



ARCHIVE 3

**Code Adoption Documents, Guidelines,
Bulletins, Advisories, Director's Orders &
Safety Orders**

**Issued from
January 2007 to October 2011**

**Elevating and Amusement Devices Safety Program
Technical Standards and Safety Authority**

This file contains historical documents (or regulatory instruments) that formed part of Ontario's Elevating Devices Regulatory Landscape.

The documents enclosed are those which have been Archived due to their age, being superseded by other documents or otherwise removed from the current ACTIVE Regulatory Documents Binder (ED-SKI).

Archive 1 contains documents created prior to May 5, 1997 that were issued by the Ministry of Consumer and Commercial Relations (MCCR).

Archive 2 contains documents issued from May 5, 1997 to Dec 2006.

Archive 3 contains archived documents issued from January 2007 to October 2011.

Technical Standards & Safety Authority ID No.	Date	Document Type	Status
ID No.	Date	CODE ADOPTION - ARCHIVE	Archive
246/11	Apr-25-11	Complete CAD Amendment and Adoption of Z98-07(Oct 1,2011)	Archive 3
239/10	Jun-21-10	Annual Testing of Firefighter's Emergency Operation	Archive 3
238/09	Jan-29-10	Adoption of CSA Standard B355-09, Lifts for Persons with Physical Disabilities	Archive 3
212/07-r1	Mar-17-09	Oil Loss Monitoring for Hydraulic Elevators	Archive 3
225/07-r3	Mar-02-09	Adoption of ASME A17.1/CSA B44-07 Safety Code for Elevators and Escalators	Archive 3
194/08	Oct-08-08	Regulation of Parking Garage Lifts	Archive 3
225/07-r2	May-13-08	Adoption of ASME A17.1/CSA B44-07 Safety Code for Elevators and Escalators	Archive 3
225/07-r1	Nov-30-07	Adoption of ASME A17.1/CSA B44-07 Safety Code for Elevators and Escalators	Archive 3
216/07	Sep-01-07	Adoption of Z185-M87(R2001), Z256-M87(R2006), A10.22-1990(R1998) w E/EE/PES requirements.	Archive 3
225/07	Jul-16-07	Adoption of ASME A17.1/CSA B44-07 Safety Code for Elevators and Escalators	Archive 3
213/07	Apr-10-07	Refurbishing of Type D Rack and Pinion Safeties	Archive 3
212/07	Jan-12-07	Oil Loss Monitoring for Hydraulic Elevators	Archive 3
ID No.	Date	GUIDELINES	Archive
214/09	Jan-18-10	Incident Reporting Requirements for Z98 Passenger Ropeway Devices	Archive 3
234/09	Jun-11-09	Frequency of Plunger Gripper Inspection and Testing	Archive 3
226/07-r1	Mar-02-09	Alterations of Elevators, DW, Freight Platforms , Escalators & Moving Walks per CSA B44-07	Archive 3
226/07	Nov-26-07	Alterations of Elevators, DW, Freight Platforms , Escalators & Moving Walks per CSA B44-07	Archive 3
224/07	Jun-25-07	Aging Ski Lift - Subsequent Engineering Assessments	Archive 3

Technical Standards & Safety Authority ID No.	Date	Document Type	Status
ID No.	Date	Advisory - Enforcement Policy - Enforcement Procedure - Interpretation Bulletin	Archive
218/07-r1	Jan-11-11	TSSA Inspection Enforcement Procedures (3X fee)	Archive 3
242/10	Nov-01-10	Signing of log books	Archive 3
241/10	Apr-09-10	Monthly Application of Friction Reducing Agents on Escalator & Moving Walk Skirts	Archive 3
228/07 -r1	Dec-22-08	Activation of FEO on Alterations	Archive 3
231/08	Nov-27-08	Roof Top Access	Archive 3
232/08	Nov-25-08	Continuing Education Requirements for ED Mechanics	Archive 3
218/07	Dec-04-07	TSSA Inspection Enforcement Procedures (2X fee)	Archive 3
228/07	Oct-01-07	Activation of FEO on Alterations	Archive 3
222/07	Apr-23-07	TSSA Grounding and Bonding - Enforcement Procedure	Archive 3
ID No.	Date	ADVISORY - Information Bulletin	Archive
244/10	Apr-28-10	Maintenance and repair of Elevating Devices by Qualified Mechanics	Archive 3
243/10	Apr-09-10	Buried hydraulic jacks with single bulkhead cylinders	Archive 3
237/08	Dec-23-08	Maintaining safe clearances around chair lift carriers	Archive 3
236/08	Dec-18-08	Structural failure due to water intrusion & ice expansion	Archive 3
215/07	Aug-20-07	Outdoor Lifts for Persons with Physical Disabilities	Archive 3
227/07	Jul-03-07	Extension to Sheave Jammer Deadline	Archive 3
208/06-r1	May-31-07	Examination and test of free-fall, overspeed, and uncontrolled low-speed protection devices	Archive 3

Technical Standards & Safety Authority ID No.	Date	Document Type	Status
ID No.	Date	Directors Order - Safety Order - Safety Alert	Archive
249/11	Oct-14-11	Cylinder Collar Welding on Lifts for Persons with Physical Disabilities	Archive 3
247/11	Jul-07-11	Requirements for Maintenance and Testing of Escalator Brakes	Archive 3
248/11	Apr-27-11	Pressure Sensor requirements for (B355) Vertical Platform Lifts	Archive 3
245/10	Dec-01-10	Installation or Upgrade of Car top Guardrails	Archive 3
240/09	Dec-16-09	Raising the chair lift safety bar - continued data collection and monitoring	Archive 3
235/09	Jun-11-09	Motor Addition to Northern ERM Machines	Archive 3
233/08-r1	Feb-06-09	Data Collection and Monitoring	Archive 3
233/08	Nov-03-08	Data Collection and Monitoring	Archive 3
223/08-r1	Mar-04-08	Weld Inspection of Unitech / Lift Tech Elevators	Archive 3
223/08	Feb-01-08	Weld Inspection of Unitech / Lift Tech Elevators	Archive 3
219/07	Oct-12-07	Hotel Fire code retrofit	Archive 3
229/07	Oct-10-07	Changes to Unloading Station on Chair Lifts	Archive 3
220/07	Jun-22-07	Kone Escalator Brakes	Archive 3
211/06-r2	May-01-07	Common FEO Key	Archive 3
169/02-r2	Apr-18-07	Periodic Engineering Review and Assessment of Aging Above-Surface Passenger Ropeways	Archive 3
221/07	Feb-16-07	Falling from Chair Lifts	Archive 3
206/07	Jan-11-07	O Thompson Controls - non compliance - redundancy and checking	Archive 3



Elevating and Amusement Devices Safety Division	Ref. No.: 169 / 02	Rev. No.: 2
DIRECTOR'S ORDER	Date: February 14, 2002	Date: April 18, 2007

IN THE MATTER OF:

**THE TECHNICAL STANDARDS AND SAFETY ACT 2000,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the
Technical Standards and Safety Act 2000**

Subject: Initial Phase - Periodic Engineering Review and Assessment of Above-surface Passenger Ropeways – (Aging Ski Lifts)
Sent to: All Passenger Ropeway Contractors and Consultants

For Above-Surface Passenger Ropeways made in 1992 and Earlier.

For Above-Surface Passenger Ropeways made after 1992 , see Director's Order 224/07.

1. INTRODUCTION

1.1 General

The Elevating Devices Regulation made under the *Technical Standards and Safety Act (TSS Act)* adopts the Elevating Devices Code Adoption Document (CAD). This bulletin is prepared in keeping with the Section 24 of the CAD that reads:

“Every above-surface passenger ropeway shall be subjected periodically to a complete engineering review and assessment to ensure its continued operational safety in accordance with guidelines set by the director.”

Section 24 of the CAD is intended to deal with the impact on the safety of above-surface passenger ropeway as a result of its age. Even though a ropeway is maintained to keep up with its original or current design/manufacturing specification during its life, over the period of time the following elements will still weaken parts of the ropeway that can fail accidentally:

- Fatigue and vibration of both moving components and fixed structures causing cracks and fractures of connections and parent metal; and
- Environmental factors like snow, ice, rain, temperature, humidity, and dust causing corrosion and deterioration of structural, mechanical and electrical components.

Above-surface passenger ropeways include those ropeways on which the passengers are transported in rope-supported carriers and are not in contact with the ground or snow surface. Chair lifts, gondola lifts, and reversible ropeways are above-surface passenger ropeways.

Periodic engineering review and assessment of every above-surface passenger ropeway will ensure continued compliance with the TSS Act, Elevating Devices Regulation, and CAD, which in turn is intended to ensure continued operational safety.

This bulletin expounds upon following criteria to meet the intent of Section 24:

- frequency for periodic engineering assessments;
- initial phase for implementing Section 24 of the CAD;
- after initial phase;
- guidelines for periodic engineering review and assessment of above-surface passenger ropeways;
- reporting engineering review/assessment findings; and
- compliance.

This Director's Order has been developed in consultation with the TSSA Ski Industry Advisory Technical Committee.

2. ORDER

2.1 General

1. All persons operating above-surface passenger ropeways in Ontario shall comply with Section 24 of the CAD adopted in the Elevating Devices Regulation in accordance with the requirements stated in this bulletin.

2.2 Frequency for Periodic Engineering Review and Assessment

1. All above-surface passenger ropeways shall be subject to engineering assessment as follows:
 - a) first engineering assessment: maximum 22,500 hours of operation, without exceeding 15 years from the initial start-up; ("initial start-up" means first permitted for use anywhere.)
 - b) second engineering assessment: maximum 37,500 hours of operation, without exceeding 25 years;
 - c) third engineering assessment: 45,000 hours of operation, without exceeding 30 years;
 - d) periodic engineering assessments: at every interval of 7,500 hours of operation, without exceeding 5 years after the third engineering assessment (Reference sub-clause (c)).
2. This order and attached tables are intended to establish the due dates for the "initial phase" or "first" engineering review and assessment reports for ropeways made in 1992 and earlier.
3. For ropeways made after 1992, initial and subsequent engineering review and assessment reports shall follow the requirements of Directors Order 224-07.

Note: The "Frequency for Periodic Engineering Review and Assessment" timelines have been restated in Director's Order 224-07.

2.3 Initial Phase for Implementing Section 24 of the CAD

The schedule for implementing Section 24 of the CAD during the initial phase has been planned based on following factors:

- Frequency for periodic engineering assessment based on Section 2.1 of this bulletin;
- Six year period, based on availability of qualified engineering resources, during which all above-surface passenger ropeways in Ontario to meet the requirements of this bulletin;
- Year 2002 to allow reasonable period of notice to the Ski Industry to schedule engineering evaluation of the aging ski lifts; and
- Older above-surface passenger ropeways to under-go engineering evaluation as early as possible.

All person shall adhere to the schedule (Table # 1) entitled "Initial Phase for Implementing Compliance to Section 24 of the CAD In Chronological Order by Age of Above-surface Passenger Ropeways" attached with this bulletin.

Table #2 entitled "Initial Phase for Implementing Compliance to Section 24 of the CAD In Chronological Order by Owner of Above-surface Passenger Ropeways" is attached with this bulletin to complement Table # 1.

2.4 After Initial Phase

After complying with the Section 2.3 of this bulletin, all person (operator's / licensees) shall adhere to periodic engineering review and assessment in accordance with the frequency stated in Section 2.2 of this bulletin.

2.5 Guidelines for Periodic Review and Assessment of Above-surface Passenger Ropeways

Identify passenger ropeway parts that are affected by the factors listed following, determine extent of their deterioration, and evaluate their security at time intervals established in Sections 2.3 and 2.4 respectively of this bulletin:

- Fatigue and vibration of both moving components and fixed structures causing cracks and fractures of connections and parent metal; and
- Environmental factors like snow, ice, rain, temperature, humidity, and dust causing corrosion and deterioration of structural, mechanical and electrical components.

The following sources shall be used as guides to appraise the security of the passenger ropeway parts:

- The latest version of CSA Standard Z98 – Passenger Ropeways adopted by CAD / Director's Order
- Requirements by manufacturer/designer of passenger ropeways
- Non-destructive Testing of Critical Components
- Documentation

(a) The Latest Version of CSA Standard Z98 – Passenger Ropeways

The latest version of CSA Standard Z98 – Passenger Ropeways adopted by CAD / Director's Order shall be used as a guide to establish criteria to assess safety of parts impacted by an aging ropeway. Those parts of passenger ropeway installation requiring alteration, replacement and/or repair shall meet the requirements of the latest version of CSA Standard Z98 – Passenger Ropeways adopted by CAD / Director's Order.

(b) Requirements by Manufacturer/Designer of Passenger Ropeways

Those parts of passenger ropeway installation requiring alteration, replacement and/or repair shall meet the requirements established by the manufacturer/designer. Where manufacturer or designer is no longer in business, an engineer shall establish requirements for alteration, replacement and/or repair.

(c) Non-destructive Testing of Critical Components

All critical components of an above-surface passenger ropeway shall be subjected to non-destructive testing. Any components to be tested that are not directly accessible shall be disassembled. The method of non-destructive, acceptance/rejection criteria, and other tolerances shall be in accordance with the specification specified by the manufacturer/designer. Where manufacturer or designer is no longer in business, an engineer shall perform that action.

Critical components are those parts of ropeway, the failure of which would immediately jeopardize passenger safety. The list of critical components of an above-surface ropeway shall include, but not be limited to the following:

MOVING COMPONENTS:

- Carrier, including grip, hanger, chair, or gondola;
- Drive and return sheaves including shafts;

- Line sheave assemblies and their attachments;
- Tension systems and their attachments; and
- Wire rope, including haul ropes, track ropes and counterweight ropes

FIXED STRUCTURES

- Drive terminal structure;
- Return terminal structure;
- Towers and cross-arms; and
- Catwalks

Identification of every critical component of an above-surface passenger ropeway shall be based on its definition and requirements contained in the latest adopted version of CSA Standard Z98 – Passenger Ropeways.

According to the CSA Standard Z98, critical component means “ a component or system of components, the failure of which would immediately jeopardize passenger safety”.

All critical components shall be tabulated with identification, including the type of non-destructive testing conducted, rejection/acceptance criteria, findings, and recommendations. The recommendations may contain establishing program of inspection/maintenance, steps to repair, replace, and/or alter the critical components.

2.6 Reporting Engineering Review/Assessment Findings

A professional engineer shall certify the engineering review/assessment report. The report shall address:

- guidelines established in Section 2.5 of this Director’s Order; and
- requirements to correct those non-compliance related findings to achieve compliance with the requirements of Section 24 of the CAD under the Elevating Devices Regulation.

An owner shall attest that he/she will comply with the requirements of the certified engineering review and assessment report to achieve compliance with the requirements of Section 24 of the CAD under the Elevating Devices Regulation.

2.7 Compliance

The engineering review and assessment report prepared in accordance with the requirements of Section 2.6 of the bulletin shall be submitted to the Technical Standards and Safety Authority (TSSA) for its registration.

Prior to registering the report, TSSA shall evaluate an engineering and assessment report for its technical integrity and conformance to the requirements of this Director’s Order. The report shall be registered without conditions, registered with conditions or rejected with explanation. An owner of an above-surface passenger ropeway shall not operate the ropeway prior to the registration of the certified engineering review and assessment report.

3. INSTRUCTIONS

- Those recommendations of the engineering review and assessment report requiring major and minor alterations of the above-surface passenger ropeway shall be dealt in accordance with the requirements of the Technical Standards and Safety Act, Elevating Devices Ontario Regulation, and Code Adoption Document. All alterations may be submitted as one design submission. The design submission for major alteration(s) must be registered and inspected prior to the operation of the ropeway.

- The fee prescribed in the fee schedule for evaluation of engineering review and assessment report will be charged to the submitter of the report.
- Four copies of the engineering review and assessment report shall be submitted to TSSA. Upon registration of the report, TSSA will retain two copies (one for TSSA engineering & one for TSSA inspection), distribute one copy to the owner and one to the engineer.
- Tables # 1 & 2 attached with this bulletin form an integral part of this Director's Order – Section 2.3.
- Tables #1 & 2 provide specific “initial phase” report times for above-surface passenger ropeways made in 1992 and prior. For devices made after 1992 see Director's Order 224/07.
- Where the latest adopted version of CSA Standard Z98 – Passenger Ropeways and this Director's Order requires action by a designer or manufacturer who is no longer in business, that action shall be performed by a professional engineer as defined in the Elevating Devices Regulation.
- Prior to the start of year 2003, an hour-meter shall be installed on every above surface passenger ropeway to keep track of hours of operation.
- All owners of above-surface passenger ropeways shall review Tables # 1 & 2 for accuracy and/or lack or missing information contained in those tables, and inform the TSSA in writing immediately of their findings.
- This Director's Order establishes guidelines for in-depth inspection and compliance requirements to ensure security of critical components of an above-surface passenger ropeway. In order to expedite registration of “Reporting Engineering Review/Assessment Findings” in accordance with Section 2.7 of this Director's Order, it is critical that consistent “methodology” is applied to confirm compliance with this Director's Order:
 - Compile “as built” specification of the ropeway necessary to assess security of critical components of an above-surface passenger ropeway.
 - Identify critical components of an above-surface passenger ropeway subjected to fatigue, vibration, and environmental exposure for their inspection.
 - Prepare list of critical components and non-destructive testing methods to be applied for their inspection.
 - Where critical components to be inspected are not directly accessible, any disassembling required must be performed where deemed necessary.
 - Evaluate the findings of the inspection with a view to confirm the security of critical components.
 - Determine action (repair, replacement and/or alteration) taken or to be taken to secure the integrity of critical components.
- Necessary non-destructive testing (NDT) may be spread (staggered) over a period not exceeding five years to assist planning for compliance with this Director's Order in accordance with the “Frequency for Periodic Engineering Review and Assessment” established in Section 2.2
- This Director Order is not intended to replace any requirements contained in the latest adopted version of CSA Standard Z98 – Passenger Ropeways and Ontario Regulation.

This is a reminder that “Operation and Maintenance” requirements under Section 32 of the Ontario Regulation must be adhered at all times. When replacing parts of a ropeway, Section 32(5) of the Ontario Regulation applies. All work must be performed by qualified persons.

Roland Hadaller, P.Eng.,

Director, appointed under the *Technical Standards and Safety Act, 2000*, Ontario Regulation
209/01(Elevating Devices)

Archive
Superseded by DO 224/07

Table # 1 (Director's Order #169/02)
Initial Phase for Implementing Compliance to Section 24
of the Code Adoption Document
In Chronological Order by Age of Above-surface Passenger Ropeways

Year Made	Manufacturer	Device #	Owner	Initial Phase (Year) Scheduled to Implement Director's Order	After Initial Phase Schedule Next Date
1971	Poma	70532	Blue Mountain Ski Resorts	2002	This resort volunteered to comply in Year 2002
1971	Borvig	22409	Chicopee Ski Club	2002	This resort volunteered to comply in Year 2002
1969	Borvig	20158	Horseshoe Resorts	2002	This resort volunteered to comply in Year 2002
1955	Poma	70584	Adanac Ski Hill	2003	Next Compliance per the Order S. 2.2
1959	Riblet	1265	Mt. Baldy	2003	Next Compliance per the Order S. 2.2
1960	Von Roll	14513	Niagara Parks Commision	2003	Next Compliance per the Order S. 2.2
1963	Hall	15404	Talisman Mt Resort	2003	Next Compliance per the Order S. 2.2
1963	Hall	15825	Talisman Mt Resort	2003	Next Compliance per the Order S. 2.2
1964	Hall	15832	Hidden Valley	2003	Next Compliance per the Order S. 2.2
1965	Timberland	16794	Devil's Glen	2003	Next Compliance per the Order S. 2.2
1965	Poma	16803	Blue Mountain Ski Resorts	2003	Next Compliance per the Order S. 2.2
1965	Timberland/Elliott	18297	Centreville Amusement Park	2003	Next Compliance per the Order S. 2.2
1965	Poma	70604	Dacre Heights Ski Resort	2003	Next Compliance per the Order S. 2.2
1966	Hall	16677	Osler Bluff Ski Club	2003	Next Compliance per the Order S. 2.2
1966	Skyway	17182	Corp. of Township of Michipicoten	2003	Next Compliance per the Order S. 2.2
1968	BM Lifts	19188	Mt. Pakenham	2003	Next Compliance per the Order S. 2.2
1969	Hall	20139	Devil's Glen	2003	Next Compliance per the Order S. 2.2
1969	Riblet	71554	Georgian Peaks	2003	Next Compliance per the Order S. 2.2
1970	Doppelmayr	21424	Alphine Ski Club	2003	Next Compliance per the Order S. 2.2
1970	Hall	39638	Loch Lomand	2003	Next Compliance per the Order S. 2.2
1971	Poma	20264	Blue Mountain Ski Resorts	2003	Next Compliance per the Order S. 2.2
1971	Borvig	22387	Devil's Elbow	2003	Next Compliance per the Order S. 2.2
1971	Skyway	70511	Rocket Man Restaurants	2003	Next Compliance per the Order S. 2.2
1972	Poma	22307	Loch Lomand	2003	Next Compliance per the Order S. 2.2
1972	Poma	23577	Mt. St. Louis-Moonstone	2003	Next Compliance per the Order S. 2.2
1972	BM Lifts	23681	Pine Ridge Ski	2004	Next Compliance per the Order S. 2.2
1972	Borvig	23697	Loch Lomand	2004	Next Compliance per the Order S. 2.2
1972	Borvig	23701	Searchmont	2004	Next Compliance per the Order S. 2.2
1972	Poma	23750	Thunder Bay Ski Jumps	2004	Next Compliance per the Order S. 2.2
1972	Hall	23753	Sir Sam's Ski Area	2004	Next Compliance per the Order S. 2.2
1972	Borvig	23754	Loch Lomand	2004	Next Compliance per the Order S. 2.2
1973	Borvig	27504	Horseshoe Resort	2004	Next Compliance per the Order S. 2.2
1974	Hall	28667	Mt. Pakenham	2004	Next Compliance per the Order S. 2.2
1974	Hall	28687	Craigleith Ski Club	2004	Next Compliance per the Order S. 2.2
1974	Poma	29553	North Bay Laurentian Ski Club	2004	Next Compliance per the Order S. 2.2
1975	Borvig	29557	Devil's Elbow	2004	Next Compliance per the Order S. 2.2
1976	Borvig	30582	Chicopee Ski Club	2004	Next Compliance per the Order S. 2.2
1977	Hall	31084	Devil's Glen	2004	Next Compliance per the Order S. 2.2
1977	Leitner/Doppelmayr	31207	Beaver Valley Ski Club	2004	Next Compliance per the Order S. 2.2
1977	Borvig	65904	Snow Valley Ski Resorts	2004	Next Compliance per the Order S. 2.2
1977	Poma	68594	Buttermilk Alpine Ski Village	2004	Next Compliance per the Order S. 2.2
1978	Poma	31058	Blue Mountain Ski Resorts	2004	Next Compliance per the Order S. 2.2
1978	Hall	32114	Caledon Ski Club	2004	Next Compliance per the Order S. 2.2
1978	Skyway	61915	Dagmar Resort	2004	Next Compliance per the Order S. 2.2
1978	BM Lifts	65948	Superior Slopes, Town of Marathon	2004	Next Compliance per the Order S. 2.2
1979	Poma	32161	Blue Mountain Ski Resorts	2004	Next Compliance per the Order S. 2.2
1979	Borvig	32174	Rocket Man Restaurants	2004	Next Compliance per the Order S. 2.2
1979	Skyway	32831	Mt. St. Louis-Moonstone	2004	Next Compliance per the Order S. 2.2

Table 1 - (1 of 3) Continued...

Year Made	Manufacturer	Device #	Owner	Initial Phase (Year) Scheduled to Implement Director's Order	After Initial Phase Schedule Next Date
1979	Skyway	33001	North Bay Laurentian Ski Club	2005	Next Compliance per the Order S. 2.2
1980	BM Lifts	20529	Mt. Pakenham	2005	Next Compliance per the Order S. 2.2
1980	Borvig	33629	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1980	BM Lifts	67359	North York Ski Centre	2005	Next Compliance per the Order S. 2.2
1981	Borvig	35356	Devil's Elbow	2005	Next Compliance per the Order S. 2.2
1981	Hall	60264	Craigleith Ski Club	2005	Next Compliance per the Order S. 2.2
1981	Hall	60268	Craigleith Ski Club	2005	Next Compliance per the Order S. 2.2
1982	Doppelmayr	36014	Beaver Valley Ski Club	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	36107	Sir Sam's Ski Area	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	36108	Dagmar Resort	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	36802	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	68568	Mt. Pakenham	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	70593	Uplands Golf and Ski Club	2005	Next Compliance per the Order S. 2.2
1984	Poma	37570	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	36801	Mt. St. Louis-Moonstone	2005	Next Compliance per the Order S. 2.2
1985	Doppelmayr	37609	Beaver Valley Ski Club	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38441	Devil's Elbow	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38451	Snow Valley Ski Resorts	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38456	Mt. St. Louis-Moonstone	2005	Next Compliance per the Order S. 2.2
1985	Poma	38459	Blue Mountain Ski Resorts	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39466	Loch Lomand	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39484	Hockley Valley Resort	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39493	Searchmont Resort	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39511	Mansfield Ski Club	2006	Next Compliance per the Order S. 2.2
1986	Von Roll	39515	Osler Bluff Ski Club	2006	Next Compliance per the Order S. 2.2
1986	Poma	39549	Horseshoe Resort	2006	Next Compliance per the Order S. 2.2
1987	Poma	13323	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	Doppelmayr	34000	Craigleith Ski Club	2006	Next Compliance per the Order S. 2.2
1987	Poma	60305	Glen Eden	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	73255	Mt. St. Louis-Moonstone	2006	Next Compliance per the Order S. 2.2
1987	Poma	73323	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	75231	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	76427	Hidden Valley Highlands Ski Club	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	76485	Mt. Pakenham	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61722	Devil's Elbow	2006	Next Compliance per the Order S. 2.2
1988	Doppelmayr	61723	Alpine Ski Club	2006	Next Compliance per the Order S. 2.2
1988	Doppelmayr	61724	Alpine Ski Club	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61753	Mt. Pakenham	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61756	Hidden Valley Highlands Ski Club	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61763	Dagmar Resort	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61765	Mt. Dufour Ski Area	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	63736	Sir Sam's Ski Area	2006	Next Compliance per the Order S. 2.2
1989	Poma	63706	Mt. St. Louis-Moonstone	2006	Next Compliance per the Order S. 2.2
1989	Doppelmayr	63712	Blue Mountain Ski Resorts	2006	Next Compliance per the Order S. 2.2
1989	BM Lifts	63755	Lakeridge Resort	2006	Next Compliance per the Order S. 2.2

Table 1 - (2 of 3) Continued...

Year Made	Manufacturer	Device #	Owner	Initial Phase (Year) Scheduled to Implement Director's Order	After Initial Phase Schedule Next Date
1979	Skyway	33001	North Bay Laurentian Ski Club	2005	Next Compliance per the Order S. 2.2
1980	BM Lifts	20529	Mt. Pakenham	2005	Next Compliance per the Order S. 2.2
1980	Borvig	33629	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1980	BM Lifts	67359	North York Ski Centre	2005	Next Compliance per the Order S. 2.2
1981	Borvig	35356	Devil's Elbow	2005	Next Compliance per the Order S. 2.2
1981	Hall	60264	Craigeleith Ski Club	2005	Next Compliance per the Order S. 2.2
1981	Hall	60268	Craigeleith Ski Club	2005	Next Compliance per the Order S. 2.2
1982	Doppelmayr	36014	Beaver Valley Ski Club	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	36107	Sir Sam's Ski Area	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	36108	Dagmar Resort	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	36802	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	68568	Mt. Pakenham	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	70593	Uplands Golf and Ski Club	2005	Next Compliance per the Order S. 2.2
1984	Poma	37570	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	36801	Mt. St. Louis-Moonstone	2005	Next Compliance per the Order S. 2.2
1985	Doppelmayr	37609	Beaver Valley Ski Club	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38441	Devil's Elbow	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38451	Snow Valley Ski Resorts	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38456	Mt. St. Louis-Moonstone	2005	Next Compliance per the Order S. 2.2
1985	Poma	38459	Blue Mountain Ski Resorts	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39466	Loch Lomand	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39484	Hockley Valley Resort	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39493	Searchmont Resort	2005	Next Compliance per the Order S. 2.2
1986	BM Lifts	39511	Mansfield Ski Club	2006	Next Compliance per the Order S. 2.2
1986	Von Roll	39515	Osler Bluff Ski Club	2006	Next Compliance per the Order S. 2.2
1986	Poma	39549	Horseshoe Resort	2006	Next Compliance per the Order S. 2.2
1987	Poma	13323	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	Doppelmayr	34000	Craigeleith Ski Club	2006	Next Compliance per the Order S. 2.2
1987	Poma	60305	Glen Eden	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	73255	Mt. St. Louis-Moonstone	2006	Next Compliance per the Order S. 2.2
1987	Poma	73323	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	75231	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	76427	Hidden Valley Highlands Ski Club	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	76485	Mt. Pakenham	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61722	Devil's Elbow	2006	Next Compliance per the Order S. 2.2
1988	Doppelmayr	61723	Alpine Ski Club	2006	Next Compliance per the Order S. 2.2
1988	Doppelmayr	61724	Alpine Ski Club	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61753	Mt. Pakenham	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61756	Hidden Valley Highlands Ski Club	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61763	Dagmar Resort	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61765	Mt. Dufour Ski Area	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	63736	Sir Sam's Ski Area	2006	Next Compliance per the Order S. 2.2
1989	Poma	63706	Mt. St. Louis-Moonstone	2006	Next Compliance per the Order S. 2.2
1989	Doppelmayr	63712	Blue Mountain Ski Resorts	2006	Next Compliance per the Order S. 2.2
1989	BM Lifts	63755	Lakeridge Resort	2006	Next Compliance per the Order S. 2.2

Table 1 - (3 of 3) Continued...

Table # 2 (Director's Order #169/02)
Initial Phase for Implementing Compliance to Section 24
of the Code Adoption Document
In Chronological Order by Owner of Above-surface Passenger Ropeways

Year Made	Manufacturer	Device #	Owner	Initial Phase (Year) Scheduled to Implement Director's Order	After Initial Phase Schedule Next Date
1955	Poma	70584	Adanac Ski Hill	2003	Next Compliance per the Order S. 2.2
1970	Doppelmayr	21424	Alphine Ski Club	2003	Next Compliance per the Order S. 2.2
1988	Doppelmayr	61723	Alpine Ski Club	2006	Next Compliance per the Order S. 2.2
1988	Doppelmayr	61724	Alpine Ski Club	2006	Next Compliance per the Order S. 2.2
1999	Doppelmayr	74568	Alpine Ski Club	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1977	Leitner/Doppelmayr	31207	Beaver Valley Ski Club	2004	Next Compliance per the Order S. 2.2
1982	Doppelmayr	36014	Beaver Valley Ski Club	2005	Next Compliance per the Order S. 2.2
1985	Doppelmayr	37609	Beaver Valley Ski Club	2005	Next Compliance per the Order S. 2.2
1990	Doppelmayr	65244	Beaver Valley Ski Club	2007	Next Compliance per the Order S. 2.2
2000	Doppelmayr	76398	Beaver Valley Ski Club	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1965	Poma	16803	Blue Mountain Ski Resorts	2003	Next Compliance per the Order S. 2.2
1971	Poma	20264	Blue Mountain Ski Resorts	2003	Next Compliance per the Order S. 2.2
1971	Poma	70532	Blue Mountain Ski Resorts	2002	This resort volunteered to comply in Year 2002
1997	Poma	73037	Blue Mountain Ski Resorts	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1999	Poma	74994	Blue Mountain Ski Resorts	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1999	Poma	75049	Blue Mountain Ski Resorts	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
2000	Poma	76186	Blue Mountain Ski Resorts	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1978	Poma	31058	Blue Mountain Ski Resorts	2004	Next Compliance per the Order S. 2.2
1979	Poma	32161	Blue Mountain Ski Resorts	2004	Next Compliance per the Order S. 2.2
1985	Poma	38459	Blue Mountain Ski Resorts	2005	Next Compliance per the Order S. 2.2
1989	Doppelmayr	63712	Blue Mountain Ski Resorts	2006	Next Compliance per the Order S. 2.2
1977	Poma	68594	Buttermilk Alpine Ski Village	2004	Next Compliance per the Order S. 2.2
2000	Doppelmayr	76252	Calabogie Peaks	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1978	Hall	32114	Caledon Ski Club	2004	Next Compliance per the Order S. 2.2
1990	BM Lifts	65720	Caledon Ski Club	2007	Next Compliance per the Order S. 2.2
1993	BM Lifts	69392	Caledon Ski Club	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1996	BM Lifts	72151	Caledon Ski Club	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
2000	Doppelmayr	76120	Caledon Ski Club	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
2000	Doppelmayr	76121	Caledon Ski Club	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1965	Timberland/Elliot	18297	Centreville Amusement Park	2003	Next Compliance per the Order S. 2.2
1971	Borvig	22409	Chicopee Ski Club	2002	This resort volunteered to comply in Year 2002
1976	Borvig	30582	Chicopee Ski Club	2004	Next Compliance per the Order S. 2.2
1991	Poma	67250	Chicopee Ski Club	2007	Next Compliance per the Order S. 2.2
1991	Poma	67251	Chicopee Ski Club	2007	Next Compliance per the Order S. 2.2
1991	BM Lifts	67276	Cobble Hills Golf & Ski Club	2007	Next Compliance per the Order S. 2.2
1966	Skyway	17182	Corp. of Township of Michipicoten	2003	Next Compliance per the Order S. 2.2

Table 2 - (1 of 4) Continued...

Year Made	Manufacturer	Device #	Owner	Initial Phase (Year) Scheduled to Implement Director's Order	After Initial Phase Schedule Next Date
1974	Hall	28687	Craigleith Ski Club	2004	Next Compliance per the Order S. 2.2
1981	Hall	60264	Craigleith Ski Club	2005	Next Compliance per the Order S. 2.2
1981	Hall	60268	Craigleith Ski Club	2005	Next Compliance per the Order S. 2.2
1987	Dopplemayr	34000	Craigleith Ski Club	2006	Next Compliance per the Order S. 2.2
1999	C-Tec	74440	Craigleith Ski Club		Ropeways made after Year 1992 Plan Compliance per S. 2.2
2000	C-Tec	76268	Craigleith Ski Club		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1965	Poma	70604	Dacre Heights Ski Resort	2003	Next Compliance per the Order S. 2.2
1989	BM Lifts	63881	Dagmar Resort	2007	Next Compliance per the Order S. 2.2
1978	Skyway	61915	Dagmar Resort	2004	Next Compliance per the Order S. 2.2
1982	BM Lifts	36108	Dagmar Resort	2005	Next Compliance per the Order S. 2.2
1988	BM Lifts	61763	Dagmar Resort	2006	Next Compliance per the Order S. 2.2
1971	Borvig	22387	Devil's Elbow	2003	Next Compliance per the Order S. 2.2
1975	Borvig	29557	Devil's Elbow	2004	Next Compliance per the Order S. 2.2
1981	Borvig	35356	Devil's Elbow	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38441	Devil's Elbow	2005	Next Compliance per the Order S. 2.2
1988	BM Lifts	61722	Devil's Elbow	2006	Next Compliance per the Order S. 2.2
1994	BM Lifts	70473	Devil's Elbow		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1965	Timberland	16794	Devil's Glen	2003	Next Compliance per the Order S. 2.2
1969	Hall	20139	Devil's Glen	2003	Next Compliance per the Order S. 2.2
1977	Hall	31084	Devil's Glen	2004	Next Compliance per the Order S. 2.2
1990	Borvig	65785	Devil's Glen	2007	Next Compliance per the Order S. 2.2
1969	Riblet	71554	Georgian Peaks	2003	Next Compliance per the Order S. 2.2
1995	Poma	71436	Georgian Peaks		Ropeways made after Year 1992 Plan Compliance per S. 2.2
2000	Leitner Lifts	76295	Georgian Peaks		Ropeways made after Year 1992 Plan Compliance per S. 2.2
2000	Leitner Lifts	76299	Georgian Peaks		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1987	Poma	60305	Glen Eden	2006	Next Compliance per the Order S. 2.2
2000	Poma	76199	Glen Eden		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1997	Poma	73036	Glen Eden		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1964	Hall	15832	Hidden Valley Highlands Ski Club	2003	Next Compliance per the Order S. 2.2
1987	BM Lifts	76427	Hidden Valley Highlands Ski Club	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61756	Hidden Valley Highlands Ski Club	2006	Next Compliance per the Order S. 2.2
1986	BM Lifts	39484	Hockley Valley Resort	2005	Next Compliance per the Order S. 2.2
1973	Borvig	27504	Horseshoe Resort	2004	Next Compliance per the Order S. 2.2
1980	Borvig	33629	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	36802	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1984	Poma	37570	Horseshoe Resort	2005	Next Compliance per the Order S. 2.2
1986	Poma	39549	Horseshoe Resort	2006	Next Compliance per the Order S. 2.2
1989	Doppelmayr	63776	Horseshoe Resort	2007	Next Compliance per the Order S. 2.2
1990	Borvig	65786	Horseshoe Resort	2007	Next Compliance per the Order S. 2.2
1990	Borvig	65788	Horseshoe Resort	2007	Next Compliance per the Order S. 2.2
1990	Borvig	65791	Horseshoe Resort	2007	Next Compliance per the Order S. 2.2
1969	Borvig	20158	Horseshoe Resort	2002	This resort volunteered to comply in Year 2002
1990	BM Lifts	65737	Kamiskotia Snow Resort	2007	Next Compliance per the Order S. 2.2
1990	BM Lifts	65739	Kamiskotia Snow Resort	2007	Next Compliance per the Order S. 2.2

Year Made	Manufacturer	Device #	Owner	Initial Phase (Year) Scheduled to Implement Director's Order	After Initial Phase Schedule Next Date
1989	BM Lifts	63755	Lakeridge Resort	2006	Next Compliance per the Order S. 2.2
1989	BM Lifts	63803	Lakeridge Resort	2007	Next Compliance per the Order S. 2.2
1993	BM Lifts	69416	Lakeridge Resort	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1970	Hall	39638	Loch Lomand	2003	Next Compliance per the Order S. 2.2
1972	Poma	22307	Loch Lomand	2003	Next Compliance per the Order S. 2.2
1972	Borvig	23754	Loch Lomand	2004	Next Compliance per the Order S. 2.2
1972	Borvig	23697	Loch Lomand	2004	Next Compliance per the Order S. 2.2
1986	BM Lifts	39466	Loch Lomand	2005	Next Compliance per the Order S. 2.2
1990	BM Lifts	65738	London Ski Club	2007	Next Compliance per the Order S. 2.2
1986	BM Lifts	39511	Mansfield Ski Club	2006	Next Compliance per the Order S. 2.2
1998	Leitner	74103	Mansfield Ski Club	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1998	Leitner	73791	Mattawa Conservation Authority	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1959	Riblet	1265	Mt. Baldy	2003	Next Compliance per the Order S. 2.2
1988	BM Lifts	61765	Mt. Dufour Ski Area	2006	Next Compliance per the Order S. 2.2
1968	BM Lifts	19188	Mt. Pakenham	2003	Next Compliance per the Order S. 2.2
1974	Hall	28667	Mt. Pakenham	2004	Next Compliance per the Order S. 2.2
1980	BM Lifts	20529	Mt. Pakenham	2005	Next Compliance per the Order S. 2.2
1982	BM Lifts	68568	Mt. Pakenham	2005	Next Compliance per the Order S. 2.2
1987	BM Lifts	76485	Mt. Pakenham	2006	Next Compliance per the Order S. 2.2
1988	BM Lifts	61753	Mt. Pakenham	2006	Next Compliance per the Order S. 2.2
1972	Poma	23577	Mt. St. Louis-Moonstone	2003	Next Compliance per the Order S. 2.2
1979	Skyway	32831	Mt. St. Louis-Moonstone	2004	Next Compliance per the Order S. 2.2
1985	BM Lifts	36801	Mt. St. Louis-Moonstone	2005	Next Compliance per the Order S. 2.2
1985	BM Lifts	38456	Mt. St. Louis-Moonstone	2005	Next Compliance per the Order S. 2.2
1987	BM Lifts	73255	Mt. St. Louis-Moonstone	2006	Next Compliance per the Order S. 2.2
1989	Poma	63706	Mt. St. Louis-Moonstone	2006	Next Compliance per the Order S. 2.2
1991	Poma	67310	Mt. St. Louis-Moonstone	2007	Next Compliance per the Order S. 2.2
1992	BM Lifts/Poma	68579	Mt. St. Louis-Moonstone	2007	Next Compliance per the Order S. 2.2
1996	Poma	72406	Mt. St. Louis-Moonstone	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1999	Poma	74995	Mt. St. Louis-Moonstone	Ropeways made after Year 1992 Plan Compliance per S. 2.2	
1960	Von Roll	14513	Niagara Parks Commision	2003	Next Compliance per the Order S. 2.2
1974	Poma	29553	North Bay Laurentian Ski Club	2004	Next Compliance per the Order S. 2.2
1979	Skyway	33001	North Bay Laurentian Ski Club	2005	Next Compliance per the Order S. 2.2
1980	BM Lifts	67359	North York Ski Centre	2005	Next Compliance per the Order S. 2.2

Table 2 - (3 of 4) Continued...

Year Made	Manufacturer	Device #	Owner	Initial Phase (Year) Scheduled to Implement Director's Order	After Initial Phase Schedule Next Date
1990	BM Lifts	65719	Oshawa Ski Club	2007	Next Compliance per the Order S. 2.2
1992	BM Lifts	68505	Oshawa Ski Club	2007	Next Compliance per the Order S. 2.2
1998	BM Lifts	73790	Oshawa Ski Club		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1966	Hall	16677	Osler Bluff Ski Club	2003	Next Compliance per the Order S. 2.2
1986	Von Roll	39515	Osler Bluff Ski Club	2006	Next Compliance per the Order S. 2.2
2000	Doppelmayr	76195	Osler Bluff Ski Club		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1998	Doppelmayr	73910	Osler Bluff Ski Club		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1972	BM Lifts	23681	Pine Ridge Ski	2004	Next Compliance per the Order S. 2.2
1971	Skyway	70511	Rocket Man Restaurants	2003	Next Compliance per the Order S. 2.2
1979	Borvig	32174	Rocket Man Restaurants	2004	Next Compliance per the Order S. 2.2
1972	Borvig	23701	Searchmont Resort	2004	Next Compliance per the Order S. 2.2
1986	BM Lifts	39493	Searchmont Resort	2005	Next Compliance per the Order S. 2.2
1989	Doppelmayr	63831	Searchmont Resort	2007	Next Compliance per the Order S. 2.2
1972	Hall	23753	Sir Sam's Ski Area	2004	Next Compliance per the Order S. 2.2
1982	BM Lifts	36107	Sir Sam's Ski Area	2005	Next Compliance per the Order S. 2.2
1988	BM Lifts	63736	Sir Sam's Ski Area	2006	Next Compliance per the Order S. 2.2
1992	BM Lifts	68524	Sir Sam's Ski Area	2007	Next Compliance per the Order S. 2.2
1996	BM Lifts	72269	Skyloft Ski & Country Club		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1997	Leitner-BM	73091	Snow Valley Ski Resorts		Ropeways made after Year 1992 Plan Compliance per S. 2.2
1977	Borvig	65904	Snow Valley Ski Resorts	2004	Next Compliance per the Order S. 2.2
1985	BM Lifts	38451	Snow Valley Ski Resorts	2005	Next Compliance per the Order S. 2.2
1978	BM Lifts	65948	Superior Slopes, Town of Marathon	2004	Next Compliance per the Order S. 2.2
1963	Hall	15404	Talisman Mt. Resort	2003	Next Compliance per the Order S. 2.2
1963	Hall	15825	Talisman Mt. Resort	2003	Next Compliance per the Order S. 2.2
1987	Poma	13323	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	Poma	73323	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1987	BM Lifts	75231	Talisman Mt Resort	2006	Next Compliance per the Order S. 2.2
1991	BM	67275	Talisman Mt. Resort	2007	Next Compliance per the Order S. 2.2
1972	Poma	23750	Thunder Bay Ski Jumps	2004	Next Compliance per the Order S. 2.2
1982	BM Lifts	70593	Uplands Golf and Ski Club	2005	Next Compliance per the Order S. 2.2

Note:

All owners of above-surface passenger ropeways shall review this table to verify for accuracy and/or lack of information contained in this table, and inform the TSSA in writing immediately of their findings.

Table 2 – (4 of 4) END



Elevating and Amusement Devices Safety Division	Ref. No.: 194 / 08	Rev. No.:
Enforcement Procedure Bulletin	Date: October 8, 2008	Date:

Subject: Regulation of Parking Garage Lifts (PGL's)

Sent to: All PGL Suppliers, Contractors, Installers, Consultants

1. INTRODUCTION

1.1. General

All elevating devices in Ontario are subject to the requirements of Ontario Regulation 209/01 (Elevating Devices) made under the *Technical Standards and Safety Act, 2000*, unless the type of elevating device is specifically excluded from the Regulation.

The elevating devices regulation (209/01) has been recently amended by O.Reg 252/08 (effective **January 1, 2009**) and now clearly references Parking Garage Lifts (PGL's) as one of the many forms of regulated elevating devices.

Elevating devices used to elevate or lower vehicle(s) for the purpose of storing (parking) the vehicle are included in the Regulation.

A primary reason to reference and not exempt PGL's is that they are not specifically regulated by any other Ontario Regulation designed to protect the public. Therefore any persons involved with the ownership, operation, installation, and maintenance of these types of elevating devices used in publicly accessible locations are expected to comply with the requirements set forth in the Act and Regulation. The Act and the Regulation specifies a person's responsibilities.

The increase in PGL installations has prompted TSSA to work with the PGL industry to ensure the requirements of the elevating devices regulation are understood and the requirements followed for PGL installations and maintenance. As the regulatory requirements are new to many in this industry, TSSA is working to implement a phased approach to regulatory fulfillment. The purpose of this document is to inform responsible parties on the compliance requirements under the Regulations. Since compliance is expected to be achieved in stages, this document also specifies the minimum requirements and implementation timelines.

1.2. Subject of this Bulletin

This bulletin is intended to outline the requirements related to Parking Garage Lifts. The Regulation defines PGL as:

"Parking Garage Lift" means an elevating device that is used for lifting or lowering a vehicle in or about a parking facility.

This document is meant to address:

1. PGL Stackers - devices where vehicles are stored and are of the format:
 - PGL-Simple Stacker –A parking lift that has vertical motion only
 - PGL-Complex Stacker –A parking system which is not solely limited to vertical motion

Note: No persons ever ride a stacker.

2. PGL-Transfer Area – An area from which vehicles are transferred to, or returned from, the working area of the PGL. The transfer area is intended to allow for at least the driver to enter or leave the vehicle. The transfer area has means to ensure the public does not have access to the working area of the PGL.
Note: No persons ever ride the transfer device.

3. PGL-Automatic – A parking system which includes a PGL-Transfer Area, and a vehicle storage area consisting of a PGL-Simple Stacker or PGL-Complex Stacker as defined above.
Note: No persons ever ride in an automatic PGL.

Note 1: At this time, only the requirements of the transfer area of a PGL-Automatic will be addressed.

Note 2: A PGL with two or more loading and unloading landings is considered a PGL elevating device under section 1.3 below.

In this bulletin, PGL-Simple Stacker, PGL-Complex Stacker, PGL-Transfer Area and PGL-Automatic are referred to as “Parking Garage Lifts” (PGL’S).

1.3. Not the Subject of this Bulletin

1. Freight Elevators designed to carry motor vehicles;
2. Freight Platform Lifts designed to carry motor vehicles;
3. Material Lifts designed to carry motor vehicles.
4. Elevating devices used to lift a vehicle for the purpose of performing service on the automobile. (O.Reg.209/01 s2.(3)(g))
5. Simple or Complex PGL’s which are inaccessible to the general public and are provided with Transfer Area(s) as the sole means of loading and unloading. Transfer Area’s however are subject to the Regulation.

Where elevating devices described in 1, 2, and 3 above are used to carry vehicles, the requirements of B44 Safety Code for Elevators will form the bases of the design of the elevating device. These devices will be classified as PGL Elevators.

2. INTERPRETATION & ENFORCEMENT

Ontario Regulation 209/01 as amended by O.Reg. 252/08 specifically recognizes Parking Garage Lifts, and becomes effective on **January 1, 2009**.

Prior to **January 1, 2009**, Parking Garage Lifts were classified as a “special elevating device”, requiring compliance with prior editions of the Act, regulation and applicable codes.

To facilitate industry compliance, the enforcement process has been divided into two phases.

Phase 1

The first phase will ensure compliance for new and altered installations, which are commissioned on or after **January 1, 2009**.

Phase 2

The second phase will address compliance issues for existing installations.

- Identification of existing sites by **June 1, 2009**
- Periodic inspection activities beginning on or after **January 1, 2010**.

The following guidelines will be used to ensure compliance with the O.Reg. 209/01:

2.1. Scope of Work

- 2.1.1. This Regulation applies to the design, construction, installation, erection, maintenance, alteration, use and service of Parking Garage Lifts as defined in this bulletin, except where otherwise indicated.
O.Reg.209/01, s.2

2.2. Contractors and Contractor Registration

- 2.2.1. All contractors must be registered. O.Reg.209/01, s.14

- a) For the first phase of the regulation compliance project, contractor registration requirements will be varied.
- b) Only companies authorized and trained by the manufacturers/major manufacturer's representative may be eligible for registration.

- 2.2.2. All work performed on a PGL after January 1, 2009 must be done by a registered contractor.
O.Reg.209/01, s.21

- 2.2.3. Applications for contractor registration shall include:

- a) A letter from the equipment manufacturer/major manufacturer's representative stating that the contractor is authorized to perform work on their equipment.
- b) Verifiable proof of experience shall be included with the application.
- c) Name of mechanic(s) registered by TSSA (see 2.3)

- 2.2.4. Applications for contractor registration can be obtained from :

- a) <http://www.tssa.org/regulated/elevating/elevatingForms.asp> or
- b) By email at customerservices@tssa.org or
- c) Calling Customer Services Advisors at 1-877-682-TSSA (8772) or 416-734-3300 for the Toronto area.

2.3. Mechanic Requirements

- 2.3.1. No work shall be undertaken on a Parking Garage Lift unless by a registered mechanic, or by a mechanic-in-training under the supervision of a mechanic. O.Reg.209/01, s.24

- a) A Parking Garage Lift mechanic must have documented training under the regulation.
- b) A certification program for Parking Garage Lift mechanics will not come into effect until a later phase.
- c) Until the mechanic certification program is in place, manufacturers and contractors shall provide information and documentation about their training programs.
- d) Until the mechanic certification program is in place, mechanics shall provide information and documentation about their training history. Ideally this will take the form of a training certificate and log from their employer.
- e) The Elevating Device Regulation 209/01 requires all mechanics to:
 - 1) have full knowledge of the Act, Regulations and any applicable code
 - 2) not undertake work beyond their scope of training

- 2.3.2. Application for a mechanic's registration shall include:

- a) Relevant education history
- b) Related work experience
- c) PGL manufacturer training dates and training content
- d) A safety training workshop as per section 6(6) of O.Reg 222/01.

Note:

- 1) Mechanic registration is a prerequisite for contractor registration
- 2) Mechanic registration is an interim step toward mechanic certification.

2.4. Installation Locations and Maintenance Lists

2.4.1. Contractors shall provide a list of all Parking Garage Lifts which they have **installed** in the province of Ontario prior to January 1, 2009.

- a) Installation lists shall be provided to TSSA by June 1, 2009.
- b) Lists will not need to include installations at private dwellings houses, including the land upon which the private dwelling house is situated.
- c) Installation lists should include:
 - 1) the device(s) address,
 - 2) owner of device(s) – if known
 - 3) owner's phone number and address – if known
 - 4) number of devices (power units and load carriers per power unit)
 - 5) Total load and load carrier capacity ratings

2.4.2. Contractors shall provide a list of all Parking Garage Lifts under their **maintenance**. O.Reg.209/01, s.23

- a) Maintenance lists shall be provided to TSSA by June 1, 2009
- b) Lists will not need to include installations at private dwellings houses, including the land upon which the private dwelling house is situated.
- c) Contractor licensing in subsequent years will require disclosure of all installations under their maintenance.
- d) Maintenance lists should include:
 - 1) the device(s) address,
 - 2) owner of device(s)
 - 3) owner's phone number and address
 - 4) number of devices (power units and load carriers per power unit)
 - 5) Total load and load carrier capacity ratings

Note: Condominiums are not included in the private dwelling house exemption as they have components / areas which are not exclusive to the owners of a single private dwelling, so they need to be included on the list.

2.5. Submission Requirements for New and Altered Installations

2.5.1. **New** and/or **altered** Parking Garage Lifts shall conform to the *Technical Standards and Safety Act, 2000*, Ontario Regulation 209/01 and the Elevating Devices Code Adoption Document. Engineering and inspection related documents (design submission documents) related to the installation shall be provided with the application for registration of a new installation. The engineering data will identify the applied codes and provide statements of hazard assessment and mitigation. O.Reg.209/01, s.5 (1), 5(2), 15, 16, 17

- a) The first required design submissions will apply to any **new** or **altered** installation which will be commissioned / put into operation after **January 1, 2009**.
- b) The design submission for registration of a **new** or **altered** installation shall include those items listed in O.Reg 209/01, s.15.(4), and shall also include:
 - 1) Proof of electrical equipment certification to CEC C22.1, CSA, cUL, or equivalent.
 - 2) Proof of manufacturer welding certification to CSA W47.1, or equivalent.
 - 3) Number of load carrying units driven by the power unit.
 - 4) Total Capacity of the device and the capacities of the individual carriers.

- 5) Operator Training Program
- 6) Assessment of Hazards and Mitigation - Identify how all minimum safety requirements are to be addressed (crush, shear, fall, shock hazards)
- 7) Testing procedures to demonstrate the effectiveness of safety devices and features.

2.5.2. All documents of a design submission shall be under the signature and seal of a professional engineer of Ontario. O.Reg.209/01, s.15. (6)

- a) Submitting engineers will be attesting compliance to any applicable regulations and codes and will ensure that matters effecting safety are addressed in a manner reflecting good engineering practice.

2.6. Inspection of New and Altered Installations

2.6.1. A contractor who installs or alters a Parking Garage Lift shall arrange for an initial inspection after ensuring the device complies with the registered design submission and the device is in a safe operating condition.

2.6.2. The initial inspection fee is the responsibility of the installing contractor. O.Reg.209/01, s.25, s. 44.

2.6.3. Contractors are reminded that new installations are not to be turned over for use until the device has passed an initial inspection.

2.6.4. Devices undergoing alterations minor in nature and which do not impact safety features can be returned to service but must be inspected within 60 days O.Reg.209/01, s.19

2.6.5. Full Load tests or loading with vehicles of representative weight will be required on all new devices (and where applicable on altered devices). Loads and/or other test equipment shall be provided by the contractor. O.Reg.209/01, s.44

2.6.6. At the initial inspection the following must be present:

- a) Operator Training Program
 - b) A training log book – to record the names of trained persons
- Note: Operators shall be trained and their names recorded in the training log book prior to operation of the device.

2.6.7. Testing by the contractor will include a demonstration of test procedures included in the design submission.

2.7. Applied Codes and Standards

2.7.1. No code, standard or other technical rule has been authorized under section 36 of the *Technical Standards and Safety Act, 2000* for the Parking Garage Lift. General engineering practice normally applied to elevating devices shall apply.

- a) If the lift was built to the European Standard EN 14010 Equipment for power-driven parking of motor vehicles, TSSA will deem that it meets an acceptable code except where the EN 14010 is in direct conflict with another North American standard applicable in Ontario. (example: Canadian Electrical Code or general requirements of the Code Adoption Document) O.Reg.209/01, s.5 (2)

2.8. Existing Installations / Devices

2.8.1. Existing Parking Garage Lifts shall comply with the Regulation.

- a) Periodic inspection of existing Parking Garage Lift installations shall commence after **January 1, 2010**.
- b) Existing Parking Garage Lifts are ones that have been commissioned / put into operation prior to **January 1, 2009**.

- c) Owners will be responsible for the inspection fees and future safety inspections, at such intervals as determined by TSSA. O.Reg.209/01, s.4 (1), s.44.
- d) Alterations of Existing Parking Garage Lifts shall conform to the Code Adoption Document.
 - 1) Alterations shall be performed by registered contractors.
- e) Identification of general safety and regulatory violations during the first periodic inspection of existing Garage Parking Lifts may require modifications to bring the devices into compliance.
- f) Safety requirements for existing lifts will be determined and refined over time by TSSA in conjunction with an Industry Working Group made up of manufacturer, contractor, and owner representatives.
- g) Data-capture for existing devices will be conducted by TSSA field staff during the first periodic inspection.
- h) After the first Periodic inspection is complete, TSSA will determine the frequency for the next Periodic inspection. (Frequency will be determined using a risk based model)

2.9. Device License

- 2.9.1. Every Parking Garage Lift requires a license that must be posted at the device and is to be renewed on an annual basis by the owner. O.Reg.209/01, s.12, s.28, s.30.
- a) During the Initial inspection, an application for the device license will be supplied to the owner to fill in and return to the inspector along with payment based on the current license fee schedule.
 - b) Owners of existing devices shall apply for a license prior to **January 1, 2010**.
 - c) The initial application for the licensing of an existing device shall include:
 - 1) Owner name and address
 - 2) Device address
 - 3) Number of load carriers (per power unit)
 - 4) Total load and load carrier capacity ratings
 - 5) Description of controls used to prevent access to the device by the general public
 - d) Each power unit will constitute an installation and will require a separate license.

2.10. Maintenance Requirements and Records (Logbook)

- 2.10.1. The owner shall ensure the device is maintained by a registered contractor. Maintenance and maintenance frequency shall be in accordance with the manufacturer's recommendations, but in no case shall the time between maintenance visits be longer than one year. O.Reg.209/01, s.32
- a) For new or altered installations, maintenance requirements are effective **January 1, 2009**.
 - b) Maintenance requirements of existing installations are effective **June 1, 2009**.
 - c) Maintenance shall include inspection and testing of the safety device. O.Reg.209/01, s.33.
- 2.10.2. Every owner of a Parking Garage Lift and every contractor shall maintain a log book, in accordance with the manufacturer's recommendations, for the device that they own or maintain. The log book shall be readily available at the location of the device. O.Reg.209/01, s.34
- a) A manufacturer supplied list of items requiring regular maintenance and the recommended maintenance frequency for each item shall be provided by the supplier of the equipment and should be included as part of the maintenance log book.
 - b) Log books shall remain on site for 5 years as per O.Reg.209/01, s.34.(2)
 - c) Maintenance requirements for PGL's will be determined and refined over time by TSSA in conjunction with an Industry Working Group made up of manufacturer, contractor, and owner representatives.

2.11. Operating Requirements (for Owners)

- 2.11.1. Every owner of an elevating device shall ensure that the attendants and operators have knowledge of the device and complies with the *Technical Standards and Safety Act, 2000* and O.Reg.209/01. O.Reg.209/01, s.40, s. 13.
- 2.11.2. Owners shall have an operator training program and a log of trained persons.
- 2.11.3. Operation shall be restricted to only trained operators through the use of keys or equivalent systems.
- 2.11.4. Owners shall annually renew and post the device license at the power unit, controller or operating station.
- 2.11.5. Owners shall post:
- a) The installation number tag at the power unit and identify each load carrier unit.
 - b) Shall post a capacity sign (in kilograms) at the operating station and each load carrier.
 - c) Shall post safe operating procedure signage at each operating station.
 - 1) Signs may be shared between operating stations.
 - 2) The sign must be legible from the operating station otherwise individual signs shall be required.
- 2.11.6. Where an accident or incident occurs, the owner and/or contractor shall notify TSSA as per requirements of O.Reg.209/01, s.36.
- 2.11.7. Every owner of a Parking Garage Lift shall ensure safe and unobstructed access to all serviceable parts of the device for maintenance and service.
- 2.11.8. Keys for access to all locked parts of the device shall be readily available. O.Reg.209/01, s.37.

3. Regulatory Requirement Summary

- *Technical Standards and Safety Act 2000*, S.O. 2000, c.16
- Ontario Regulation 209/01 (Elevating Devices)
- Ontario Regulation 222/01 (Certification and Training of Elevating Device Mechanics)

Electronic copies of these documents can be found on the Government of Ontario web site at:

<http://www.e-laws.gov.on.ca> or
<http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>

- Elevating Devices Code Adoption Document
- Enforcement Procedure Bulletin 194/08

Electronic copies of these documents can be found on the TSSA web site at:

<http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>

4. Effective Date

This enforcement procedure is effective immediately.



Rob Kremer, P. Eng.,
Engineering Manager, EDAD Program



Roger Neate
Operations Manager, EDAD Program

Developed in consultation with the PGL Industry Task Group



Elevating and Amusement Devices Safety Division	Ref. No.: 206 / 07	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: January 11, 2007	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT 2000*,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01(Elevating Devices) made under the
*Technical Standards and Safety Act 2000***

Subject: Retrofit Order applicable to the O'Thompson Series 90 - Vector Controller with Hoistway Access Operation

Sent to: All Elevator Contractors

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under section 31 and 27 of the *Technical Standards & Safety Act 2000* hereby orders the following:

1 Background

- 1.1. TSSA was made aware of an incident involving the O'Thompson Series 90 - Vector Controller during Hoistway Access Operation. The Access Key Switch located at the 2nd landing would bypass both 1st and 2nd floor hall door interlocks when actuated up or down. A field wiring error was responsible for the incident.
- 1.2. Upon further investigation a lack of redundancy in the hoistway access circuit (relays BAD, BAU, TAD, or TAU) used to bypass the car door contact and the hall door interlock was discovered. Single failure of any of these relays would unconditionally bypass the car door contact, one hall door interlock contact, and bypass the auxiliary car door open indication circuit.

2 Order to Contractors

- 2.1 If you maintain elevators with O'Thompson Series 90 – Vector Controller with hoistway access operation you must follow the procedure listed in Schindler Elevator Corporation's June 7, 2006 **Field Engineering Letter No. 49** (attached) to complete the upgrade. A record indicating that the upgrade has been completed must be entered in the log book.
 - 2.1.1 Add a new relay **ACCX** (force guided contacts) as per attached electrical drawings (Sheets 4, 5, 6, 6A). Normally open contacts from ACCX will be used as redundant contacts to ACC, TAD, TAU, BAD, and BAU. A normally closed contact of ACCX inserted in the safety circuit will be used to monitor ACCX relay.
 - 2.1.2 Check the complete operation of the hoistway access circuitry and verify the landing door interlocks field wiring before returning the elevator to automatic operation

- 2.1.3 After completing the requirements of this safety alert put a note in the log book indicating: Serviced per DR 206/07, and include the date, mechanic's printed name, signature and certificate number.
- 2.1.4 A permanent label shall be affixed to the controller's enclosure to indicate that the controller has been retrofitted per DR 206/07.
- 2.1.5 When carrying out the yearly maintenance, the contractor shall ensure that TAU, TAD, BAU, and BAD relays are in good operating condition.
- 2.2 If the required work does not constitute a part of your maintenance contract, and you cannot obtain authorization from the owner to complete the work, you shall inform this office immediately, indicating the elevator installation numbers so we may issue an order to the owner to have the work completed.
- 2.3 This Safety Order is effective immediately.
- 2.4 Contractors undertaking the required control upgrade shall submit a Minor B Notification indicating;
- Retrofit of O'Thompson Series 90 - Vector Controller with Hoistway Access Operation per Director's Safety Order 206/07
- 2.5 This work shall be completed not later than June 30, 2007.

Note: Section 37 of the Act provides that "every person who fails to comply with an order; is guilty of an offence and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both, or, if the person is a body corporate, to a fine of not more than \$1,000,000". 2000, c. 16, s.37 (1).

Roland Hadaller Director, TSS Act 2000, (Elevating Devices)



FIELD ENGINEERING LETTER NO. 49

**Retrofit of O'Thompson Series 90 Controller
with Hoistway Access Operation**

TSSA has brought to our attention that failure of Hoistway access relay(s) may allow an elevator to potentially operate in an unsafe manner.

The problem should be rectified by the addition of a new force guided relay ACCX to create redundancy for access relays BAU, TAU, BAD, TAD and ACC.

We request therefore that circuits in O'Thompson Series 90 controllers having Hoistway Access operation be modified as per the attached procedure.

A handwritten signature in black ink, appearing to read 'Aziz', with a horizontal line underneath.

Aziz Rehman, P. Eng.
Engineering Manager

June 7, 2006



Procedure

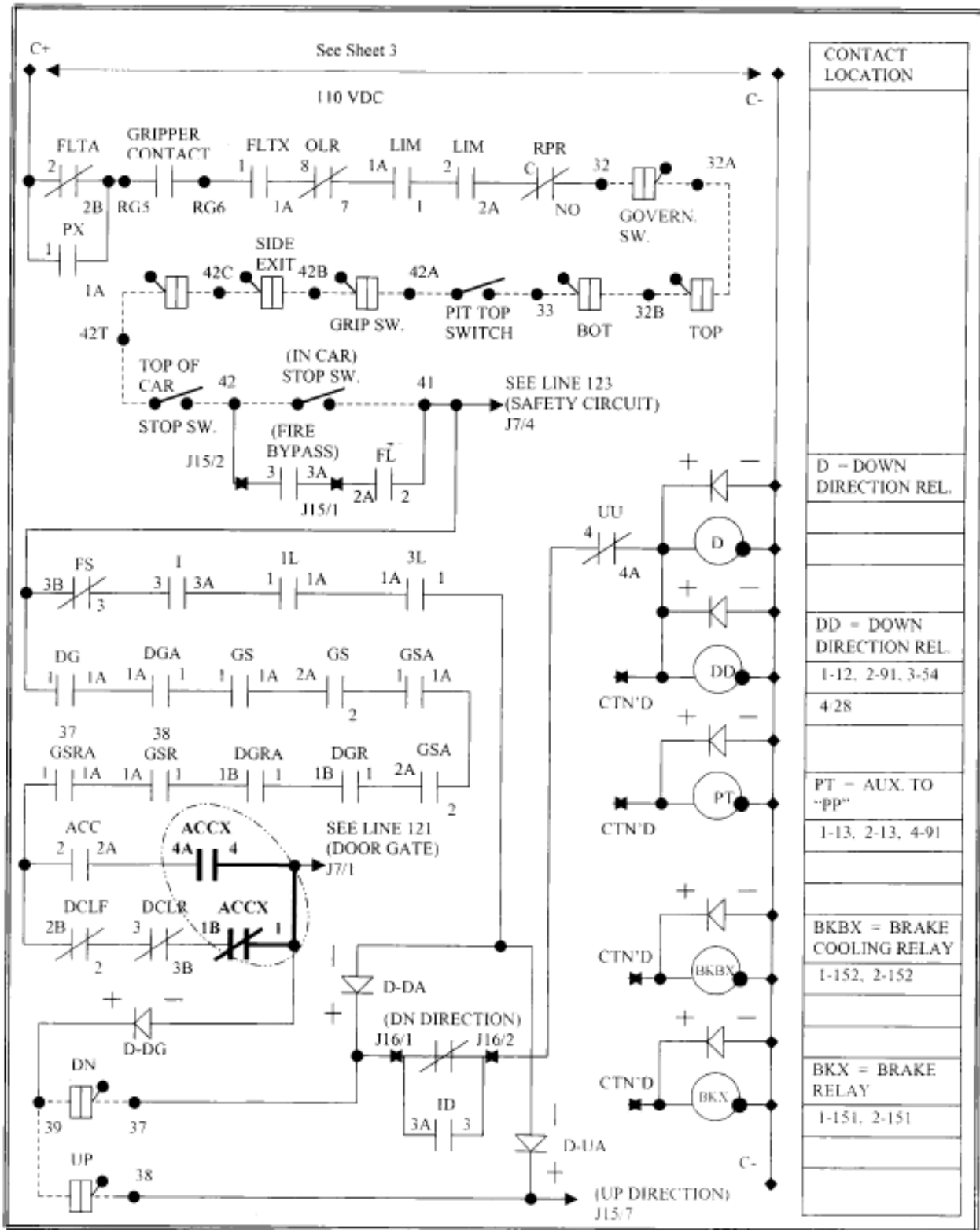
Add a new force guided relay ACCX as per attached drawings (Sheets 4, 5, 6, & 6A).

The new force guided relay ACCX will be energized when in-car operation is activated.

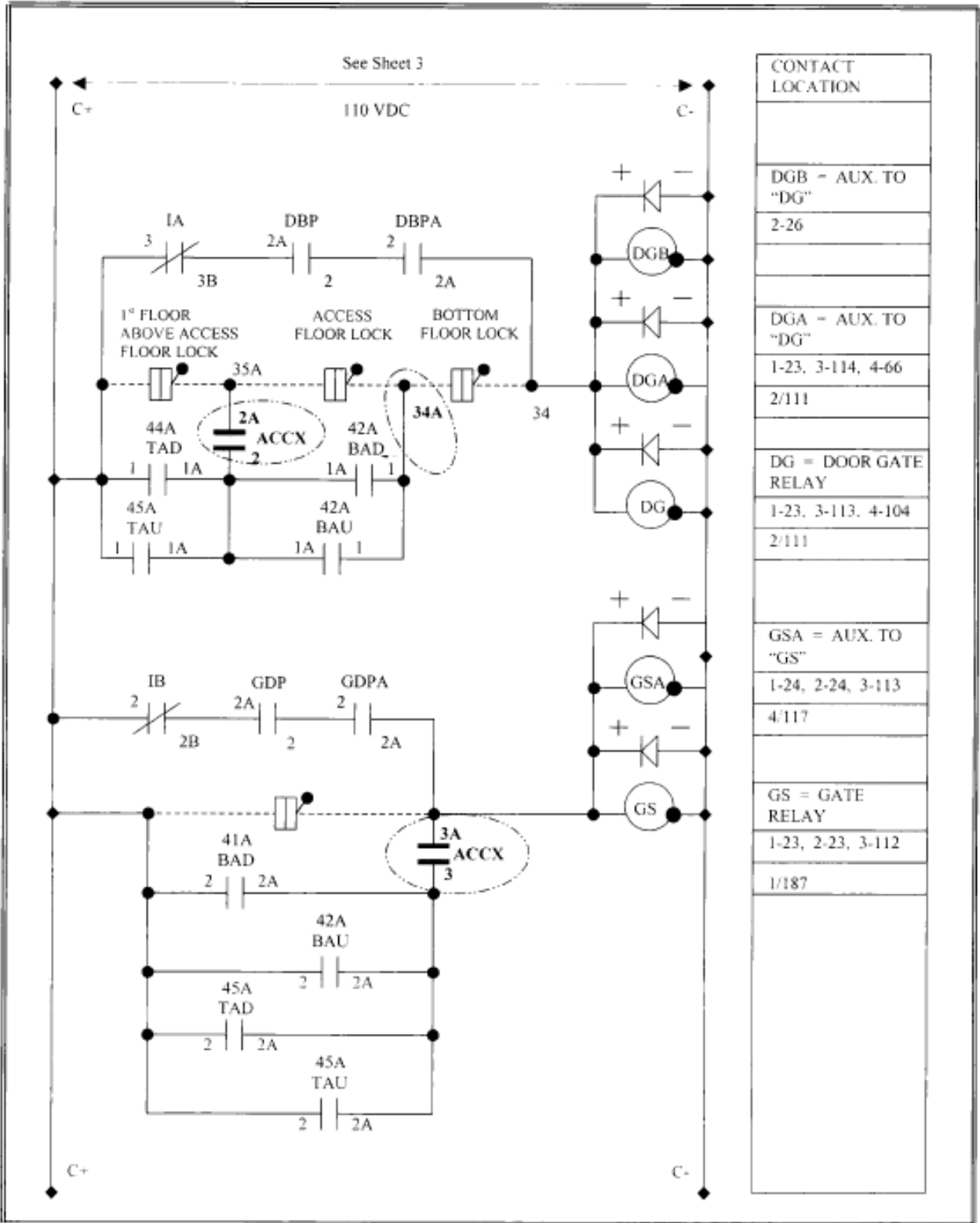
Normally open contacts from ACCX will be used to provide redundancy in the circuits controlling the access relay ACC, the door relay DG and gate relay GS, as well as the bypass of the door lock contacts connected in the safety circuit.

ACCX relay will also be monitored through one normally closed contact inserted in the safety circuit that will open, in the event of relay ACCX failure, to prevent the car from running.

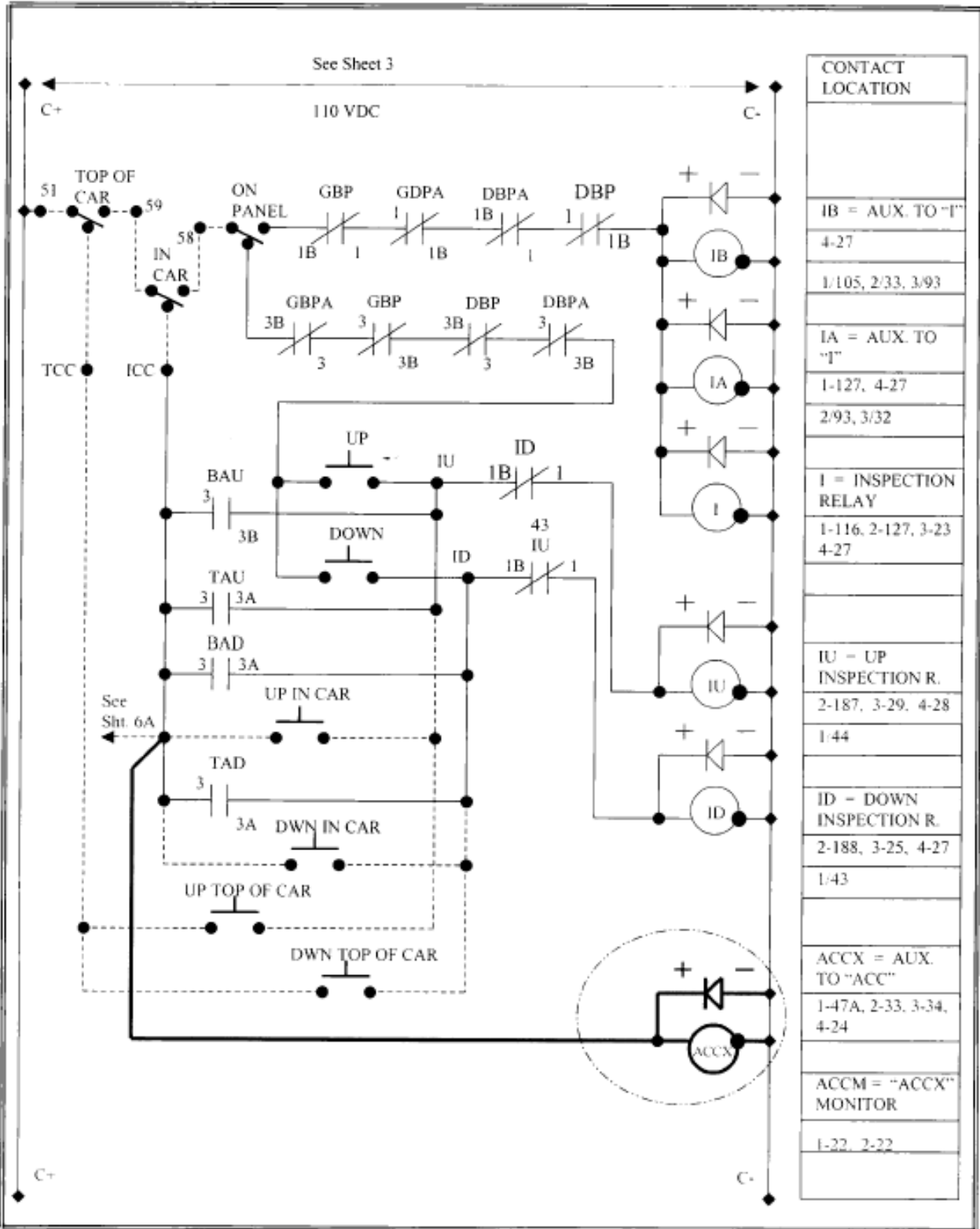
After the control changes have been made in accordance with the instructions, check the complete operation of the hoistway access system before returning the elevator to automatic operation.



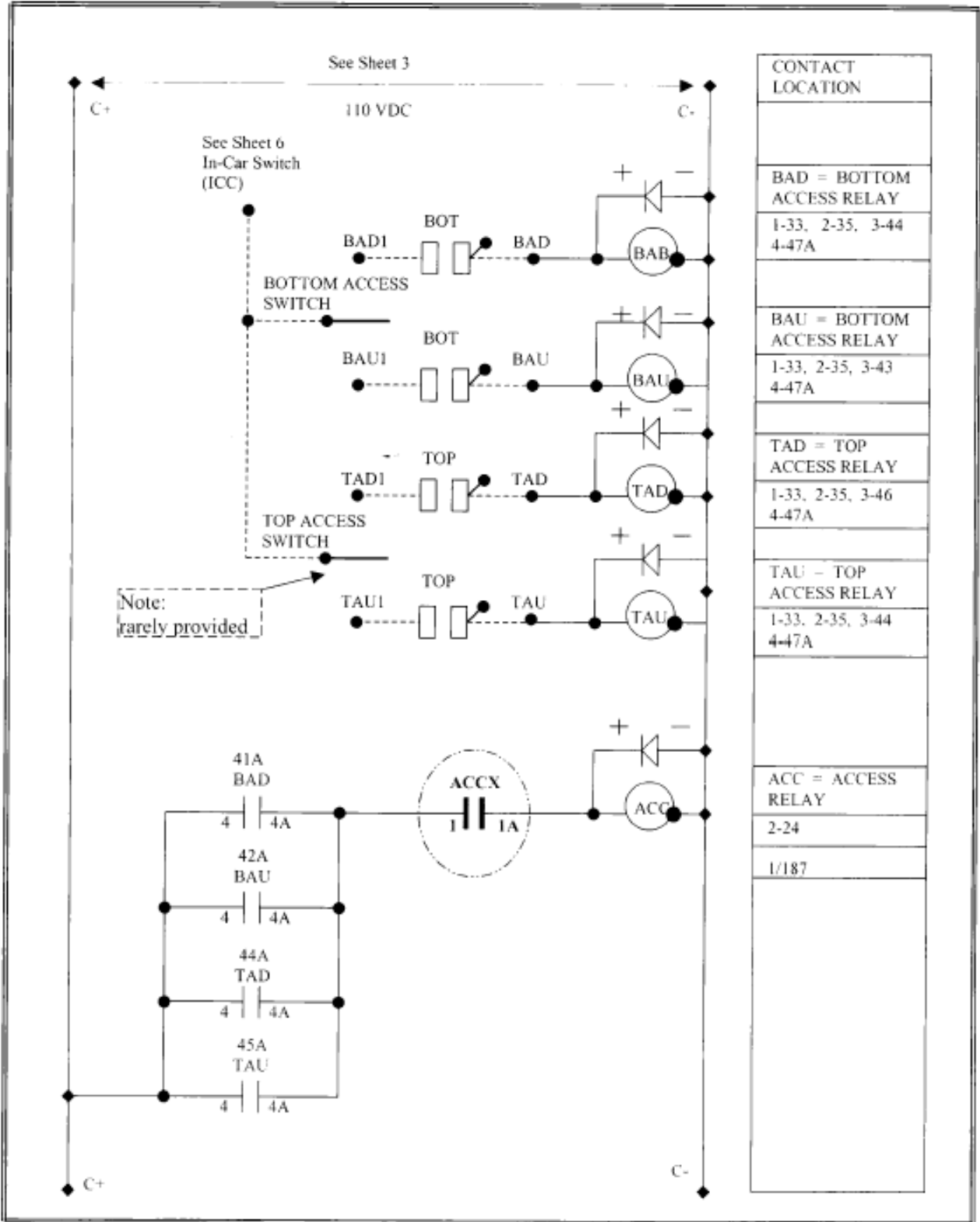
O'Thompson Co.
Controller Type: Series 90-Vector
Sheet: 4



O'Thompson Co. Controller Type: Series 90-Vector	Sheet: 5
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O'Thompson Co.	Sheet: 6
Controller Type: Series 90-Vector	



O'Thompson Co. Controller Type: Series 90-Vector	Sheet: 6A
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Elevating and Amusement Devices Safety Division	Ref. No.: 208 / 06	Rev. No.: 1
Information / Interpretation Bulletin	Date: July 27, 2006	Date: May 31, 2007

Subject: Examination and test of free-fall, overspeed, and uncontrolled low-speed protection devices
Sent to: All elevating device contractors, consultants and mechanics

1.0 Introduction

This bulletin is intended to remind all contractors and maintenance personnel, of their obligations under the provisions of set forth in B44 and/or the Elevating Devices regulation 209/01. When performing annual testing of Ascending Car Overspeed (ACO) protection devices and Unintended Car Movement (UCM) protection devices, maintaining Contractors are reminded that:

- (a) **The examination and testing of ACO and UCM shall be completed annually.**
 - *unless the manufacturer specifies more frequent examination & tests*
 - *see Director's Safety Order 192/05 for other testing frequency requirements for ThyssenKrupp "sheave jammer"*
- (b) **All maintenance and testing activities shall be recorded in a maintenance logbook.**
- (c) **Compliance with the applicable requirements of section 2.19 of B44, can only be demonstrated through dynamic testing of the protective device (while the elevator is in motion), and when subject to a fault which represents a realistic failure, the device is designed to protect against.**
- (d) **The failure of an ACO or UCM device during maintenance testing is a reportable incident.**

This bulletin is being issued, over concerns that examinations, dynamic tests, log entries and incident reporting are not being performed as required.

2.0 Instructions for Field Staff

- (a) Maintaining contractors shall provide their field staff with procedures to accurately test, maintain and verify the effectiveness of the protective equipment.
- (b) Field staff shall be advised that activating the protective device on stationary equipment does not comply with the annual test requirements of B44 section J.2.11.2.
- (c) Assistance from the driving machine brake during ACO and UCM device testing is not permitted.

3.0 Applicable Requirements from B44

Note: "With the permission of Canadian Standards Association, material is reproduced from CSA Standard, B44-04 Safety Code for Elevators, which is copyrighted by Canadian Standards Association, 178 Rexdale Blvd., Toronto, Ontario, M9W 1R3. While use of this material has been authorized, CSA shall not be responsible for the manner in which the information is presented, nor for any interpretations thereof. CSA Standards are available by contacting CSA at 1-800-463-6727 · 416-747-4044 or online at www.shopcsa.ca "

J.2.11 Examination and test of free-fall, overspeed, and uncontrolled low-speed protection devices

J.2.11.1 Examination

All parts relating to free-fall, overspeed, and uncontrolled low-speed protection devices shall be examined annually, following manufacturer's recommendations, to determine if they are in safe operating condition.

J.2.11.2 Inspections and tests

Inspections and tests, as required in 8.10.2.2.2(cc), shall be carried out annually, except that full-load tests shall not be required.

8.10.2.2.2 Machine room

(cc) Ascending Car Overspeed, and Unintended Car Motion Protection

(1) *Ascending Car Overspeed Protection*. The means to prevent ascending car overspeed shall be inspected and tested with no load in the car to verify conformance with 2.19.1.2.

(2) *Unintended Car Motion*. The means to prevent unintended car motion shall be inspected and tested to verify conformance with 2.19.2.2.

c8.6.12.2.5 Log book

A log pertaining to all maintenance activities specified in c8.6.12 (see also [Appendix J](#)) shall be maintained on site at all times by the maintenance contractor. The log shall contain, as a minimum, but not be limited to, detailed records of all tests, inspections, and other maintenance duties referred to in this Section that have been performed in the previous five years (see c8.6.12.4.1.1). For records kept in an electronic format, a hard copy shall be placed in the job site log within a maximum of three months of the initial recording.

c8.11.2.2.10 Ascending car overspeed protection and unintended car motion devices

(a) Examinations. All working parts of ascending car overspeed protection and unintended car motion devices shall be examined to determine that they are in satisfactory operating condition and that they conform to the applicable requirements of 2.19.1.2(a) and 2.19.2.2(a).

(b) Tests. These devices shall be subjected to tests with no load in the car at the slowest operating speed* in the up direction.

* for UCM testing, slowest operating speed means "rollaway speed from the floor due to imbalance" without brake assistance

for ACO testing, slowest operating speed means, at "inspection speed"

Rob Kremer, P. Eng.,
Technical Leader, EDAD Program

Roger Neate
Operations Manager, EDAD Program

This Bulletin has been developed in consultation with the Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.: 211/ 06	Rev. No.: 2
DIRECTOR'S ORDER	Date: July 27, 2006	Date: May 1, 2007

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000*,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices) made under the
*Technical Standards and Safety Act, 2000***

Subject: Common Firefighters' Emergency Operation (FEO) Key "FEO-K1"
Sent to: All Elevator Contractors

Pursuant to subsection 36.(3)(a) of the *Technical Standards and Safety Act, 2000*, the Director, subject to the conditions herein, authorizes the use of and requires compliance with the following:

1. INTRODUCTION

The current editions of the A17.1 and B44 Safety Codes for Elevators require that the Elevator Emergency Power Selector Switch, three-position Fire Recall Switch and the three-position Fire Operation Switch for all new elevators in a building, be operable by the same key.

With the publication of the 2007 edition of the Codes mentioned above, sometime around January 2007, a requirement that a common key for the operation of the named switches will be introduced.

2. BACKGROUND

The Elevating Devices Advisory Council (EDAC), the Technical Standards and Safety Authority (TSSA), as well as the Office of the Ontario Fire Marshal and the firefighting community across Ontario support the implementation of a common key.

Currently each elevator installation, new or altered, has a key that is manufacturer specific. The new common key will be the standard key for operation of FEO systems regardless of manufacturer and applicable in all jurisdictions in North America.

The use of a standardized key will assist in reducing response times for firefighters during operations involving elevating devices for medical and fire or other emergencies. The common key will allow for emergency services to equip personnel with one key to access all newly installed or altered elevator systems provided with FEO.

The bitting code establishes the number of slots, depth of the slots and configuration of the key. This key will be of a tubular, 7 pin, style 137 construction and will have a bitting code of 6143521 starting at the tab sequenced clockwise as viewed from the barrel end of the key. The key will be coded "FEO-K1". The possession of the "FEO-K1" key will be limited to elevator personnel, emergency personnel, elevator equipment manufacturers and authorized personnel during checking of

firefighters' emergency operation. The bitting code will be available for use by any manufacturer of key switches.

3. RECOMMENDATION

In advance of publication of the 2007 Code and with the support of EDAC, TSSA is requesting voluntary compliance from the elevator industry prior to the January 1, 2008 implementation of the Common FEO Key. TSSA is recommending the incorporation of the key to operate the Elevator Emergency Power Selector Switch, Fire Recall Switch and the Fire Operation Switch, on all new elevator installations provided with FEO.

Altered elevator installations, where FEO is altered or installed as part of the alteration shall incorporate the Common FEO Key to operate the Fire Recall Switch and the Fire Operation Switch.

There shall be a separate key for each named switch as required by code in clause 2.27.8. These keys shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521 starting at the tab sequenced clockwise as viewed from the barrel end of the key. The key shall be coded "FEO-K1". The possession of the "FEO-K1" key will be limited to elevator personnel, emergency personnel, elevator equipment manufacturers and authorized personnel during checking of firefighters' emergency operation.

4. ORDER

4.1. Effective January 1, 2008 each newly installed elevator provided with FEO shall incorporate the Common FEO Key to operate the Elevator Emergency Power Selector Switch, Fire Recall Switch and the Fire Operation Switch.

Each elevator where FEO is altered or installed as part of the alteration shall incorporate the Common FEO Key to operate the Fire Recall Switch and the Fire Operation Switch.

There shall be a separate key for each named switch as required by clause 2.27.8 of the B-44 Code. These keys shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521. The key shall be coded "FEO-K1". The possession of the "FEO-K1" key will be limited to elevator personnel, emergency personnel, elevator equipment manufacturers and authorized personnel during checking of firefighters' emergency operation.

4.2. **DESIGN SUBMISSIONS** received by TSSA for registration on or after January 1, 2008 shall conform to the requirements of 4.1 above.

Notes: Revision 1, revised the compliance date based on input from industry.

Notes: Revision 2, clarified direction of the bitting code, & revised the compliance date based on this new information.

Roland Hadaller, P.Eng.,

Director, appointed under the *Technical Standards and Safety Act, 2000*, Ontario Regulation 209/01(Elevating Devices)

This Order has been developed in consultation with the Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.: 212 / 07	Rev. No.:
DIRECTOR'S ORDER	Date: January 12, 2007	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000,*
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices) made under the
*Technical Standards and Safety Act 2000***

**Subject: Amendment to the Elevating Devices Code Adoption Document
Oil Loss Monitoring of Hydraulic Elevating Devices with buried cylinders or buried
piping**

Sent to: Elevator Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 published by the Technical Standards & Safety Authority is amended by adding the following:

Appendix A

HYDRAULIC ELEVATING DEVICES - OIL LOSS MONITORING PROGRAM

A. Oil Loss Monitoring Program

Definitions

“hydraulic elevating device” means a non-portable device for hoisting and lowering or moving persons or freight and includes an elevator, dumbwaiter, manlift, incline lift, construction hoist, stage lift, platform lift and special elevating device that incorporates one or more hydraulic cylinders.

Application

A.1.01 Every contractor who maintains a hydraulic elevating device **with buried cylinders or buried piping** shall ensure there is a written oil level monitoring program.

Purpose

A.2.01 The purpose of the oil loss monitoring program is to identify any loss of oil which cannot be accounted for in the hydraulic system.

Requirements for Compliance

A.3.01 If a contractor performs maintenance on a hydraulic elevating device **with buried cylinders or buried piping**, the contractor shall ensure that a written oil loss monitoring program is developed and maintained before the contractor performs work on the hydraulic elevating device. The oil loss monitoring program shall include,

- Log (a) the requirement to provide an oil loss monitoring log book (“OLM log book”) for each hydraulic elevating device **with buried cylinders or buried piping**;
- Inst # (b) the requirement for the OLM log book to reference the elevating device installation number;
- Reference mark (c) the requirement to establish a fixed reference point for the oil level and the requirement to mark the reference point on the tank, dip stick or other suitable location;
- Record of mark (d) the requirement to record the location of the fixed oil reference point in the OLM log book;
- Checking (e) the requirement to check that the oil level is at the established reference point when the device is level with the lowest landing during each scheduled maintenance visit;
- Altering the oil reference level (f) if oil levels need to be intentionally adjusted, the requirement to document and record the changes to the established reference level and reason for establishing the new reference level
- Add/remove record (g) the requirement to record in the OLM log book any quantity of oil added or removed from the hydraulic system;
- Record of visit (h) that during each maintenance visit, even if no oil is added, the requirement to record in the OLM log book the oil level and the date of the scheduled maintenance visit;
- Date of add/remove (i) if oil is added or removed, the requirement to record in the OLM log book the dates oil was added or removed from the hydraulic system;
- Reason for add/remove (j) the requirement to record in the OLM log book the reason oil was added to or removed from the hydraulic system;
- Record of signature (k) the requirement to record in the OLM log book the mechanic’s printed and legible name, signature and certification number for every entry made;
- Location of log (l) the requirement to keep the OLM log book in the machine room;
- Retention of records (m) the OLM log book shall be kept of a period for at least five years from the date of the last entry in the OLM log book;

- Max level (n) the requirement to never allow oil levels to exceed the fixed reference point for the oil level;
- Frequency (o) the requirement to record in the OLM log book the frequency of oil monitoring activities;
- Monthly visits (p) despite **A.3.01(o)**, the requirement that hydraulic elevating devices with buried cylinders installed prior to September 1978* shall be monitored on a monthly basis;
- *Note: An elevator registered by MCCR after September 4, 1978, under Installation No. 31909 was provided with a safety bulkhead.
- Oil loss (q) if there is any oil loss which cannot be accounted for, the requirement to immediately remove a hydraulic elevating device from service until the cause for the oil loss is determined and the cause and associated remedy noted in the OLM log book;
- Reporting (r) the requirement to report in writing any oil loss attributed to leaks in buried cylinders or buried piping to the TSSA Elevating Devices Director within 7 days;
- Training (s) the requirement to provide maintenance personnel adequate training related to the contractor's oil loss monitoring program;
- Record of training (t) the requirement to maintain up-to-date written records showing who provided and who received the training referred to in **A.3.01(s)**, the nature of the training and the date when it was provided. A record of training shall be available to the TSSA upon request.
- Posting of program (u) the requirement that the contractor's oil loss monitoring program be posted in the machine room,
- Record of oil recovery (v) the requirement to record in the OLM log book the quantity of oil that has leaked from the hydraulic system into collection containers, before removal or return to the tank, and
Note: Oil returned to the tank via direct lines or scavenger pumps need not be recorded.
- Storage containers (w) the requirement that the collection containers referred to in **A.3.01 (v)** shall not exceed 19 L (5 gal) per cylinder.

Effective Date

A.4.01 This amendment is effective on April 30, 2007.

Roland Hadaller, P. Eng.
Director, Ontario Regulation 209/01 (Elevating Devices) made under
the *Technical Standards and Safety Act, 2000*

BACKGROUND

In-ground hydraulic elevator cylinders (as well as piping) may corrode and develop an oil leak. If an oil leak develops in the hydraulic elevator cylinders (as well as piping) and insufficient steps are taken to correct the problem, the total failure of the cylinder may occur causing the car to overspeed in the down direction or free-fall.

The risk of corrosion affecting cylinders is greatest on cylinders installed without protective plastic casing. In April 1992 the code changed to require corrosion protection by means of a protective plastic casing. Clause **4.18.3.8 Corrosion Protection**, was introduced with the release of **B44-M90 Supplement 1 – 1992**, which was adopted through Director's Ruling #94/92.

The risk of corrosion and catastrophic cylinder failure is even greater on cylinders installed before September 1978, when the new requirement for a safety bulkhead (double cylinder head) was introduced. Clause **4.18.3.7 Safety Bulkhead**, was introduced with the release of **B44-1975 Supplement 1 – 1977**.

Oil loss which cannot be accounted for, is an indication that corrosion may have developed and should be viewed as a critical warning indicator before further corrosion causes a catastrophic failure.

This Code Adoption Document amendment is to require contractors to implement an effective oil loss-monitoring program to remove the risk of catastrophic failure due to corrosion.

This amendment to the Code Adoption Document replaces Safety Alert Bulletin 143/99.



Elevating and Amusement Devices Safety Division	Ref. No.: 212 / 07	Rev. No.: 1
Elevating Devices Code Adoption Document - Amendment	Date: January 12, 2007	Date: February 23, 2009

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000,*
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices) made under the
*Technical Standards and Safety Act 2000***

**Subject: Amendment to the Elevating Devices Code Adoption Document
Oil Loss Monitoring of Hydraulic Elevating Devices with buried cylinders or buried
piping (excluding B355 devices)**
Sent to: Elevator Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that Appendix "A" attached to the Elevating Devices Code Adoption Document dated June 1, 2001, as amended, published by the Technical Standards & Safety Authority is revoked and replaced by the following:

Appendix A

HYDRAULIC ELEVATING DEVICES - OIL LOSS MONITORING PROGRAM

A. Oil Loss Monitoring Program

Definitions

"hydraulic elevating device" means a non-portable device for hoisting and lowering or moving persons or freight and includes an elevator, dumbwaiter, manlift, incline lift, construction hoist, stage lift, platform lift and special elevating device that incorporates one or more hydraulic cylinders.

A.1 Application

A.1.01 Every contractor who maintains a hydraulic elevating device **with buried cylinders or buried piping** shall ensure there is a written oil loss monitoring program.

A.2 Purpose

A.2.01 The purpose of the oil loss monitoring program is to identify any loss of oil which cannot be accounted for in the hydraulic system.

A.3 Requirements for Compliance

A.3.01 If a contractor performs maintenance on a hydraulic elevating device **with buried cylinders or buried piping**, the contractor shall ensure that a written oil loss monitoring program is developed and maintained before the contractor performs work on the hydraulic elevating device. The oil loss monitoring program shall include:

- Log (a) the requirement to provide an oil loss monitoring log (“OLM log”) for each hydraulic elevating device **with buried cylinders or buried piping**;
- Inst # (b) the requirement for the OLM log to reference the elevating device installation number;
- Reference mark (c) the requirement to establish a fixed reference level for the oil and the requirement to mark the reference level on the tank, dip stick or other suitable location via permanent means;
- Note: “permanent” implies affixed in such a manner so as to not be easily removed or repositioned.
- Record of mark (d) the requirement to document in the OLM log the location of the mark for the fixed reference level;
- Checking (e) the requirement to check that the oil level is at the established reference point when the device is level with the lowest landing during each scheduled maintenance visit;
- Altering the oil reference level (f) if the fixed reference level needs to be intentionally adjusted, the requirement to document and record the changes to the established reference level and reason for establishing the new reference level
- Add/remove record (g) the requirement to record in the OLM log any quantity of oil added or removed from the hydraulic system;
- Record of visit (h) that during each maintenance visit, even if no oil is added, the requirement to record in the OLM log the oil level and the date of the scheduled maintenance visit;
- Date of add/remove (i) if oil is added or removed, the requirement to record in the OLM log the dates oil was added or removed from the hydraulic system;
- Reason for add/remove (j) the requirement to record in the OLM log the reason oil was added to or removed from the hydraulic system;
- Record of signature (k) the requirement to record in the OLM log the mechanic’s printed and legible name, signature and certification number for every entry made;

Location of log	(l) the requirement to keep the OLM log in the elevator machine room, in a readily identifiable location;
Retention of records	(m) the requirement that the OLM log be kept in the elevator machine room for a period of at least five years from the date of the last entry in the OLM log;
Max level	(n) the requirement to never allow oil levels to exceed the fixed reference level for the oil level;
Frequency	(o) the requirement to record in the OLM log the frequency of oil monitoring activities;
Monthly visits for single bottom	(p) the requirement that, despite A.3.01(o) , hydraulic elevating devices with buried single bottom cylinders be monitored on a monthly basis;
Monthly visits per vintage unless Director notified	(q) installations registered by MCCR prior to September 4, 1978 with an installation number below 31909 shall be monitored monthly, unless a notification* (in the form provided by the TSSA) is sent to the Director, advising why the monthly requirements should not apply, and the registered notification is posted along with the OLM log;
Oil loss	(r) if there is any oil loss which cannot be accounted for, the requirement to immediately remove a hydraulic elevating device from service until the cause for the oil loss is determined and the cause and associated remedy noted in the OLM log;
Reporting	(s) the requirement to report in writing any oil loss attributed to leaks in buried cylinders or buried piping to the TSSA Elevating Devices Director within 7 days;
Training	(t) the requirement to provide maintenance personnel adequate training related to the contractor's oil loss monitoring program;
Record of training	(u) the requirement to maintain up-to-date written records showing who provided and who received the training referred to in A.3.01(t) , the nature of the training and the date when it was provided. A record of training shall be available to the TSSA upon request.
Posting of program	(v) the requirement that the contractor's oil loss monitoring program be posted or otherwise available in the machine room, and
Storage containers	(w) the requirement that the collection containers shall not exceed 19 L (5 gal) per cylinder.

A.3.02 Oil that is returned to the hydraulic system from recovery containers, either by manual means or automatically via scavenger pumps, need not be recorded.

Oil from recovery containers
 Note: if oil from recovery containers is not suitable for return to the tank, it must be measured and an equivalent amount must be added to the system when recovery containers are emptied. If additional oil is needed to reach the fixed reference level it must be recorded as new oil.

A.4 Effective Date

A.4.01 This amendment is effective immediately.

A.5 *Notification

A.5.01 A Notification form can be obtained from the TSSA web site at, www.tssa.org.

The "Subject" entry (box 5.0) should state: *Non Single Bottom Cylinder*

The "TSSA Reference No." entry (box 7.0) should state: *212/07-r1*

Roland Hadaller, P. Eng.

Director, Ontario Regulation 209/01 (Elevating Devices) made under the *Technical Standards and Safety Act, 2000*

BACKGROUND

In-ground hydraulic elevator cylinders (as well as piping) may corrode and develop an oil leak. If an oil leak develops in the hydraulic elevator cylinders (as well as piping) and insufficient steps are taken to correct the problem, the total failure of the cylinder may occur causing the car to overspeed in the down direction or free-fall.

The risk of corrosion affecting cylinders is greatest on cylinders installed without protective plastic casing. In April 1992 the code changed to require corrosion protection by means of a protective plastic casing. Clause **4.18.3.8 Corrosion Protection**, was introduced with the release of **B44-M90 Supplement 1 – 1992**, which was adopted through Director's Ruling #94/92.

The risk of corrosion and catastrophic cylinder failure is even greater on cylinders installed before September 1978, when the new requirement for a safety bulkhead (double cylinder head) was introduced. Clause **4.18.3.7 Safety Bulkhead**, was introduced with the release of B44-1975 Supplement 1 – 1977.

Oil loss which cannot be accounted for, is an indication that corrosion may have developed and should be viewed as a critical warning indicator before further corrosion causes a catastrophic failure.

This Code Adoption Document amendment is to require contractors to implement an effective oil loss-monitoring program to remove the risk of catastrophic failure due to corrosion.

This amendment to the Code Adoption Document replaces Safety Alert Bulletin 143/99.



Elevating and Amusement Devices Safety Division	Ref. No.: 213 / 07	Rev. No.:
Elevating Devices Code Adoption - Amendment	Date: April 10, 2007	Date:

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT*, 2000, S.O. 2000, c. 16 (the “Act”)

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01 (Elevating Devices) made under the Act

Subject: Amendment to the Elevating Devices Code Adoption Document - Repair or Rebuild of a Type ‘D’ Rack and Pinion Safety

Sent to: All Elevating Device Contractors

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 published by the Technical Standards & Safety Authority is amended by adding the following to Part II:

1. **GENERAL TECHNICAL REQUIREMENTS**
 - 5.1(5)** Any repair or rebuild of a type ‘D’ rack and pinion safety where the manufacturer has stated that such work shall only be performed by the manufacturer, may be either,
 - (a) repaired, rebuilt or replaced by the manufacturer; or
 - (b) repaired or rebuilt in accordance with a procedure certified by a professional engineer.
 - 5.1(6)** The procedure referred to in clause 5.1(5) shall be filed with the director and shall be available to the inspector upon request.

2. This amendment is effective immediately.

Roland Hadaller, P. Eng.

Director, Ontario Regulation 209/01 (Elevating Devices) made under the *Technical Standards and Safety Act, 2000*

BACKGROUND - ALIMAK SAFETY DEVICE

Some contractors have repaired Alimak Type ‘D’ Rack and Pinion safety devices on ALIMAK rack and pinion hoists and manlifts contrary to the manufacturer’s recommended maintenance repair or replacement procedures. The manufacturer of these devices recommends that these safety devices only be repaired or replaced by the manufacturer.

Contractors are reminded that s.32 (2) of Ontario Regulation 209/01 (Elevating Devices) requires that maintenance of an elevating device be determined on the basis of specifications for maintenance of the manufacturer, manufacturers agent or of the contractor. Repair or replacement of these safety components is maintenance within the scope of the provisions of the regulation. Accordingly, these safeties shall either be repaired or replaced by the manufacturer or in the alternative be repaired or replaced in accordance with a procedure certified by a professional engineer. Such procedures shall be filed with TSSA engineering and be available to an inspector upon request.

This Order has been developed in consultation with the Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.:	Rev. No.:
	214 / 09	
DIRECTOR'S GUIDELINE	Date:	Date:
	January 6, 2010	

Subject: Guideline for the reporting of
1) incidents
2) equipment exposed to harmful events affecting safe operation and
3) equipment found in a hazardous state (by a mechanic or owner)

Applicable to: All Passenger Ropeway Contractors, Consultants, Owners and Certificate Holders

1. Introduction

Ontario Regulation 209/01 (Elevating Devices) as amended by O.Reg 252/08, which came into effect on January 1, 2009, contains updated requirements related to the reporting of incidents.

Note: Passenger ropeways fall under the definition of elevating device, as defined by O.Reg 209/01. For the purpose of this guideline, and to facilitate its readability for the ski lift industry, the term elevating device (which covers passenger ropeways and conveyors) will be replaced with either passenger ropeway or ski lift.

2. Purpose of this Guideline

This guideline is intended to aid in compliance with section 36 of Ontario Regulation 209/01 (Elevating Devices) titled **Reporting of Incidents**. Section 36 requires that any incident involving a ski lift be reported to the Director. The specifics of this requirement vary depending on the nature of the incident.

The **Reporting of Incidents** section of the regulation addresses issues related to;

- types of incident(s),
- harmful events which may impact the safety of a device,
- devices found in a hazardous condition,
- who should report, method of reporting and reporting timelines,
- requirements related to preserving the scene,
- returning a device back into operation, and
- thorough investigation of incidents.

A copy of section 36 is attached as Appendix 'A'.

3. Intent

The intent of section 36 is to ensure that the Director is informed of all incidents related to ski lifts. Section 36 deals with not only actual incidents but also hazardous conditions where no injury or property damage has yet occurred. The reporting of instances or hazardous conditions can be an effective trigger for safety enhancements and it is vital to 'risk-informed decisions making' in order to manage public safety related to ski lifts. Legislated requirements for incident reporting allow the Director to make use of information obtained beyond that which is gained only from inspection activities.

4. Effective Date

The amended incident reporting section came into effect on January 1, 2009.

5. Returning Passenger Ropeways to Service

- a) Subsection 36.(8) provides that no person shall return an elevating device to service after an incident until the cause of the incident or condition is identified, the safety of the device restored and an inspector gives permission to return the device to service.
- b) Subject to compliance with all applicable incident reporting and notification requirements, an operator may return a passenger ropeway to service after an incident if:
 - i) The incident is investigated by a ski-lift mechanic certified for that device type or by a professional engineer, **and**
 - ii) The person conducting the investigation determines that the incident was solely due to the rider failing to load or unload properly, **and**
 - iii) The person conducting the investigation certifies the incident did not occur as a result of an issue with the passenger ropeway.

6. Incident Notification and Reporting Q&A's:

a) What is an incident?

The regulation defines an incident as follows:

“Incident” means an occurrence involving an elevator system, an elevating device or a component of an elevating device resulting in an adverse consequence to persons or property.

Note:

- Subsections 36.(1) and 36.(2) of the regulation specifically deal with “incidents”.
- Subsections 36.(3) through 36.(5) do not deal with “incidents” but rather with “conditions”.

b) Are reporting requirements connected to the severity of the ‘incident’?

Yes.

Subsection 36.(1) details notification and reporting requirements for two categories of incident: “death”, or “injury to a person that requires the services of a medical practitioner”.

Subsection 36.(2) has notification and reporting requirements for minor incidents which are not covered in ss. 36.(1). A minor incident would be a personal injury where no medical practitioner was required or where there was property damage. Remember that a consequence to person or property = an incident.

c) What is meant by “services of a medical practitioner”?

The regulation defines medical practitioner as follows:

“medical practitioner” means a physician, nurse, dentist, chiropractor or physiotherapist legally qualified to practice their profession in Ontario, and a paramedic as defined under the Ambulance Act.

If any medical practitioner provided services as a result of the personal injury, then the notification and reporting requirements as described in ss. 36.(1) apply.

Note: If, for example, a paramedic responds to a call and provides medical services in connection with a ski lift incident, the owner and if applicable the maintenance or service contractor must both comply with the reporting requirements of ss. 36.(1) in relation to a death or serious injury.

If an incident occurs in connection with a ski lift where the services of a medical practitioner are not provided, the owner and if applicable the maintenance or service contractor must both comply with the reporting requirements of ss. 36.(2) in relation to a minor injury.

d) Do I need to report a personal injury which did not require the services of a medical practitioner (i.e. a more minor type injury)?

Yes.

Subsection 36.(2) of the regulation requires reporting incidents other than those described in ss. 36.(1). A personal injury that does not require the services of a medical practitioner would fall into this category.

e) Aside from the “incidents” described as

- i) death:** in ss.36.(1),
- ii) injuries:** serious injuries in ss36.(1) and minor injuries in s36.(2), or
- iii) property damage:** in ss.36.(2)

are there any other reportable events?

Yes.

Any time a ski lift is found to be in a condition where the safe operation of the equipment is affected (see ss. 36.(3)) or where there is an immediate hazard to the safety of persons or property [see ss. 36.(4) and ss. 36.(5)] the Director must be notified and a written report must be submitted.

f) When are the conditions of subsection 36.(3), that detail fire, flood or other significant water exposure, vandalism, impact or lightning strike, reportable?

Any time a ski lift has been negatively impacted to the extent that safe operation is questionable as a result of exposure to the conditions listed above, the owner and if applicable the maintenance or service contractor must both notify the Director and submit a written report of the incident to the Director.

g) What’s the difference between subsections 36.(4) and 36.(5)?

Both of these provisions relate to the finding of the device in a condition which constitutes an immediate hazard. The difference depends on who finds or becomes aware of the hazard. Subsection 36.(4) applies if a mechanic finds the device in a hazardous state whereas subsection 36.(5) applies to licence holders.

h) What is meant by a “condition which constitutes an immediate hazard”?

A condition which constitutes an immediate hazard would be something that, if left unattended, would imminently cause death or serious injury to a person, also if the condition has the potential to cause

property damage it likely also exhibits the potential for serious injury. If a device is in a condition that constitutes an immediate hazard, it must be immediately removed from service.

i) What if the immediate hazard is something that can be fixed quickly through general maintenance or repair. Do I still need to report?

Yes.

If there was a potential for harm to persons or property the Director must be notified of the event or condition and a written report must be submitted.

j) If I comply with my notification and reporting requirements, can the device be returned to service?

Not if the incident or condition is of a type referred to in ss. 36.(1), ss. 36.(3), ss. 36.(4) or ss. 36.(5). No person shall disturb the scene except for making the site safe or to facilitate rescue. Nothing is permitted to be done to the scene until an inspector gives permission to do so. No person is permitted to return the device to service until:

1. The cause of the incident or condition is identified;
2. The safety of the device is restored; and
3. The inspector has authorized the return to service.

See the exception found in section 5 of this guideline, “Returning Passenger Ropeways to Service”.

k) If an incident [ss. 36.(1) or ss. 36.(2)] occurs or a condition as specified in ss. 36.(3), (4) or (5) is identified, can the device operate?

Requirements for Device Operation			
Reg ref.	Occurrence or Event	Operation of Equipment	Requirements before restoring operation
36.(1)	Death	Shut Down. Cannot interfere with anything connected with the elevating device, except for making the site safe or rescue of injured persons, until an inspector gives permission	Operation only after: 1. cause is identified & 2. device safety is restored & 3. inspector gives permission
	Injury requiring services of a medical practitioner		
36.(2)	Injury other than 36.(1) or property damage	No shut down requirements	Safety of the device is restored
36.(3)	Equipment exposure to harmful events impacting safe operation	Shut Down. Cannot interfere with anything connected with the elevating device, except for making the site safe or rescue of injured persons, until an inspector gives permission	Operation only after: 1. cause is identified & 2. device safety is restored & 3. inspector gives permission
36.(4)	Mechanic finds equipment in a condition that constitutes an immediate hazard		
36.(5)	Licence holder finds or becomes aware of equipment in a condition that constitutes an immediate hazard		

See exception found in section 5 of this guideline, “Returning Passenger Ropeways to Service”.

- l) **Who is responsible to report?
What are the timelines for reporting?
What documentation is required?**

Summary of Reporting Requirements			
Reg ref.	Occurrence or Event	Notification	Written Reports
36.(1)	Death	Owner must notify the Director immediately	The contractor shall submit a written report to the Director within 24 hours of becoming aware of the incident
	Injury requiring services of a medical practitioner		
36.(2)	Injury other than 36.(1) or property damage	Owner and Contractor must notify the Director within 24 hours of becoming aware	The Owner and the Contractor shall submit a written reports to the Director within 7 days of becoming aware
36.(3)	Equipment exposure to harmful events impacting safe operation		
36.(4)	Mechanic finds equipment in a condition that constitutes an immediate hazard	The mechanic must notify the Owner or Contractor immediately	The licence holder shall submit a written report to the Director within 7 days of the finding
36.(5)	Licence holder finds or becomes aware of equipment in a condition that constitutes an immediate hazard	The licence holder must notify the Director within 24 hours of the finding	The licence holder shall submit a written report to the Director within 7 days of the finding

- m) **What information must be included in the report to the Director?**

TSSA has a reporting form available on the www.tssa.org web site which must be used to capture the necessary information when reporting an incident. The regulation requires that full particulars of the incident / event are provided. Subsection 36.(6) provides as follows:

“The written report shall contain the results of an investigation carried out by the contractor following the incident or finding that the [...] device was in a condition that constituted an immediate hazard.”

A copy of the reporting form is attached to this guideline.

- n) **Is it a requirement to use TSSA’s reporting form?**

Yes.

A written report must be submitted to the Director in the form provided by the Technical Standards and Safety Authority. A copy of this form is attached to this guideline.

- o) **Does the licence holder need to report the results of the investigation under ss. 36.(6)?**

Yes.

It will be necessary for the licence holder to work with their maintenance contractor to complete the reporting form details. Subsection 36.(6) requires that contractors carry out an investigation following an incident or the finding of a hazardous condition. This information must be included in the licence holder's report to the Director.

While gathering information for the incident report, licence holders and contractors must be aware that during the investigation process, subsection 36.(7) requires that no person shall interfere with, disturb, destroy, carry away, or alter anything at the scene of or connected with the incident until an inspector gives permission to do so.

p) What are some examples of a condition that constitutes an immediate hazard (imminent potential for death or serious injury)?

While there are many possible conditions that could constitute an immediate hazard it is difficult to provide an exhaustive list. An immediate hazard is a condition that could result in death or serious injury to persons if not immediately removed from service or rectified.

Here are a few examples of hazardous conditions*;

- A jumper is left on a safety circuit
- A safety related component is circumvented
- Missing or failed safety components
- A crack is discovered in an important weldment
- Failure of the tensioning system or components
- A single failure of a component which has created an immediate hazard condition
 - oil line or hydraulic cylinder failure
 - parted suspension or haul rope
 - brake failure
 - rope derailment

* to be considered an immediate hazard, the nature of these condition have a high probability to cause death or serious injury.

q) If a device is in a condition that does NOT constitute an immediate hazard [per Q&A (h) or (p)], but the condition poses an “elevated exposure to risk” to the public, can I voluntarily report the condition even though this is not covered by the regulation, and if so, how?

Yes. Voluntary reporting of conditions which pose an “**elevated exposure to risk**” to the public are welcomed and can aid in better risk informed decision making by the Director, the elevating devices safety program and TSSA's industry councils. The regulation defines the minimum requirements for reporting. The incident reporting form includes checkboxes used to specify the “occurrence type”. To report a condition which poses an elevated exposure to risk select the occurrence type; “**voluntary reporting of an instance of elevated exposure to risk**”.

Example of elevated risk might include:

- Repetitive misloads or unloads on the same device

r) What should I do if I am uncertain about my notification and reporting obligations?

If you are in doubt as to whether reporting is required, you are encouraged to report the finding, or contact TSSA's customer contact centre at 1 (877) 682-8772 for further clarification.

s) How do I Report?

An incident reporting form (specific to ski lifts) is available online at www.tssa.org
Incidents may be reported via:

- Telephone Notification - TSSA's customer contact centre at 1 (877) 682-8772
- Written Notification - via email to ski-incident@tssa.org

Where the regulation requires immediate reporting, see table "Summary of Reporting Requirements", reporting must be done by telephone.

Roland Hadaller, P.Eng.,
Director, Ontario Regulation 209/01(Elevating Devices) appointed under the *Technical Standards and Safety Act, 2000*.

This Guideline has been developed in consultation with the Ski Lift Advisory Council.

Archive
Superseded by REV

Appendix 'A'

From Ontario Regulation 209/01

INCIDENTS

Reporting of incidents

36. (1) Where an incident occurs in connection with an elevating device that results in the death of a person or injury to a person that requires the services of a medical practitioner,
- (a) the owner of the device shall notify the director by telephone immediately; and
 - (b) the contractor maintaining the device shall submit to the director, in the form provided by the designated administrative authority, a written report giving full particulars within 24 hours of first becoming aware of the incident. O. Reg. 252/08, s. 21.
- (2) Where an incident occurs in connection with an elevating device, other than an incident described in subsection (1), the owner and the contractor maintaining the device shall,
- (a) notify the director by telephone or other means within 24 hours of first becoming aware of the incident;
 - (b) each submit to the director in the form provided by the designated administrative authority a written report giving full particulars within seven days of first becoming aware of the incident. O. Reg. 252/08, s. 21.
- (3) Where there has been a fire, flood or other significant exposure to water, vandalism, impact or lightning strike that may adversely affect the safe operation of an elevating device, the owner and the contractor maintaining the device shall,
- (a) notify the director by telephone or other means within 24 hours of first becoming aware of the condition that may adversely affect the safe operation of the device;
 - (b) each submit to the director, in the form provided by the designated administrative authority, a written report giving full particulars within seven days of first becoming aware of the condition. O. Reg. 252/08, s. 21.
- (4) Where a mechanic finds that an elevating device is in a condition that constitutes an immediate hazard to the safety of a person or property, he or she shall immediately remove the device from service and notify the owner or contractor maintaining the device. O. Reg. 252/08, s. 21.
- (5) Where a licence holder for an elevating device finds or becomes aware that the device is in a condition that constitutes an immediate hazard to the safety of a person or property, the licence holder shall,
- (a) immediately remove the device from service;
 - (b) notify the director by telephone or other means within 24 hours of making the finding; and
 - (c) within seven days of making the finding, submit to the director in the form provided by the designated administrative authority a written report giving full particulars. O. Reg. 252/08, s. 21.
- (6) The written report shall contain the results of an investigation carried out by the contractor following the incident or finding that the elevating device was in a condition that constituted an immediate hazard. O. Reg. 252/08, s. 21.
- (7) Where an incident or condition of a type referred to in subsection (1), (3), (4) or (5) occurs, no person shall, except for the purpose of making the site safe or rescuing a person injured in the incident, interfere with, disturb, destroy, carry away or alter any wreckage, article or thing at the scene of or connected with the incident until an inspector gives permission to do so. O. Reg. 252/08, s. 21.
- (8) No person shall return an elevating device referred to in subsection (1), (3), (4) or (5) to service until the cause of the incident or condition is identified, the safety of the device restored and an inspector gives permission to return the device to service. O. Reg. 252/08, s. 21.
- (9) An investigation under this section shall be conducted in such manner as the director considers necessary in the circumstances. O. Reg. 252/08, s. 21.



Elevating and Amusement Devices Safety Division	Ref. No.: 215/07	Rev. No.:
Information / Interpretation Bulletin	Date: August 20, 2007	Date:

Subject: Outdoor Installation of Lifts For Persons With Physical Disabilities
Sent to: Elevator Contractors, Mechanics and Inspectors

1. INTRODUCTION

The location of, access to, and usage of lifts for persons with physical disabilities do not fall under the scope of CAN/CSA-B355-00S1-02, however Clause 4.1.1 requires that the whole lift and its components to be designed in accordance with acceptable engineering practice; the lift shall be constructed with suitable materials.

2. INTERPRETATION

The authority having jurisdiction (AHJ) regulates factors related to the location of, access to, and usage of the lifts covered by B355. Since the majority of elevating devices for persons with physical disabilities are located indoors, the existing requirements cover these types of installations. The following instructions apply to devices and their components where installed outdoors and exposed to weather conditions.

3. INSTRUCTIONS

- 3.1. The controller shall be enclosed in an enclosure (B355, Clause 8.4.3.2). Where the controller is directly exposed to precipitation, its enclosure shall be at least Type 3R (see C22.1-02, Table 65) certified, marked, and properly installed following manufacturer's instructions.
- 3.2. Operating devices (see B355-00S1-02, Clause 8.2.2 including note) shall be protected against exposure to precipitation and installed following manufacturer's instructions, or shall be certified for at least Type 3R applications; they shall be marked, and properly installed, following manufacturer's instructions.
- 3.3. Conduit fittings where used and directly exposed to precipitation shall be certified for at least Type 3R applications and shall be installed following manufacturer's instructions.
Flexible conduits, where used and directly exposed to precipitation shall be "liquid-tight" type.
- 3.4. Wires, cables, flexible cords directly exposed to precipitation shall be suitable for wet locations/exposure to the weather, certified and marked as per C22.1 Table 11, and Table 19.
- 3.5. Wires, cables, or flexible cords, used to provide flexible connections (e.g.: traveling cables), exposed to extreme cold (under - 30°C) shall be certified for the appropriate low temperature (e.g.: -40°C).
- 3.6. The owner is responsible for maintaining the elevating device and its access path free of snow and ice.

3.7. A statement in Box 189 of the Specification Sheet must be included:

“This elevating device has been designed and constructed for use in an outdoor application”

Note: Submitting Engineer must provide information in Box 189 to confirm suitability of the following components, where applicable:

- a) Motors and driving machines
 - i) Where directly exposed to precipitation and/or
 - ii) Where extreme low temperatures occur.
- b) Hydraulic fluids (grade and/or oil tank heater)
- c) Components providing lubrication of various mechanisms
(e.g.: lubricator on an ACME screw drive nut.)

Rob Kremer, P. Eng.,
Engineering Manager, EDAD Program

Roger Neate
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This Bulletin has been developed in consultation with the Elevating Devices Advisory Council.

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Elevating and Amusement Devices Safety Division	Ref. No.: 216 / 07	Rev. No.:
Elevating Devices Code Adoption Document - Amendment	Date: September 1, 2007	Date:

IN THE MATTER OF:

THE TECHNICAL STANDARDS AND SAFETY ACT, 2000, S.O. 2000, c. 16 (the "Act")

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Adoption of CAN/CSA-Z185-M87 (R2001) Safety Code for Personnel Hoists, CAN/CSA-Z256-M87 (R2006) Safety Code for Material Hoists, and ANSI A10.22-2007 American National Standard for Rope-Guided and Nonguided Worker's Hoists.

Sent to: All Elevating Device Contractors

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD) published by the Technical Standards & Safety Authority, as amended, is further amended as follows;

1.0 Change to Definitions

Part I, General, 1. Definitions of the CAD is amended by adding the following:

common-mode failure, means the result of an event(s) which because of dependencies, causes a coincidence of failure states of components in two or more separate channels of a redundancy system, leading to the defined system failing to perform its intended function.

software system failure, means a behaviour of the software, including its support (host) hardware, that is not in accordance with the intended function.

solid-state device, means an element that can control current flow without moving parts.

2.0 Change to General Technical Requirements

2.1 Part II, General Technical Requirements of the CAD is amended by adding the following:

4.(c) except the requirements of 4.(b) are not applicable to Construction Hoists.

3.0 Change to Part VI Construction Hoists

3.1 Part VI, Construction Hoists section 31.(1) of the CAD is revoked and replaced with the following:

31.(1) Every construction hoist shall conform to the following:

- a) workers' rail-guided construction hoists shall conform to CAN/CSA-Z185-M87 (R2001) Safety Code for Personnel Hoists;
- b) workers' rope-guided construction hoists shall conform to American National Standard ANSI/ASSE A10.22-2007 Safety Requirements for Rope-Guided and Non-Guided Worker's Hoists.
- c) material construction hoists shall conform to CAN/CSA-Z256-M87 (R2006) Safety Code for Material Hoists.

3.2 Part VI, Construction Hoists section 35. of the CAD is renumbered as 35.(1)

3.3 Part VI, Construction Hoists section 35.(2) is added as follows:

35.(2) In addition to the requirements of 31.(1)(a), workers' rail-guided construction hoists shall conform to the following:

- a) Clause 14.4.2 of CAN/CSA-Z185-M87 (R2001) shall be replaced with the following:
The occurrence of a single ground or a software system failure or the failure of
 - i) a switch which does not have contacts that are positively separated;
 - ii) a contactor;
 - iii) a relay; or
 - iv) a solid state device;
 shall not render any electrical protective device ineffective.
- b) Redundant software systems used to satisfy the requirements of a) shall have a level of diversification sufficient to avoid common mode failures.
- c) Clause 18.1.1(c) of CAN/CSA-Z185-M87 (R2001) shall be replaced with:
Control equipment incorporating solid state devices and/or software systems in operating and control circuits shall be tested in accordance with the testing requirements of EN 12016:2004 by exposing it to interference levels at the test values specified for "safety circuits." The interference shall not render any electrical protective device ineffective and shall not cause the car to move. If enclosure doors or suppression equipment must remain installed to meet the above requirements, warning signs to that effect shall be posted on the control equipment.
- d) The normal terminal stopping device and final terminal stopping devices shall not control the same controller devices unless two or more separate and independent controller devices are provided, two of which shall complete both the driving-machine motor and the driving machine brake circuits in either direction of travel.
- e) Workers' construction hoists employing a two- or three-phase alternating-current driving machine motor, which is not driven from a direct current source through a static inverter, shall be provided with a means to inhibit the flow of alternating-current in each phase.

3.4 Part VI, Construction Hoists section 35.(3) is added as follows:

35.(3) In addition to the requirements of 31.(1)(b), workers' rope-guided construction hoists shall conform to the following:

- a) The occurrence of a single ground or a software system failure or the failure of
 - i) a switch which does not have contacts that are positively separated;
 - ii) a contactor;
 - iii) a relay; or
 - iv) a solid state device;shall not render the, deadman control switch, the limit switches which prevent overtravel, or the automatic friction brake ineffective.

Note: Requirements only apply to the circuits in which the deadman control switch, the limit switches which prevent overtravel, or the automatic friction brake are used and not to the devices themselves.

- b) Redundant software systems used to satisfy the requirements of **i)** shall have a level of diversification sufficient to avoid common mode failures.
- c) Control equipment incorporating solid state devices and/or software systems in operating and control circuits shall be tested in accordance with the testing requirements of EN 12016:2004 by exposing it to interference levels at the test values specified for "safety circuits." The interference shall not render the Deadman Control Switch, Limit Switches, or the Automatic Friction Brake ineffective and shall not cause the cage to move. If enclosure doors or suppression equipment must remain installed to meet the above requirements, warning signs to that effect shall be posted on the control equipment.
- d) All references to NFPA 70 (Clause 2.1, Clause 3.24, and Clause 4.13 of ANSI A10.22-2007) shall be replaced with OESC 23rd Edition-2002.

3.5 Part VI, Construction Hoists section 35.(4) is added as follows:

35.(4) In addition to the requirements of 31.(1)(c), material construction hoists shall conform to the following:

- a) Clause 15.3.2 of CAN/CSA-Z256-M87 (R2006) shall be replaced with the following:

The occurrence of a single ground or a software system failure or the failure of

 - i) a switch which does not have contacts that are positively separated;
 - ii) a contactor;
 - iii) a relay; or
 - iv) a solid state device;shall not render any electrical protective device ineffective.
- b) Redundant software systems used to satisfy the requirements of a) shall have a level of diversification sufficient to avoid common mode failures.
- c) Clause 19.1.3 of CAN/CSA-Z256-M87 (R2006) shall be replaced with:

Control equipment incorporating solid state devices and/or software systems in operating and control circuits shall be tested in accordance with the testing requirements of EN 12016:2004 by exposing it to interference levels at the test values specified for "safety circuits." The interference shall not render any electrical protective device ineffective and shall not cause the car to move. If enclosure doors or suppression equipment must remain installed to meet the above requirements, warning signs to that effect shall be posted on the control equipment.

- d) The normal terminal stopping device and final terminal stopping devices shall not control the same controller devices unless two or more separate and independent controller devices are provided, two of which shall complete both the driving-machine motor and the driving machine brake circuits in either direction of travel.
- e) Material construction hoists employing a two- or three-phase alternating-current driving machine motor, which is not driven from a direct current source through a static inverter, shall be provided with a means to inhibit the flow of alternating-current in each phase.

4.0 Effective Date

This Code adoption Document Amendment is effective September 1, 2007.

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices)

made under the *Technical Standards and Safety Act, 2000*.

5.0 Background

Due to changes in technology, Construction Hoists have begun to incorporate solid-state devices and software systems into safety circuits replacing traditional hard-wired switches and relays. The CAN/CSA-Z185, CAN/CSA-Z256, and ANSI A10.22 standards are silent with regards to the use of these technologies, and therefore additional rules are required to ensure the continued safe operation of Construction Hoists.

With the acknowledgement of designs which incorporate software systems and solid state controls in safety circuits, electromagnetic interference from radio frequency transmitters and cell phones is a hazard which must be ruled out by electromagnetic compatibility testing where required.

The CAN/CSA-Z185-M87 (R2001) Safety Code for Personnel Hoists and CAN/CSA-Z256-M87 (R2006) Safety Code for Material Hoists, are available from the Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, ON, L4W 5N6, telephone: 1-800-463-6727, 416-747-4044 or online www.shopcsa.ca

The ANSI A10.22-2007 American National Standard for Rope-Guided and Nonguided Worker's Hoists is available from the American National Standards Institute, 25 West 43rd Street, 4th floor, New York, NY 10036, telephone: 1-212-642-4900 or online webstore.ansi.org

The EN 12016:2004 Electromagnetic Compatibility – Product Family Standard for Lifts, Escalators and Passenger Conveyors is available from BSI British Standards, 389 Chiswick High Road, London, W4 4AL, United Kingdom, telephone +44 (0)20-8996-9001, or online www.bsonline.bsi-global.com

This Order has been developed in consultation with the Construction Hoist Industry



Elevating and Amusement Devices Safety Division	Ref. No.: 218/ 07	Rev. No.:
Enforcement Procedure Bulletin	Date: December 4, 2007	Date:

Subject: Periodic Inspections and Follow-Ups to Periodic Inspections on elevating devices (excludes passenger ropeway devices)
Sent to: Elevator Contractors, Mechanics and Owners

1. INTRODUCTION

TSSA has recognized a noticeable trend of non-compliance of both safety and maintenance related directions during its periodic inspection activities. Many of these directions are not being resolved in a timely manner. Failure by owners and elevator contractors to resolve these directions in the specified time limits are exposing the public to unnecessary risk and are resulting in unnecessary follow-up inspections by TSSA to deal with unresolved issues.

The purpose of this Enforcement Procedure is to advise industry stakeholders of TSSA's revised enforcement procedures as related to periodic inspections, and follow-up to periodic inspections. These procedures are designed to provide an incentive to contractors and owners who receive directions and resolve those directions in the times specified (by offering voluntary reporting of compliance), while providing disincentives to owners and contractors who receive directions but fail to resolve them in a timely manner.

2. VOLUNTARY REPORTING OF COMPLIANCE

TSSA believes that the existing process of allowing persons to voluntarily report when compliance has been achieved is an effective tool that benefits both industry stakeholders and TSSA while not adversely affecting public safety. As a result, TSSA inspectors will continue to offer voluntary reporting of compliance on all low risk directions.

TSSA will not be offering voluntary reporting of compliance on the following:

- Any high risk directions
- Any overdue yearly, two year or five year inspections, tests or maintenance tasks
- Any directions associated with oil loss monitoring Director's Order 212/07
- Any directions which request a submission as a result of an alteration
- Any directions associated with a Director's Orders which has a past due date for compliance

To facilitate in the use of voluntary reporting of compliance and to ensure that contractors are fully aware of any directions issued, TSSA inspectors will issue the inspection report to the licensee or the building representative, and will leave a copy with the logbook or email a copy to the maintenance contractor.

In the absence of a voluntary compliance mechanism, the owner would always be paying for a follow up inspection. Should voluntary reporting of compliance be used, with the owner or contractor confirming that all directions have been resolved within the prescribed time limit, the owner will

avoid the cost of a follow-up inspection. Audit inspections at the discretion of the inspector may result, however costs will only apply if non-compliance is found. This benefits the owner by saving the cost of a follow-up inspection and enables TSSA resources to focus on other safety issues.

3. COMPLIANCE INCENTIVES AND DISINCENTIVES

Voluntary Reporting of Compliance Offered, Directions Completed, and Reported to TSSA (no cost)

Where voluntary reporting of compliance is offered and reported as complete, no additional fees will apply.

Voluntary Reporting of Compliance Offered, Directions Completed, but not Reported to TSSA (1x regular inspection rate)

Where an inspector performs a follow-up inspection and finds that the directions have been completed, but the owner or contractor did not submit the voluntary reporting of compliance, the owner shall be billed at the regular rate for inspection with a minimum one-hour charge (normal fee).

Directions NOT Completed within Timelines (2x regular inspection rate)

Where an inspector performs a follow up inspection and finds that the directions **have not been completed**, the owner shall be billed **twice the regular rate for the inspection (minimum one hour charge x 2)**. The directive will remain outstanding and will be subjected to an additional follow up and associated fees.

Where directions have not been completed, the inspector shall at his or her discretion, allow an additional period of time to resolve the directions, **remove the device from service, or recommend to the Director administrative penalties or additional enforcement actions up to and including charges under the *Technical Standards and Safety Act***.

This enforcement procedure is effective **March 1, 2008**.

4. NOTES

Voluntary reporting of compliance will not be granted on inspection reports where one or more of the directions are not eligible for voluntary reporting of compliance despite the fact that some of them on their own may have been eligible.

Rob Kremer, P. Eng.,
Engineering Manager, EDAD Program

Roger Neate
Operations Manager, EDAD Program

This Order has been developed in consultation with the Elevating Devices Advisory Council



Elevating and Amusement Devices Safety Division	Ref. No.: 218/07	Rev. No.: 1
Enforcement Procedure Bulletin	Date: December 4, 2007	Date: January 11, 2011

Subject: Periodic Inspections, Minor Alterations and Follow-Up Inspections on elevating devices (excludes passenger ropeway devices)

Applicable to: Elevator Owners, Contractors and Mechanics

1. INTRODUCTION

TSSA has recognized a noticeable trend of non-compliance of both safety and maintenance related directions during its periodic inspection activities. Many of these directions are not being resolved in a timely manner. Failure by owners and elevator contractors to resolve these directions in the specified time limits are exposing the public to unnecessary risk and are resulting in unnecessary follow-up inspections by TSSA to deal with unresolved issues.

The purpose of this Enforcement Procedure is to advise industry stakeholders of TSSA's revised enforcement procedures as related to periodic inspections, and follow-up to periodic inspections. These procedures are designed to provide an incentive to contractors and owners who receive directions and resolve those directions in the times specified (by offering voluntary reporting of compliance), while providing disincentives to owners and contractors who receive directions but fail to resolve them in a timely manner.

2. REVISION 1 NOTES

The original release of 218/07 advised elevating device owners and contractors that TSSA was increasing some 'follow-up inspection' charges by a factor of two times (2X) if the 'follow-up inspection' was in response to a prior 'follow-up inspection'.

This 2X charge became effective March 1, 2008 and was intended to persuade owners and contractors to address their inspection directions within the provided time frame, and avoid a 2X re-inspection charge. Ultimately this would allow TSSA to divert valuable inspection resources to higher priority issues (such as 'periodic' and 'initial' inspections).

Despite some improvement in compliance timelines over the past two and half years as a result of a 2X charge deterrent, in conjunction with additional enforcement strategies such as shutting down elevators for specific non-compliances, TSSA continues to observe significant non-compliances to the completion timelines issued during a periodic inspections.

In an effort to further drive compliance, revision 1 of Enforcement Procedure 218/07 revises the 2X charge multiplier to a 3X charge multiplier. Additionally, this multiplier will be applied to follow-up inspections related to Minor Alterations.

In many circumstances a 'follow-up inspection' may not be avoidable, however if the inspection directives identified during either a 'periodic inspection' or "minor alteration inspection" are resolved within the time frame issued by the inspector then charge multipliers will not be utilized, thereby saving contractors or owners from additional fees and saving a return visit by a TSSA inspector.

3. RESOURCE ALLOCATION and FOLLOW-UP VISITS

From September 1, 2009 to September 1, 2010 TSSA conducted 18,606 periodic inspections.

As a result of these periodic inspections, a 1st time follow-up visit was required 11,759 times, which represents a 63% return rate by TSSA inspectors to perform these follow-up visits. In many cases a follow-up visit could have been avoided if proper & adequate maintenance was being conducted.

During the same time period, TSSA conducted 7,635 follow-up inspections **on top of a prior follow-up inspection**. (These 7635 follow-ups to a follow-up would have been subject to the **2X** charge. In future this will be a **3X** charge.)

In the same time period, 593 Minor A alterations and 2687 Minor B alterations were inspected, requiring, 197 and 1068 follow-up inspections respectively, suggesting a re-inspection by TSSA inspectors was required 33% and 40% of the time on alteration work.

4. VOLUNTARY REPORTING OF COMPLIANCE (VC)

TSSA believes that the existing process of allowing persons to voluntarily report when compliance has been achieved is an effective tool that benefits both industry stakeholders and TSSA while not adversely affecting public safety. As a result, TSSA inspectors will continue to offer voluntary reporting of compliance on all low risk directions.

TSSA will not be offering voluntary reporting of compliance on the following:

- Any high risk directions
- Any overdue yearly, two year or five year inspections, tests or maintenance tasks
- Any directions associated with oil loss monitoring Director's Order 212/07
- Any directions which request a submission as a result of an alteration
- Any directions associated with a Director's Orders which has a past due date for compliance

To facilitate the use of voluntary reporting of compliance and to ensure that contractors are fully aware of any directions issued, TSSA inspectors will issue the inspection report to the licensee or the building representative, and the maintenance contractor.

In the absence of a voluntary compliance mechanism, the owner, and now the contractor for incomplete alteration work directives, would always be paying for a follow up inspection. Should voluntary reporting of compliance be used, with the owner or contractor confirming that all directions have been resolved within the prescribed time limit, the owner or contractor will avoid the cost of the associated follow-up inspection. Audit inspections at the discretion of the EDAD Program may result, however fees would only apply if inspection directives were not completed.

If VC is offered, it is essential that owners or contractors complete the directions and report the VC within the allotted time. Failure to complete and report will result in a follow-up inspection and a minimum 1X charge in lieu of No Inspection Charge.

Note: VC may be subject to an audit. Where audit inspections find full compliance, a no charge audit inspection will result, however a 3X charge will apply if the directives are found to be incomplete.

5. FEE INCENTIVES AND DISINCENTIVES

5.1. No Inspection Charge

Where ‘VC’ voluntary reporting of compliance is offered and reported as complete, no additional fees will apply.

Note: Fees will apply if an audit inspection is performed and reveals the work was not completed. A 3X charge will be applied and the TSSA shutdown policy will apply. Voluntary reporting of compliance will not be granted on inspection reports where one or more of the directions are not eligible for voluntary reporting of compliance.

5.2. 1X Inspection Charge*

Where an inspector performs a first time follow-up inspection in response to a shut down or conditional pass inspection and finds that the directions have been completed (inspection outcome = pass), the owner or contractor, as appropriate for the inspection, shall be billed a 1X charge for the inspection.

5.3. 3X Inspection Charge*

Where an inspector performs a follow up inspection and finds that the directions have not been completed, the owner or contractor (as appropriate) shall be billed a **3X** charge for the inspection. The directive will remain outstanding and will be subjected to an additional follow up inspection and the TSSA shutdown policy will be applied.

Where directions have not been completed, the inspector shall allow an additional period of time to resolve the directions or shall remove the device from service (in accordance with TSSA’s “Shutdown Policy”). Additional enforcement actions up to and including charges under the *Technical Standards and Safety Act* may apply.

* Inspection Charge:

A regular inspection includes half hour travel time per site plus actual inspection time. There is a minimum billable time of one hour per site.

6. INFORMATION NOTES ON AN INSPECTION REPORT

Where Order(s) have been issued with Compliance Date timelines (see Fig 1.),

Orders Issued To: <name>		
Line	Reference and Order(s)	Compliance Date
--	Car enclosure other: Repair or replace the damaged directional arrows in the cab.	SEP 13, 2010
--	Make both in car emergency lights operational.	SEP 13, 2010

Fig 1.

the Standard Notes area of the ED Inspection Report (see Fig 2.) will be populated with information notes advising about additional fee consequences.

Standard Notes
Where an inspector performs a follow up inspection and finds that the order(s) have not been completed,

Fig 2.

6.1. Standard Note (Directions Found)

“Where an inspector performs a follow up inspection and finds that the order(s) have not been completed, the owner (for periodic inspection issues) or the contractor (for minor alteration issues) will be billed at three times the regular charge for inspection. The order(s) will remain outstanding and will be subject to an additional follow up inspection. [A regular inspection includes half hour travel time per site plus actual inspection time. There is a minimum billable time of one hour per site.]”

This standard note is applicable whenever orders are issued or are outstanding on an inspection report.

6.2. Standard Note (Directions Found, VC Eligible)

“Voluntary compliance guidelines: This report is eligible for the voluntary reporting of compliance option. YOU MUST EXERCISE THIS OPTION TO AVOID ADDITIONAL FEES. Reporting requirements are as follows;

1. All inspectors orders (directions) appearing on the inspection report must be complied with.
2. A person who has legal signing authority on behalf of the owner or the ED contractor must FAX or EMAIL completion of the voluntary compliance option on or before the last compliance date appearing on the inspection report. For more information please contact TSSA at 1-877-682-8772.

Note: Voluntary compliance is subject to an audit process which may result in additional inspection fees. It is an offence to knowingly make a false statement or to furnish false information under The Act, the regulations or a ministers order; Technical Standards and Safety Act, 2000; sect. 37.”

Fax Instructions: Provide printed name, signature and date and FAX TO: 416 – 231 - 5435
(Printed Name, Signature, Date) _____

Email Instructions: Send an EMAIL complete with the following information to vcreporting@tssa.org

1. Service Request # <____>
2. Reference Number(s): <____>
3. Inspection Address: <____>
4. The statement: I < insert name > acknowledge completion of ALL outstanding directions.

This standard note is applicable whenever voluntary compliance reporting is granted.

7. EFFECTIVE DATE

The three times fee note (in 6.1) will appear on inspections reports whenever directions are issued on or after **April 1, 2011.**

8. DEFINITION OF TERMS USED IN THIS ENFORCEMENT PROCEDURE:

“periodic inspection” means an inspection by an inspector carried out at intervals determined by the director for the purpose of ensuring the safe operation of an elevating device; (fees payable by the owner)

“follow-up inspection” means an inspection by an inspector that is made following a periodic inspection, a special inspection, a minor A or minor B alteration inspection; also refers to an inspection in response to overdue directives from a prior follow-up; (fees payable by owner or contractor - depending on the inspection type prior to the follow-up)

“pass” means no directives were issued at this time

“conditional pass” means directives have been issued, however the device is permitted to operate under the terms of the inspection order.

“voluntary compliance” or “VC” means a low safety risk directive has been issued for which completion of the outstanding directive can be voluntarily reported to avoid re-inspection fees

“conditional pass w/VC option” means directives have been issued, however voluntary report of compliance has been allowed due to the low risk nature of the safety directive

“shut down” means issues have been identified that require the device to be removed from service

“audit” means an inspection carried out at the discretion of the inspector in response to reporting of VC (fees payable by owner or contractor - depending on the inspection type prior to the audit inspection)

“Minor A or Minor B” is a submission type dictated by an alteration scope (inspection fees are payable by the contractor)

9. INSPECTION FLOW AND FEE FLOW DIAGRAM

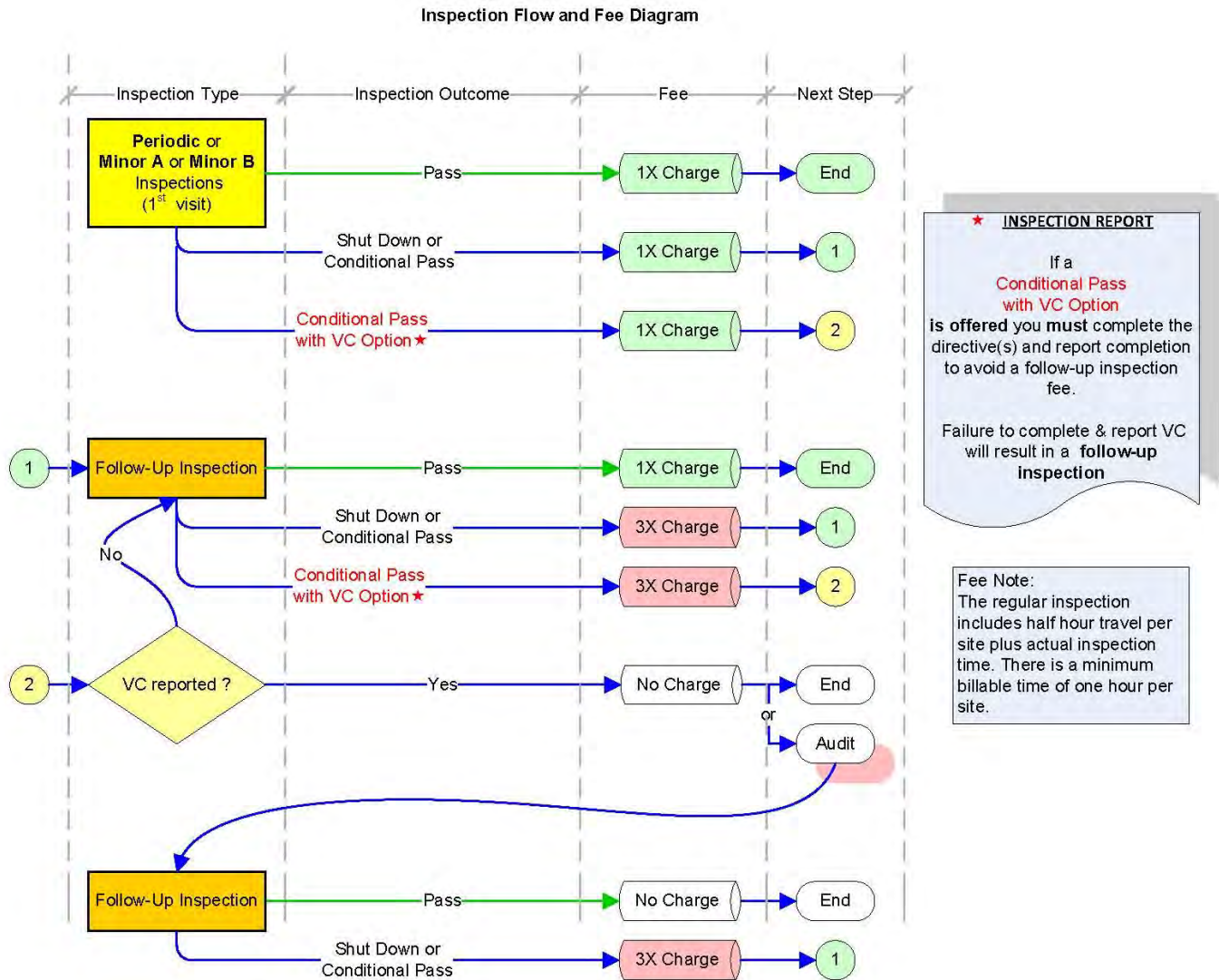


Fig. 3

Marc Tevyaw
Technical Specialist, EDAD Program

Rob Kremer, P. Eng.,
Engineering Manager, EDAD Program

This Order has been developed in consultation with the Elevating Devices Advisory Council



Elevating and Amusement Devices Safety Division	Ref. No.: 219 / 07	Rev. No.:
DIRECTOR'S ORDER	Date: October 12, 2007	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000*,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the
*Technical Standards and Safety Act, 2000***

Subject: Fire Code Retrofitting of elevators in buildings with hotel occupancies in conformance with Article 9.9.5.3. of the Ontario Fire Code
Sent to: All Elevator Contractors

Pursuant to subsection 36.(3)(a) of the *Technical Standards and Safety Act, 2000*, the Director, subject to the conditions herein, authorizes the use of and requires compliance with the following:

1. ORDER TO CONTRACTORS RETROFITTING EXISTING ELEVATORS

For fire code retrofits per Article 9.9.5.3 of

- a) Ontario Regulation 388/97 including the amending Ontario Regulation 144/06 made under the Fire Protection and Prevention Act 1997 (for installations prior to November 21, 2007) or
- b) Ontario Regulation 213/07 (for installations on or after to November 21, 2007, the following requirements apply:

1.1 Where elevators, in buildings with hotel occupancies having a vertical distance between grade and the floor of the top storey exceeding 18m, are retrofitted "for use by firefighters", the retrofitting of such elevators shall additionally conform to one of the following:

- a) CAN/CSA - B44-00 including Update No. 2, Safety Code for Elevators,
- b) CAN/CSA - B44-04 Safety Code for Elevators, or
- c) CAN/CSA - B44-07 Safety Code for Elevators (see Code Adoption Document Amendment 225/07)

Note: conformance to future code editions will also be permitted

1.2 Where Article 9.9.5.3 (*Elevators for firefighters' use*) requires only **one** elevator in a group to be designated as the firefighters' elevator, this order requires that **all** elevators in the group shall be provided with the following B44 Safety Code for Elevator features:

- a) phase one operation conforming to 2.27.3.1 (*Phase I Emergency Recall Operation - manual*) and
- b) phase two operation conforming to 2.27.3.3 (*Phase II Emergency In-Car Operation*) and
- c) phase one operation conforming to 2.27.3.2 (*Phase I Emergency Recall Operation - automatic*) if required by the Ontario Building Code.

1.3 In accordance with Ontario Regulation 209/01 made under the *Technical Standards and Safety Act, 2000*, any work on existing elevators leading to the designation of "Fire Code Retrofitted Hotel-Elevator", constitutes a "minor alteration type A".

- 1.4 All markings of elevators, retrofitted under Article 9.9.5.3 of the Ontario Fire Code shall be in compliance with the B44 Elevator Safety Code requirements. The 50 mm Fire Fighter Hat displayed at the entrance frame shall be yellow to identify the hotel fire code retrofit designation.
- 1.5 Elevators retrofitted under Article 9.9.5.3 of the Ontario Fire Code shall also conform to Director's Order 211 /06 which requires a common key for operation of FEO.
- 1.6 A design submission, covering the alteration, must be submitted to TSSA within ten working days after the completion of the alteration and must include the following:
 - a) a key plan to show the location of all elevators controlled by the recall switch,
 - b) a statement in the specification sheet that "all elevators (provide installation numbers) are recalled by the same recall switch", and
 - c) identification of which B44 code edition referenced in section 1.1 above will be used in the design and testing of the "Firefighters Emergency Operation" (FEO) system.
- 1.7 The **contractor** who completed the alteration **shall arrange** for a special inspection to be carried out not later than 60 days from the date of the completion of the alteration. If elevator(s) are to be returned to service before the inspection, the installing contractor must ensure that the safety of the elevator is not adversely affected by the alteration.

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices) made under the *Technical Standards and Safety Act, 2000.*

2. BACKGROUND

- 2.1 Ontario Regulation 144/06 amending Ontario Regulation 388/97 (Fire Code) came into effect on January 1, 2007.
- 2.2 Ontario Regulation 388/97 is revoked on November 21, 2007.
- 2.3 Ontario Regulation 213/07 comes in force on November 21, 2007.
- 2.4 Article 9.9.5.3, retrofitting of *Elevators for firefighter's use*, is required to be completed by January 1, 2012, per Article 9.1.3.1.
- 2.5 Enforcement of owner compliance with the retrofit regulation will rest with those having jurisdictional authority under the Ontario Fire Code. The Technical Standards & Safety Authority (TSSA) enforces rules and standards applicable to the retrofitted features of the elevator.

This Order has been developed in consultation with the Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.: 220/07	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: June 22, 2007	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT 2000*,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the *Technical Standards and Safety Act 2000***

Subject: MONTGOMERY HR ESCALATOR DC BRAKE ADJUSTMENT ALERT
Sent to: All Elevating devices Contractors, Consultants and Owners

The Director, Elevating Devices Regulation (O.Reg.209/01) pursuant to his authority under section 14.(1) of the *Technical Standards & Safety Act, 2000* hereby orders the following:

1. ORDER

- 1.1 On every maintenance visit, to all Montgomery HR Escalators having a DC shoe-type brake, that is maintained by your company, contractors shall perform the brake slide test set out in Box 1 of Kone Escalator Instruction 2007-04 (see attached). Should an HR escalator take more than half a step to stop when running in the down direction under no load, the contractor shall carry out the torque test and check the wear reserve as set out in Boxes 2 and 3 prior to returning the escalator to service.
- 1.2 No later than 90 days from the effective date of this order, contractors shall have completed a brake slide test, a brake torque test and a brake wear reserve check as set out in Boxes 1, 2, and 3 of KONE ESCALATOR INSTRUCTION 2007-04, (see attached)
- 1.3 If oil is found on the brake pad, the brake pad shall be replaced before the escalator is returned to service, and an oil drip guard shall be installed over the brake shoes to prevent future oil contamination.
- 1.4 Every action in 1.1, 1.2 and 1.3 above shall be noted in the log book, together with mechanic's name, signature and date, and, in addition:
 - a) the empty down slide distance shall be noted every visit .
 - b) the brake wear reserve gap shall be noted if adjustments are made.
- 1.5 This order is effective immediately

Roland Hadaller, P.Eng., Director, Elevating Devices Regulation appointed under the *Technical Standards & Safety Act, 2000*

2. NOTES:

- 2.1 If replacement brake pads or complete shoes are installed, the linings must be burnished to achieve full contact with the pulley. Since burnishing may generate excessive heat, ensure brakes cool to ambient temperature before making adjustments per Boxes 2 and 3 of KONE Escalator Instruction 2007-04.
- 2.2 If adjustments are required to the brake, the brake wear reserve as set by the brass adjusting screw (referred to in box 3) shall be checked. The head of this screw may have to be ground down to get the required clearance (min. 0.060" air gap) when the brake is applied
- 2.3 Check that there is equal clearance between upper and lower brake shoes and the brake drum to ensure the brake is not dragging. This clearance can be adjusted using bolts of Stop A and then Stop B, as shown in the drawing of the Montgomery DC Brake.
- 2.4 If adjustments are required to the brake, the brake lifting micro-switch shall be checked and if necessary properly adjusted. The micro-switch operates just as the upper shoe fully opens, in order to reduce the coil voltage and prevent coil overheating. It also holds in the motor contactors. If the switch operates too soon the voltage will drop before the brake is fully lifted. This may cause the pads to drag and excessively wear. If the switch operates too late (or not at all), the run circuit will not latch causing it not to start or shut down.

3. BACKGROUND

Investigations following a recent accident raised concerns that Montgomery DC shoe type brakes may not be able to stop their rated load if not properly set up and maintained. Accordingly, KONE Inc. has issued enhanced maintenance procedures as Escalator Instruction 2007-04, and TSSA has issued this Director's Safety Order.

This Order has been developed in consultation with the Elevating Devices Advisory Council

Head Office Engineering



April 5, 2007

KONE Inc.

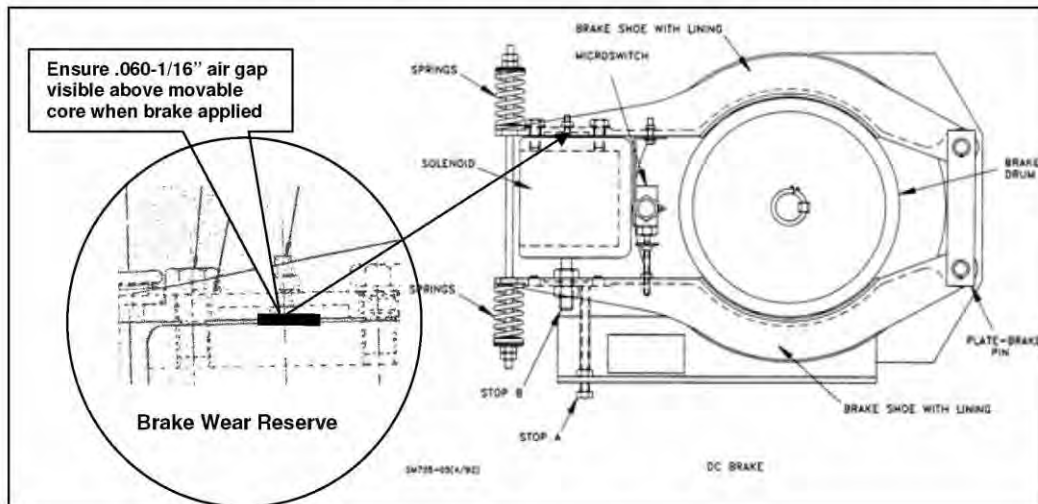
80 Horner Avenue,
Toronto, ON M8Z 4X8
CANADA
Tel 416-252-6151
Fax 416-252-3624
al.brown@kone.com

ESCALATOR INSTRUCTION 2007-04

RE: MONTGOMERY HR ESCALATOR DC SHOE BRAKES INSPECTION AND TEST PROCEDURES

Investigations following a recent occurrence indicate that it would be useful to issue enhanced brake inspection and test procedures for MONTGOMERY HR ESCALATORS with DC SHOE BRAKES, to ensure stopping ability as the linings wear.

MONTGOMERY HR ESCALATOR DC SHOE BRAKE CHARACTERISTICS



End View of DC Shoe Brake

The Montgomery HR escalator DC shoe brake has a single push solenoid. Upon energization, its plunger pushes down on Stop B, opening the bottom shoe until it reaches stop A, then continues to open the top shoe. A micro-switch operates just as this upper shoe is fully open, to reduce the coil voltage and prevent coil overheating. It also holds in the motor contactors.

The empty down stopping slide distance always indicates the holding ability of this brake. The rated empty down stopping distance for this brake is 4-6 inches for 20 ft rise at 90 fpm at room temperature. Under no circumstances may this empty down stopping slide exceed half a step or 8 inches.

1. BRAKE SLIDE - VISUAL CHECK REQUIRED EVERY VISIT

- a) On every maintenance visit to every MONTGOMERY HR ESCALATOR with DC SHOE BRAKES, the maintainer must press the stop pushbutton and visually **verify that the empty escalator running in the down direction at 90 fpm appears to stop within half a step or 8 inches.**
- b) If the observed slide exceeds half a step or 8 inches, the unit must be immediately removed from service, and barricaded to prevent passenger from using it as a staircase, until the brake meets the torque, slide, and wear reserve requirements in boxes 2) and 3) below.
- c) This stop pushbutton check is required by the B44 Safety Code Appendix J.

2. BRAKE TORQUE - TORQUE TEST REQUIRED ANNUALLY

- a) Annually the maintainer must use a calibrated torque wrench to verify that each Montgomery HR escalator DC shoe brake has **45-55 lb-ft torque** as follows:
 1. To access the brake, remove 1 or 2 steps, and then move the step gap over the motor.
 2. Turn off power to the escalator at the disconnect switch on the controller and lock it out.
 3. Ensure that any newly installed pads are properly burnished..
 4. Measure the amount of torque required to turn the brake drum through the closed shoes.
 5. Tighten or loosen both torque springs equally to set torque to 45-55 lb-ft (60-75 n-m).
 6. Lock the spring settings by placing two nuts on both ends of the spring rod.
 7. (This is a good opportunity to also apply a few drops of oil to the holes of the brake shoe castings to lubricate the brake shoe pins and prevent the shoe from locking up on the pin.)
 8. Restore power to escalator at disconnect switch and run the escalator.
 9. Visually verify that empty down stopping slide distance of a standard escalator is 4-6 inches. Re-adjust springs, replace linings, or re-burnish brakes if necessary.
- b) Note this examination in the Log Book, together with maintainer's name and date.

3. BRAKE WEAR RESERVE - CHECK REQUIRED ANNUALLY

- a) Annually the maintainer must ensure that whenever the escalator is stopped and the brake is applied, **the DC brake solenoid core has at least .060" space above it. This is to ensure a space into which the core can move as the brake lining wears.** Using a flashlight if necessary, ensure that at least a 0.060" air gap is visible above the core (see illustration). While a "60 thou" spark plug gap setting gauge is useful, a visual check is sufficient. Note: Modify brass screw head if necessary to ensure gap.
- b) Note this examination in the Log Book, together with maintainer's name and date.

KONE Inc.,

A. D. Brown, P.Eng.,
Vice President Engineering



Elevating and Amusement Devices Safety Division	Ref. No.: 221/ 07	Rev. No.:
Safety Alert Bulletin	Date: February 16, 2007	Date:

Subject: Falling from Chair Lifts Hazard
Sent to: All Ski Lift Industry Stakeholders

1. INTRODUCTION

In response to a number of recently reported incidents involving children falling out of chairlifts at resorts within Ontario, a Risk Reduction Group (RRG) has been formed comprised of industry stakeholders including ski operators, manufacturers and the TSSA. The mandate of the RRG is to examine recorded occurrences of persons falling from chairlifts and to make recommendations for short term initiatives and long term solutions that will drive the province toward zero incidents of this type.

2. ALERT

Be advised that current initiatives are in progress to meet the RRG's long term objectives. This bulletin outlines some of the short term objectives that require active and diligent participation of all industry stakeholders in order for successful movement towards zero incidents. With only a few weeks of the 2006/07 season left, **immediate** action is required.

3. INSTRUCTIONS

Short Term Objective: Raise Awareness Now

Effective immediately, all licensees shall review their current policies and procedures regarding lift operations, attendant training, and the placement of signs. Share with your staff the contents of this bulletin.

Club policies and procedures shall be reinforced to operators, attendants and ski school instructors, specifically with regards to young children on chairlifts, the proper place to lift the bar, defining and monitoring acceptable behaviour on a chair lift, and attendant placement during loading/unloading.

Short Term Objective: Information Gathering to support Long Term Initiatives

You should have already received a copy of a letter from the Ontario Snow Resorts Association regarding this issue, and a copy has been attached for your reference. Additionally, a questionnaire has been created jointly by the TSSA and the RRG in an effort to assist in the RRG in their long term initiatives. The questionnaire can be filled in by hand, and faxed to (416) 231-7525. For an electronic copy of the form, please visit the TSSA website at www.tssa.org. Completed copies of the questionnaire can be emailed to Jim Palmer at jpalmer@tssa.org.

Your response is required on or before March 7, 2007.

Rob Kremer, P. Eng.,
Engineering Manager, EDAD Program

Roger Neate
Operations Manager, EDAD Program

This Safety Bulletin has been developed in consultation with the Ontario Snow Resorts Association.



Elevating and Amusement Devices Safety Division	Ref. No.: 222/07	Rev. No.:
Enforcement Procedure Bulletin	Date: April 23, 2007	Date:

Subject: TSSA Grounding and Bonding Enforcement Procedure
Sent to: Elevator Contractors, Mechanics and Inspectors

1. INTRODUCTION

There have been instances where inspection has revealed situations where the existing electrical grounding and bonding means does not meet the requirements of Section 10 of C22.1. The following procedure has been prepared to provide guidance to elevator inspectors when completing inspections **on new or altered installations** and to inform contractors and mechanics of the need to ensure adequate grounding and bonding.

* See Appendix A for Definitions of terms used in this Bulletin.

2. INTERPRETATION & ENFORCEMENT

Inspectors shall ensure that power is disconnected prior to checking grounding and bonding on controllers, disconnects, door locks, etc.

2.1 Initial Inspection of New Installations

1. Check to ensure that the controller is bonded to the metal enclosure of the disconnect with a bonding conductor which is either; bare copper, or insulated and having a continuous outer finish that is either green or green with one or more yellow stripes.
2. Check all grounding lugs in disconnect, controller, etc. to ensure that they are secure.
3. Check the continuity of the bonding means between the controller and disconnect. (Perform check with disconnect door closed)
4. Randomly pick a minimum of 10% of the landing door locks to ensure that the bonding conductor is present and secure. If any bonding wire is missing, then 100% shall be inspected.
5. Randomly pick a minimum of 10% of the hall call stations to ensure that the bonding conductor is present and secure. If any bonding wire is missing, then 100% shall be inspected.
6. When completing the single ground test it shall be conducted at the furthest point from the controller. For example grounding the bottom floor door lock when the controller is located at the top of the building. The single ground test will result in an instantaneous failure or interruption of the supply voltage. When a single ground occurs the car shall not be permitted to restart. (Where provided, follow manufacturer specific test procedures)

Note: The disconnecting means shall be in the "ON" position (the source of power shall be connected to the controller) when conducting the "single ground" test.

NOTE: The inspector shall remember that flexible conduit cannot be used as a bonding means; however rigid metal conduit or electrical metal tubing (EMT) may. If flex is running to the disconnect, you must have a bonding wire, however if rigid metal conduit or EMT is installed correctly, it may be used as a bond to ground. This is the same for landing door locks and hall call stations.

2.2 Initial Inspection on Alterations

The inspector shall keep in mind the scope of the alteration when completing an inspection on an altered device. All new and modified equipment and wiring shall be installed in accordance with the current Edition of C22.1.

1. When an alteration includes the controller:

- Controller installed as part of an alteration – Clause 8.7.2.27.4
- Change in type of motion control – Clause 8.7.2.27.5, or
- Change in type of operation control – Clause 8.7.2.27.6), the following shall be completed:
 1. Check to ensure that the controller is bonded to the metal enclosure of the disconnect with a bonding conductor which is either; bare copper, or insulated and having a continuous outer finish that is either green or green with one or more yellow stripes.
 2. Check all grounding lugs in disconnect, controller, etc. to ensure that they are secure.
 3. Check the continuity of the bonding means between the controller and disconnect. (Perform check with disconnect door closed)

2. When an alteration includes the landing door locks:

- modification, change or replacement with a different make/model

One of the options below will be followed;

1. Where a bonding conductor is not provided (e.g. the armour of an existing metal flexible conduit continues to be used as bonding means), the single ground test shall be conducted (see Initial inspection on new installations, Item 6). The single ground test will result in an instantaneous failure or interruption of the supply voltage. The inspector shall visually verify the integrity of the metal flexible conduit at all landings.
2. If a bonding wire is provided, randomly pick a minimum of 10% of the landing door locks to ensure that the bonding conductor is present and secure. If any bonding wire is missing, then 100% shall be inspected.

3. When landing call stations,

operating at more than 30 V are **replaced** or installed (**added**) as part of an alteration:

One of the options below will be followed;

1. Where a bonding conductor is not provided (e.g. the armour of an existing metal flexible conduit continues to be used as bonding means), the single ground test shall be conducted (see Initial inspection on new installations, Item 6). The single ground test will result in an instantaneous failure or interruption of the supply voltage.
2. If a bonding wire is provided randomly pick a minimum of 10% of the landing call stations to ensure that the bonding conductor is present and secure. If any bonding wire is missing, then inspect 100 % of hall call stations to ensure that the bonding conductor is present and secure.

2.3 Incident/Accident Investigation

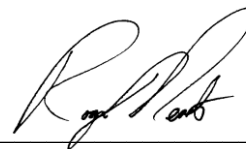
When an incident occurs which indicates that bonding to ground was not effective, a direction shall be issued to ensure that related components of the elevating device are checked for bonding.

3. EFFECTIVE DATE

This enforcement procedure is effective on alterations and new installations submitted to TSSA on or after October 1, 2007



**Rob Kremer, Engineering Manager
EDAD Program**



**Roger Neate, Operations Manager
EDAD Program**

This Bulletin has been developed in consultation with the Elevating Devices Advisory Council and the Field Advisory Committee.

APPENDIX – A

Definitions and references

Grounding means a permanent and continuous conductive path to the earth with sufficient ampacity to carry any fault current liable to be imposed on it, and of a sufficiently low impedance to limit the voltage rise above ground and to facilitate the operation of the protective devices in the circuit;

Bonding means a low impedance path obtained by permanently joining all non-current-carrying metal parts to assure electrical continuity and having the capacity to conduct safely any current likely to be imposed on it;

Bonding conductor means a conductor which connects the non-current-carrying parts of electrical equipment, raceways, or enclosures to the service equipment or system grounding conductor;

Raceway means any channel designed for holding wires, cables, or busbars, and, unless otherwise qualified in the Rules of the Canadian Electrical Code, Part I, the term includes conduit (rigid and flexible, metal and nonmetallic), electrical metallic and nonmetallic tubing, underfloor raceways, cellular floors, surface raceways, wireways, cable trays, busways, and auxiliary gutters;

Conduit means a raceway of circular cross-section, other than electrical metallic tubing and electrical nonmetallic tubing, into which it is intended that conductors be drawn;

Flexible metal conduit means a metal conduit which may be easily bent without the use of tools;

Rigid metal conduit means a rigid conduit of metal made to the same dimensions as standard pipe and suitable for threading with standard pipe threads;

Electrical metallic tubing means a raceway of metal having circular cross-section into which it is intended that conductors be drawn and which has a wall thinner than that of rigid metal conduit and an outside diameter sufficiently different from that of rigid conduit to render it impracticable for anyone to thread it with standard pipe thread;

Where rigid metal conduit or other metal raceway is used for bonding, the methods described in Rules 10-600 thru 10-614 of Part I of the Canadian Electrical Code, Part I (C22.1), shall be used.



Elevating and Amusement Devices Safety Division	Ref. No.: 223/ 08	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: February 1, 2008	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000,*
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices) made under the
*Technical Standards and Safety Act, 2000***

Subject: Inspection of structural welds on elevating devices manufactured by Uni-Tech Elevator & Lift Inc. or Liftech Elevator Co.
Sent to: All Elevator Contractors, Mechanics, and Owners of affected devices

The Director, Elevating Devices Ontario Regulation 209/01 pursuant to his authority under subsection 14.(1) of the *Technical Standards & Safety Act, 2000* hereby orders the following:

1. ORDER

- 1.1.** No later than November 1st, 2008, all owners of elevating devices manufactured by Uni-Tech Elevator & Lift Inc. or Liftech Elevator Co. shall,
- have the integrity of the structural welds of these elevating devices assessed;
 - where necessary have welds repaired or modified; and
 - utilize registered elevating device maintenance contractors to facilitate in the inspection and subsequent reporting requirements.

Note: A list of the affected devices is attached for reference.

- 1.2.** If you are an **owner** of an installation manufactured by Uni-Tech elevator & Lift Inc. or Liftech Elevator Co. and the device is not on the attached list of affected devices, you are required to,
- contact this office with details of the installation by fax (416) 251-7525 or email eddesignsubmittal@tssa.org; and
 - fulfill the requirements of this Safety Order.
- 1.3.** If you are a **maintenance contractor** of an installation manufactured by Uni-Tech elevator & Lift Inc. or Liftech Elevator Co. and the device is not on the attached list of affected devices, you are required to,
- contact this office with details of the installation by fax (416) 251-7525 or email eddesignsubmittal@tssa.org; and
 - provide a copy of this Director's Safety Order to the owner for their action.
- 1.4.** All structural welds shall be non-destructively tested (visual inspection) by a Canadian Welding Bureau (CWB) certified welding inspector. A list of certified companies or individual welding inspectors can be found on the CWB web site at <http://www.cwbgroup.org/>.

- 1.5. If an installation has previously received confirmation of weld integrity or has previously undergone the necessary assessment of welds and passed, a copy of the report or a letter confirming this activity in the form of a notice of notification (Minor B) shall be forwarded by the owner or contractor to this office by fax to (416) 251-7525 or by email to eddesignsubmittal@tssa.org.
- 1.6. In the event that there are any indications of weld cracks, weld failures or welds that are identified as deficient the owner or contractor shall,
- a) immediately remove the lift from service;
 - b) notify the Director as per subsection 35 of Ontario Regulation 209/01 via fax to (416) 251-7525 or by email to eddesignsubmittal@tssa.org and include the installation number and nature of the defect; and
 - c) arrange for the repair or replacement of welds by a certified welder in accordance to subsection 3.2 of the Elevating Devices Code Adoption Document.
- 1.7. Where welds are repaired, contractors shall,
- a) submit to TSSA a Minor B notification;
 - b) include the name of the CWB certified welder or company;
 - c) include a copy of the CWB certified weld inspectors report; and
 - d) be permitted to return the device to service (no site inspection required).
- 1.8. Where welds are modified, contractors shall,
- a) submit to TSSA a Minor A alteration;
 - b) include the name of the CWB certified welder or company;
 - c) include a copy of the CWB certified weld inspectors report;
 - d) include weld drawings;
 - e) be permitted to return the device to service; and
 - f) arrange for a special inspection by a TSSA inspector not later than 60 days from the date of the completion of the alteration.
- 1.9. This Safety Order is effective immediately. If you are a maintenance contractor and the required work does not constitute a part of your maintenance contract, and you cannot obtain authorization from the elevator owner to complete this Safety Order by the November 1st, 2008 deadline you shall notify this office immediately and indicate the installation numbers of the relevant elevators.

2. INSTRUCTIONS

- 2.1. All inspections, tests, repairs and alterations shall be performed under the supervision of an elevator mechanic as per subsection 24.(1) of the Ontario Regulations 209/01.
- 2.2. All welding of a steel structure on an elevating device shall conform to the requirements of CSA Standard W59-03, Welded Steel Construction (Metal Arc Welding).
- 2.3. Structural welds are considered to be those critical welds whose failure could cause an unsafe or hazardous condition. Welds to be inspected shall include, but not be limited to, areas such as the hydraulic jack and support assembly, cross head, car frame and structural uprights, etc.
- 2.4. The contractor who completes a Minor A alteration shall arrange for a “special inspection” to be carried out not later than 60 days from the date of the completion of the alteration. The registered design submission shall be available at the time of the special inspection.

- 2.5 As a reminder any person who carries out an inspection shall ensure that the elevating device is in a safe operating condition and shall take all steps and reasonable precautions in the circumstances to ensure that the parts and functions will remain in a safe operating condition until the next scheduled inspection and examination in accordance to subsection 32.(4) of the Ontario Regulations 209/01.
- 2.6 It shall be the responsibility of the owner to engage the contractor for the safe removal of every elevating device (which they own) from service that does not comply with this Order by November 1st, 2008.
- 2.7 Detail drawings of the welds can be obtained from the manufacturer.

Uni-Tech Elevator and Lift Inc.
751 McKay Road, Unit #5
Pickering, Ontario
L1W 3C7
Phone: (905) 686-8342 / (800) 670-7416
Fax: (905) 686-8111

3. **BACKGROUND**

- 3.1. The Technical Standard & Safety Authority (TSSA) was made aware of several defective structural welds on elevating devices manufactured by Uni-Tech Elevator & Lift Inc. or Liftech Elevator Co. Upon further investigation it was discovered that the structural welds were not installed in accordance to the requirements of W47.1-03 Certification of Companies for Fusion Welding of Steel.

Roland Hadaller, Director, Ontario Regulations 209/01(Elevating Devices) made under the *Technical Standards and Safety Act, 2000*

This Order has been developed in consultation with the Elevating Devices Advisory Council.

Installation Number	Elevating Device Location Address			ED DeviceType	Status
					Weld Assessment Required
					No Authorization from Owner for Weld Assessment
					Assessment Complete - Not Submitted
					Complete (Assessed / Submitted)
					Dismantled
					Shut Down
69076	R R 2 HIGHWAY 7	SHARBOT LAKE	K0K 2P0	Stair Platform Lift-D	Weld Assessment Required
68102	500 MAJOR MACKENZIE DR E	RICHMOND HILL	K0M 1K0	Vertical Pltfrm Lift-C	Weld Assessment Required
66164	35 WYCHWOOD CR	FENELON FALLS	K0M 1N0	Vertical Pltfrm Lift-C	Weld Assessment Required
67868	1090 Highbury Ave	LONDON	K1R 5B2	Stair Platform Lift-D	Weld Assessment Required
67868	400 ALBERT ST	OTTAWA	K1R 5B2		Weld Assessment Required
72820	391 GLADSTONE AVE	OTTAWA	K2P 0Y9	Stair Platform Lift-D	Weld Assessment Required
82079	41 COURTHOUSE SQ	BROCKVILLE	K6V 7N3		Weld Assessment Required
68108	95 CHURCH ST N	AJAX	K7H 3C5	Vertical Pltfrm Lift-D	Weld Assessment Required
69103	324 JOHN ST N	ARNPRIOR	K7S 2P6	Vertical Pltfrm Lift-C	Weld Assessment Required
69104	324 JOHN ST N	ARNPRIOR	K7S 2P6	Vertical Pltfrm Lift-C	Weld Assessment Required
76177	76 ROBINSON ST	PETERBOROUGH	K9H 1E8	Vertical Pltfrm Lift-C	Weld Assessment Required
76178	76 ROBINSON ST	PETERBOROUGH	K9H 1E8	Vertical Pltfrm Lift-C	Weld Assessment Required
81814	550 ERSKINE AVE	PETERBOROUGH	K9J 5T4	Vertical Pltfrm Lift-C	Weld Assessment Required
77534	260 KENT ST	LINDSAY	K9V 4R2	Vertical Pltfrm Lift-C	Weld Assessment Required
77537	260 KENT ST	LINDSAY	K9V 4R2	Vertical Pltfrm Lift-C	Weld Assessment Required
77541	260 KENT ST	LINDSAY	K9V 4R2	Vertical Pltfrm Lift-C	Weld Assessment Required
77871	6 PARKSIDE ST	MINDEN	K9V 4S7	Vertical Pltfrm Lift-C	Weld Assessment Required
77872	8 JAMES ST	OMEMEE	K9V 4S7	Vertical Pltfrm Lift-C	Weld Assessment Required
76179	200 ALBERT ST	LINDSAY	K9V 5R6	Vertical Pltfrm Lift-C	Weld Assessment Required
64340	BROCK ST	UXBRIDGE	L0C 1K0	Stair Platform Lift-D	Weld Assessment Required
70109	1315 RIVER RD	WASAGA BEACH	L0L 2P0	Vertical Pltfrm Lift-C	Weld Assessment Required
77092	1 NIAGARA ON THE GREEN BLVD	NIAGARA ON THE LAKE	L0S 1J0	Freight Platform Lift-B	Weld Assessment Required
73317	191 CHURCH ST	BOWMANVILLE	L1C 1T8	Vertical Pltfrm Lift-C	Weld Assessment Required
79965	350 LONGWORTH	BOWMANVILLE	L1C 5J5	Vertical Pltfrm Lift-C	Weld Assessment Required
78943	75 MEADOWGLADE	COURTICE	L1H	Vertical Pltfrm Lift-C	Weld Assessment Required
69143	700 STEVENSON RD N	OSHAWA	L1J 5P5	Vertical Pltfrm Lift-C	Weld Assessment Required
69144	700 STEVENSON RD N	OSHAWA	L1J 5P5	Vertical Pltfrm Lift-C	Weld Assessment Required
69429	1610 CHAMPLAIN AVE	WHITBY	L1N 6A7	Vertical Pltfrm Lift-C	Weld Assessment Required
65697	20 FOREST HEIGHTS ST	WHITBY	L1R 1T5	Vertical Pltfrm Lift-C	Weld Assessment Required
68105	6234 OSPREY BLVD	MISSISSAUGA	L1R 1Z7	Vertical Pltfrm Lift-C	Weld Assessment Required
64579	1000 DRYDEN BLVD	WHITBY	L1R 2A2	Vertical Pltfrm Lift-C	Weld Assessment Required
65309	1020 DRYDEN BLVD	WHITBY	L1R 2A2	Vertical Pltfrm Lift-C	Weld Assessment Required
68104	HWY 35	COBOCONK	L1S 6A9	Vertical Pltfrm Lift-C	Weld Assessment Required
72091	25 SULLIVAN DR	AJAX	L1T 3L3	Vertical Pltfrm Lift-C	Weld Assessment Required
66163	15 BENNETT AVE	AJAX	L1T 3P1	Stair Platform Lift-D	Weld Assessment Required
79964	190 CHURCH ST	ST CATHARINES	L2R 3E9	Vertical Pltfrm Lift-C	Weld Assessment Required
65179	191 CARLTON ST	ST CATHARINES	L2R 7P4	Freight Platform Lift-B	Weld Assessment Required
71023	240 THOROLD RD	WELLAND	L3C 3W2	Vertical Pltfrm Lift-C	Weld Assessment Required
69428	261 ONTARIO ST	GRIMSBY	L3M 5J2	Vertical Pltfrm Lift-C	Weld Assessment Required
75346	730 COCHRANE DR	MARKHAM	L3R 8E1	Freight Platform Lift-B	Weld Assessment Required
66368	525 HIGGLEN AVE	MARKHAM	L3S 3L5	Vertical Pltfrm Lift-C	Weld Assessment Required
84498	61 RUSSEL JARVIS DR	MARKHAM	L3S 4B1	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
80331	399 ELSON STREET	MARKHAM	L3S 4R8	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
77538	300 COMMERCE VALLEY DR E	MARKHAM	L3T	Dumbwaiter	Weld Assessment Required
82957	161 SAWMILL VALLEY DR	NEWMARKET	L3X	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
74950	715 KINGSMERE AVE	NEWMARKET	L3X 1L4	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
69170	480 KEITH AVE	NEWMARKET	L3X 1V5	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
75782	200 CLEARMEADOW BLVD	NEWMARKET	L3X 2E4	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
72674	40 HURON HEIGHTS DR	NEWMARKET	L3Y 3J9	Vertical Pltfrm Lift-C	Weld Assessment Required
73183	330 BURFORD ST	NEWMARKET	L3Y 6L1	Vertical Pltfrm Lift-C	Weld Assessment Required
39759	17440 YONGE ST	NEWMARKET	L3Y 6Y9	Freight Platform Lift-B	Weld Assessment Required
71747	345 HARRY WALKER PKWY	NEWMARKET	L3Y 8P6	Passenger Elevator	Weld Assessment Required
71748	345 HARRY WALKER PKWY	NEWMARKET	L3Y 8P6	Passenger Elevator	Weld Assessment Required
72995	300 GLAD PARK AVE	STOUFFVILLE	L4A 1E5	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
72675	183 BRAMBLE CRES	STOUFFVILLE	L4A 7Z1	Vertical Pltfrm Lift-C	Weld Assessment Required
64492	124 BLACKMORE AV	RICHMOND HILL	L4B 2B1	Vertical Pltfrm Lift-C	Weld Assessment Required
73316	121 LARRATT STREET	RICHMOND HILL	L4C 0E6	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
67969	1280 BRAESIDE DR	OAKVILLE	L4C 1J2	Vertical Pltfrm Lift-C	Weld Assessment Required
74408	118 HILLSVIEW DR	RICHMOND HILL	L4C 1T2	Vertical Pltfrm Lift-C	Weld Assessment Required
75676	400 MILL ST	RICHMOND HILL	L4C 4B9	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
75677	400 MILL ST	RICHMOND HILL	L4C 4B9	Vertical Pltfrm Lift-C	Weld Assessment Required

Installation Number	Elevating Device Location Address			ED DeviceType	Status
					Weld Assessment Required
					No Authorization from Owner for Weld Assessment
					Assessment Complete - Not Submitted
					Complete (Assessed / Submitted)
					Dismantled
Shut Down					
74844	6 SCOTT DR	RICHMOND HILL	L4C 6V6	Passenger Elevator	Weld Assessment Required
82955	121 ROLLINGHILL RD	RICHMOND HILL	L4E 4L2	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
84497	195 SILVER MAPLE DR	RICHMOND HILL	L4E 4Z1	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
73792	39 DUNNING AVE	AURORA	L4G 1A2	Vertical Pltfrm Lift-C	Weld Assessment Required
73793	330 INDUSTRIAL PKY N	AURORA	L4G 4C3	Vertical Pltfrm Lift-C	Weld Assessment Required
74947	120 AURORA HEIGHTS DR	AURORA	L4G 6C4	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
75746	415 STONE RD	AURORA	L4G 6Z5	Vertical Pltfrm Lift-C	Weld Assessment Required
84490	171 MARIA ANTONIA RD	WOODBIDGE	L4H	Vertical Pltfrm Lift-C	Weld Assessment Required
81862	366 MULLEN DR	THORNHILL	L4J 2P3	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
81863	366 MULLEN DR	THORNHILL	L4J 2P3	Vertical Pltfrm Lift-C	Weld Assessment Required
64844	65 BROWNRIDGE DR	THORNHILL	L4J 7R8	Vertical Pltfrm Lift-C	Weld Assessment Required
75675	8881 MARTIN GROVE RD	WOODBIDGE	L4L	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
72996	86 GAMBLE ST	WOODBIDGE	L4L 1R2	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
74948	250 CORONATION ST	WOODBIDGE	L4L 6H3	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
74949	140 GREENPARK BLVD	WOODBIDGE	L4L 6Z6	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
75781	250 BLUE WILLOW	VAUGHAN	L4L 9E1	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
78941	180 FARMSTEAD ROAD	RICHMOND HILL	L4S	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
74673	35 SQUIRE DR	RICHMOND HILL	L4S 1C6	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
67650	11300 BAYVIEW AVE	RICHMOND HILL	L4S 1L4		Weld Assessment Required
80333	180 ALAMO HEIGHTS DR	RICHMOND HILL	L4S 2P3	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
64046	4120 DIXIE RD	MISSISSAUGA	L4W 4V8	Freight Platform Lift-B	Weld Assessment Required
76408	2350 HURONTARIO ST S	MISSISSAUGA	L5B 1N1	Vertical Pltfrm Lift-C	Weld Assessment Required
76411	2350 HURONTARIO ST S	MISSISSAUGA	L5B 1N1	Vertical Pltfrm Lift-C	Weld Assessment Required
74663	309 RATHBURN RD W	MISSISSAUGA	L5B 4C1	Freight Platform Lift-B	Weld Assessment Required
75112	450 HILLCREST AVE	MISSISSAUGA	L5B 4J3	Vertical Pltfrm Lift-C	Weld Assessment Required
65047	1576 DUNDAS ST W	MISSISSAUGA	L5C 1E5	Vertical Pltfrm Lift-C	Weld Assessment Required
73720	2266 COUNCIL RING RD	MISSISSAUGA	L5L 1C1	Vertical Pltfrm Lift-C	Weld Assessment Required
63942	3215 THORNCREST DR	MISSISSAUGA	L5L 4K7	Vertical Pltfrm Lift-C	Weld Assessment Required
64491	3240 GARTHWOOD RD	MISSISSAUGA	L5L 5A3	Vertical Pltfrm Lift-C	Weld Assessment Required
77584	2200 EGLINTON AV W	MISSISSAUGA	L5M 2N1	Vertical Pltfrm Lift-C	Weld Assessment Required
63928	1715 WILLOW WAY	MISSISSAUGA	L5M 3W5	Vertical Pltfrm Lift-C	Weld Assessment Required
82956	1830 MEADOWVALE BLVD	MISSISSAUGA	L5N	Vertical Pltfrm Lift-C	Weld Assessment Required
83598	1830 MEADOWVALE BLVD	MISSISSAUGA	L5N	Stair Platform Lift-D	Weld Assessment Required
68103	70 BROOKHAVEN DR	NORTH YORK	L5N 3X4	Vertical Pltfrm Lift-C	Weld Assessment Required
65023	3700 TRELAWNY CIR	MISSISSAUGA	L5N 5J7	Vertical Pltfrm Lift-C	Weld Assessment Required
66655	3420 TRELAWNY CIR	MISSISSAUGA	L5N 6N6	Vertical Pltfrm Lift-C	Weld Assessment Required
77170	5100 SALISHAN CIRCLE	MISSISSAUGA	L5N 7Z1	Vertical Pltfrm Lift-C	Weld Assessment Required
77172	1455 SAMUELSON CIRCLE	MISSISSAUGA	L5N 7Z2	Vertical Pltfrm Lift-C	Weld Assessment Required
66708	50 BRISTOL RD W	MISSISSAUGA	L5R 3K3	Vertical Pltfrm Lift-C	Weld Assessment Required
77358	5735 WHITEHORN AVE	MISSISSAUGA	L5V	Vertical Pltfrm Lift-C	Weld Assessment Required
73314	1075 SWINBOURNE DRIVE	MISSISSAUGA	L5V 1B9	Vertical Pltfrm Lift-C	Weld Assessment Required
73638	5187 FALLINGBROOK DR	MISSISSAUGA	L5V 1N7	Vertical Pltfrm Lift-C	Weld Assessment Required
73778	79 AVRO RD	MAPLE	L6A 1Y3	Vertical Pltfrm Lift-C	Weld Assessment Required
75783	155 MELVILLE AVE	MAPLE	L6A 1Y9	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
73315	251 MELVILLE AVENUE	MAPLE	L6A 1Z1	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
74953	230 HAWKER RD	MAPLE	L6A 2R2	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
76074	400 ST JOAN OF ARC AVE	VAUGHAN	L6A 2S8	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
72885	230 CALVERT RD	MARKHAM	L6C 1T5	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
76076	130 CASTLEMORE AVE	MARKHAM	L6C 2P9	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
80335	168 STONEBRIDGE DRIVE	MARKHAM	L6C 2Z8	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
80334	171 MINGAY AVENUE	MARKHAM	L6E 1H8	Vertical Pltfrm Lift-C	Complete (Assessed / Submitted)
67178	851 MOUNT PLEASANT RD	TORONTO	L6J 2A4	Vertical Pltfrm Lift-C	Weld Assessment Required
78419	2912 WESTOAK TRAIL	OAKVILLE	L6M 3S1	Vertical Pltfrm Lift-C	Weld Assessment Required
72089	35 BLACK OAK DR	BRAMPTON	L6R 1B9	Vertical Pltfrm Lift-C	Weld Assessment Required
73744	25 MOUNTAINBERRY RD	BRAMPTON	L6R 1J3	Vertical Pltfrm Lift-C	Weld Assessment Required
77171	28 RED RIVER DR	BRAMPTON	L6R 2H9	Vertical Pltfrm Lift-C	Weld Assessment Required
81860	450 FERNFOREST DR	BRAMPTON	L6R 2P7	Vertical Pltfrm Lift-C	Weld Assessment Required
81865	450 FERNFOREST DR	BRAMPTON	L6R 2P7	Vertical Pltfrm Lift-C	Weld Assessment Required
77091	285 GREAT LAKES DR	BRAMPTON	L6R 2R8	Vertical Pltfrm Lift-C	Weld Assessment Required
76085	2 HEATH DR	BRAMPTON	L6S 1E6	Vertical Pltfrm Lift-C	Weld Assessment Required
63467	7945 BRAMALEA RD	BRAMPTON	L6T 4J9	Freight Platform Lift-B	Weld Assessment Required

Installation Number	Elevating Device Location Address			ED DeviceType	Status
					Weld Assessment Required
					No Authorization from Owner for Weld Assessment
					Assessment Complete - Not Submitted
					Complete (Assessed / Submitted)
					Dismantled
Shut Down					
73348	20 UNION STREET	BRAMPTON	L6V 1R2	Vertical Pltfrm Lift-C	Weld Assessment Required
73349	20 UNION STREET	BRAMPTON	L6V 1R2	Vertical Pltfrm Lift-C	Weld Assessment Required
63927	15 FINCHAM AVE	BRAMPTON	L6X 3V2	Vertical Pltfrm Lift-D	Weld Assessment Required
72090	121 ROYAL ORCHARD DR	BRAMPTON	L6X 4K9	Vertical Pltfrm Lift-C	Weld Assessment Required
75473	50 LADORE DR	BRAMPTON	L6Y 1V5	Vertical Pltfrm Lift-C	Weld Assessment Required
76075	103 MALTA AVE	BRAMPTON	L6Y 4C8	Vertical Pltfrm Lift-C	Weld Assessment Required
73718	60 STERRITT DR	BRAMPTON	L6Y 5B6	Vertical Pltfrm Lift-C	Weld Assessment Required
80296	83 MCCRIMMON DRIVE	BRAMPTON	L7A 2Z3	Stair Platform Lift-D	Weld Assessment Required
80330	83 MCCRIMMON DRIVE	BRAMPTON	L7A 2Z3	Vertical Pltfrm Lift-C	Weld Assessment Required
81864	61 ALLAN RD	BOLTON	L7E 1P7	Vertical Pltfrm Lift-C	Weld Assessment Required
75113	299 LANDSBRIDGE ST	BOLTON	L7E 2K4	Vertical Pltfrm Lift-C	Weld Assessment Required
77916	221 GUELPH ST	GEORGETOWN	L7G 4A8	Special Elevator LULA	Weld Assessment Required
74691	2 DUNCAN DR	GEORGETOWN	L7G 4L7	Vertical Pltfrm Lift-C	Weld Assessment Required
74823	5205 NEW ST	BURLINGTON	L7L 1V3	Vertical Pltfrm Lift-C	Weld Assessment Required
74822	200 KENWOOD AVE	BURLINGTON	L7L 4L8	Vertical Pltfrm Lift-C	Weld Assessment Required
78417	5070 DRYDEN AVE	BURLINGTON	L7L 6G8	Vertical Pltfrm Lift-C	Weld Assessment Required
61553	3230 FAIRVIEW ST	BURLINGTON	L7N 3H5	Freight Elevator	Weld Assessment Required
75747	127 GRAYS RD	STONEY CREEK	L8E 1V6	Stair Platform Lift-D	Weld Assessment Required
37109	1089 BARTON ST E	HAMILTON	L8H 2V2	Freight Platform Lift-B	Weld Assessment Required
71068	135 FOREST AVE	HAMILTON	L8N 1X6	Vertical Pltfrm Lift-C	Weld Assessment Required
76746	2274 OLD LESLIE ST	NORTH YORK	M0M 1A1	Freight Platform Lift-B	Weld Assessment Required
64755	61 CANMORE BLVD	SCARBOROUGH	M1C 3T7	Vertical Pltfrm Lift-C	Weld Assessment Required
75334	4698 KINGSTON RD	SCARBOROUGH	M1E 2P9	Vertical Pltfrm Lift-C	Weld Assessment Required
73743	61 HOLMFIRTH TERR	SCARBOROUGH	M1G 1G8	Vertical Pltfrm Lift-C	Weld Assessment Required
74012	61 HOLMFIRTH TERR	SCARBOROUGH	M1G 1G8	Stair Platform Lift-D	Weld Assessment Required
74011	15 LUELLA ST	SCARBOROUGH	M1J 3P2	Stair Platform Lift-D	Weld Assessment Required
73808	110 BYNG AVE	TORONTO	M1L 3P1	Vertical Pltfrm Lift-C	Weld Assessment Required
76330	2447 KINGSTON RD	SCARBOROUGH	M1N 1V4	Freight Platform Lift-B	Weld Assessment Required
61503	130 FUNDY BAY BLVD	SCARBOROUGH	M1W 3G1	Vertical Pltfrm Lift-C	Weld Assessment Required
73294	35 CHURCH AV	TORONTO	M2N 6X6	Vertical Pltfrm Lift-C	Weld Assessment Required
73795	60 ROCKFORD RD	NORTH YORK	M2R 3A7	Vertical Pltfrm Lift-C	Weld Assessment Required
73295	55 GATEWAY BLVD.	NORTH YORK	M3C 1B4	Vertical Pltfrm Lift-C	Weld Assessment Required
74946	200 WILMINGTON AVE	DOWNSVIEW	M3H 5J8	Vertical Pltfrm Lift-C	Weld Assessment Required
78420	88 POND ST	TORONTO	M3J 1P3	Freight Platform Lift-B	Weld Assessment Required
80369	4700 KEELE ST	TORONTO	M3J 1P3	Freight Platform Lift-B	Weld Assessment Required
63466	21 DON VALLEY PKWY	TORONTO	M4M 1B6	Freight Platform Lift-B	Weld Assessment Required
67730	1090 HIGHBURY AVE	LONDON	M4P 2L5	Passenger Elevator	Weld Assessment Required
39783	50 GOULD ST	TORONTO	M5B 1E8	Vertical Pltfrm Lift-C	Weld Assessment Required
73099	170 JARVIS ST	TORONTO	M5B 2B7	Passenger Elevator	Weld Assessment Required
72744	1717 AVENUE ROAD	NORTH YORK	M5M 3Y5	Vertical Pltfrm Lift-C	Weld Assessment Required
70590	7 BERRYMAN ST	TORONTO	M5R 1M7	Vertical Pltfrm Lift-C	Weld Assessment Required
76073	70 D'ARCY ST	TORONTO	M5T 1K1	Vertical Pltfrm Lift-C	Weld Assessment Required
79060	224 RICHMOND ST W	TORONTO	M5V 1V6	Dumbwaiter	Weld Assessment Required
37158	2451 DUFFERIN ST	TORONTO	M6B 3P6	Freight Platform Lift-B	Weld Assessment Required
73794	101 ENGLEMOUNT AVE	NORTH YORK	M6B 4L5	Vertical Pltfrm Lift-C	Weld Assessment Required
77503	2189 DUFFERIN ST	TORONTO	M6E 3R9	Freight Platform Lift-B	Weld Assessment Required
66538	66 DUFFERIN PARK AVE	TORONTO	M6H 1J6	Vertical Pltfrm Lift-C	Weld Assessment Required
60282	93 MARGUERETTA ST	TORONTO	M6H 3S4	Vertical Pltfrm Lift-C	Weld Assessment Required
82790	1566 DUNDAS ST W	TORONTO	M6K 1T8	Freight Platform Lift-B	Weld Assessment Required
67995	400 ALBERT ST	OTTAWA	M6M 4N8	Vertical Pltfrm Lift-C	Weld Assessment Required
74359	100 SIDNEY BELSEY CRES	TORONTO	M6M 5H6	Vertical Pltfrm Lift-C	Weld Assessment Required
79568	125 EVELYN CRES	TORONTO	M6P 3E3	Vertical Pltfrm Lift-C	Weld Assessment Required
79570	125 EVELYN CRES	TORONTO	M6P 3E3	Vertical Pltfrm Lift-C	Weld Assessment Required
79600	125 EVELYN CRES	TORONTO	M6P 3E3	Stair Platform Lift-D	Weld Assessment Required
68126	95 WALLER ST	WHITBY	M8V 1B7	Vertical Pltfrm Lift-C	Weld Assessment Required
75333	2 HIGH MEADOW PLACE	TORONTO	M9L 2Z5	Vertical Pltfrm Lift-C	Weld Assessment Required
71574	3395 WESTON RD	NORTH YORK	M9M 2V9	Vertical Pltfrm Lift-C	Weld Assessment Required
64302	77 BELFIELD RD	ETOBICOKE	M9W 1G6	Freight Platform Lift-B	Weld Assessment Required
73260	225 CLAIRVILLE DRIVE	REXDALE	M9W 6K9	Freight Platform Lift-B	Weld Assessment Required
69978	79 MARIA ST	TAVISTOCK	N0B 2R0	Vertical Pltfrm Lift-C	Weld Assessment Required
69979	79 MARIA ST	TAVISTOCK	N0B 2R0	Stair Platform Lift-D	Weld Assessment Required

Installation Number	Elevating Device Location Address			ED Device Type	Status
					Weld Assessment Required
					No Authorization from Owner for Weld Assessment
					Assessment Complete - Not Submitted
					Complete (Assessed / Submitted)
					Dismantled
Shut Down					
71555	21 MCGIVERN ST	WALKERTON	N0G 2V0	Vertical Pltfn Lift-C	Weld Assessment Required
71556	21 MCGIVERN ST	WALKERTON	N0G 2V0	Vertical Pltfn Lift-C	Weld Assessment Required
70841	2452 GIDEON DR	DELAWARE	N0L 1E0	Vertical Pltfn Lift-C	Weld Assessment Required
69700	RIDGETOWN COLLEGE	RIDGETOWN	N0P 2C0	Passenger Elevator	Weld Assessment Required
69701	RIDGETOWN COLLEGE	RIDGETOWN	N0P 2C0	Passenger Elevator	Weld Assessment Required
69702	RIDGETOWN COLLEGE	RIDGETOWN	N0P 2C0	Passenger Elevator	Weld Assessment Required
80573	200 GORDON ST	GUELPH	N1G 1K1	Passenger Elevator	Weld Assessment Required
69257	43 MCGILVRAY ST	GUELPH	N1G 2W1	Passenger Elevator	Weld Assessment Required
74821	670 WILLOW RD	GUELPH	N1H 8K2	Vertical Pltfn Lift-C	Weld Assessment Required
74824	670 WILLOW RD	GUELPH	N1H 8K2	Vertical Pltfn Lift-C	Weld Assessment Required
37767	75 DUNDAS ST	CAMBRIDGE	N1R 5N6	Freight Platform Lift-B	Weld Assessment Required
74432	270 STRASBURG RD	KITCHENER	N2E 3M6	Vertical Pltfn Lift-C	Weld Assessment Required
69839	255 KING ST N	WATERLOO	N2J 4V2	Vertical Pltfn Lift-C	Weld Assessment Required
72088	660 GLEN FORREST BLVD	WATERLOO	N2L 4K2	Vertical Pltfn Lift-C	Weld Assessment Required
68665	R R 3	PERTH	N5Y 4V9	Passenger Elevator	Weld Assessment Required
68666	2379 LAKE SHORE BLVD W	ETOBICOKE	N5Y 4V9	Passenger Elevator	Weld Assessment Required
69919	700 CHRISTINA ST N	SARNIA	N7V 3C2	Passenger Elevator	Weld Assessment Required
71508	3100 HOWARD AVE	WINDSOR	N8X 3Y8	Vertical Pltfn Lift-C	Weld Assessment Required
70667	PLACER DOME CANADA LTD	SOUTH PORCUPINE	P0N 1H0		Weld Assessment Required
73742	HIGHWAY 614	MANITOUWADGE	P0T 2C0	Vertical Pltfn Lift-C	Weld Assessment Required
65347	MINE RD	BALMERTOWN	P0V 1C0	Vertical Pltfn Lift-C	Weld Assessment Required
73454	33 KING WILLIAM ST	HUNTSVILLE	P1H	Passenger Elevator	Weld Assessment Required
64857	216 MATHESON ST S	KENORA	P9N 1V2		Weld Assessment Required

CONFIDENTIAL



Elevating and Amusement Devices Safety Division	Ref. No.: 223/ 08	Rev. No.: 1
DIRECTOR'S SAFETY ORDER	Date: February 1, 2008	Date: March 4, 2008

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000,*
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices) made under the
*Technical Standards and Safety Act, 2000***

Subject: Inspection of structural welds on elevating devices manufactured by Uni-Tech Elevator & Lift Inc. or Liftech Elevator Co.
Sent to: All Elevator Contractors, Mechanics, and Owners of affected devices

The Director, Elevating Devices Ontario Regulation 209/01 pursuant to his authority under subsection 14.(1) of the *Technical Standards & Safety Act, 2000* hereby orders the following:

1. ORDER

- 1.1.** No later than November 1st, 2008, all owners of elevating devices manufactured by Uni-Tech Elevator & Lift Inc. or Liftech Elevator Co. shall,
- have the integrity of the structural welds of these elevating devices assessed;
 - where necessary have welds repaired or modified; and
 - utilize registered elevating device maintenance contractors to facilitate in the inspection and subsequent reporting requirements.
- Note: A list of the affected devices is attached for reference.
- 1.2.** If you are an **owner** of an installation manufactured by Uni-Tech elevator & Lift Inc. or Liftech Elevator Co. and the device is not on the attached list of affected devices, you are required to,
- contact this office with details of the installation by fax (416) 251-7525 or email eddesignsubmittal@tssa.org; and
 - fulfill the requirements of this Safety Order.
- 1.3.** If you are a **maintenance contractor** of an installation manufactured by Uni-Tech elevator & Lift Inc. or Liftech Elevator Co. and the device is not on the attached list of affected devices, you are required to,
- contact this office with details of the installation by fax (416) 251-7525 or email eddesignsubmittal@tssa.org; and
 - provide a copy of this Director's Safety Order to the owner for their action.
- 1.4.** All structural welds shall be non-destructively tested (visual inspection) by a Canadian Welding Bureau (CWB) certified welding inspector. A list of certified companies or individual welding inspectors can be found on the CWB web site at <http://www.cwbgroup.org/>.

- 1.5. If an installation has received confirmation of weld integrity or has previously undergone the necessary assessment of welds and passed, a copy of the report or a letter confirming this activity in the form of a notice of notification (Minor B) shall be forwarded by the owner or contractor to this office by fax to (416) 251-7525 or by email to eddesignsubmittal@tssa.org.
- 1.6. In the event that there are any indications of weld cracks, weld failures or welds that are identified as deficient the owner or contractor shall,
- immediately remove the lift from service;
 - notify the Director as per subsection 35 of Ontario Regulation 209/01 via fax to (416) 251-7525 or by email to eddesignsubmittal@tssa.org and include the installation number and nature of the defect; and
 - arrange for the repair or replacement of welds by a certified welder in accordance to subsection 3.2 of the Elevating Devices Code Adoption Document.
- 1.7. Where welds are repaired, contractors shall,
- submit to TSSA a Minor B notification;
 - include the name of the CWB certified welder or company;
 - include a copy of the CWB certified weld inspectors report; and
 - be permitted to return the device to service (no site inspection required).
- 1.8. Where welds are modified, contractors shall,
- submit to TSSA a Minor A alteration;
 - include the name of the CWB certified welder or company;
 - include a copy of the CWB certified weld inspectors report;
 - include weld drawings;
 - be permitted to return the device to service; and
 - arrange for a special inspection by a TSSA inspector not later than 60 days from the date of the completion of the alteration.
- 1.9. This Safety Order is effective immediately. If you are a maintenance contractor and the required work does not constitute a part of your maintenance contract, and you cannot obtain authorization from the elevator owner to complete this Safety Order by the November 1st, 2008 deadline you shall notify this office immediately and indicate the installation numbers of the relevant elevators.

2. INSTRUCTIONS

- 2.1. All inspections, tests, repairs and alterations shall be performed under the supervision of an elevator mechanic as per subsection 24.(1) of the Ontario Regulations 209/01.
- 2.2. All welding of a steel structure on an elevating device shall conform to the requirements of CSA Standard W59-03, Welded Steel Construction (Metal Arc Welding).
- 2.3. Structural welds are considered to be those critical welds whose failure could cause an unsafe or hazardous condition. Welds to be inspected shall include, but not be limited to, areas such as the hydraulic jack and support assembly, cross head, car frame and structural uprights, etc.
- 2.4. The contractor who completes a Minor A alteration shall arrange for a “special inspection” to be carried out not later than 60 days from the date of the completion of the alteration. The registered design submission shall be available at the time of the special inspection.

- 2.5 As a reminder any person who carries out an inspection shall ensure that the elevating device is in a safe operating condition and shall take all steps and reasonable precautions in the circumstances to ensure that the parts and functions will remain in a safe operating condition until the next scheduled inspection and examination in accordance to subsection 32.(4) of the Ontario Regulations 209/01.
- 2.6 It shall be the responsibility of the owner to engage the contractor for the safe removal of every elevating device (which they own) from service that does not comply with this Order by November 1st, 2008.
- 2.7 Detail drawings of the welds can be obtained from the manufacturer.

Uni-Tech Elevator and Lift Inc.
751 McKay Road, Unit #5
Pickering, Ontario
L1W 3C7
Phone: (905) 686-8342 / (800) 670-7416
Fax: (905) 686-8111

3. BACKGROUND

- 3.1. The Technical Standard & Safety Authority (TSSA) was made aware of several defective structural welds on elevating devices manufactured by Uni-Tech Elevator & Lift Inc. or Liftech Elevator Co. Upon further investigation it was discovered that the structural welds were not installed in accordance to the requirements of W47.1-03 Certification of Companies for Fusion Welding of Steel.

4. NOTES

- a) The attached table of device installations has been corrected in Revision 1.
- b) No further action is required for devices identified as Complete (Assessed / Submitted) or Dismantled.



Roland Hadaller, Director, Ontario Regulations 209/01(Elevating Devices) made under the *Technical Standards and Safety Act, 2000*

This Order has been developed in consultation with the Elevating Devices Advisory Council.

Installation Number	Device Address	Device City	Device-PC	Status
				Weld Assessment Required
				No Authorization from Owner for Weld Assessment
				Assessment Complete - Not Submitted
				Complete (Assessed - Submitted)
Dismantled				
Shut Down				
69076	R R 2 HIGHWAY 7	SHARBOT LAKE	K0K 2P0	Weld Assessment Required
68102	HWY 35	COBOCONK	K0M 1K0	Weld Assessment Required
66164	35 WYCHWOOD CR	FENELON FALLS	K0M 1N0	Weld Assessment Required
85021	1171 KENASTON RD	OTTAWA	K1B 3N9	Weld Assessment Required
67868	400 ALBERT ST	OTTAWA	K1R 5B2	Weld Assessment Required
72820	391 GLADSTONE AVE	OTTAWA	K2P 0Y9	Weld Assessment Required
68108	R R 3	PERTH	K7H 3C5	Weld Assessment Required
69103	324 JOHN ST N	ARNPRIOR	K7S 2P6	Weld Assessment Required
69104	324 JOHN ST N	ARNPRIOR	K7S 2P6	Weld Assessment Required
64341	HARDER DR & AVONDALE RD	BELLEVILLE	K8N 5B2	Dismantled
76177	76 ROBINSON ST	PETERBOROUGH	K9H 1E8	Weld Assessment Required
76178	76 ROBINSON ST	PETERBOROUGH	K9H 1E8	Weld Assessment Required
81814	550 ERSKINE AVE	PETERBOROUGH	K9J 5T4	Weld Assessment Required
60242	377 KENT ST W	LINDSAY	K9V 3S1	Dismantled
77534	260 KENT ST	LINDSAY	K9V 4R2	Weld Assessment Required
77537	260 KENT ST	LINDSAY	K9V 4R2	Weld Assessment Required
77541	260 KENT ST	LINDSAY	K9V 4R2	Weld Assessment Required
77871	6 PARKSIDE ST	MINDEN	K9V 4S7	Weld Assessment Required
77872	8 JAMES ST	OMEMEE	K9V 4S7	Weld Assessment Required
76179	200 ALBERT ST	LINDSAY	K9V 5R6	Weld Assessment Required
64340	BROCK ST	UXBRIDGE	L0C 1K0	Weld Assessment Required
69169	2 NOLAN RD	TOTTENHAM	L0G 1W0	Dismantled
70109	1315 RIVER RD	WASAGA BEACH	L0L 2P0	Weld Assessment Required
77092	1 NIAGARA ON THE GREEN BLVD	NIAGARA ON THE LAKE	L0S 1J0	Weld Assessment Required
73317	191 CHURCH ST	BOWMANVILLE	L1C 1T8	Weld Assessment Required
79965	350 LONGWORTH	BOWMANVILLE	L1C 5J5	Weld Assessment Required
78943	75 MEADOWGLADE	COURTICE	L1H	Weld Assessment Required
69143	700 STEVENSON RD N	OSHAWA	L1J 5P5	Weld Assessment Required
69144	700 STEVENSON RD N	OSHAWA	L1J 5P5	Weld Assessment Required
69429	1610 CHAMPLAIN AVE	WHITBY	L1N 6A7	Weld Assessment Required
84109	1702 TRICONT AVE	WHITBY	L1N 7C3	Weld Assessment Required
65697	20 FOREST HEIGHTS ST	WHITBY	L1R 1T5	Weld Assessment Required
68105	95 WALLER ST	WHITBY	L1R 1Z7	Weld Assessment Required
64579	1000 DRYDEN BLVD	WHITBY	L1R 2A2	Weld Assessment Required
65309	1020 DRYDEN BLVD	WHITBY	L1R 2A2	Weld Assessment Required
68104	95 CHURCH ST N	AJAX	L1S 6A9	Weld Assessment Required
72091	25 SULLIVAN DR	AJAX	L1T 3L3	Weld Assessment Required
66163	15 BENNETT AVE	AJAX	L1T 3P1	Weld Assessment Required
66266	910 MCKAY RD	PICKERING	L1W 3Y7	Weld Assessment Required
79964	190 CHURCH ST	ST CATHARINES	L2R 3E9	Weld Assessment Required
65179	191 CARLTON ST	ST CATHARINES	L2R 7P4	Weld Assessment Required
71023	240 THOROLD RD	WELLAND	L3C 3W2	Weld Assessment Required
69428	261 ONTARIO ST	GRIMSBY	L3M 5J2	Weld Assessment Required
75346	730 COCHRANE DR	MARKHAM	L3R 8E1	Weld Assessment Required
66368	525 HIGHGLEN AVE	MARKHAM	L3S 3L5	Weld Assessment Required
84498	61 RUSSEL JARVIS DR	MARKHAM	L3S 4B1	Complete (Assessed - Submitted)
80331	399 ELSON STREET	MARKHAM	L3S 4R8	Complete (Assessed - Submitted)
77638	300 COMMERCE VALLEY DR E	MARKHAM	L3T	Weld Assessment Required
82957	161 SAWMILL VALLEY DR	NEWMARKET	L3X	Complete (Assessed - Submitted)
74950	715 KINGSMERE AVE	NEWMARKET	L3X 1L4	Complete (Assessed - Submitted)
69170	480 KEITH AVE	NEWMARKET	L3X 1V5	Complete (Assessed - Submitted)
75782	200 CLEARMEADOW BLVD	NEWMARKET	L3X 2E4	Complete (Assessed - Submitted)
72674	40 HURON HEIGHTS DR	NEWMARKET	L3Y 3J9	Weld Assessment Required
73183	330 BURFORD ST	NEWMARKET	L3Y 6L1	Weld Assessment Required
39759	17440 YONGE ST	NEWMARKET	L3Y 6Y9	Weld Assessment Required
71747	345 HARRY WALKER PKWY	NEWMARKET	L3Y 8P6	Weld Assessment Required
71748	345 HARRY WALKER PKWY	NEWMARKET	L3Y 8P6	Weld Assessment Required
72995	300 GLAD PARK AVE	STOUFFVILLE	L4A 1E5	Complete (Assessed - Submitted)
72675	183 BRAMBLE CRES	STOUFFVILLE	L4A 7Z1	Weld Assessment Required
64492	124 BLACKMORE AV	RICHMOND HILL	L4B 2B1	Weld Assessment Required

Installation Number	Device Address	Device City	Device-PC	Status
				Weld Assessment Required
				No Authorization from Owner for Weld Assessment
				Assessment Complete - Not Submitted
				Complete (Assessed - Submitted)
				Dismantled
Shut Down				
73316	121 LARRATT STREET	RICHMOND HILL	L4C 0E6	Complete (Assessed - Submitted)
67969	500 MAJOR MACKENZIE DR E	RICHMOND HILL	L4C 1J2	Weld Assessment Required
74408	118 HILLSVIEW DR	RICHMOND HILL	L4C 1T2	Weld Assessment Required
75676	400 MILL ST	RICHMOND HILL	L4C 4B9	Complete (Assessed - Submitted)
75677	400 MILL ST	RICHMOND HILL	L4C 4B9	Weld Assessment Required
74844	6 SCOTT DR	RICHMOND HILL	L4C 6V6	Weld Assessment Required
82955	121 ROLLINGHILL RD	RICHMOND HILL	L4E 4L2	Complete (Assessed - Submitted)
84497	195 SILVER MAPLE DR	RICHMOND HILL	L4E 4Z1	Complete (Assessed - Submitted)
73792	39 DUNNING AVE	AURORA	L4G 1A2	Weld Assessment Required
73793	330 INDUSTRIAL PKY N	AURORA	L4G 4C3	Weld Assessment Required
74947	120 AURORA HEIGHTS DR	AURORA	L4G 6C4	Complete (Assessed - Submitted)
75746	415 STONE RD	AURORA	L4G 6Z5	Weld Assessment Required
84490	171 MARIA ANTONIA RD	WOODBIDGE	L4H	Weld Assessment Required
81862	366 MULLEN DR	THORNHILL	L4J 2P3	Complete (Assessed - Submitted)
81863	366 MULLEN DR	THORNHILL	L4J 2P3	Weld Assessment Required
64844	65 BROWNIDGE DR	THORNHILL	L4J 7R8	Weld Assessment Required
75675	8881 MARTIN GROVE RD	WOODBIDGE	L4L	Complete (Assessed - Submitted)
72996	86 GAMBLE ST	WOODBIDGE	L4L 4R2	Complete (Assessed - Submitted)
74948	250 CORONATION ST	WOODBIDGE	L4L 6H3	Complete (Assessed - Submitted)
74949	140 GREENPARK BLVD	WOODBIDGE	L4L 6Z6	Complete (Assessed - Submitted)
75781	250 BLUE WILLOW	VAUGHAN	L4L 9E1	Complete (Assessed - Submitted)
78941	180 FARMSTEAD ROAD	RICHMOND HILL	L4S	Complete (Assessed - Submitted)
74673	35 SQUIRE DR	RICHMOND HILL	L4S 1C6	Complete (Assessed - Submitted)
80333	180 ALAMO HEIGHTS DR	RICHMOND HILL	L4S 2P3	Complete (Assessed - Submitted)
64046	4120 DIXIE RD	MISSISSAUGA	L4W 4V8	Weld Assessment Required
76408	2350 HURONTARIO ST S	MISSISSAUGA	L5B 1N1	Weld Assessment Required
76411	2350 HURONTARIO ST S	MISSISSAUGA	L5B 1N1	Weld Assessment Required
74663	309 RATHBURN RD W	MISSISSAUGA	L5B 4C1	Weld Assessment Required
75112	450 HILLCREST AVE	MISSISSAUGA	L5B 4J3	Weld Assessment Required
65047	1576 DUNDAS ST W	MISSISSAUGA	L5C 1E5	Weld Assessment Required
73720	2266 COUNCIL RING RD	MISSISSAUGA	L5L 1C1	Weld Assessment Required
63942	3215 THORNCREST DR	MISSISSAUGA	L5L 4K7	Weld Assessment Required
64491	3240 GARTHWOOD RD	MISSISSAUGA	L5L 5A3	Weld Assessment Required
77584	2200 EGLINTON AV W	MISSISSAUGA	L5M 2N1	Weld Assessment Required
63928	1715 WILLOW WAY	MISSISSAUGA	L5M 3W5	Weld Assessment Required
82956	1830 MEADOWVALE BLVD	MISSISSAUGA	L5N	Weld Assessment Required
83598	1830 MEADOWVALE BLVD	MISSISSAUGA	L5N	Weld Assessment Required
68103	6234 OSPREY BLVD	MISSISSAUGA	L5N 3X4	Weld Assessment Required
65023	3700 TRELAWNY CIR	MISSISSAUGA	L5N 5J7	Weld Assessment Required
66655	3420 TRELAWNY CIR	MISSISSAUGA	L5N 6N6	Weld Assessment Required
77170	5100 SALISHAN CIRCLE	MISSISSAUGA	L5N 7Z1	Weld Assessment Required
77172	1455 SAMUELSON CIRCLE	MISSISSAUGA	L5N 7Z2	Weld Assessment Required
66708	50 BRISTOL RD W	MISSISSAUGA	L5R 3K3	Weld Assessment Required
77358	5735 WHITEHORN AVE	MISSISSAUGA	L5V	Weld Assessment Required
73314	1075 SWINBOURNE DRIVE	MISSISSAUGA	L5V 1B9	Weld Assessment Required
73638	5187 FALLINGBROOK DR	MISSISSAUGA	L5V 1N7	Weld Assessment Required
73778	79 AVRO RD	MAPLE	L6A 1Y3	Weld Assessment Required
75783	155 MELVILLE AVENUE	MAPLE	L6A 1Y9	Complete (Assessed - Submitted)
73315	251 MELVILLE AVENUE	MAPLE	L6A 1Z1	Complete (Assessed - Submitted)
74953	230 HAWKER RD	MAPLE	L6A 2R2	Complete (Assessed - Submitted)
76074	400 ST JOAN OF ARC AVE	VAUGHAN	L6A 2S8	Complete (Assessed - Submitted)
72885	230 CALVERT RD	MARKHAM	L6C 1T5	Complete (Assessed - Submitted)
76076	130 CASTLEMORE AVE	MARKHAM	L6C 2P9	Complete (Assessed - Submitted)
80335	168 STONEBRIDGE DRIVE	MARKHAM	L6C 2Z8	Complete (Assessed - Submitted)
80334	171 MINGAY AVENUE	MARKHAM	L6E 1H8	Complete (Assessed - Submitted)
67178	1280 BRAESIDE DR	OAKVILLE	L6J 2A4	Weld Assessment Required
78419	2912 WESTOAK TRAIL	OAKVILLE	L6M 3S1	Weld Assessment Required
72089	35 BLACK OAK DR	BRAMPTON	L6R 1B9	Weld Assessment Required
73744	25 MOUNTAINBERRY RD	BRAMPTON	L6R 1J3	Weld Assessment Required
77171	28 RED RIVER DR	BRAMPTON	L6R 2H9	Weld Assessment Required

Installation Number	Device Address	Device City	Device-PC	Status
				Weld Assessment Required
				No Authorization from Owner for Weld Assessment
				Assessment Complete - Not Submitted
				Complete (Assessed - Submitted)
Dismantled				
Shut Down				
81860	450 FERNFOREST DR	BRAMPTON	L6R 2P7	Weld Assessment Required
81865	450 FERNFOREST DR	BRAMPTON	L6R 2P7	Weld Assessment Required
77091	285 GREAT LAKES DR	BRAMPTON	L6R 2R8	Weld Assessment Required
76085	2 HEATH DR	BRAMPTON	L6S 1E6	Weld Assessment Required
63467	7945 BRAMALEA RD	BRAMPTON	L6T 4J9	Weld Assessment Required
73348	20 UNION STREET	BRAMPTON	L6V 1R2	Weld Assessment Required
73349	20 UNION STREET	BRAMPTON	L6V 1R2	Weld Assessment Required
63927	15 FINCHAM AVE	BRAMPTON	L6X 3V2	Weld Assessment Required
72090	121 ROYAL ORCHARD DR	BRAMPTON	L6X 4K9	Weld Assessment Required
75473	50 LADORE DR	BRAMPTON	L6Y 1V5	Weld Assessment Required
76075	103 MALTA AVE	BRAMPTON	L6Y 4C8	Weld Assessment Required
73718	60 STERRITT DR	BRAMPTON	L6Y 5B6	Weld Assessment Required
80296	83 MCCRIMMON DRIVE	BRAMPTON	L7A 2Z3	Weld Assessment Required
80330	83 MCCRIMMON DRIVE	BRAMPTON	L7A 2Z3	Weld Assessment Required
81884	61 ALLAN RD	BOLTON	L7E 1P7	Weld Assessment Required
75113	299 LANDSBRIDGE ST	BOLTON	L7E 2K4	Weld Assessment Required
77916	221 GUELPH ST	GEORGETOWN	L7G 4A8	Weld Assessment Required
74691	2 DUNCAN DR	GEORGETOWN	L7G 4L7	Weld Assessment Required
74823	5205 NEW ST	BURLINGTON	L7L 1V3	Weld Assessment Required
74822	200 KENWOOD AVE	BURLINGTON	L7L 4L8	Weld Assessment Required
78417	5070 DRYDEN AVE	BURLINGTON	L7L 6G8	Weld Assessment Required
61553	3230 FAIRVIEW ST	BURLINGTON	L7N 3H5	Weld Assessment Required
69369	1182 NORTH SHORE BLVD	BURLINGTON	L7R 3Z9	Dismantled
75747	127 GRAYS RD	STONEY CREEK	L8E 1V6	Weld Assessment Required
37109	1089 BARTON ST E	HAMILTON	L8H 2V2	Weld Assessment Required
71068	135 FOREST AVE	HAMILTON	L8N 1X6	Weld Assessment Required
70646	39 THIRD AVE S	UXBRIDGE	L9P 1K5	Dismantled
75757	2274 OLD LESLIE ST	NORTH YORK	M0M 1A1	Weld Assessment Required
76746	2274 OLD LESLIE ST	NORTH YORK	M0M 1A1	Weld Assessment Required
64755	61 CANMORE BLVD	SCARBOROUGH	M1C 3T7	Weld Assessment Required
75334	4698 KINGSTON RD	SCARBOROUGH	M1E 2P9	Weld Assessment Required
73743	61 HOLMFIRTH TERR	SCARBOROUGH	M1G 1G8	Weld Assessment Required
74012	61 HOLMFIRTH TERR	SCARBOROUGH	M1G 1G8	Weld Assessment Required
74011	15 LUELLA ST	SCARBOROUGH	M1J 3P2	Weld Assessment Required
73808	110 BYNG AVE	TORONTO	M1L 3P1	Weld Assessment Required
70856	725 WARDEN AVE	SCARBOROUGH	M1L 4R7	Dismantled
76330	2447 KINGSTON RD	SCARBOROUGH	M1N 1V4	Weld Assessment Required
61503	130 FUNDY BAY BLVD	SCARBOROUGH	M1W 3G1	Weld Assessment Required
39291	1019 SHEPPARD AVE E	WILLOWDALE	M2K 1C2	Dismantled
73294	85 CHURCH AV	TORONTO	M2N 6X6	Weld Assessment Required
73705	68 ROOKFORD RD	NORTH YORK	M2R 3A7	Weld Assessment Required
73205	55 GATEWAY BLVD	NORTH YORK	M8C 1B4	Weld Assessment Required
74946	200 WILMINGTON AVE	DOWNSVIEW	M3H 5J8	Weld Assessment Required
78420	88 POND ST	TORONTO	M3J 1P3	Weld Assessment Required
80369	4700 KEELE ST	TORONTO	M3J 1P3	Weld Assessment Required
63466	21 DON VALLEY PKWY	TORONTO	M4M 1B6	Weld Assessment Required
67730	851 MOUNT PLEASANT RD	TORONTO	M4P 2L5	Weld Assessment Required
39783	50 GOULD ST	TORONTO	M5B 1E8	Weld Assessment Required
72000	170 JARVIS ST	TORONTO	M6B 2B7	Weld Assessment Required
72744	1717 AVENUE ROAD	NORTH YORK	M5M 3Y5	Weld Assessment Required
70590	7 BERRYMAN ST	TORONTO	M5R 1M7	Weld Assessment Required
76073	70 D'ARCY ST	TORONTO	M5T 1K1	Weld Assessment Required
70060	224 RICHMOND ST W	TORONTO	M5V 1V6	Weld Assessment Required
37158	2451 DUFFERIN ST	TORONTO	M6B 3P6	Weld Assessment Required
73794	101 ENGLEMOUNT AVE	NORTH YORK	M6B 4L5	Weld Assessment Required
77503	2189 DUFFERIN ST	TORONTO	M6E 3R9	Weld Assessment Required
66538	66 DUFFERIN PARK AVE	TORONTO	M6H 1J6	Weld Assessment Required
60282	93 MARGUERETTA ST	TORONTO	M6H 3S4	Weld Assessment Required
82790	1566 DUNDAS ST W	TORONTO	M6K 1T8	Weld Assessment Required
67995	70 BROOKHAVEN DR	NORTH YORK	M6M 4N8	Weld Assessment Required

Installation Number	Device Address	Device City	Device-PC	Status
				Weld Assessment Required
				No Authorization from Owner for Weld Assessment
				Assessment Complete - Not Submitted
				Complete (Assessed - Submitted)
Dismantled				
Shut Down				
74359	100 SIDNEY BELSEY CRES	TORONTO	M6M 5H6	Weld Assessment Required
79568	125 EVELYN CRES	TORONTO	M6P 3E3	Weld Assessment Required
79570	125 EVELYN CRES	TORONTO	M6P 3E3	Weld Assessment Required
79600	125 EVELYN CRES	TORONTO	M6P 3E3	Weld Assessment Required
75472	1900 LAKESHORE BLVD W	TORONTO	M6S 1A1	Weld Assessment Required
68126	2379 LAKE SHORE BLVD W	ETOBICOKE	M8V 1B7	Weld Assessment Required
66400	86 MONTGOMERY RD	ETOBICOKE	M9A 3N5	Weld Assessment Required
75333	2 HIGH MEADOW PLACE	TORONTO	M9L 2Z5	Weld Assessment Required
71574	3395 WESTON RD	NORTH YORK	M9M 2V9	Weld Assessment Required
85141	1 WARRENDALE CRT	TORONTO	M9V 1P9	Weld Assessment Required
64302	77 BELFIELD RD	ETOBICOKE	M9W 1G6	Weld Assessment Required
73164	2625D WESTON RD	TORONTO	M9W 3W2	Dismantled
73260	225 CLAIRVILLE DRIVE	REXDALE	M9W 6K9	Weld Assessment Required
85885	745 CHIEFSWOOD RD	OSHWOKEN	N0A 1M0	Weld Assessment Required
69978	79 MARIA ST	TAVISTOCK	N0B 2R0	Weld Assessment Required
69979	79 MARIA ST	TAVISTOCK	N0B 2R0	Weld Assessment Required
71555	21 MCGIVERN ST	WALKERTON	N0G 2V0	Weld Assessment Required
71556	21 MCGIVERN ST	WALKERTON	N0G 2V0	Weld Assessment Required
70841	2452 GIDEON DR	DELAWARE	N0L 4E0	Weld Assessment Required
69700	RIDGETOWN COLLEGE	RIDGETOWN	N0P 2C0	Weld Assessment Required
69701	RIDGETOWN COLLEGE	RIDGETOWN	N0P 2C0	Weld Assessment Required
69702	RIDGETOWN COLLEGE	RIDGETOWN	N0P 2C0	Weld Assessment Required
80573	200 GORDON ST	GUELPH	N1G 1K1	Weld Assessment Required
69257	43 MCGILVRAY ST	GUELPH	N1G 2W1	Weld Assessment Required
74821	670 WILLOW RD	GUELPH	N1H 8K2	Weld Assessment Required
74824	670 WILLOW RD	GUELPH	N1H 8K2	Weld Assessment Required
37767	75 DUNDAS ST	CAMBRIDGE	N1R 5N6	Weld Assessment Required
74432	270 STRASBURG RD	KITCHENER	N2E 3M6	Weld Assessment Required
69839	255 KING ST N	WATERLOO	N2J 4V2	Weld Assessment Required
72088	660 GLEN FORREST BLVD	WATERLOO	N2L 4K2	Weld Assessment Required
68665	1090 Highbury Ave	LONDON	N5Y 4V9	Weld Assessment Required
68666	1090 Highbury Ave	LONDON	N5Y 4V9	Weld Assessment Required
70773	780 DULANEY DR	LONDON	N6C 3W4	Dismantled
69919	700 CHRISTINA ST N	SARNIA	N7V 3C2	Weld Assessment Required
71508	3100 HOWARD AVE	WINDSOR	N8X 3Y8	Weld Assessment Required
70667	PLACER DOME CANADA LTD	SOUTH PORCUPINE	P0N 1H0	Weld Assessment Required
73742	HIGHWAY 614	MANITOUWADGE	P0T 2C0	Weld Assessment Required
65347	MINE RD	BALMERTOWN	P0V 1C0	Weld Assessment Required
73454	33 KING WILLIAM ST	HUNTSVILLE	P1H	Weld Assessment Required



Elevating and Amusement Devices Safety Division	Ref. No.: 224 / 07	Rev. No.:
DIRECTOR'S GUIDELINES	Date: June 25, 2007	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT* 2000,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices) made under the
*Technical Standards and Safety Act, 2000***

- and -

**Section 24 of the Elevating Devices Code Adoption Document
dated June 1, 2001, as amended**

Subject: Periodic Engineering Review and Assessment of Above-surface Passenger Ropeways
(Aging Ski Lifts)
Sent to: **All Passenger Ropeway Contractors and Consultants**

1. DIRECTOR'S GUIDELINES

1.1 General

1. All persons operating above-surface passenger ropeways in Ontario shall comply with Section 24 of the Elevating Devices Code Adoption Document, adopted in the Elevating Devices Regulation, and in accordance with the requirements stated in this Guideline.

1.2 Frequency for Periodic Engineering Review and Assessment

1. All above-surface passenger ropeways shall be subject to periodic engineering assessment as follows:
 - a) **first or initial engineering assessment:**
 - maximum 22,500 hours of operation,
 - without exceeding 15 years from the initial start-up;
("initial start-up" means first permitted for use anywhere.)
 - b) **second engineering assessment:**
 - maximum 37,500 hours of operation,
 - without exceeding 25 years;
 - c) **third engineering assessment:**
 - maximum 45,000 hours of operation,
 - without exceeding 30 years;
 - d) **subsequent periodic engineering assessments:**
 - at every interval of 7,500 hours of operation,
 - without exceeding 5 years after the third engineering assessment.
2. Despite the frequency stated in 1.2.1, reporting due dates may deviate somewhat as permitted by the Director. Where such deviations occur the next reporting date noted on the registered copy of the Periodic Engineering Review and Assessment report will apply. For a current listing of device

installation numbers and their next scheduled frequency for the Periodic Engineering Review and Assessment, contact TSSA or obtain a copy of the **Aging Ski-Lift Periodic Engineering Review and Assessment Schedule** from the web site, www.tssa.org.

It is expected that by the end of 2007 all above-surface passenger ropeways made on and prior to 1992 will have submitted an engineering review and assessment as originally scheduled in Table # 1 of Director's Order 169/02.

1.3 **Periodic Engineering Review and Assessment of Above-surface Passenger Ropeways**

1. The Periodic Engineering Review and Assessment shall identify passenger ropeway parts that are affected by:
 - a) **fatigue and vibration** of both **moving components** and **fixed structures** causing cracks and fractures of connections and parent metal; and
 - b) **environmental factors** like snow, ice, rain, temperature, humidity, and dust causing corrosion and deterioration of structural, mechanical and electrical components, and shall determine the extent of their deterioration, and evaluate their security at time intervals established in section 1.2 of this bulletin.
2. The following sources shall be used as guides to appraise the security of the passenger ropeway parts:
 - a) **The latest version of CSA Standard Z98**
The latest version of CSA Standard Z98 shall be used as a guide to establish criteria to assess safety of parts impacted by an aging ropeway. Those parts of passenger ropeway installation requiring alteration, replacement and/or repair shall meet the requirements of the latest adopted version of CSA Standard Z98, and
 - b) **The requirements by Manufacturer/Designer of the Passenger Ropeway**
The requirements by Manufacturer/Designer of the Passenger Ropeway shall be used as a guide for those parts of the passenger ropeway installation requiring alteration, replacement and/or repair shall meet the requirements established by the manufacturer/designer of the passenger ropeway. Where manufacturer or designer is no longer in business, an engineer shall establish requirements for alteration, replacement and/or repair, and
 - c) **Non-Destructive Testing of Critical Components**
Non-Destructive Testing of Critical Components shall be undertaken for all above-surface passenger ropeway critical components. Any components to be tested that are not directly accessible shall be disassembled. The method of non-destructive, acceptance/rejection criteria, and other tolerances shall be in accordance with the specification specified by the manufacturer/designer. Where manufacturer or designer is no longer in business, an engineer shall perform that action.

Critical components are those parts of ropeway, the failure of which would immediately jeopardize passenger safety. The list of critical components of an above-surface ropeway shall include, but not be limited to the following:

MOVING COMPONENTS:

- Carrier, including grip, hanger, chair, or gondola;
- Drive and return sheaves including shafts;
- Line sheave assemblies and their attachments;
- Tension systems and their attachments; and
- Wire rope, including haul ropes, track ropes and counterweight ropes

FIXED STRUCTURES

- Drive terminal structure;
- Return terminal structure;
- Towers and cross-arms; and
- Catwalks

Identification of every critical component of an above-surface passenger ropeway shall be based on its definition and requirements contained in the latest adopted version of CSA Standard Z98 – Passenger Ropeways. According to the CSA Standard Z98, critical component means “ a component or system of components, the failure of which would immediately jeopardize passenger safety”.

All critical components shall be tabulated with identification, including the type of non-destructive testing conducted, rejection/acceptance criteria, findings, and recommendations. The recommendations may contain establishing program of inspection/maintenance, steps to repair, replace, and/or alter the critical components.

1.4 **Reporting Engineering Review and Assessment Findings**

1. A professional engineer shall certify the engineering review/assessment report. The report shall address:
 - a) guidelines established in Section 1.3; and
 - b) the requirements to correct all non-compliance related findings to achieve compliance with the requirements of Section 24 of the CAD under the Elevating Devices Regulation.
2. An owner shall attest that he/she will comply with the requirements of the certified engineering review and assessment report to achieve compliance with the requirements of Section 24 of the CAD under the Elevating Devices Regulation.

1.5 **Compliance**

1. The engineering review and assessment report prepared in accordance with the requirements of Section 1.4 of this Guideline shall be submitted to the Technical Standards and Safety Authority (TSSA) for its registration.
2. Prior to registering the report, TSSA shall evaluate an engineering and assessment report for its technical integrity and conformance to the requirements of this Guideline. The report shall be registered without conditions, registered with conditions or rejected with explanation.
3. An owner of an above-surface passenger ropeway shall not operate the ropeway prior to the registration of the certified engineering review and assessment report.
4. The requirements of Directors Order 169/02-r1 have been superseded with the release of this Guideline.

2. BACKGROUND

2.1 **General**

The Elevating Devices Regulation made under the *Technical Standards and Safety Act (TSS Act)* adopts the Elevating Devices Code Adoption Document (CAD). This Guideline is prepared in keeping with the Section 24 of the CAD that reads:

“Every above-surface passenger ropeway shall be subjected periodically to a complete engineering review and assessment to ensure its continued operational safety in accordance with guidelines set by the director.”

Section 24 of the CAD is intended to deal with the impact on the safety of above-surface passenger ropeway as a result of its age. Even though a ropeway is maintained to keep up with its original or current design/manufacturing specification during its life, over the period of time the following elements will still weaken parts of the ropeway that can fail accidentally:

- Fatigue and vibration of both moving components and fixed structures causing cracks and fractures of connections and parent metal; and
- Environmental factors like snow, ice, rain, temperature, humidity, and dust causing corrosion and deterioration of structural, mechanical and electrical components.

Above-surface passenger ropeways include those ropeways on which passengers are transported in rope-supported carriers and are not in contact with the ground or snow surface. Chair lifts, gondola lifts, and reversible ropeways are above-surface passenger ropeways.

Periodic engineering review and assessment of every above-surface passenger ropeway will ensure continued compliance with the TSS Act, Elevating Devices Regulation, and CAD, which in turn is intended to ensure continued operational safety.

This Guideline expounds upon the following criteria to meet the intent of Section 24:

- frequency for periodic engineering review and assessments;
- guidelines for periodic engineering review and assessment of above-surface passenger ropeways;
- reporting engineering review and assessment findings; and
- compliance.

This Guideline has been developed in consultation with the TSSA Ski Industry Advisory Technical Committee.

3. INSTRUCTIONS

1. Those recommendations of the engineering review and assessment report requiring major and minor alterations of the above-surface passenger ropeway shall be dealt in accordance with the requirements of the Technical Standards and Safety Act, Elevating Devices Ontario Regulation, and Code Adoption Document. All alterations may be submitted as one design submission. The design submission for major alteration(s) must be registered and inspected prior to the operation of the ropeway.
2. The fee prescribed in the fee schedule for evaluation of engineering review and assessment report will be charged to the submitter of the report.
3. Four copies of the engineering review and assessment report shall be submitted to TSSA. Upon registration of the report, TSSA will retain two copies (one for TSSA engineering & one for TSSA inspection), distribute one copy to the owner and one to the engineer.
4. Where the latest adopted version of CSA Standard Z98 – Passenger Ropeways and this Guideline requires action by a designer or manufacturer who is no longer in business, that action shall be performed by a professional engineer as defined in the Elevating Devices Regulation.
5. This Guideline establishes in-depth inspection and compliance requirements to ensure security of critical components of an above-surface passenger ropeway. In order to expedite registration of “Reporting Engineering Review and Assessment Findings” in accordance with Section 1.4 of this Guideline, it is critical that consistent “methodology” is applied to confirm compliance with this Guideline:

- Compile “as built” specification of the ropeway necessary to assess security of critical components of an above-surface passenger ropeway.
 - Identify critical components of an above-surface passenger ropeway subjected to fatigue, vibration, and environmental exposure for their inspection.
 - Prepare list of critical components and non-destructive testing methods to be applied for their inspection.
 - Where critical components to be inspected are not directly accessible, any disassembling required must be performed where deemed necessary.
 - Evaluate the findings of the inspection with a view to confirm the security of critical components.
 - Determine action (repair, replacement and/or alteration) taken or to be taken to secure the integrity of critical components.
6. Necessary non-destructive testing (NDT) may be spread (staggered) over a period not exceeding five years to assist planning for compliance with this Guideline in accordance with the “Frequency for Periodic Engineering Review and Assessment” established in Section 1.2.
7. The current “Periodic Engineering Review and Assessment” Report confirming compliance with this Guideline in keeping with the “Frequency for Periodic Engineering Review and Assessment” established in Section 1.2 shall be linked by reference to all previous “Periodic Engineering Review and Assessment” Report(s) for a specific passenger ropeway in order to justify and resolve the following conditions (where applicable):
- Next NDT cycle (other than Section 1.2 of this Director’s Order) for newly replaced parts identified in the previous “Periodic Engineering Review and Assessment” Report(s);
 - Compliance with all outstanding recommendations and conclusions identified in the previous “Periodic Engineering Review and Assessment” Report(s);
 - Compliance with “Notice of Registration of Design Submission with Conditions” attached to previous “Periodic Engineering Review and Assessment” Report(s) registered with the TSSA.
8. The current “Periodic Engineering Review and Assessment” Report shall be linked to previous (where applicable) “Periodic Engineering Review and Assessment” Reports for a specific passenger ropeway by referencing the design submission (DS) number listed under “Notice of Registration of Design Submission with Conditions” attached with the previous “Engineering Review and Assessment” Report registered with the TSSA.
9. This Guideline is not intended to replace any requirements contained in the latest adopted version of CSA Standard Z98 – Passenger Ropeways and Ontario Regulation.
10. This is a reminder that “Operation and Maintenance” requirements under Section 32 of the Ontario Regulation must be adhered at all times. When replacing parts of a ropeway, Section 32(5) of the Ontario Regulation applies. All work must be performed by qualified persons.

Roland Hadaller, P.Eng.,
 Director, Ontario Regulation 209/01(Elevating Devices) appointed under the *Technical Standards and Safety Act, 2000*,

This Guideline has been developed in consultation with the Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.: 225 / 07	Rev. No.:
Elevating Devices Code Adoption Document - Amendment	Date: July 16, 2007	Date:

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT*, 2000, S.O. 2000, c. 16 (the “Act”)

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Adoption of ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and
ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

Sent to: All Elevating Device Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD), as amended, published by the Technical Standards & Safety Authority is further amended as follows;

1.0 Change to Part III Elevators, Dumbwaiters, Escalators, Moving Walks, Material Lifts and Freight Platform lifts

Effective January 1, 2008, Section 6. (1) of the CAD is revoked and replaced by the following:

- 6.(1)(a) Every newly installed or altered elevator, dumbwaiter, escalator, moving walk, material lift, and freight platform lift shall conform to the requirements of;
- (1) ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators, and
 - (2) CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, except
 - (3) The requirements of (1) are adopted with the following modifications and clarifications:
 - (a) Requirements which are identified as applicable to “jurisdictions not enforcing NBCC” are not adopted, unless otherwise stated. *Note: NBCC means the National Building Code of Canada;*
 - (b) Requirements identified as applicable “in jurisdictions enforcing NBCC” are adopted;
 - (c) Any reference to the “building code” or to the National Building Code of Canada or “NBCC” in this definition and throughout the Code shall be deemed to refer to the Ontario Regulation 350/06 made under the Building Code Act 1992 or a later edition, commonly known as Ontario Building Code or OBC;

(d) Where there is inconsistency between the Regulations and this Code (e.g. Rule 2.15.9.2 related to the car-platform guards or aprons) the Regulation prevails, unless otherwise specified in this Amendment;

(e) Requirement 2.14.1.8.3 is not adopted;

Note: Glass and mirror shall conform to the requirements of 2.14.1.8.1, 2.14.1.8.2, 2.14.1.8.4. Type 3C film reinforced silver mirror is not permitted for use in elevators. The standard CAN/CGSB-12.5 was revoked by Canadian General Standards Board in May 2004.

(f) Requirement 2.27.3.2.2 is adopted as written, with the following clarification;

Where the building fire alarm system is identified to activate Phase 1, fire alarm initiating devices and not pull stations shall be used to initiate either the designated or alternate level recall.

Note: Fire alarm initiating devices are referred to as fire detectors (smoke or heat) in the NBCC to ensure initiation of recall by automatic means only;

(g) Requirement 2.27.3.2.4(a) is revoked and the following substituted:

2.27.3.2.4(a) the activation of a fire alarm initiating device specified in 2.27.3.2.1(a) or 2.27.3.2.2(a) that is located at the designated level, shall cause all elevators serving that level to be recalled to an alternate level, unless Phase I Emergency Recall is in effect.

Note 2.27.3.2.2(a) was 2.27.3.2.2(b) in the code.

(h) Requirement 5.2.1.16.5 - Maximum Rise limitation for LULA elevators is not adopted;

(i) Section 5.3 – Private Residence Elevators, is not adopted;

(j) Section 5.4 – Private Residence Inclined Elevators, is not adopted;

(k) Section 5.7 – Special Purpose Personnel Elevators, is not adopted;

(l) Section 5.8 – Shipboard Elevators, is not adopted;

(m) Section 5.9 – Mine Elevators, is not adopted;

(n) “Elevators used for construction” shall have the same meaning as “temporary elevator” used in Ontario Regulation 209/01;

(o) Requirement 5.10.1.9.5(a) is revoked and the following substituted:

5.10.1.9.5(a) For elevators with car speeds of up to 1.75 m/s (350 ft/min), hoistway doors or gates shall be provided with devices that comply with the requirements of 5.10.1.9.5(b);

(p) “Material lift – type B” shall mean the same as the term “freight platform lift – type B” used in Ontario Regulation 209/01;

(q) Sections 7.8 to 7.11 – Dumbwaiters and Material Lifts with Automatic Transfer Devices, that meet the requirements as specified in item 2(3)(j) of the Elevating Device Regulation 209/01, are not adopted;

- (r) The requirements of 8.6.1 through 8.6.11 are not adopted, except:
 - i) 8.6.3.2 Replacement of a Single Suspension Rope
 - ii) 8.6.8.2 Step-to-Skirt Clearance
 - iii) 8.6.9.2.1 Comb replacement requirements
 - iv) 8.6.11.5 Escalator or Moving Walk Startupare adopted;
- (s) Requirements of elevator maintenance are adopted in accordance with 8.6.12 of the B44-07 Code, and are supplemented with:
 - i) the additional maintenance requirements identified in CSA Standard B44.2-07, which are adopted and,
 - ii) The 'Replacement of specific elevator components' from CAN/CSA B44-04 Safety Code for Elevators, sections c8.6.12.5.4 to c8.6.12.5.7 are adopted;
- (t) Maintenance records shall be kept in the log book, in accordance with 8.6.12.2.5 of the Code and Section 34 of Ontario Elevating Device Regulation 209/01;
- (u) Section 8.7 – Alterations, is adopted, with modifications and enforcement procedures as specified in Director's Order #226/07 including its latest revision;
- (v) Section 8.8 – Welding, is not adopted. The requirements in Section 3 of the Elevating Devices Code Adoption Document apply;
- (w) Section 8.9 – Code Data Plate, is adopted except that the requirements shall not apply to the existing devices installed or altered to versions of the B44 Code earlier than B44-00;
- (x) Section 8.11 - Periodic Inspection and Test Requirements, are not adopted, except for 8.11.2.2.6, and;
- (y) Requirement 8.11.2.2.6 Firefighters' Emergency Operation is revoked and the following substituted:
 - 8.11.2.2.6 Firefighters' Emergency Operation.
 - (a) Firefighters' emergency operation shall be tested to determine conformance with the applicable requirements.
 - (b) All elevators provided with firefighters' emergency operation shall be subjected annually to Phase I recall by use of the key switch, and a minimum of one-floor operation on Phase II. Deficiencies shall be corrected.
 - (c) A record of findings shall be available to elevator personnel and the authority having jurisdiction. *Note: Conformance to these test requirements are the responsibility of the building owners as part of the elevator maintenance.*

6.(1)(b) Where conformance with the prescriptive requirements in 6.1(a) are not strictly met, conformance may be demonstrated through compliance to the requirements in ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

2. INSTRUCTIONS

- (a) In the case of existing elevators, escalators, etc., the application of any newly adopted code is restricted to the sections covering the inspection, testing, maintenance and use of the elevating devices, unless otherwise required by the Elevating Device Regulation 209/01.
- (b) The ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and the CSA B44.2 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators are available from the Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, ON, L4W 5N6, telephone 1-800-463-6727, 416 747 4044 or online www.shopcsa.ca.
- (c) Since the Elevating Device Regulation 209/01 requires all mechanics to have full knowledge of the codes applicable to the elevating devices on which they are assigned to work, we would expect that the mechanics involved in the construction, installation and maintenance of elevators, escalators, etc. will obtain a copy of the Regulation and applicable codes and be familiar with the subject standard.
- (d) Electronic copies of the
- *Technical Standards and Safety Act, 2000*, and
 - Elevating Devices Regulation 209/01
- can be obtained free of charge from Government of Ontario web site <http://www.e-laws.gov.on.ca/> or from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>.
- (e) Electronic copies of the
- Elevating Devices Code Adoption Document
- can be obtained free of charge from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>

3. NOTES

- 3.1 Contractors are urged to study **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators** carefully to ensure conformance by the specified date.

Major revisions/additions in CSA-B44-07 include:

- A new rule to require fire emergency operation on **all** automatic elevators (2.27.3),
- Type 3C Silver Mirrored glass is no longer permitted for use in elevators,
- Seismic requirements (section 8.4) now apply in Canada,
- The recommended maintenance intervals in Appendix J are deleted from this code and are published as a separate standard – CSA Standard B44.2-07,
- Alteration requirements are further clarified in Director's Order 226/07.
- Recognition of the new Performance Base Code A17.7/B44.7,
- Machine room-less elevator requirements are now included in the body of the code,
- A new rule to allow the use of SIL rated electrical protective devices (2.26.4.3.2),
- A new rule to allow the use of certified SIL-rated software systems to solely remove the power from the motor and brake (2.26.9.4) and
- Revised requirements for motor control using AC and DC drives (2.26.9.5 & 2.26.9.6),

- 3.2 **Conformance with the above requirements as well as all other requirements in ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators shall be demonstrated in the design submission or at the initial inspection, as applicable.**

4. The Effective Date of said amendments are as follows:

4.1 DESIGN SUBMISSIONS received by TSSA for registration on or after the **1st day of January 2008**, shall conform to the requirements of **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators**.

- a) Compliance with this edition of the **ASME A17.1-2007/CSA B44-07** shall be stated in the design submission, in item 192 of the specification sheet or in a separate affidavit.
- b) Submissions received between October 1, 2007 and December 31, 2007 may comply with the codes adopted for this time period or **ASME A17.1-2007/CSA B44-07**.
- c) Any designs submitted before October 1, 2007 based on the **ASME A17.1-2007/CSA B44-07** code must be accompanied by a request for variance.
- d) Pre-applications submitted in advance of the implementation of **ASME A17.1-2007/CSA B44-07**, in order to conform to an earlier edition of B44 shall be followed up with a complete submission by **July 1, 2008**.

4.2 The MAINTENANCE REQUIREMENTS of 8.6. of **ASME A17.1-2007/CSA B44-07**, and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks as adopted above, are effective as of the **1st day of January 2008**.

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*.

This Order has been developed in consultation with the Elevating Devices Advisory Council



Elevating and Amusement Devices Safety Division	Ref. No.: 225 / 07	Rev. No.: 1
Elevating Devices Code Adoption Document - Amendment	Date: July 16, 2007	Date: November 30, 2007

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000, S.O. 2000, c. 16* (the “Act”)

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Adoption of ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and
ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

Sent to: All Elevating Device Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD), as amended, published by the Technical Standards & Safety Authority is further amended as follows;

1.0 Change to Part III Elevators, Dumbwaiters, Escalators, Moving Walks, Material Lifts and Freight Platform lifts

Effective January 1, 2008, Section 6. (1) of the CAD is revoked and replaced by the following:

- 6.(1)(a) Every newly installed or altered elevator, dumbwaiter, escalator, moving walk, material lift, and freight platform lift shall conform to the requirements of;
- (1) ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators, and
 - (2) CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, except
 - (3) The requirements of (1) are adopted with the following modifications and clarifications:
 - (a) Requirements which are identified as applicable to “jurisdictions not enforcing NBCC” are not adopted, unless otherwise stated. *Note: NBCC means the National Building Code of Canada;*
 - (b) Requirements identified as applicable “in jurisdictions enforcing NBCC” are adopted;
 - (c) Any reference to the “building code” or to the National Building Code of Canada or “NBCC” in this definition and throughout the Code shall be deemed to refer to the Ontario Regulation 350/06 made under the Building Code Act 1992, as amended, commonly known as Ontario Building Code or OBC;

- (d) Where there is inconsistency between the Regulations and this Code (e.g. Rule 2.15.9.2 related to the car-platform guards or aprons) the Regulation prevails, unless otherwise specified in this Amendment;
- (e) Requirement 2.2.2.7 is not adopted;
- (f) Requirement 2.14.1.8.3 is not adopted;

Note: Glass and mirror shall conform to the requirements of 2.14.1.8.1, 2.14.1.8.2, 2.14.1.8.4. Type 3C film reinforced silver mirror is not permitted for use in elevators. The standard CAN/CGSB-12.5 was revoked by Canadian General Standards Board in May 2004.

- (g) Requirement 2.14.2.1 is revoked and the following substituted;

2.14.2.1 Material for Car Enclosures, Enclosure Linings, and Floor Coverings. All materials exposed to the car interior and the hoistway shall be metal, glass, or shall conform to 2.14.2.1.1 through 2.14.2.1.4.

2.14.2.1.1 is not adopted.

2.14.2.1.2 In jurisdictions enforcing the NBCC:

(a) materials in their end-use configuration, other than those covered by 2.14.2.1.2(b), 2.14.2.1.3 and 2.14.2.1.4 shall conform to the following requirements, based on the tests conducted in accordance with the requirements of ASTM E 84, ANSI/UL 723 or CAN/ULC-S102:

- (1) flame spread rating of 0 to 75
- (2) smoke development of 0 to 450

(b) where the building is designated by the building code as a high building, materials in their end-use configuration shall have a flame spread rating for walls and ceiling of 0 to 25, with smoke development of 0 to 100, based on the test conducted in accordance with the requirements of CAN/ULC-S102.

(c) floor surfaces shall have a flame spread rating of 0 to 300 with smoke development of 0 to 300, based on the test conducted in accordance with the requirements of CAN/ULC-S102.2.

2.14.2.1.3

Padded protective linings, for temporary use in passenger cars during the handling of freight, shall be of materials conforming to either 2.14.2.1.1(a) or (b), or 2.14.2.1.2(a), whichever is applicable. The protective lining shall clear the floor by not less than 100 mm (4 in.).

2.14.2.1.4 Handrails, operating devices, ventilating devices, signal fixtures, audio and visual communication devices, and their housings are not required to conform to 2.14.2.1.

- (h) Requirement 2.27.3 is revoked and the following substituted:
2.27.3 Firefighters' Emergency Operation: Automatic Elevators
Firefighters' Emergency Operation shall apply to all automatic elevators except where the hoistway or a portion thereof is not required to be fire-resistive construction (see 2.1.1.1), the rise does not exceed 2 000 mm (80 in.), and the hoistway does not penetrate a floor.
NOTE (2.27.3): When the structure (building, etc.) is located in a flood hazard area, the alternate and designated levels (see 8.12.1) should be above the base flood elevation.
Note: Independent of the requirements in NBCC, Phase I recall shall include the requirements of both 2.27.3.1 and 2.27.3.2.

- (i) Requirement 2.27.3.2.2 is revoked and the following substituted;

2.27.3.2.2 Smoke detectors or fire detectors (fire alarm initiating devices), shall be installed, to provide outputs from the fire alarm system to the elevator controller(s) to automatically initiate Phase I Emergency Recall Operation, and shall be located

(a) at each floor served by the elevator

(b) in the associated elevator machine room, control space, or control room.

The installation of these detectors shall be in conformance with the requirements of the NBCC.

NOTE (2.27.3.2.2): Fire alarm initiating devices are referred to as fire detectors in the NBCC.

Where the building fire alarm system is identified to activate Phase 1, fire alarm initiating devices and not pull stations shall be used to initiate either the designated or alternate level recall.

Note: Fire alarm initiating devices are referred to as fire detectors (smoke or heat) in the NBCC to ensure initiation of recall by automatic means only;

- (j) Requirement 2.27.3.2.4(a) is revoked and the following substituted:

2.27.3.2.4(a) the activation of a fire alarm initiating device specified in 2.27.3.2.1(a) or 2.27.3.2.2(a) that is located at the designated level, shall cause all elevators serving that level to be recalled to an alternate level, unless Phase I Emergency Recall is in effect.

Note 2.27.3.2.2(a) was 2.27.3.2.2(b) in the code;

- (k) Requirement 5.2.1.16.5 – Maximum Rise limitation for LULA elevators is not adopted;

- (l) Sections 5.3 and 8.7.5.3 – Private Residence Elevators, are not adopted;

- (m) Sections 5.4 and 8.7.5.4 – Private Residence Inclined Elevators, are not adopted;

- (n) Sections 5.7 and 8.7.5.7 – Special Purpose Personnel Elevators, are not adopted;

- (o) Sections 5.8 and 8.7.5.8 – Shipboard Elevators, are not adopted;

- (p) Sections 5.9 and 8.7.5.9 – Mine Elevators, are not adopted;

- (q) “Elevators used for construction” shall have the same meaning as “temporary elevator” used in Ontario Regulation 209/01;

- (r) Requirement 5.10.1.9.5(a) is revoked and the following substituted:

5.10.1.9.5(a) For elevators with car speeds of up to 1.75 m/s (350 ft/min), hoistway doors or gates shall be provided with devices that comply with the requirements of 5.10.1.9.5(b);

- (s) “Material lift – type B” shall mean the same as the term “freight platform lift – type B” used in Ontario Regulation 209/01;

- (t) Sections 7.8 to 7.11 – Dumbwaiters and Material Lifts with Automatic Transfer Devices, that meet the requirements as specified in item 2(3)(j) of the Elevating Device Regulation 209/01, are not adopted;

- (u) The requirements of 8.6.1 through 8.6.11 are not adopted, except:

i) 8.6.3.2 Replacement of a Single Suspension Rope

ii) 8.6.8.2 Step-to-Skirt Clearance

iii) 8.6.8.4.1 & 8.6.9.2.1 Comb replacement requirements

- iv) 8.6.8.4.2 & 8.6.9.2.2 Comb teeth meshing requirements
 - v) 8.6.11.5 Escalator or Moving Walk Startup are adopted
 - vi) 8.6.11.6 Operating Instructions for Means Specified in 2.7.5.1.1 or 2.7.5.2.1
 - vii) 8.6.11.7 Egress and Reentry Procedure From Working Areas on 2.7.5.1.3 or 2.7.5.2.3
 - viii) 8.6.11.8 Operating Instructions for Retractable Platforms;
- (v) Requirements of elevator maintenance are adopted in accordance with 8.6.12 of the B44-07 Code, and are supplemented with:
- i) the additional maintenance requirements identified in CSA Standard B44.2-07, which are adopted and,
 - ii) The 'Replacement of specific elevator components' from CAN/CSA B44-04 Safety Code for Elevators, sections c8.6.12.5.4 to c8.6.12.5.7 are adopted;
- (w) Maintenance records shall be kept in the log book, in accordance with 8.6.12.2.5 of the Code and Section 34 of Ontario Elevating Device Regulation 209/01;
- (x) Section 8.7 – Alterations, is adopted, with modifications and enforcement procedures as specified below and in Director's Order #226/07 including it's latest revision;
- (y) Requirement 8.7.2.27.4(a) is revoked and the following substituted:
- 8.7.2.27.4 Controllers
- (a) Where a controller is installed as part of an alteration, it shall conform to 2.25, 2.26.1.4, 2.26.1.5, 2.26.4 through 2.26.9, and where required by NBCC at the time of the original installation to 2.27.2 through 2.27.8.
- (z) Requirement 8.7.2.27.6(g) is revoked and the following substituted:
- (g) Emergency operation and signaling devices where required by NBCC at the time of the original installation shall be provided and shall conform to 2.27.
- (aa) Section 8.7.7.3 Material Lifts and Dumbwaiters with Automatic Transfer Devices, is not adopted, except 8.7.7.3.2 is adopted;
- (bb) Section 8.8 – Welding, is not adopted. The requirements in Section 3 of the Elevating Devices Code Adoption Document apply;
- (cc) Section 8.9 – Code Data Plate, is adopted except that the requirements shall not apply to the existing devices installed or altered to versions of the B44 Code earlier than B44-00;
- (dd) Section 8.11 - Periodic Inspection and Test Requirements, are not adopted, except for 8.11.2.2.6, and;
- (ee) Requirement 8.11.2.2.6 Firefighters' Emergency Operation is revoked and the following substituted:
- 8.11.2.2.6 Firefighters' Emergency Operation.
- (a) Firefighters' emergency operation shall be tested to determine conformance with the applicable requirements.
 - (b) All elevators provided with firefighters' emergency operation shall be subjected annually to Phase I recall by use of the key switch, and a minimum of one-floor operation on Phase II. Deficiencies shall be corrected.

- (c) A record of findings shall be available to elevator personnel and the authority having jurisdiction. *Note: Conformance to these test requirements are the responsibility of the building owners as part of the elevator maintenance.*

6.(1)(b) Where conformance with the prescriptive requirements in 6.1(a) are not strictly met, conformance may be demonstrated through compliance to the requirements in ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

2. INSTRUCTIONS

- (a) In the case of existing elevators, escalators, etc., the application of any newly adopted code is restricted to the sections covering the inspection, testing, maintenance and use of the elevating devices, unless otherwise required by the Elevating Device Regulation 209/01.
- (b) The ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and the CSA B44.2 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators are available from the Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, ON, L4W 5N6, telephone 1-800-463-6727, 416 747 4044 or online www.shopcsa.ca.
- (c) Since the Elevating Device Regulation 209/01 requires all mechanics to have full knowledge of the codes applicable to the elevating devices on which they are assigned to work, we would expect that the mechanics involved in the construction, installation and maintenance of elevators, escalators, etc. will obtain a copy of the Regulation and applicable codes and be familiar with the subject standard.
- (d) Electronic copies of the
- *Technical Standards and Safety Act, 2000*, and
 - Elevating Devices Regulation 209/01
- can be obtained free of charge from Government of Ontario web site <http://www.e-laws.gov.on.ca/> or from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>.
- (e) Electronic copies of the
- Elevating Devices Code Adoption Document
- can be obtained free of charge from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>

3. NOTES

3.1 Contractors are urged to study **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators** carefully to ensure conformance by the specified date.

Major revisions/additions in CSA-B44-07 include:

- A new rule to require automatic fire emergency operation on **all** automatic elevators* (2.27.3),
- Type 3C Silver Mirrored glass is no longer permitted for use in elevators,
- Flame and smoke development ratings for cab walls and ceilings in low buildings are more stringent,
- Seismic requirements (section 8.4) now apply in Canada,
- The recommended maintenance intervals in Appendix J are deleted from this code and are published as a separate standard – CSA Standard B44.2-07,
- Alteration requirements are further clarified in Director's Order 226/07.
- Recognition of the new Performance Base Code A17.7/B44.7,
- Machine room-less elevator requirements are now included in the body of the code,
- A new rule to allow the use of SIL rated electrical protective devices (2.26.4.3.2),

- A new rule to allow the use of certified SIL-rated software systems to solely remove the power from the motor and brake (2.26.9.4) and
- Revised requirements for motor control using AC and DC drives (2.26.9.5 & 2.26.9.6),

* The rationale from the B44 committee, confirms that the intent of the technical revision to section 2.27.3 found in the B44-07 code, was to require mandatory automatic recall and phase 2 operation on all automatic elevators.

3.2 Conformance with the above requirements as well as all other requirements in ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators shall be demonstrated in the design submission or at the initial inspection, as applicable.

4. The Effective Date of said amendments are as follows:

4.1 DESIGN SUBMISSIONS received by TSSA for registration on or after the **1st day of January 2008**, shall conform to the requirements of **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators**.

- Compliance with this edition of the **ASME A17.1-2007/CSA B44-07** shall be stated in the design submission, in item 192 of the specification sheet or in a separate affidavit.
- Submissions received between October 1, 2007 and December 31, 2007 may comply with the codes adopted for this time period or **ASME A17.1-2007/CSA B44-07**.
- Any designs submitted before October 1, 2007 based on the **ASME A17.1-2007/CSA B44-07** code must be accompanied by a request for variance.
- Pre-applications submitted in advance of the implementation of **ASME A17.1-2007/CSA B44-07**, in order to conform to an earlier edition of B44 shall be followed up with a complete submission by **July 1, 2008**.

4.2 The MAINTENANCE REQUIREMENTS of 8.6. of **ASME A17.1-2007/CSA B44-07**, and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks as adopted above, are effective as of the **1st day of January 2008**.

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*.

This Order has been developed in consultation with the Elevating Devices Advisory Council



Elevating and Amusement Devices Safety Division	Ref. No.: 225 / 07	Rev. No.: 2
Elevating Devices Code Adoption Document - Amendment	Date: July 16, 2007	Date: May 13, 2008

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT*, 2000, S.O. 2000, c. 16 (the “Act”)

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Adoption of ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and
ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

Sent to: All Elevating Device Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD), as amended, published by the Technical Standards & Safety Authority is further amended as follows;

1.0 Change to Part III Elevators, Dumbwaiters, Escalators, Moving Walks, Material Lifts and Freight Platform lifts

Effective January 1, 2008, Section 6. (1) of the CAD is revoked and replaced by the following:

- 6.(1)(a) Every newly installed or altered elevator, dumbwaiter, escalator, moving walk, material lift, and freight platform lift shall conform to the requirements of;
- (1) ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators, and
 - (2) CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, except
 - (3) The requirements of (1) are adopted with the following modifications and clarifications:
 - (a) Requirements which are identified as applicable to “jurisdictions not enforcing NBCC” are not adopted, unless otherwise stated. *Note: NBCC means the National Building Code of Canada;*
 - (b) Requirements identified as applicable “in jurisdictions enforcing NBCC” are adopted;
 - (c) Any reference to the “building code” or to the National Building Code of Canada or “NBCC” in this definition and throughout the Code shall be deemed to refer to the Ontario Regulation 350/06 made under the Building Code Act 1992, as amended, commonly known as Ontario Building Code or OBC;

- (d) Where there is inconsistency between the Regulations and this Code (e.g. Rule 2.15.9.2 related to the car-platform guards or aprons) the Regulation prevails, unless otherwise specified in this Amendment;
- (e) Requirement 2.2.2.7 is not adopted;
- (f) Requirement 2.14.1.8.3 is not adopted;

Note: Glass and mirror shall conform to the requirements of 2.14.1.8.1, 2.14.1.8.2, 2.14.1.8.4. Type 3C film reinforced silver mirror is not permitted for use in elevators. The standard CAN/CGSB-12.5 was revoked by Canadian General Standards Board in May 2004.

- (g) Requirement 2.14.2.1 is revoked and the following substituted;

2.14.2.1 Material for Car Enclosures, Enclosure Linings, and Floor Coverings. All materials exposed to the car interior and the hoistway shall be metal, glass, or shall conform to 2.14.2.1.1 through 2.14.2.1.4.

2.14.2.1.1 is not adopted.

2.14.2.1.2 In jurisdictions enforcing the NBCC:

(a) materials in their end-use configuration, other than those covered by 2.14.2.1.2(b), 2.14.2.1.3 and 2.14.2.1.4 shall conform to the following requirements, based on the tests conducted in accordance with the requirements of ASTM E 84, ANSI/UL 723 or CAN/ULC-S102:

- (1) flame spread rating of 0 to 75
- (2) smoke development of 0 to 450

(b) floor surfaces shall have a flame spread rating of 0 to 300, based on the test conducted in accordance with the requirements of CAN/ULC-S102.2

(c) where the building is designated by the building code as a high building:

- (1) materials in their end-use configuration shall have a flame spread rating for walls and ceiling of 0 to 25 with smoke development of 0 to 100 based on the test conducted in accordance with the requirements of CAN/ULC-S102.
- (2) floor surfaces shall have a flame spread rating of 0 to 300 with smoke development of 0 to 300 based on the test conducted in accordance with the requirements of CAN/ULC-S102.2.

2.14.2.1.3

Padded protective linings, for temporary use in passenger cars during the handling of freight, shall be of materials conforming to either 2.14.2.1.1(a) or (b), or 2.14.2.1.2(a), whichever is applicable. The protective lining shall clear the floor by not less than 100 mm (4 in.).

2.14.2.1.4 Handrails, operating devices, ventilating devices, signal fixtures, audio and visual communication devices, and their housings are not required to conform to 2.14.2.1.

- (h) Requirement 2.27.3 is revoked and the following substituted:
2.27.3 Firefighters' Emergency Operation: Automatic Elevators
Firefighters' Emergency Operation shall apply to all automatic elevators except where the hoistway or a portion thereof is not required to be fire-resistive construction (see 2.1.1.1), the rise does not exceed 2 000 mm (80 in.), and the hoistway does not penetrate a floor.

NOTE (2.27.3): When the structure (building, etc.) is located in a flood hazard area, the alternate and designated levels (see 8.12.1) should be above the base flood elevation.

Note: Independent of the requirements in NBCC, Phase I recall shall include the requirements of both 2.27.3.1 and 2.27.3.2.

- (i) Requirement 2.27.3.2.2 is revoked and the following substituted;

2.27.3.2.2 Smoke detectors or fire detectors (fire alarm initiating devices), shall be installed, to provide outputs from the fire alarm system to the elevator controller(s) to automatically initiate Phase I Emergency Recall Operation, and shall be located

(a) at each floor served by the elevator

(b) in the associated elevator machine room, control space, or control room.

The installation of these detectors shall be in conformance with the requirements of the NBCC.

NOTE (2.27.3.2.2): Fire alarm initiating devices are referred to as fire detectors in the NBCC.

Where the building fire alarm system is identified to activate Phase 1, fire alarm initiating devices and not pull stations shall be used to initiate either the designated or alternate level recall.

Note: Fire alarm initiating devices are referred to as fire detectors (smoke or heat) in the NBCC to ensure initiation of recall by automatic means only;

- (j) Requirement 2.27.3.2.4(a) is revoked and the following substituted:

2.27.3.2.4(a) the activation of a fire alarm initiating device specified in 2.27.3.2.1(a) or 2.27.3.2.2(a) that is located at the designated level, shall cause all elevators serving that level to be recalled to an alternate level, unless Phase I Emergency Recall is in effect.

Note 2.27.3.2.2(a) was 2.27.3.2.2(b) in the code;

- (k) Requirement 5.2.1.16.5 - Maximum Rise limitation for LULA elevators is not adopted;
- (l) Sections 5.3 and 8.7.5.3 – Private Residence Elevators, are not adopted;
- (m) Sections 5.4 and 8.7.5.4 – Private Residence Inclined Elevators, are not adopted;
- (n) Sections 5.7 and 8.7.5.7 – Special Purpose Personnel Elevators, are not adopted;
- (o) Sections 5.8 and 8.7.5.8 – Shipboard Elevators, are not adopted;
- (p) Sections 5.9 and 8.7.5.9 – Mine Elevators, are not adopted;
- (q) “Elevators used for construction” shall have the same meaning as “temporary elevator” used in Ontario Regulation 209/01;
- (r) Requirement 5.10.1.9.5(a) is revoked and the following substituted:
5.10.1.9.5(a) For elevators with car speeds of up to 1.75 m/s (350 ft/min), hoistway doors or gates shall be provided with devices that comply with the requirements of 5.10.1.9.5(b);
- (s) “Material lift – type B” shall mean the same as the term “freight platform lift – type B” used in Ontario Regulation 209/01;
- (t) Sections 7.8 to 7.11 – Dumbwaiters and Material Lifts with Automatic Transfer Devices, that meet the requirements as specified in item 2(3)(j) of the Elevating Device Regulation 209/01, are not adopted;

- (u) The requirements of 8.6.1 through 8.6.11 are not adopted, except:
 - i) 8.6.3.2 Replacement of a Single Suspension Rope
 - ii) 8.6.8.2 Step-to-Skirt Clearance
 - iii) 8.6.8.4.1 & 8.6.9.2.1 Comb replacement requirements
 - iv) 8.6.8.4.2 & 8.6.9.2.2 Comb teeth meshing requirements
 - v) 8.6.11.5 Escalator or Moving Walk Startup are adopted
 - vi) 8.6.11.6 Operating Instructions for Means Specified in 2.7.5.1.1 or 2.7.5.2.1
 - vii) 8.6.11.7 Egress and Reentry Procedure From Working Areas on 2.7.5.1.3 or 2.7.5.2.3
 - viii) 8.6.11.8 Operating Instructions for Retractable Platforms;
- (v) Requirements of elevator maintenance are adopted in accordance with 8.6.12 of the B44-07 Code, and are supplemented with:
 - i) the additional maintenance requirements identified in CSA Standard B44.2-07, which are adopted and,
 - ii) The 'Replacement of specific elevator components' from CAN/CSA B44-04 Safety Code for Elevators, sections c8.6.12.5.4 to c8.6.12.5.7 are adopted;
- (w) Maintenance records shall be kept in the log book, in accordance with 8.6.12.2.5 of the Code and Section 34 of Ontario Elevating Device Regulation 209/01;
- (x) Section 8.7 – Alterations, is adopted, with modifications and enforcement procedures as specified below and in Director's Order #226/07 including it's latest revision;
- (y) Requirement 8.7.2.27.4(a) is revoked and the following substituted:
 - 8.7.2.27.4 Controllers
 - (a) Where a controller is installed as part of an alteration, it shall conform to 2.25, 2.26.1.4, 2.26.1.5, 2.26.4 through 2.26.9, and where required by NBCC at the time of the original installation to 2.27.2 through 2.27.8.
- (z) requirement 8.7.2.27.5 is revoked and the following substituted:

Where there is a change in the type of motion control, the installation shall conform to the following:

- (a) The protection of the hoistway landing openings shall conform to
 - (1) 2.11.1 except;
 - (a) existing entrance openings less than 2030mm in height or 800mm in width are permitted to be retained
 - (b) requirement 2.11.1.4
 - (2) 2.11.2 through 2.11.6, except 2.11.6.3
 - (3) 2.11.8, 2.11.9
 - (4) 2.11.11.8 for horizontally sliding center opening and single speed entrances
 - (5) 2.11.12.8,
 - (6) 2.12, except;
 - (a) requirement 2.12.2.4.3 to allow a minimum engagement of 6mm
 - (b) 2.12.4, 2.12.5 and
 - (7) 2.13.

- (b) Car enclosures and car doors or gates shall conform to 2.14, except that where existing car enclosures and/or car doors or gates are retained, conformance with the following requirements are not required:
- (1) requirements 2.14.1.3, 2.14.1.5.1,
 - (2) car top enclosures are not required to meet the design requirements of 2.14.1.6, but shall meet the loading requirements specified
 - (3) requirement 2.14.1.7.1 applies only to the extent the existing vertical clearances allow
 - (4) requirement 2.14.1.8, 2.14.1.9 and 2.14.1.10
 - (5) requirements 2.14.2.1, 2.14.2.3, through 2.14.2.6
 - (6) requirement 2.14.3
 - (7) requirements 2.14.4.2.5, 2.14.4.3, 2.14.4.5.1(c) and 2.14.4.6
 - (8) requirements 2.14.5.1, 2.14.5.6 through 2.14.5.8
 - (9) requirement 2.14.6.2.2 except 2.14.5 shall be as amended above
 - (10) requirements 2.14.7.1.3, 2.14.7.1.4 and 2.14.7.2 through 2.14.7.4
- (c) The car safety, the counterweight safety (where provided), and the governor shall conform to 2.17 and 2.18, except that
- (1) where the safety factors required by 2.17.12.1 cannot be ascertained, performance testing shall be accepted, and
 - (2) the pitch diameter of speed governor sheaves and tension sheaves are not required to conform to 2.18.7.
- (d) The capacity and loading shall conform to 2.16.8(e), (f), (g) and (h).
- (e) The terminal stopping devices shall conform to 2.25
- (f) The operating devices and control equipment shall conform to 2.26. The requirements of 2.26.4.2, 2.26.4.3, and 2.26.4.4 shall not apply to electrical equipment unchanged by the alteration.
- (g) In jurisdictions enforcing NBCC, emergency operation and signaling devices where required by NBCC shall be provided and shall conform to 2.27
- (h) Car overspeed protection and unintended movement protection shall conform to 2.19.
- (aa) Requirement 8.7.2.27.6(g) is revoked and the following substituted:
- (g) Emergency operation and signaling devices where required by NBCC at the time of the original installation shall be provided and shall conform to 2.27.
- (bb) Section 8.7.7.3 Material Lifts and Dumbwaiters with Automatic Transfer Devices, is not adopted, except 8.7.7.3.2 is adopted;
- (cc) Section 8.8 – Welding, is not adopted. The requirements in Section 3 of the Elevating Devices Code Adoption Document apply;

- (dd) Section 8.9 – Code Data Plate, is adopted except that the requirements shall not apply to the existing devices installed or altered to versions of the B44 Code earlier than B44-00;
- (ee) Section 8.11 - Periodic Inspection and Test Requirements, are not adopted, except for 8.11.2.2.6, and;
- (ff) Requirement 8.11.2.2.6 Firefighters’ Emergency Operation is revoked and the following substituted:

8.11.2.2.6 Firefighters’ Emergency Operation.

- (a) Firefighters’ emergency operation shall be tested to determine conformance with the applicable requirements.
- (b) All elevators provided with firefighters’ emergency operation shall be subjected annually to Phase I recall by use of the key switch, and a minimum of one-floor operation on Phase II. Deficiencies shall be corrected.
- (c) A record of findings shall be available to elevator personnel and the authority having jurisdiction. *Note: Conformance to these test requirements are the responsibility of the building owners as part of the elevator maintenance.*

(4) The requirements of 6.(1)(a)(2) are adopted with the following modifications and clarifications:

- (a) The requirements of B44.2-07 are applicable to all elevating devices covered in B44-07 as amended in 6.(1)(a)(3) above, and includes limited use/limited application elevators, material lifts and freight platform lifts.
- (b) Where monthly maintenance frequencies identified in B44.2-07 are extended,
 - i) the altered frequencies must taking into account the age and inherent quality of the equipment, the frequency and method of usage, and the recommendation(s) by either the original manufacturer, or manufacturer’s agent, or the maintaining contractor,
 - ii) the owner and maintenance contractor shall agree in writing to the altered frequencies,
 - iii) the log book shall either capture this agreement or make reference to another document where such an agreement is made,
 - iv) a copy of the altered frequency agreement shall be made available to TSSA upon request, and
 - v) the new maintenance frequencies shall not exceed three (3) months.

6.(1)(b) Where conformance with the prescriptive requirements in 6.1(a) are not strictly met, conformance may be demonstrated through compliance to the requirements in ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

2. INSTRUCTIONS

- (a) In the case of existing elevators, escalators, etc., the application of any newly adopted code is restricted to the sections covering the inspection, testing, maintenance and use of the elevating devices, unless otherwise required by the Elevating Device Regulation 209/01.
- (b) The ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and the CSA B44.2 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators are available from the Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, ON, L4W 5N6, telephone 1-800-463-6727, 416 747 4044 or online www.shopcsa.ca.

- (c) Since the Elevating Device Regulation 209/01 requires all mechanics to have full knowledge of the codes applicable to the elevating devices on which they are assigned to work, we would expect that the mechanics involved in the construction, installation and maintenance of elevators, escalators, etc. will obtain a copy of the Regulation and applicable codes and be familiar with the subject standard.
- (d) Electronic copies of the
- *Technical Standards and Safety Act, 2000*, and
 - Elevating Devices Regulation 209/01
- can be obtained free of charge from Government of Ontario web site <http://www.e-laws.gov.on.ca/> or from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>.
- (e) Electronic copies of the
- Elevating Devices Code Adoption Document
- can be obtained free of charge from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>

3. NOTES

- 3.1 Contractors are urged to study **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators** carefully to ensure conformance by the specified date.

Major revisions/additions in CSA-B44-07 include:

- A new rule to require automatic fire emergency operation on **all** automatic elevators* (2.27.3),
- Type 3C Silver Mirrored glass is no longer permitted for use in elevators,
- Flame and smoke development ratings for cab walls and ceilings in low buildings are more stringent,
- Seismic requirements (section 8.4) now apply in Canada,
- The recommended maintenance intervals in Appendix J are deleted from this code and are published as a separate standard – CSA Standard B44.2-07,
- Alteration requirements are further clarified in Director's Order 226/07.
- Recognition of the new Performance Base Code A17.7/B44.7,
- Machine room-less elevator requirements are now included in the body of the code,
- A new rule to allow the use of SIL rated electrical protective devices (2.26.4.3.2),
- A new rule to allow the use of certified SIL-rated software systems to solely remove the power from the motor and brake (2.26.9.4) and
- Revised requirements for motor control using AC and DC drives (2.26.9.5 & 2.26.9.6),

* The rationale from the B44 committee, confirms that the intent of the technical revision to section 2.27.3 found in the B44-07 code, was to require mandatory automatic recall and phase 2 operation on all automatic elevators.

- 3.2 **Conformance with the above requirements as well as all other requirements in ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators shall be demonstrated in the design submission or at the initial inspection, as applicable.**

- 3.3 Even though B44.2 establishes fixed maintenance frequencies, tasks which have historically required monthly maintenance are permitted to be extended if the requirements of 6.(1)(a)(4) are complied with, but in no case shall these frequencies extend beyond three months. Note: The permission to extend frequencies is based upon previous practice captured in Directors Order 99/92.

4. The Effective Date of said amendments are as follows:

4.1 DESIGN SUBMISSIONS received by TSSA for registration on or after the **1st day of January 2008**, shall conform to the requirements of **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators**.

- a) Compliance with this edition of the **ASME A17.1-2007/CSA B44-07** shall be stated in the design submission, in item 192 of the specification sheet or in a separate affidavit.
- b) Submissions received between October 1, 2007 and December 31, 2007 may comply with the codes adopted for this time period or **ASME A17.1-2007/CSA B44-07**.
- c) Any designs submitted before October 1, 2007 based on the **ASME A17.1-2007/CSA B44-07** code must be accompanied by a request for variance.
- d) Pre-applications submitted in advance of the implementation of **ASME A17.1-2007/CSA B44-07**, in order to conform to an earlier edition of B44 shall be followed up with a complete submission by **July 1, 2008**.

4.2 The MAINTENANCE REQUIREMENTS of 8.6. of **ASME A17.1-2007/CSA B44-07**, and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks as adopted above, are effective as of the **1st day of January 2008**.

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*.

This Order has been developed in consultation with the Elevating Devices Advisory Council



Elevating and Amusement Devices Safety Division	Ref. No.: 225 / 07	Rev. No.: 3
Elevating Devices Code Adoption Document - Amendment	Date: July 16, 2007	Date: March 2, 2009

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000, S.O. 2000, c. 16* (the “Act”)

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Adoption of ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and
ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

Sent to: All Elevating Device Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices), pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD), as amended, published by the Technical Standards & Safety Authority is further amended as follows;

1.0 Change to Part III Elevators, Dumbwaiters, Escalators, Moving Walks, Material Lifts and Freight Platform lifts

Effective immediately, Section 6.(1) of the CAD is revoked and replaced by the following:

- 6.(1)(a) Every elevator, dumbwaiter, escalator, moving walk, material lift, and freight platform lift shall conform to the requirements of:
- (1) ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators, and
 - (2) CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, except
 - (3) The requirements of (1) are adopted with the following modifications and clarifications:
 - (a) Requirements which are identified as applicable to “jurisdictions not enforcing NBCC” are not adopted, unless otherwise stated. *Note: NBCC means the National Building Code of Canada;*
 - (b) Requirements identified as applicable “in jurisdictions enforcing NBCC” are adopted;
 - (c) Any reference to the “building code” or to the National Building Code of Canada or “NBCC” in this definition and throughout the Code shall be deemed to refer to Ontario Regulation

350/06 made under the *Building Code Act, 1992*, as amended, commonly known as Ontario Building Code or OBC;

- (d) Where there is inconsistency between the Regulation and this Code (e.g. Rule 2.15.9.2 related to the car-platform guards or aprons) the Regulation prevails, unless otherwise specified in this Amendment;
- (e) Requirement 2.2.2.7 (restriction on sump pumps in pits) is not adopted;
- (f) Requirement 2.14.1.8.3 (3C film-reinforced mirror) is not adopted;

Note: Glass and mirror shall conform to the requirements of 2.14.1.8.1, 2.14.1.8.2, 2.14.1.8.4. Type 3C film-reinforced silver mirror is not permitted for use in elevators. The standard CAN/CGSB-12.5 was revoked by Canadian General Standards Board in May 2004.

- (g) Requirement 2.14.2.1 is revoked and the following substituted;

CAD 2.14.2.1 Material for Car Enclosures, Enclosure Linings, and Floor Coverings. *All materials exposed to the car interior and the hoistway shall be metal, glass, or shall conform to 2.14.2.1.1 through 2.14.2.1.4.*

2.14.2.1.1 is not adopted.

CAD 2.14.2.1.2 *In jurisdictions enforcing the NBCC:*

(a) materials in their end-use configuration, other than those covered by 2.14.2.1.2(b), 2.14.2.1.3 and 2.14.2.1.4 shall conform to the following requirements, based on the tests conducted in accordance with the requirements of ASTM E 84, ANSI/UL 723 or CAN/ULC-S102:

(1) flame spread rating of 0 to 75

(2) smoke development of 0 to 450

(b) floor surfaces shall have a flame spread rating of 0 to 300, based on the test conducted in accordance with the requirements of CAN/ULC-S102.2

(c) where the building is designated by the building code as a high building:

(1) materials in their end-use configuration shall have a flame spread rating for walls and ceiling of 0 to 25 with smoke development of 0 to 100 based on the test conducted in accordance with the requirements of CAN/ULC-S102.

(2) floor surfaces shall have a flame spread rating of 0 to 300 with smoke development of 0 to 300 based on the test conducted in accordance with the requirements of CAN/ULC-S102.2.

CAD 2.14.2.1.3

Padded protective linings, for temporary use in passenger cars during the handling of freight, shall be of materials conforming to 2.14.2.1.2(a). The protective lining shall clear the floor by not less than 100 mm (4 in.).

CAD 2.14.2.1.4 *Handrails, operating devices, ventilating devices, signal fixtures, audio and visual communication devices, and their housings are not required to conform to 2.14.2.1.*

- (h) Introduction to requirement 2.27.3 is revoked and the following introduction is substituted:

CAD 2.27.3 Firefighters' Emergency Operation: Automatic Elevators

Firefighters' Emergency Operation shall apply to all automatic elevators except where the hoistway or a portion thereof is not required to be fire-resistive construction (see 2.1.1.1), the rise does not exceed 2000 mm (80 in.), and the hoistway does not penetrate a floor.

NOTE (2.27.3): When the structure (building, etc.) is located in a flood hazard area, the alternate and designated levels (see 8.12.1) should be above the base flood elevation.

Note: Independent of the requirements in NBCC, Phase I recall shall include the requirements of both 2.27.3.1 and 2.27.3.2.

Note: Requirements 2.27.3.1 through 2.27.3.5 are adopted or adopted as amended below.

- (i) Requirement 2.27.3.2.2 is revoked and the following substituted;

CAD 2.27.3.2.2

(a) Smoke detectors or fire detectors (fire alarm initiating devices)¹ shall be installed to provide a signal, either directly or through the fire alarm system, to the elevator controller(s) to automatically initiate Phase I Emergency Recall Operation, and shall be located

(1) at each floor served by the elevator

(2) in the associated elevator machine room, control space, or control room.

(b) The installation of these detectors shall be in conformance with the requirements of the NBCC. Despite (a), fire detectors located outside the machine room, control space, or control room need not be provided within a floor area if the floor area is sprinklered and the sprinkler system is electrically supervised in conformance with NBCC.

(c) Where the building fire alarm system is identified to activate Phase I, pull stations shall not be used to initiate either the designated or alternate level recall².

NOTE:

¹ Fire alarm initiating devices are referred to as fire detectors (smoke or heat) in the NBCC

² To ensure initiation of recall by automatic means only.

- (j) Requirement 2.27.3.2.4(a) is revoked and the following substituted:

CAD 2.27.3.2.4(a) *the activation of a fire alarm initiating device specified in 2.27.3.2.1(a) or 2.27.3.2.2(a) that is located at the designated level, shall cause all elevators serving that level to be recalled to an alternate level, unless Phase I Emergency Recall is in effect.*

Note 2.27.3.2.2(a) was 2.27.3.2.2(b) in the code;

- (k) Requirement 5.2.1.16.5 - Maximum Rise limitation for LULA elevators is not adopted;
- (l) Sections 5.3 and 8.7.5.3 – Private Residence Elevators, are not adopted;
- (m) Sections 5.4 and 8.7.5.4 – Private Residence Inclined Elevators, are not adopted;
- (n) Sections 5.7 and 8.7.5.7 – Special Purpose Personnel Elevators, are not adopted;
- (o) Sections 5.8 and 8.7.5.8 – Shipboard Elevators, are not adopted;
- (p) Sections 5.9 and 8.7.5.9 – Mine Elevators, are not adopted;
- (q) “Elevators used for construction” shall have the same meaning as “temporary elevator” used in Ontario Regulation 209/01;

- (r) Requirement 5.10.1.9.5(a) is revoked and the following substituted:
- CAD 5.10.1.9.5(a)** For elevators with car speeds of up to 1.75 m/s (350 ft/min), hoistway doors or gates shall be provided with devices that comply with the requirements of 5.10.1.9.5(b);
- (s) “Material lift – type B” shall mean the same as the term “freight platform lift – type B” used in Ontario Regulation 209/01;
- (t) Sections 7.8 to 7.11 – Dumbwaiters and Material Lifts with Automatic Transfer Devices, that meet the requirements as specified in item 2(3)(j) of the Elevating Device Regulation 209/01, are not adopted;
- (u) The requirements of 8.6.1 through 8.6.11 are not adopted, except:
- i) 8.6.1.6.3(d) “*use of jumpers*”
 - ii) 8.6.3.2 Replacement of a Single Suspension Rope
 - iii) 8.6.8.2 Step-to-Skirt Clearance
 - iv) 8.6.8.4.1 & 8.6.9.2.1 Comb replacement requirements
 - v) 8.6.8.4.2 & 8.6.9.2.2 Comb teeth meshing requirements
 - vi) 8.6.11.5 Escalator or Moving Walk Startup are adopted
 - vii) 8.6.11.6 Operating Instructions for Means Specified in 2.7.5.1.1 or 2.7.5.2.1
 - viii) 8.6.11.7 Egress and Reentry Procedure From Working Areas on 2.7.5.1.3 or 2.7.5.2.3
 - ix) 8.6.11.8 Operating Instructions for Retractable Platforms;
- (v) Requirements of elevator maintenance are adopted in accordance with 8.6.12 of the B44-07 Code, and are supplemented with:
- i) the additional maintenance requirements identified in CSA Standard B44.2-07, which are adopted and,
 - ii) The ‘Replacement of specific elevator components’ from CAN/CSA B44-04 Safety Code for Elevators, sections c8.6.12.5.4 to c8.6.12.5.7 are adopted;
- (w) Maintenance records shall be kept in the log book, in accordance with 8.6.12.2.5 of the Code and Section 34 of Ontario Elevating Device Regulation 209/01;
- (x) Section 8.7 – Alterations, is adopted, with modifications and enforcement procedures as specified below and in Director’s Order #226/07 including its latest revision;
- (y) Requirement 8.7.2.27.4(a) is revoked and the following substituted:

CAD 8.7.2.27.4 Controllers

(a) Where a controller is installed as part of an alteration, it shall conform to 2.25, 2.26.1.4, 2.26.1.5, 2.26.4 through 2.26.9, and where

- (1) required by NBCC at the time of the original installation to 2.27.2 through 2.27.8, CAD 2.27.3 and the provisions of Director’s Order 226/07 as specified in subsection (x) above;
- (2) provided voluntarily shall conform to 2.27, CAD 2.27.3 and the provisions of Director’s Order 226/07 as specified in subsection (x) above.

- (z) Requirement 8.7.2.27.5 is revoked and the following substituted:

CAD 8.7.2.27.5 Change in Type of Motion Control

Where there is a change in the type of motion control, the installation shall conform to the following:

- (a) The protection of the hoistway landing openings shall conform to
- (1) 2.11.1 except;
 - (a) existing entrance openings less than 2030mm in height or 800mm in width are permitted to be retained
 - (b) requirement 2.11.1.4
 - (2) 2.11.2 through 2.11.6, except 2.11.6.3
 - (3) 2.11.8, 2.11.9
 - (4) 2.11.11.8 for horizontally sliding center opening and single speed entrances
 - (5) 2.11.12.8,
 - (6) 2.12, except;
 - (a) requirement 2.12.2.4.3 to allow a minimum engagement of 6mm
 - (b) 2.12.4, 2.12.5 and
 - (7) 2.13.
- (b) Car enclosures and car doors or gates shall conform to 2.14, except that where existing car enclosures and/or car doors or gates are retained, conformance with the following requirements is not required:
- (1) requirements 2.14.1.3, 2.14.1.5.1,
 - (2) car top enclosures are not required to meet the design requirements of 2.14.1.6, but shall meet the loading requirements specified
 - (3) requirement 2.14.1.7.1 applies only to the extent the existing vertical clearances allow
 - (4) requirement 2.14.1.8, 2.14.1.9 and 2.14.1.10
 - (5) requirements 2.14.2.1, 2.14.2.3, through 2.14.2.6
 - (6) requirement 2.14.3
 - (7) requirements 2.14.4.2.5, 2.14.4.3, 2.14.4.5.1(c) and 2.14.4.6
 - (8) requirements 2.14.5.1, 2.14.5.6 through 2.14.5.8
 - (9) requirement 2.14.6.2.2 except 2.14.5 shall be as amended above
 - (10) requirements 2.14.7.1.3, 2.14.7.1.4 and 2.14.7.2 through 2.14.7.4
- (c) The car safety, the counterweight safety (where provided), and the governor shall conform to 2.17 and ~~2.18~~, except that
- (1) where the safety factors required by 2.17.12.1 cannot be ascertained, performance testing shall be accepted, and
 - (2) the pitch diameter of speed governor sheaves and tension sheaves are not required to conform to 2.18.7.
- (d) The capacity and loading shall conform to 2.16.8(e), (f), (g) and (h).

- (e) *The terminal stopping devices shall conform to 2.25*
- (f) *The operating devices and control equipment shall conform to 2.26. The requirements of 2.26.4.2, 2.26.4.3, and 2.26.4.4 shall not apply to electrical equipment unchanged by the alteration.*
- (g) *Emergency operation and signaling devices where*
- (1) *required by NBCC at the time of the original installation shall be provided and shall conform to 2.27, CAD 2.27.3 and the provisions of Director's Order 226/07 as specified in subsection (x) above;*
 - (2) *provided voluntarily shall conform to 2.27, CAD 2.27.3 and the provisions of Director's Order 226/07 as specified in subsection (x) above.*
- (h) *Car overspeed protection and unintended movement protection shall conform to 2.19.*
- (aa) Requirement 8.7.2.27.6(g) is revoked and the following substituted:
- CAD 8.7.2.27.6 Change in Type of Operation Control***
- (g) *Emergency operation and signaling devices where*
- (1) *required by NBCC at the time of the original installation shall be provided and shall conform to 2.27, CAD 2.27.3 and the provisions of Director's Order 226/07 as specified in subsection (x) above;*
 - (2) *provided voluntarily shall conform to 2.27, CAD 2.27.3 and the provisions of Director's Order 226/07 as specified in subsection (x) above.*
- (bb) Requirement 8.7.2.28 is adopted with the following modifications and clarifications:
- CAD 8.7.2.28 Emergency Operation and Signaling Devices***
- Where an alteration consists of the addition of an elevator to a group, all elevators in that group shall conform to 2.27.1, 2.27.2 and the FEO operation (or equivalent) of any car shall not be diminished and shall match or exceed the highest level of FEO features (or equivalent) that existed on any car in the group prior to the alteration.*
- (cc) Section 8.7.7.3 Material Lifts and Dumbwaiters with Automatic Transfer Devices, is not adopted, except 8.7.7.3.2 is adopted;
- (dd) Section 8.8 – Welding, is not adopted. The requirements in Section 3 of the Elevating Devices Code Adoption Document apply;
- (ee) Section 8.9 – Code Data Plate, is adopted except that the requirements shall not apply to the existing devices installed or altered to versions of the B44 Code earlier than B44-00;
- (ff) Section 8.11 - Periodic Inspection and Test Requirements, is not adopted, except for 8.11.2.2.6, and;
- (gg) Requirement 8.11.2.2.6 Firefighters' Emergency Operation is revoked and the following substituted:

CAD 8.11.2.2.6 Firefighters' Emergency Operation.

- (a) Firefighters' emergency operation shall be tested to determine conformance with the applicable requirements.
- (b) All elevators provided with firefighters' emergency operation shall be subjected annually to Phase I recall by use of the key switch, and a minimum of one-floor operation on Phase II. Deficiencies shall be corrected.
- (c) A record of findings shall be available to elevator personnel and the authority having jurisdiction. Note: Conformance to these test requirements are the responsibility of the building owners as part of the elevator maintenance.

(4) The requirements of 6.(1)(a)(2) are adopted with the following modifications and clarifications:

- (a) The requirements of B44.2-07 are applicable to all elevating devices covered in B44-07 as amended in 6.(1)(a)(3) above, and includes limited use/limited application elevators, material lifts and freight platform lifts.
- (b) B44.2-07 requirement 4.6.1 Plunger return test applies, except that testing with full-load shall not be required
- (c) Where frequencies of maintenance, examinations or inspections identified in B44.2-07 are extended,
 - i) the altered maintenance, examination and/or inspection frequencies must take into account the age and inherent quality of the equipment, the frequency and method of usage, and the recommendation(s) by either the original manufacturer, or manufacturer's agent, or the maintaining contractor,
 - ii) the owner and maintenance contractor shall agree in writing to the altered maintenance, examination and/or inspection frequencies,
 - iii) the log book shall either capture this agreement or make reference to another document where such an agreement is made,
 - iv) a copy of the altered maintenance, examination and/or inspection frequency agreement shall be made available to TSSA upon request, and
 - v) the interval between maintenance visits shall not exceed three (3) months.
 - vi) The frequency of tests** identified in B44.2 shall not be altered.
 - vii) Despite the allowance to adjust maintenance, examination or inspection frequencies as stated above, the frequency of activities listed in B44.2-07 section 5.2.1 shall not be altered.

**where the terms:

'operate'- (or equivalent thereof), such as "*governors shall be operated by hand*"

'check'- (or equivalent thereof), such as "*skirt switches shall be checked*"

are used, the frequency of these tests shall not be altered.

6.(1)(b) Where the prescriptive requirements in 6.1(a) are not strictly met, conformance may be demonstrated through compliance to the requirements in ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

2.0 INSTRUCTIONS

- (a) In the case of existing elevators, escalators, etc., the application of any newly adopted code is restricted to the sections covering the inspection, testing, maintenance and use of the elevating devices, unless otherwise required by the Elevating Device Regulation 209/01.
- (b) The ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators and the CSA B44.2 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, and ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators are available from the Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, ON, L4W 5N6, telephone 1-800-463-6727, 416 747 4044 or online www.shopcsa.ca.
- (c) Since the Elevating Device Regulation 209/01 requires all mechanics to have full knowledge of the codes applicable to the elevating devices on which they are assigned to work, we would expect that the mechanics involved in the construction, installation and maintenance of elevators, escalators, etc. will obtain a copy of the Regulation and applicable codes and be familiar with the subject standard.
- (d) Electronic copies of the
 - *Technical Standards and Safety Act, 2000*, and
 - Elevating Devices Regulation 209/01
 can be obtained free of charge from Government of Ontario web site <http://www.e-laws.gov.on.ca/> or from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>.
- (e) Electronic copies of the
 - Elevating Devices Code Adoption Document
 can be obtained free of charge from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>

3.0 NOTES

3.1 Contractors are urged to study **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators** carefully to ensure conformance by the specified date.

Major revisions/additions in CSA-B44-07 include:

- A new rule to require automatic fire emergency operation on **all automatic** elevators* (2.27.3),
 - refer to CAD 2.27.3 in this document for modified requirements
- Type 3C Silver Mirrored glass is no longer permitted for use in elevators,
 - refer to 6.(1)(a)(3)(f) of this document
- Flame and smoke development ratings for cab walls and ceilings in low buildings are more stringent,
 - refer to CAD 2.14 requirements in this document
- Seismic requirements (section 8.4) now apply in Canada,
- The recommended maintenance intervals in Appendix J are deleted from this code and are published as a separate standard – CSA Standard B44.2-07,
- Alteration requirements are further clarified in the latest revision of Director's Order 226/07.
- Recognition of the new Performance Base Code A17.7/B44.7,
- Machine room-less elevator requirements are now included in the body of the code,
- A new rule to allow the use of SIL rated electrical protective devices (2.26.4.3.2),
- A new rule to allow the use of certified SIL-rated software systems to solely remove the power from the motor and brake (2.26.9.4) and
- Revised requirements for motor control using AC and DC drives (2.26.9.5 & 2.26.9.6),

* The rationale from the B44 committee, confirms that the intent of the technical revision to section 2.27.3 found in the B44-07 code, was to require mandatory automatic recall and phase 2 operation on all automatic elevators.

3.2 Conformance with the above requirements as well as all other requirements in ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators shall be demonstrated in the design submission or at the initial inspection, as applicable.

3.3 Even though B44.2 establishes fixed maintenance frequencies, tasks which have historically required monthly maintenance are permitted to be extended if the requirements of 6.(1)(a)(4) are complied with, but in no case shall the interval between maintenance visits extend beyond three months. Note: The permission to extend frequencies is based upon previous practice captured in Directors Order 99/92.

4.0 The Effective Dates of said amendments are as follows:

4.1 DESIGN SUBMISSIONS received by TSSA for registration on or after the **1st day of January 2008**, shall conform to the requirements of **ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators**.

- a) Compliance with this edition of the **ASME A17.1-2007/CSA B44-07** shall be stated in the design submission, in item 192 of the specification sheet or in a separate affidavit.
- b) Submissions received between October 1, 2007 and December 31, 2007 may comply with the codes adopted for this time period or **ASME A17.1-2007/CSA B44-07**.
- c) Any designs submitted before October 1, 2007 based on the **ASME A17.1-2007/CSA B44-07** code must be accompanied by a request for variance.
- d) Pre-applications submitted in advance of the implementation of **ASME A17.1-2007/CSA B44-07**, in order to conform to an earlier edition of B44 shall be followed up with a complete submission by **July 1, 2008**.

4.2 The MAINTENANCE REQUIREMENTS of 8.6 of **ASME A17.1-2007/CSA B44-07**, and CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks as adopted above, are effective as of the **1st day of January 2008**.

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*.

This Order has been developed in consultation with the Elevating Devices Advisory Council

Archive
Superseded by CAD



Elevating and Amusement Devices Safety Division	Ref. No.: 226 / 07	Rev. No.:
DIRECTOR'S ORDER	Date: November 26, 2007	Date:

IN THE MATTER OF:

**THE TECHNICAL STANDARDS AND SAFETY ACT 2000,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01(Elevating Devices) made under the
*Technical Standards and Safety Act 2000***

Subject:

- **Alterations of Elevators, Dumbwaiters, Material Lifts, Freight Platforms, Escalators and Moving Walks per the CSA B44-07 Code**
- **Procedure for Design Submissions and Inspections**

Sent to: **ALL ELEVATOR CONTRACTORS**

1. Introduction

- 1.1 As of January 1, 2008, Director's Order 200/05 is revoked and replaced with the requirements of Director's Order 226/07.
- 1.2 With the release of Elevating Devices Code Adoption Amendment - 225/07 you have been notified that the new edition **CSA-B44-07, Safety Code for Elevators** will apply to each **newly installed or altered** elevating device for which the DESIGN is submitted to the Technical Standards and Safety Authority (TSSA) for registration on or after the 1st day of January 2008.
- 1.3 The requirements for alterations are in Section 8.7 and 8.6.12.5 of the new Code. Contractors are advised to study the Code requirements when any alteration is to be carried out.
- 1.4 The purpose of this Director's Order is to:
- (a) re-affirm which types of upgrades are classified as alterations
 - (b) indicate the format of submission paperwork required, by categorizing the work as "major" or "minor A" or "minor B".
- 1.5 Included in this Director's Order is an Alteration Checklist (similar to that provided in 200/05). Changes from the 200/05 checklist are denoted on the new 226/07 checklist in red text. Aside from changes resulting from B44-07 code changes, red text is also used to show changes intended to provide clarity. Where changes are intended to introduce a new TSSA specific requirement these changes are also identified with a ★ on the checklist.

2. Application

This order applies to work carried out on those elevating devices which are the subject of the Code Adoption Document Amendment 225/07 and includes: elevators, dumbwaiters, material lifts, freight platforms, escalators, moving walks, rack and pinion elevators, screw column elevators, hand elevators, inclined elevators, LULA elevators, power sidewalk elevators, and rooftop elevators.

3. Order to Contractors Carrying out Alterations

Each alteration to an elevating device listed in section 2. Application, for which the DESIGN is submitted for registration to TSSA on or after the 1st day of January 2008, shall be carried out in accordance with this Order.

4. Definitions

- (a) "alteration":

- i) means an alteration or replacement, removal or addition of any component or part of an elevating device that results in, or may result in, a change in the original design, inherent safety or operational characteristics of the elevating device, and “altered” has a corresponding meaning (O.Reg. 209/01);
 - ii) any change to equipment, including its parts, components, and/or subsystems, other than maintenance, repair, or replacement (CSA B44-07);
- (b) **alteration, as part of an:** a repair or replacement that is included with other work that is classified as an alteration (CSA B44-07);
- (c) **maintenance:** means,
- i) regularly scheduled work or other action taken to ensure that an elevating device is and will remain in safe operating condition and ‘maintain’ has a corresponding meaning (O.Reg. 209/01);
 - ii) and includes, an inspection and examination at regular intervals of all parts and functions of the elevating device (O.Reg. 209/01s.32(3));
 - iii) cleaning, lubricating and adjusting all its parts at regular intervals and repairing or replacing worn or defective components in order to prevent the device from becoming unsafe for operation (O.Reg.209/01 s.32(3));
 - iv) repairing or replacing damaged or broken parts (O.Reg. 209/01s.32(3));
 - v) such other examinations or work as is required by this Regulation, the applicable code or standard referred to in the code adoption document or by an inspector (O.Reg. 209/01s.32(3)).
 - vi) a process of routine examination, lubrication, cleaning, and adjustment of parts, components, and/or subsystems for the purpose of ensuring performance in accordance with the applicable Code requirements (CSA B44-07);
- (d) **replacement:** the substitution of a device or component and/or subsystems, in its entirety, with a unit that is the same as the original for the purpose of ensuring performance in accordance with applicable Code requirements (CSA B44-07);
- (e) **repair:** reconditioning or renewal of parts, components, and/or subsystems necessary to keep equipment in compliance with applicable Code requirements (CSA B44-07).

5. Alterations

5.1 Work performed on an elevating device other than worked performed, as maintenance, repair, or replacement is an alteration. Part 8, Section 8.6 of the B44-07 Safety Code for Elevators deals with “Maintenance, Repair, and Replacement”, while Section 8.7 of the code deals with “Alterations”. This order elaborates on these requirements and includes a 33 page alteration checklist, which extracts the various alterations, and in table form displays a list of applicable sub requirements. The “Alteration Checklist” also identifies the required submission type required by TSSA. (see 8 Alteration Checklist for more information about this table)

5.2 **Type of Alteration Work**

Columns 3 to 6 of the alteration checklist classify the type of work as one of the following types:

- (a) **Alteration: Modification / Change** (column 3)
means a change to the original design or characteristics of a component, assembly or the device as a whole, such as material, strength, size, dimension, rating, setting, function, operational mode, design parameters etc., whereby the change may be made on existing equipment or by substituting new modified equipment. Note that a change of the component make or model, without any other change, may constitute an alteration under this Director’s Order (see item (d) below).
- (b) **Alteration: Addition** (column 4)
means addition of a new component or a design feature, not previously provided e.g. addition of top-of-car operating devices.
- (c) **Replacement with same** (column 5)
means the substituted device, assembly or component is the same as the original, and either;

- (i) B44- Section 8.6.12.5 classifies the specific replacements as alterations and requires that the substituted component and/or the elevating device as a whole meets the specific requirements of the latest Code edition, or
 - (ii) this order recognizes the replacement of the noted item as an alteration, and requires an appropriate submission, as referenced in 1.4
- (d) **Replacement with different make and model** (column 6)
means that the substituted device, assembly or component is the same as the original in its design, performance and safety characteristics, except that it is of a different make and/or model and this order recognizes the replacement of the noted item as an alteration, and requires an appropriate submission, as referenced in 1.4.

Note: In addition to the work described in 5.2 and listed in the checklist, any other work performed on an elevating device, that results in a change to the inherent safety or operational characteristics will constitute an alteration even though there may be no change in the original design. The list in the enclosed checklist, is not all inclusive.

6. Type of Design Submission

6.1 Based on the type of alteration work, as per 5.2 above, columns 3 to 6 of the alteration checklist provide additional information to determine the type of the submission required. The entries in columns 3 – 6 may be one of the following:

Major	-	means Major alterations
Minor A	-	means Minor alteration type A
Minor B	-	means Minor alteration type B
Blanks (columns 5&6)	-	work that would not constitute an alteration
mrr	-	means the designated scope of work is permitted under the requirements related to maintenance repair and replacement
n/a	-	means TSSA has permitted an exception to a compliance requirement, however, if another alteration activity requires compliance to the exempted requirement, the exemption no longer applies
New	-	means, not an alteration but a new installation
†	-	means that no inspection is required following the alteration
variance	-	this activity can only be considered after approval of a variance
★	-	TSSA designated alteration or requirement

Note: The definitions for “major” and “minor” alterations, as defined in O.Regulation 209/01 have been used. Although “Minor A” and “Minor B” are no longer defined in O.Regulation 209/01, in this Order we continue to use terms “Minor A” and “Minor B” in order to facilitate the needs of the contractors respecting the timing, scope and format of submissions and inspections.

7. Requirements for Design Submissions and Inspections

7.1 A design submission or notification (in the case of a Minor B) must clearly specify, for each alteration covered, whether the type of the alteration work is a "modification", or "addition", or "replacement".

7.2 Where a design submission covers alterations to more than one component or feature, which would require different types of submissions, the type of such submission will be of the “highest rank”, e.g. combination of Minor B and Major will be designated as a Major alteration.

7.2.1 Major Alteration:

- 7.2.1.1 The design submission shall be registered before the major alteration commences, except as permitted in subsection 7(2) of O.Reg 209/01.
- 7.2.1.2 The alteration shall be inspected by TSSA prior to returning to service.

7.2.2 Minor Alteration type A and B:

- 7.2.1.1 According to Section 19 of O.Reg 209/01, the design submission shall be submitted for registration not later than 10 working days after completion of a minor alteration. However, contractors are advised to submit the documents in

advance of the work start to ensure that no expense will be incurred should the registration of the proposed design or a requested variance be rejected.

- 7.2.1.2 Minor A and B alterations are permitted to be returned to service after work completion, however the contractor who completed the alteration shall arrange for a “special inspection” to be carried out not later than 60 days from the date of the completion of the alteration, and shall arrange for performance of tests required by the inspector. A registered design submission or notification shall be available at the time of inspection.

7.3 Signatures

- 7.3.1 According to subsection 15(6) of O.Reg 209/01 the design submission for any Major or Minor A alteration shall bear the **signature and seal of the professional engineer** who prepared or approved the design submission. Electronically imaged / transmitted documents, which bear the **signature and seal of the professional engineer** are deemed acceptable.
- 7.3.2 In the case of Minor B alterations, an officer or director of the Company applying for registration may sign the design submission documents or the Notification, if the officer or director is a mechanic. Minor B’s that are electronically transmitted shall be deemed acceptable provided that the signature box of the Minor B Notification form contains the name, designation and mechanic license number of a registered and licensed mechanic who supervised and is competent to oversee the scope of the minor B alteration. Example: Signature: John Smith, EDM-A, 00999999

7.4 Specification Forms

- 7.4.1 Alterations should be submitted on the appropriate Specification Sheets (depending on device type) and should itemize all entries which are **Directly** and **Indirectly** affected by the alteration scope.
Example: Cab Interior Modification resulting in an increase in cab weight
- Directly affected are interior finishes and flame ratings
 - Indirectly affected are items such as rope factor of safety (elec.) or cylinder column strength (hyd.)
 - Sufficient details are to be provided to show compliance verification.
- 7.4.2 Items which are not affected by the alterations should be noted with either:
- **N/C or No Change** or
 - The original entry followed by **Existing** (Example Car Wt.: 1812 kg - Existing)
- 7.4.3 Where a “major alteration” and “minor alteration” affects only a very few items, the abridged form may be used instead of the full specification form provided clarity is not compromised. The Abridged form should specify: box numbers, descriptions, and new entry valves. (Example: 34. Rated Working Pressure: 3445 kPa)
- 7.4.4 Some predefined templates exist for Minor B type alterations and are available from the TSSA web site. These templates shall be utilized where appropriate to ensure all relevant entries are completed and included in the submission. Multiple Minor B notification templates may be utilized to fully cover the scope of work and only one Minor B fee shall apply.

7.5 Submitting an Alteration Checklist

- 7.5.1 The design submission for a Major or Minor A alteration must include an Alteration Checklist to assist in demonstrating compliance with Section 8.7 of the code or any other items listed in Column 1 of the checklist and must clearly specify the following:
- (a) The scope of the alteration as identified with an ‘X’ in column 0 adjacent to the primary scope of the alteration
 - (b) An ‘x’ placed in column 0, adjacent to all relevant sub requirements
- 7.5.2 An alteration checklist is not required for Minor B Notifications.
- 7.5.3 Sections of the alteration checklist, which are not included in the scope of the alteration work, should be hidden (using the row-hide feature in excel) prior to printing the checklist, in order to reduce the number of printed pages accompanying a submission.

- 7.5.4 To assist our clients in completing the alteration checklist, TSSA will post on its Website (www.tssa.org) a fillable version of the Alteration Checklist in excel format (ED-226-07-xls.xls).
- 7.5.5 The **B44-07 reference numbers, shown in column 1 and which are marked with ‘X’** in the Alterations Checklist, (also shown in **BOLD** font), are **those items that are required to be shown on the Code Data Plate** as per section 8.9 of B44.
- 7.5.6 A 33-page Alteration checklist accompanies this order.

8 Alteration Checklist

8.1 The alteration checklist provides information useful to contractors, submitting engineers, reviewing engineers and inspectors for determining:

- scope of the work,
- requirements associated with specified scope, including ;
 - exemptions to a requirement (where n/a is shown)
 - additional TSSA requirements (where ★ is provided)
- type of submission required (Major, Minor A, Minor B) – depending on the type of alteration work being performed (See Fig 1)

8.2 Parts of the Checklist (See Fig 2)

8.2.1 Column 0:

Column 0 is used to define the scope and applicable sub requirements.

- The scope of an alteration shall be denoted by placing an ‘X’ adjacent to the applicable alteration section.
 - Sub requirements related to the alteration are mandatory* and shall also be identified with an ‘x’.
- *unless the sub requirements are unrelated to the device being altered.

8.2.2 Column 1:

Column 1 is the scope reference number, and is the same number which should appear on the alteration data tag, and

- provides either the B44-07 reference number, or
- a TSSA reference number. TSSA reference numbers are denoted as follows;
 - 8.7.2.12★1 ★1 denotes the first TSSA designated alteration under section 8.7.2.12
 - 8.7.2.12★2 ★2 denotes the second TSSA designated alteration under section 8.7.2.12
 - DO 173/02 denotes an alteration as required by the noted Directors Order
 - O.Reg 209/01s30 denotes a requirement contained in the Regulation

Note: Alterations identified with ★ are TSSA designated alterations in addition to those specified in B44-07, or ★ items are supplemental requirements under a given alteration scope.

8.2.3 Column 2a, 2b and 2c:

Column 2 describes the scope and applicable sub requirements.

- Column 2a is the primary title of the alteration activity (e.g. interlocks)
- Column 2b is the list of sub requirements by reference number (e.g. 2.12.1, 2.12.2...)
- Column 2c is a description of the referenced sub requirement. (e.g. General, Interlocks,...)

8.2.4 Column 3, 4, 5 and 6:

The headings of Columns 3 to 6 define the “Type of Alteration Work” as, Modification Change, Addition, Replacement with Same, and Replacement with Different. See 5.2 of this order.

The contents of Columns 3 to 6 define the “Type of Design Submission” as, Major Alteration, Minor A Alteration, or Minor B – Notification. See 5.3 of this order.

Fig 1

Health, Safety and Environment Branch | (Type) Exemptions, (TSSA Designated Alteration or Requirement) | www.healthandsafety.gov.on.ca | ED-226-07-checklist.xls | 103

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement			Type of Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
		Job Reference: _____			Submission Type Required			
	8.7.2	Alterations to Electric Elevators						
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓			
X	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B
x	(A)	2.12.1	General					
x		2.12.2	Interlocks					
x		2.12.4	Listing/Certification Locking Devices					
x	(B)	2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)				n/a	(C)
x		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)				n/a	
x		2.12.7	Hoistway Access Switches (n/a for column 5,6)			(D)	n/a	
x		2.24.8.3	Driving Machine Brake					
X	8.7.2.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A		
x		8.7.2.10.1	Entrances & H/W Openings - General Req'ts					
x	(E)	8.7.2.10.2	Horizontal Slide-Type Entrances					
x		8.7.2.10.3	Vertical Slide-Type Entrances					
x		8.7.2.10.5	Marking of Entrance Assemblies					
x		★ 2.13.	(F) Power Operation of Hoistway Doors and Car Doors					
X	8.7.2.12*1	★ Replacement of Door Operator			-	-	mrr	Minor B
x		2.13.	Power Operation of Hoistway Doors and Car Doors					
X	DO 173/02	★ Addition of Top-of-Car Operating Device			-	Minor A		
(G)								

Fig 2 – Sample Alteration Checklist

Figure 2 Notes:

- A – indicates 8.7.2.11.1 Interlocks is part of the alteration scope
- B – indicates which sub requirements have been included (2.12.5 and 2.12.7 are excluded, ok due to specific exemption)
- C – n/a denotes that TSSA has made this requirement optional (note compliance to 2.12.6 was provided)
- D – specifies the submission type – In the example a Minor A alteration is required to be submitted
- E – this subrequirement related to vertical slide entrances, was not selected as it is not applicable to the installation
- F – compliance to 2.13 is a TSSA supplemental requirement
- G – shows two TSSA designated alterations, one denoted as 8.7.2.12*1, the other per DO 173/02.

Roland Hadaller, P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the Technical Standards & Safety Act, 2000

This Director's Order has been developed in consultation with the TSSA Elevating Devices Advisory Council.

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2	Alterations to Electric Elevators						
	8.7.2.1	Hoistway Enclosures			Major	Major		
	8.7.2.1.1	Hoistway Enclosure Walls			Major	Major		
		2.1.1	Hoistway Enclosures					
		2.1.5	Windows and Skylights					
		2.1.6	Projections, Recesses, and Setbacks in H/W					
		2.5.	Horizontal Car and Counterweight Clearances					
		2.7.3.4.2	Access Doors and Openings					
		2.8.	Equipment in Hoistways, Machinery Spaces, Machine Rooms, Control Spaces, and Control Rooms					
		8.7.2.10	Entrances and Hoistway Openings (if change includes an entrance)					
		2.11.1	Entrances and Emergency Doors Required (if blind H/W)					
	8.7.2.1.2	Addition of Elevator to Existing Hoistway			-	New		
		2.5.	Horizontal Car and Counterweight Clearances					
	8.7.2.1.3	Construction at Top of Hoistway			Major	Major		
		2.1.2.1	Construction at Top of the Hoistway					
		2.1.3	Floor Over Hoistways					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.4	Construction at Bottom of Hoistway			Major	Major		
		2.1.2.2	Construction at Bottom of the Hoistway					
		2.1.2.3	Strength of Pit Floor					
		2.2.	Pits					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.5	Control of Smoke and Hot Gases			Major	Major		
		2.1.4	Control of Smoke and Hot Gases					
	8.7.2.2	Pits see other alterations below for non Major Alterations			Major	-		
		2.2.	Pits					
		2.1.2.3	Strength of Pit Floor					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.2	Pit Drains & Sumps			Minor B	Minor A		
		2.2.2.	Pit Drains					
	8.7.2.2	Pit Guards			Minor B	Minor A		
		2.2.3	Guards Between Adjacent Pits					
	8.7.2.2	Pit Access			Minor B	Minor A		
		2.2.4	Pit Access					
	8.7.2.2	Pit Illumination			Minor B	Minor A		
		2.2.5	Illumination of Pits					
	8.7.2.2	Pit Stop Switches			Minor B	Minor A		
		2.2.6	Stop Switches					
	8.7.2.2	Pit Depth			Minor B	Minor A		
		2.2.7	Minimum Pit Depths Required					
	8.7.2.2	Access to Underside of Car			Minor B	Minor A		
		2.2.8	Access to Underside of Car					
	8.7.2.3	Location and Guarding of Counterweights			Major	Major		
		2.3.	Location and Guarding of Counterweights					
		2.5.1.2	Between Car & Cwt and Cwt Guard					
		2.6.	Protection of Space below H/W					
	8.7.2.4	Vertical Car and Counterweight Clearances and Runbys (no reduction allowed)			Major	-		
		2.4.	Vertical Clearances & Runbys for Cars & Cwts					
		8.7.2.17.1	Increase or Decrease in Rise					
		8.7.2.17.2	Increase in Rated Speed					
		8.7.2.25.2	Change in Location of Driving Machine					
	8.7.2.5	Horizontal Car and Counterweight Clearances (no reduction allowed)			Major	-		
		2.5.	Horizontal Car and Counterweight Clearances					
		8.7.2.17.2	Increase in Rated Speed					
	8.7.2.6	Protection of Spaces Below Hoistways			Minor B	Major		
		2.6.	Protection of Space below H/W					

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.7	Machine Rooms and Machinery Spaces			↓ See Below ↓			
	8.7.2.7.1	Enclosures - other than specifics of 8.7.2.7.2 to 8.7.2.7.7						
		2.7. (& 3.7.)	New	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	-	Major		
		2.7. (& 3.7.)	Altered	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	Minor A	-		
		CSA C22.1	Electrical Equipment Clearances		Minor B	-		
	8.7.2.7★1	Enclosures - Control Rooms and Control Spaces						
		2.7. (& 3.7.)	New	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	-	Major		
		2.7. (& 3.7.)	Altered	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	Minor A	-		
		CSA C22.1	Electrical Equipment Clearances		Minor B	-		
	8.7.2.7.2	Means of Access			Minor B	-		
		2.7.3.1	General Requirements					
		2.7.3.2	Access Across Roofs					
		2.7.3.3	Means of Access					
	8.7.2.7.3	Access Doors and Openings			Minor B	Minor B		mrr
		2.7.3.4	Access Doors and Openings					
		2.7.3.5	Stop Switch for Machinery Space or Control Spaces					
	8.7.2.7.4	Headroom (no reduction)			Minor B	Minor B		
		2.7.4	Headroom in M/C Rooms					
	8.7.2.7.5	Windows and Skylights			Minor B	Minor B		
		2.1.5						
	8.7.2.7.6	Lighting (no reduction)			Minor B	Minor A		
		2.7.9.1	Lighting					
	8.7.2.7.7	Ventilation			Minor B	Minor B		
		2.7.9.2	Temperature & Humidity					
	8.7.2.8	Electrical Equipment, Wiring, Pipes, and Ducts in H/W's & M/C Rooms			Minor B	Minor B		
		Installation of New (electrical, wiring, raceways, cables, pipes, ducts)			-	Minor B		
		also installation of Monitoring Equipment, HVAC						
		2.8.	Equipment in Hoistways and Machine Rooms					
			CSA Labeling (or equivalent)					
			C22.1 as required					
		Alteration of Existing (electrical, wiring, raceways, cables, pipes, ducts...)			Minor B	-		
		2.8.	Equipment in Hoistways and Machine Rooms					
	8.7.2.9	Machinery and Sheave Beams, Supports, and Foundations			Major	Major		
		New/Relocated Machinery & Sheave Beams, Supports, Foundation						
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		Building reactions increased by more than 5%						
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		adequacy of building structure verified by P.Eng.						
	8.7.2.10	Entrances and Hoistway Openings			Major	Major		see below
	8.7.2.10.1	General Requirements			Major	-		
	8.7.2.10.1(a)	General Requirements - All New Entrances			Major	-		Major Major
		2.11.	Protection of H/W Openings					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(b)	General Requirements - New Entrances w/Existing Entrances			-	Major		
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.4	Location of Horizontally Sliding or Swinging H/W Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.1(c)	General Requirements - Alteration to H/W Entrance			Major	-		
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(d)	General Requirements - Emergency Doors			Major	Major		
		2.11.1	Entrances and Emergency Doors Required					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.1(e)	General Requirements - Access Openings (installed for cleaning)			Major	Major		
		2.11.1.4	Access Opening for Cleaning of Car & H/W Enclosure					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.2	Horizontal Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.11	Entrances, Horizontal Slide Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.11.1	Landing Sills					
		2.11.11.6	Bottom Guides					
	hanger /track (b)	2.11.11.2	Hanger Tracks, and Track Supports		Minor B		Minor B	
	frame (c)	2.11.11.3	Entrance Frames		Minor A		Minor A	
		2.11.11.5.1	Panel Overlap					
		2.11.11.5.2	Panel Gaps Clearances					
		2.11.11.5.3	Pockets in Strike Jamb					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hangers (d)	2.11.11.4	Hangers		Minor B		Minor B	
	panels (e)	2.11.11.5(*)	Panels		Minor A		Minor A	
		2.11.11.6	Bottom Guides					
		2.11.11.7	Multipanel Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
	retainers (f)	2.11.11.8	Hoistway Door Safety Retainers		Minor B		Minor B	
	8.7.2.10.3	Vertical-Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.12	Entrances, Vertical Slide Type					
	sills (a)	2.11.10.3	Hinged Hoistway Landing Sills		Minor B		Minor B	
		2.11.12.1	Landing Sills					
	frames (b)	2.11.12.2	Entrances Frames		Minor B		Minor B	
		8.7.2.10.5	Marking of Entrance Assemblies					
	rails (c)	2.11.12.3	Rails		mrr		mrr	
	panels (d)	2.11.12.3	Rails		Minor A		Minor A	
		2.11.12.4	Panels					
		2.11.12.5	Guides					
		2.11.12.6	Counterweighting or Counterbalancing					
		2.11.12.8	Pull Straps					
		8.7.2.10.5	Marking of Entrance Assemblies					
	guides (e)	2.11.12.5	Guides					
	sill guard (f)	2.11.12.7	Sill Guards		mrr		mrr	
	straps (g)	2.11.12.8	Pull Straps					
	8.7.2.10.4	Swing-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.13	Entrances, Swing Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.10.3	Hinged Hoistway Landing Sills					
		2.11.13.1	Landing Sills					
	frames (b)	2.11.13.2	Entrance Frames		Minor B		Minor B	
		2.11.13.4	Hinges					
		8.7.2.10.5	Marking of Entrance Assemblies					
	panels (c)	2.11.13.3	Panels		Minor B		Minor B	
		2.11.13.4	Hinges					
		2.11.13.5	Marking					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hinges (d)	2.11.13.4	Hinges		mrr		mrr	

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.5	Marking of Entrance Assemblies (Alteration to an Entrance Door Panel) Fire Protection Rating not less then existing entrance 8.7.2.10.5(a) NBCC requirements			Major	Major		
	8.7.2.10★1	★ Removing Service To a Floor Bolt entrances shut Remove Interlock From Safety String If Adding Door In front Of Entrance, Gap btwn doors <=125mm Remove COP Floor Button 2.11.6.2 Cannot Lock Out Top/Btm, Designated/Alternate, All Landing in Phase II				Minor B		
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓			
	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.2	Interlocks					
		2.12.4	Listing/Certification Locking Devices					
		2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)				n/a	
		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)				n/a	
		2.12.7	Hoistway Access Switches (n/a for column 5,6)				n/a	
		2.24.8.3	Driving Machine Brake					
	8.7.2.11.2	Mechanical Locks and Electric Contacts			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.3	H/W Door Combination Mechanical Locks & Contacts					
		2.12.4	Listing/Certification Locking Devices					
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8	Braking Systems & Driving Machine Brakes					
	8.7.2.11.3	Parking Devices			Minor A	Minor A		
	8.7.2.11.4	Access Switches and Unlocking Devices						
	8.7.2.11.4 (a)	Addition of Unlocking Devices			-	Minor B	mrr	
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8.3	Driving Machine Brake					
	8.7.2.11.4 (b)	Addition of Access Switches			-	Minor A	mrr	
		2.12.7	Hoistway Access Switches					
		2.24.8	Braking Systems & Driving Machine Brakes					
		2.26.1.4	Inspection Operation					
	8.7.2.11★1	★ Door Safety Retainers			Minor B	Minor A	mrr	Minor B
		2.11.11.8	Hoistway Door Safety Retainers					
	8.7.2.11.5	Restricted Opening of H/W or Car Doors of Passenger Elevators (Restrictors) (Altered or Installed)			Minor B	Minor B	mrr	Minor B
		2.12.5	Restricted Opening of H/W or Car Door					
	8.7.2.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A		
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					
		8.7.2.10.2	Horizontal Slide-Type Entrances					
		8.7.2.10.3	Vertical Slide-Type Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
		★ 2.13.	Power Operation of Hoistway Doors and Car Doors					
	8.7.2.12★1	★ Replacement of Door Operator			-	-	mrr	Minor B
		2.13.	Power Operation of Hoistway Doors and Car Doors					
	8.7.2.13	Door Reopening Device (Safety Edge) (Altered or Added or Replaced)			Minor B	Minor B	mrr	Minor B
		2.13.4	Closing Limitations for Power Operated HS Doors & Gates					
		2.13.5	Reopening Device for Power Operated Car Doors or Gates if FEO provided, door opening & closing to PHI & II at time of install					

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.14	Car Enclosures, Car Doors and Gates, and Car Illumination			↓ See Below ↓			
	8.7.2.14.1	Installation of New Car Enclosure			Major	-		
		2.14.	Car: Enclosure, Doors, Gates, Illumination					
		2.15.	Car Frames & Platforms					
		2.17	Car and counterweight safeties					
		8.7.2.15.1	Alterations to Car Frames and Platforms					
	8.7.2.14.2	Alteration to Existing Cars			Minor A	Minor A		
	8.7.2.14.2(a)	Car Enclosure - Securing of Enclosures			Minor A	Minor A		
		2.14.1.2	Securing of Enclosures					
	8.7.2.14.2(b)	Top Emergency Exit (Altered or Added)			Minor B	Minor B		
		2.14.1.5	Top Emergency Exits					
	8.7.2.14.2(c)	Installation of Glass			Minor B	Minor B		
		2.14.1.8	Glass in Elevator Cars					
		2.14.1.8.1	Enclosures include glass					
		2.14.1.8.2	Lining of Walls or Ceilings include glass					
		2.14.1.8.3	Not Adopted - Type 3C in not permitted, except if mrr					mrr
		2.14.1.8.4	Marking of each Glazing Panel					
	8.7.2.14.2(d)	Specific Equipment in Elevator Car			Minor B	Minor B		
		2.14.1.9	Equipment Inside Cars					
		(a)	Handrails					
		(b)	fastening devices for protective linings					
		(c)	ceiling mounted hooks/tracks					
		(d)	picture frames display boards, plaques <38mm protrusion					
			secured to 2.14.1.2					
			material to 2.14.2.1					
		(e)	conveyor tracks in freights					
		(f)	heating or cooling equipment					
	8.7.2.14★1	★ Car operating station			Minor B	Minor B	mrr	Minor B
			verify inspection operation 'if provided'					
			verify stop sw					
			verify switches operate as before (eg. FS, FEO, Access)					
	8.7.2.14★2	★ video cameras / surveillance equipment / video monitors			Minor B	Minor B		
		2.8.1.1	electrical equipment & wiring					
		2.14.1.2.3	securing of enclosure equipment					
		2.14.2.4	Headroom in Elevator Cars					
	8.7.2.14★3	★ other equipment			Variance			
	8.7.2.14.2(e)	Side Emergency Exits - Secured Shut			Major	-		
	8.7.2.14.2(f)	Car Ventilation			Minor B	-		
		2.14.2.3	Ventilation					
	8.7.2.14.2(g)	Car Illumination			Minor B	Minor B		
		2.14.7	Illumination of Cars and Lighting Fixtures					
	8.7.2.14.2(h)	Partitions Installed in Elevator Cars			Major	Major		
		2.16.1.2	Use of Partitions for Reducing Inside Net Platform Area					
	8.7.2.14.4	Car Enclosure / Car Door or Car Gates			↓ See Below ↓			
	8.7.2.14.4	Alteration to Car Enclosure other than 8.7.2.14.2 - Enclosure Materials			DR 171		Minor B	DR 171
		2.14.	Car: Enclosure, Doors, Gates, Illumination					
			enclosure material flame ratings shall not be diminished					
		2.14.1.7	car top railing		n/a		n/a	n/a
		2.14.7.1.3	auxiliary lighting					
		2.14.7.1.4	car top light & outlet					
			Directors Order 171					
	8.7.2.14.4	Alteration to Car Door or Car Gates other than 8.7.2.14.2			Minor A	Minor A		
		2.14.	Car: Enclosure, Doors, Gates, Illumination					
		2.14.1.7	car top railing					
		2.14.7.1.3	auxiliary lighting					
		2.14.7.1.4	car top light & outlet					
	O.Reg.209/01s30	★ Relocation of Elevator License to remote location			Minor B†	-		
	8.7.2.14★4	★ Car Top Railing			Minor B	Minor A		
		2.14.1.7	Railing and Equipment on Top of Cars					
		2.4	Vertical Car & Cwt Clearances & Runbys					

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.15	Car Frames and Platforms			↓ See Below ↓			
	8.7.2.15.1	Alterations to Car Frames and Platforms			Major	-	Major	
		2.15. Car Frames & Platforms						
	DR 171/02	★ Decrease Deadweight <5% or Increase Deadweight of Car (115 kg or Less) record weight on Aux. Data Tag			Minor B	Minor B		
	DR 171/02	★ Increase Deadweight of Car (>115 kg to 5%) record weight on Aux. Data Tag engineering assessment of related items (except 2.24.3)			Minor A	Minor A		
	8.7.2.15.2	Increase or Decrease in Deadweight of Car (Car Wt+Rated Load > 5%)			Major	-		
		DR 171/02 ★ record weight on Aux. Data Tag						
		2.15.(*). Car Frames & Platforms - ★apron guard to ED CAD/as pit permits						
		2.15.9 Platform Guards (Aprons)						
		2.16. Capacity & Loading						
		2.17. Car & Cwt Safeties						
		2.18. Speed Governors						
		2.20. Suspension Ropes & Connections						
		2.21.(*). Counterweights						
		2.22.(*). Buffers & Bumpers						
		2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings						
		2.24.(*). Driving Machines & Sheaves						
		8.7.2.9 Machinery and Sheave Beams, Supports, Foundations						
	8.7.2.16	Capacity, Loading, and Classification			Major	-		
	8.7.2.16.1	Change in Type of Service: Passenger to Freight OR Freight to Passenger			Major	-		
		2.11.1 Entrances and Emergency Doors Required						
		2.11.2 Types of Entrances						
		2.11.3 Closing of Hoistway Doors						
		2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills						
		2.11.6 Opening of Hoistway Doors						
		2.11.7 Glass in Hoistway Doors						
		2.11.8 Weights for Closing or Balancing Doors						
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		2.13. Power Operation of H/W Doors and Car Doors						
		2.22 (*) Buffers & Bumpers						
		2.14. Car: Enclosure, Doors, Gates, Illumination						
		2.15.(*). Car Frames & Platforms - ★apron guard to ED CAD/as pit permits						
		2.17.(*). Car & Cwt Safeties						
		2.18.(*). Speed Governors						
		2.16. Capacity & Loading						
		2.20. Suspension Ropes & Connections						
		2.24.(*). Driving Machines & Sheaves						
		2.25. Terminal Stopping Devices						
		2.26. Operating Devices and Control Equipment						
		2.27. Emergency Operation & Signaling Devices						
		2.19. Ascending Car Overspeed & Unintended Car Movement Protection						
	8.7.2.16.2	Change in Class of Loading: [from any class to any other class ie A, B, C1, C2, C3]			Major	-		
		2.16.2 Minimum Rated Load for Freight Elevators						
		8.7.2.16.4 Increase in Rated Load						
	8.7.2.16.3	Carrying of Passengers on Freight Elevators			Major	-		
		2.16.4 Carrying of Passengers on Freight Elevators						
		2.16.4.1 not accessible to general public						
		2.16.4.2 rated load not less than required by 2.16.1						
		2.16.4.3 conforms to 2.16.8 Passenger Overload in Down Direction						
		2.16.4.4 H/W entrances to 2.12.1.1 & 2.11.2.1 or 2.11.2.2(e)						
		2.16.4.5 car doors to 2.14.5 Passenger Car Doors						
		2.16.4.6 car enclosure openings to 2.14.2.2 Prohibited Openings						
		2.16.4.7 conforms to 2.12.5 Restricted Opening of H/W or Car Door						
		2.16.4.8 Fs for suspension ropes to Table 2.20.3						
		2.16.4.9 Power Operated vertical doors to 2.16.4.9(a) to (e)						
		★ apron guard to ED CAD or extent pit permits						
		★ 2.16.5 Signs Required in Freight Elevator Cars						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.16.4	Increase in Rated Load		Car doors or gates shall be provided at all car entrances 2.14.4 New to: Passenger & Frt Car Doors & Gates, General Req'mts 2.14.5 New to: Passenger Car Doors 2.14.6 New to: Freight Elevator Car Doors and Gates 2.15.(*) Car Frames & Platforms- ★apron guard to ED CAD/as pit permits 2.16. Capacity & Loading 2.17. Car & Cwt Safeties 2.18.(*) Speed Governors 2.19. Ascending Car Overspeed & Unintended Car Movement Protection 2.20. Suspension Ropes & Connections 2.21.(*) Counterweights 2.22.(*) Buffers & Bumpers 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 2.24. Driving Machines & Sheaves 2.26.1.4 Inspection Operation 2.26.1.5 Inspection Operation with Open Door Circuits 2.26.5 Monitor & Prevent Automatic Operation w/ Faulty Door Contacts 8.7.2.9 Machinery and Sheave Beams, Supports, Foundations	Major	-		
	8.7.2.17	Change in Rise or Rated Speed			Major	-		
	8.7.2.17.1	Increase or Decrease in Rise		2.25. Terminal Stopping Devices retain drum m/c, travel increase < 4570mm 2.4.(*) Vertical Clearances & Runbys for Cars & Cwts If decrease in rise is at lowest end then; 2.2.4 Access to Pits 2.2.5 Illumination of Pits 2.2.6 Stop Switches	Major	-		
	8.7.2.17.2	Increase in Rated Speed			Major	-		
	8.7.2.17.2(a)	Increase in Rated Speed on a Winding Drum machine		Increase in Rated Speed of a winding drum m/c prohibited 8.7.2.17.2(c) except in 8.7.2.17.2(c)	Major	-		
	8.7.2.17.2(b)	Increase in Rated Speed greater than 10% & greater than 0.20m/s		2.4.2 Minimum Bottom Runby for Counterweighted Elevators 2.4.3 Minimum Bottom Runby for Uncounterweighted Elevators 2.4.4 Maximum Bottom Runby 2.4.5 Counterweight Runby Data Plate 2.4.6 Top Car Clearances for Counterweighted Elevators 2.4.7 Top Car Clearances for Uncounterweighted Elevators 2.4.8 Vertical Clearances with Underslung Car Frames 2.4.9 Top Counterweight Clearances 2.4.10 Overhead Clearances - w/No Overhead Beams 2.4.11 Equipment on Top of Car Not Permitted to Strike O/H 2.5. Horizontal Car and Counterweight Clearances 2.22.(*) Buffers & Bumpers Car doors or gates shall be provided at all car entrances 2.14. New doors/gates to: Car: Enclosure, Doors, Gates, Illumination 2.17. Car & Cwt Safeties 2.18.(*) Speed Governors 2.16. Capacity & Loading 2.24. Driving Machines & Sheaves 2.25. Terminal Stopping Devices 2.26.(*) Operating Devices and Control Equipment 2.20. Suspension Ropes & Connections 2.19. Ascending Car Overspeed & Unintended Car Movement Protection	Major	-		
	8.7.2.17.2(c)	Increase in Rated Speed less than 10% & less than 0.20m/s		new spd <.75 for type A safeties new spd <1 w/spring buffer, 2.18.2.1&2 2.18.2.1 Car speed governors 2.18.2.2 counterweight speed governors 8.7.2.27.3 Change in Power Supply	Major	-		

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.17.3	Decrease in Rated Speed 2.4. Vertical Clearances & Runbys for Cars & Cwts 2.18.2 Tripping Speeds for Speed Governors 2.16. Capacity & Loading 2.16.3(*) Capacity and Data Plates 2.26.4.1 Electrical Equipment and Wiring 2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling 2.26.4.3 Positively Opened Contacts			Major	-		
	8.7.2.18	Car and Counterweight Safeties			Major	Major	↓See Below ↓	
	8.7.2.18.1	New Car Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes			-	Major	mrr	Minor A
	8.7.2.18.2	New Cwt Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes			-	Major	mrr	Minor A
	8.7.2.18.3	Existing Car Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes				-	mrr	Minor A
	8.7.2.18.3	Existing Cwt Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes			Major	-	mrr	Minor A
	8.7.2.19	Speed Governors and Governor Ropes			Major	Major	↓See Below ↓	
	8.7.2.19	2.18. Speed Governors					mrr	Minor A
	8.7.2.19	2.17.15 Governor Rope Releasing Carriers					mrr	mrr
	8.7.2.19	Governor Ropes of different material or Construction to: 2.18.6 Design Gov'r Rope Retarding Means for Type B Safeties 2.18.7 Traction between Speed Governor Rope & Sheave & testing to 2.17.3 Function and Stopping Distances of Safeties					Minor B	Minor B
	8.7.2.20	Ascending Car Overspeed and Unintended Car Movement Protection (ACO & UCM)			Minor A	Major	mrr	Minor A
		2.19. Ascending Car Overspd & Unintended Car Movement Protection if part of an alteration which includes; change in motion control - 8.7.2.27.5 replacement of an Elevator Controller 8.6.12.5.3.1 or 8.7.2.27.4						
	8.7.2.20★1	★ If Elevators Controllers are pre-B44-00 & have ACO & UCM 2.19. ACO & UCM Protection, EXCEPT◆ ◆ detection means to B44-M90 or the code at time of install 8.9. ◆ Code Data tag to reflect code at time of install			Minor A	-	mrr	Minor A
	8.7.2.20★2	★ If Elevators Controllers are pre-B44-00 & have ACO ONLY 2.19.1 ACO Protection Only, EXCEPT◆ 2.19.3 Emergency Brake EXCEPT◆ ◆ detection means to B44-M90 or the code at time of install 8.9. ◆ Code Data tag to reflect code at time of install			Minor A	-	mrr	Minor A
	8.7.2.20★3	★ Voluntary Addition of Both ACO and UCM where previously not provided 2.19. ACO & UCM Protection EXCEPT◆ ◆ detection means to B44-M90 code or later 2.7. Machinery Spaces, Machine Rooms Control Spaces & Control Rooms as applicable to the equipment installation 8.9. ◆ Code Data tag to reflect code edition used for the alteration				Minor A		

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.21	Suspension Ropes and Their Connections			↓ See Below ↓			
	8.7.2.21.1	Change in Number of, or Diameter of Ropes 2.20. Suspension Ropes & Connections PEO to certify retained sheaves w/different ropes are satisfactory			Major	-		
	8.7.2.21.1	Change in Material / Grade of Ropes 2.20. Suspension Ropes & Connections PEO to certify retained sheaves w/different ropes are satisfactory			Minor A	-		
	8.7.2.21.2	Addition of Rope Equalizers 2.20.5 Suspension Rope Equalizers			Minor B	Minor B		
	8.7.2.21.3	Addition of Auxiliary Rope-Fastening Devices 2.20. Suspension Ropes & Connections			Major	Major		
	8.7.2.22	Counterweights			Minor A	-		
	8.7.2.22.1	Alteration to any part of a cwt except guiding members 2.21. Counterweights 8.7.2.22.2 Rod Type Counterweights 8.7.2.3 Location and Guarding of Counterweights						
	8.7.2.22.2	Rod Type Cwt - can retain if: Minimum of 2 suspension and 2 tie rods Suspension rods: 2.21.2.1 Material - Cwt Frames & Rods 2.21.2.3 Factor of Safety Tie Rods: 2.21.1.2 Retention of Weight Sections						
	8.7.2.22.3	Roller or similar guide shoes added safety jaws cannot touch rails if not activated			mrr		mrr	
	8.7.2.23	Car and Counterweight Buffers and Bumpers (oil buffer only in column 6) 2.22.(*) Buffers & Bumpers			Major	-	mrr	Minor B
	8.7.2.24	Guide Rails, Supports, and Fastenings (alteration to, or stress increase >5%) 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings			Major	-		
	8.7.2.25	Driving Machines and Sheaves			↓ See Below ↓			
	8.7.2.25.1	Alterations to Driving Machines & Sheaves			Major	Major		
	8.7.2.25.1(a)	Installation of 2.7.2 Maintenance Path and Clearance (★editorially omitted) 2.7.2.3 Maintenance Clearance in Machine Rooms & Control Rooms 2.9. Machinery & Sheave Beams, Supports, Foundation 2.10.1 Guarding of Equipment 2.19. Ascending Car Overspeed & Unintended Car Movement Protection 2.20. Suspension Ropes & Connections 2.24. Driving Machines & Sheaves 2.26.8 Release and Application of Driving-Machine Brakes			-	-	see 8.6.12.5.2	
	8.7.2.25.1(b)	Alterations to Driving Machine Components - affected component complies w/ 2.24.2 Sheaves and Drums 2.24.3 Factor of Safety for Driving Machines and Sheaves 2.24.4 Fasteners Transmitting Load 2.24.5 Shafts Fillets and Keys 2.24.6 Cast-Iron Worms and Worm Gears 2.24.7 Friction Gearing and Clutches 2.24.8 Braking Systems & Driving Machine Brakes 2.24.9 Indirect-Driving Machines 2.26.8 Release and Application of Driving-Machine Brakes			Major		mrr	Major
	8.7.2.25.1(c)	Change of Driving Machine Sheave 2.24.2 Sheaves and Drums 2.24.3 Factor of Safety for Driving Machines and Sheaves 2.24.4 Fasteners Transmitting Load 2.20. Suspension Ropes & Connections			Major	-	mrr	Major

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.6.12.5.2	Replacement of	Driving Machine		-	-	Major	
		8.7.2.25.1(a)						
		2.7.2	Maintenance Path and Clearance (★editorially omitted)					
		2.7.2.3	Access to Machinery Spaces/Rooms, Control Spaces/Rooms					
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		2.10.1	Guarding of Equipment					
		2.19.	ACO & UCM Protection, Except ♦					
		♦8.7.2.20★3	if replacement is machine only & ACO / UCM not previously provided					
		2.20.	Suspension Ropes & Connections					
		2.24.	Driving Machines & Sheaves					
		2.26.8	Release and Application of Driving-Machine Brakes					
	8.7.2.25.2	Change in Location of	Driving Machine		Major	-		
	8.7.2.25.2(a)	Change in Location of	Driving Machine w/ no change in Rise		Major	-		
		2.7.2	Maintenance Path and Clearance (★editorially omitted)					
		2.7.2.3	Access to Machinery Spaces/Rooms, Control Spaces/Rooms					
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		2.10.1	Guarding of Equipment					
		2.24.2.3	Traction					
	8.7.2.25.2(b)	Change in Location of	Driving Machine w/ change in Rise		Major	-		
		Part 2 (*)	Electric Elevators					
		8.7.2.5	see also					
		8.7.2.10	see also					
	8.7.2.25★1	★ Replacement of worm and/or gear (specify make)			-	-	mrr	Minor A
	8.7.2.25★2	★ Addition of Machine Guarding			Minor B		mrr	mrr
		2.10.1	Guarding of Equipment					
	8.7.2.26	Terminal-Stopping Devices			Minor B	Minor B		
		2.25.	Terminal Stopping Devices					
	8.7.2.27	Operating Devices and Control Equipment			↓ See Below ↓			
	8.7.2.27.1	Top-of-Car Operating Devices			Minor A	Minor A	mrr	Minor A
		2.26.1.4	Inspection Operation					
	DO 173/02	★ Addition of Top-of-Car Operating Device			-	Minor A		
	8.7.2.27.2	Car-Leveling or Truck-Zoning Devices			Minor A	Minor A		
		2.26.1.6	Operation in Leveling or Truck Zone					
	8.7.2.27★1	★ Door By-Pass Switches			Minor A	Minor A		
		2.26.1.5	Inspection Operation with Open Door Circuits					
	8.7.2.27★2	★ Door Monitoring System			Minor A	Minor A		
		2.26.5	System to Prevent Auto Operation w/faulty Door Contacts					
	8.7.2.27.3	Change in Power Supply			Major	-		
		(a) voltage, frequency or # of phases or						
		(b) AC to DC , DC to AC or						
		(c) combination of DC & AC, then						
		electrical to:						
		2.26.1.1	Types of Operation					
		2.26.1.2	For Car-Switch Operation Elevators					
		2.26.1.3	Add'l Operating Devices for Elevators carrying 1pc. load > than Rated					
		2.26.1.4	Inspection Operation					
		2.26.1.6	Operation in Leveling or Truck Zone					
		2.26.2	Electrical Protective Devices					
		2.26.6	Phase Protection of Motors					
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective					
		2.26.9	Control & Operating Circuits					
		2.26.10	Absorption of Regenerated Power					
		new / modified equipment and wiring to:						
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
		2.26.4.3	Positively Opened Contacts					
		brakes to:						
		2.24.8	Braking Systems & Driving Machine Brakes					
		2.26.8	Release and Application of Driving-Machine Brakes					
		winding drum to:						
		2.25.3.5	Additional Req'mts for Winding Drum Machines					
		see 8.7.2.17.2(b)	Increase in Rated Speed					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.27.4	Controllers						
	8.7.2.27.4(a)	Installation of	Elevator Controller (as part of an alteration)		Major	-		see 8.6.12.5.3.1
		2.25.	Terminal Stopping Devices					
		2.26.1.4	Inspection Operation					
		2.26.1.5	Inspection Operation with Open Door Circuits					
		2.26.4	Electrical Equipment and Wiring					
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts					
		2.26.6	Phase Protection of Motors					
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective					
		2.26.8	Release and Application of Driving-Machine Brakes					
		2.26.9	Control & Operating Circuits					
		2.27.2	Emergency or Standby Power systems					
		2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★where required by NBCC					
			indicate if Manual PHI Recall is provided					
			indicate if Automatic PHI Recall by FAID's is provided					
		2.27.4	Firefighters' Emergency Operation - Non-Automatic Elevators					
		2.27.5	Firefighters' Emergency Operation - Automatic Elevators w/Attendant					
		2.27.6	Firefighters' Emergency Operation - Inspection Operation					
		2.27.7	Firefighters' Emergency Operation - Operating Procedures					
		2.27.8	Switch Keys					
	8.6.12.5.3.1	Replacement of	Elevator Controller		-	-		Major
		8.7.2.27.4(a)						
		2.25.	Terminal Stopping Devices					
		2.26.1.4	Inspection Operation					
		2.26.1.5	Inspection Operation with Open Door Circuits					
		2.26.4	Electrical Equipment and Wiring					
			- Including Clearances to CSA C22.1					
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts					
		2.26.6	Phase Protection of Motors					
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective					
		2.26.8	Release and Application of Driving-Machine Brakes					
		2.26.9	Control & Operating Circuits					
		2.27.2	Emergency or Standby Power systems					
		2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★where required by NBCC					
			indicate if Manual PHI Recall is provided					
			indicate if Automatic PHI Recall by FAID's is provided					
		2.27.4	Firefighters' Emergency Operation - Non-Automatic Elevators					
		2.27.5	Firefighters' Emergency Operation - Automatic Elevators w/Attendant					
		2.27.6	Firefighters' Emergency Operation - Inspection Operation					
		2.27.7	Firefighters' Emergency Operation - Operating Procedures					
		2.27.8	Switch Keys					
		★ 2.7.5.2	Temperature and Humidity					
	8.7.2.27 ★3	Relocation of	Elevator Controller (if control wiring disconnected - reconnected)		Major			
		2.8.2	Electrical Equipment and Wiring					
			Electrical testing as per the original design submission tests					
	8.7.2.27.4(b)	Installation of	Door Controller (as part of an alteration)		Minor A	-		see 8.6.12.5.3.2
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
	8.6.12.5.3.2	Installation of	Door Controller		-	-		Minor B
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.27.5	Change in Type of Motion Control - AC, VVVF, DC, SCR			Major	-		
		<ul style="list-style-type: none"> 2.11.1 Entrances and Emergency Doors Required 2.11.2 Types of Entrances 2.11.3 Closing of Hoistway Doors 2.11.4 Location of Horizontally Sliding or Swinging H/W Doors 2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills 2.11.6 Opening of Hoistway Doors 2.11.7 Glass in Hoistway Doors 2.11.8 Weights for Closing or Balancing Doors 2.11.9 Hoistway Door Locking Devices & Power Operation 2.11.10 Landing Sill: Guards, Illumination, hinged sills, Tracks 2.11.11 Entrances, Horizontal Slide Type 2.11.12 Entrances, Vertical Slide Type 2.11.13 Entrances, Swing Type 2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access 2.13. Power Operation of H/W Doors and Car Doors 2.14.(*). Car: Enclosure, Doors, Gates, Illumination 2.16. Capacity & Loading 2.17. Car & Cwt Safeties 2.18.(*). Speed Governors 2.19. Ascending Car Overspeed & Unintended Car Movement Protection 2.25. Terminal Stopping Devices 2.26.(*). Operating Devices and Control Equipment 2.27. Emergency Operation & Signaling Devices - where required by NBCC <p style="margin-left: 20px;">indicate if Manual PHI Recall is provided</p> <p style="margin-left: 20px;">indicate if Automatic PHI Recall by FAID's is provided</p>						
	8.7.2.27.6	Change in Type of Operation Control - CPPB, AUTOMATIC			Major	-		
		<ul style="list-style-type: none"> 2.11.1 Entrances and Emergency Doors Required 2.11.2 Types of Entrances 2.11.3 Closing of Hoistway Doors 2.11.4 Location of Horizontally Sliding or Swinging H/W Doors 2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills 2.11.6 Opening of Hoistway Doors 2.11.7 Glass in Hoistway Doors 2.11.8 Weights for Closing or Balancing Doors 2.11.9 Hoistway Door Locking Devices & Power Operation 2.11.10 Landing Sill: Guards, Illumination, hinged sills, Tracks 2.11.11 Entrances, Horizontal Slide Type 2.11.12 Entrances, Vertical Slide Type 2.11.13 Entrances, Swing Type 2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access 2.13. Power Operation of H/W Doors and Car Doors 2.14.(*). Car: Enclosure, Doors, Gates, Illumination 2.16. Capacity & Loading 2.17. Car & Cwt Safeties 2.18.(*). Speed Governors 2.25. Terminal Stopping Devices 2.26.(*). Operating Devices and Control Equipment 2.27. Emergency Operation & Signaling Devices - * where required by NBCC <p style="margin-left: 20px;">indicate if Manual PHI Recall is provided</p> <p style="margin-left: 20px;">indicate if Automatic PHI Recall by FAID's is provided</p>						
	8.7.2.27*4	* Addition of Wander Patient Feature - Change in Operation Control			Minor B	Minor B		
		<ul style="list-style-type: none"> 2.11.3.2 - doors closed when not in use 2.13.5.4 - door time out 2.27.3.1.6(l) - shall not prevent PHI 						
	8.7.2.27*5	* Addition of Restricted Access - Security / Floor Lock Out			Minor B	Minor B		
		<ul style="list-style-type: none"> OBC-3.2.6.5(4) - shall not prevent floor access when on FEO D.O. Button Remain Operative Under non FEO Conditions, Door Closed When not in Use 2.27.3.1.6(l) - shall not prevent PHI 2.27.3.3.1(i) - permit travel to all landings when on PH II 2.11.6.2 Cannot Lock Out Top& Btm, Designated & Alternate or All Landings in Phase II DR 172/02 Elevators With Phase II Operation & Floor Button Controlled by Cards/Keys 						

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.27.7	Removal of emergency stop switch on passenger elevators remove all related markings / engravings & provide an in-car stop switch to: 2.26.2.21 In-car stop switch ★ 2.26.4.3 Positively Opened Contacts ★ 2.26.9.3(a) Single failure does not render In-Car Stop Sw ineffective			Minor B	-		
	8.7.2.27.8	Electrical Protective Devices			↓ See Below ↓			
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.2 (PES) 2.26.2 Electrical Protective Devices - for specified device			Major	Major	mrr	Major
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.1 2.26.2 Electrical Protective Devices - for specified device			-	Minor A		mrr
	8.7.2.28	Emergency Operation and Signaling Devices			↓ See Below ↓			
	8.7.2.28	Car Emergency Signaling Devices 2.27.1 Car Emergency Signaling Devices			Minor B	Minor B		mrr
	8.7.2.28	Emergency or Standby Power 2.27.2 Emergency Or Standby Power systems			Minor B	Minor A		
	8.7.2.28	Firefighter's Emergency Operation 2.27.3 Firefighters' Emergency Operation - Automatic Elevators Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory 2.27.4 Firefighters' Emergency Operation - Non-Automatic Elevators 2.27.5 Firefighters' Emergency Operation - Automatic Elevators w/Attendant 2.27.6 Firefighters' Emergency Operation - Inspection Operation 2.27.7 Firefighters' Emergency Operation - Operating Procedures 2.27.8 Layout Drawings ★ See also provisions of 175/02			Minor B	Minor A		
	8.7.2.28	Addition of Elevator to a Group 2.27. Emergency Operation & Signaling Devices - Mandatory notes re: 2.27.3 FEO for Automatic Elevators Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory			-	Minor A		
	DO 175/02	★ Emerg. Recall Upgrade - from Manual to Automatic & matching code at time of install conformance to auto recall based on F.S. at time of install				Minor B		
	DO 219/07	★ Emerg. Recall Upgrade to comply with a Fire Code Retrofit Order 219/07 Firefighter Operation to B44-00U2 or Firefighter Operation to B44-04 or Firefighter Operation to B44-07 Manual PHI Recall is mandatory Automatic PHI Recall by FAID's if required by NBCC or B44-07			Minor B	Minor A		

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3	Alterations to Hydraulic Elevators						
	8.7.3.1	Hoistway Enclosures			see 8.7.2.1			
	8.7.2.1	Hoistway Enclosures			Major	Major		
	8.7.2.1.1	Hoistway Enclosure Walls			Major	Major		
		2.1.1	Hoistway Enclosures					
		2.1.5	Windows and Skylights					
		2.1.6	Projections, Recesses, and Setbacks in H/W					
		2.5.	Horizontal Car and Counterweight Clearances					
		2.7.3.4.2	Access Doors and Openings					
		2.8.	Equipment in Hoistways, Machinery Spaces, Machine Rooms, Control Spaces, and Control Rooms					
		8.7.2.10	Entrances and Hoistway Openings (if change includes an entrance)					
		2.11.1	Entrances and Emergency Doors Required (if blind H/W)					
	8.7.2.1.2	Addition of Elevator to Existing Hoistway			-	New		
		2.5.	Horizontal Car and Counterweight Clearances					
	8.7.2.1.3	Construction at Top of Hoistway			Major	Major		
		2.1.2.1	Construction at Top of the Hoistway					
		2.1.3	Floor Over Hoistways					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.4	Construction at Bottom of Hoistway			Major	Major		
		2.1.2.2	Construction at Bottom of the Hoistway					
		2.1.2.3	Strength of Pit Floor					
		2.2.	Pits					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.5	Control of Smoke and Hot Gases			Major	Major		
		2.1.4	Control of Smoke and Hot Gases					
	8.7.3.2	Pits			see Electric Elevators			
	8.7.2.2	Pits see other alterations below for non Major Alterations			Major	-		
		2.2.	Pits					
		2.1.2.3	Strength of Pit Floor					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.2	Pit Drains & Sumps			Minor B	Minor A		
		2.2.2.	Pit Drains					
	8.7.2.2	Pit Guards			Minor B	Minor A		
		2.2.3	Guards Between Adjacent Pits					
	8.7.2.2	Pit Access			Minor B	Minor A		
		2.2.4	Pit Access					
	8.7.2.2	Pit Illumination			Minor B	Minor A		
		2.2.5	Illumination of Pits					
	8.7.2.2	Pit Stop Switches			Minor B	Minor A		
		2.2.6	Stop Switches					
	8.7.2.2	Pit Depth			Minor B	Minor A		
		2.2.7	Minimum Pit Depths Required					
	8.7.2.2	Access to Underside of Car			Minor B	Minor A		
		2.2.8	Access to Underside of Car					
	8.7.3.3	Location and Guarding of Counterweights			Major	Major		
		2.3.	Location and Guarding of Counterweights					
		2.5.1.2	Between Car & Cwt and Cwt Guard					
		3.5.	Horizontal car and Counterweight Clearances					
	8.7.3.4	Vertical Car and Counterweight Clearances and Runbys (no reduction allowed)			Major	-		
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts					
		8.7.3.22.1	Increase or Decrease in Rise					
		8.7.3.22.2	Increase in Rated Speed					
		8.7.3.23.5	Change in Location of Hydraulic Jack					
	8.7.3.5	Horizontal Car and Counterweight Clearances (no reduction allowed)			Major	-		
		2.5.	Horizontal Car and Counterweight Clearances					
		8.7.3.22.1	Increase or Decrease in Rise					
		8.7.3.22.2	Increase in Rated Speed					
		8.7.3.23.5	Change in Location of Hydraulic Jack					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.6	Protection of Spaces Below Hoistways			Minor B	Major		
		3.6. Protection of Spaces below Hoistway						
	8.7.3.7	Machine Rooms and Machinery Spaces			see 8.7.2.7			
	8.7.2.7	Machine Rooms and Machinery Spaces			↓ See Below ↓			
	8.7.2.7.1	Enclosures - other than specifics of 8.7.2.7.2 to 8.7.2.7.7						
		2.7. (& 3.7.) New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			-	Major		
		2.7. (& 3.7.) Altered- Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			Minor A	-		
		CSA C22.1 Electrical Equipment Clearances			Minor B	-		
	8.7.2.7★1	Enclosures - Control Rooms and Control Spaces						
		2.7. (& 3.7.) New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			-	Major		
		2.7. (& 3.7.) Altered- Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			Minor A	-		
		CSA C22.1 Electrical Equipment Clearances			Minor B	-		
	8.7.2.7.2	Means of Access			Minor B	-		
		2.7.3.1 General Requirements						
		2.7.3.2 Access Across Roofs						
		2.7.3.3 Means of Access						
	8.7.2.7.3	Access Doors and Openings			Minor B	Minor B		mrr
		2.7.3.4 Access Doors and Openings						
		2.7.3.5 Stop Switch in O/H M/C Space in the H/W						
	8.7.2.7.4	Headroom (no reduction)			Minor B	Minor B		
		2.7.4 Headroom in M/C Rooms						
	8.7.2.7.5	Windows and Skylights			Minor B	Minor B		
		2.1.5						
	8.7.2.7.6	Lighting (no reduction)			Minor B	Minor A		
		2.7.9.1 Lighting						
	8.7.2.7.7	Ventilation			Minor B	Minor B		
		2.7.9.2 Temperature & Humidity						
	8.7.3.8	Electrical Wiring, Pipes, and Ducts in Hoistways and Machine Rooms			Minor B	Minor B		
		Installation of New (electrical, wiring, raceways, cables, pipes, ducts) also installation of Monitoring Equipment, HVAC			-	Minor B		
		2.8. Equipment in Hoistways and Machine Rooms CSA Labeling (or equivalent) C22.1 as required						
		Alteration of Existing (electrical, wiring, raceways, cables, pipes, ducts...)			Minor B	-		
		2.8. Equipment in Hoistways and Machine Rooms						
	8.7.3.9	Machinery and Sheave Beams, Supports and Foundations			Major	Major		
		New/Relocated Machinery & Sheave Beams, Supports, Foundation						
		2.9. Machinery & Sheave Beams, Supports, Foundation						
		Building reactions increased by more than 5%						
		2.9. Machinery & Sheave Beams, Supports, Foundation adequacy of building structure verified by P.Eng.						
	8.7.3.10	Hoistway Entrances and Openings - see 8.7.2.10			see 8.7.2.10			
	8.7.2.10	Entrances and Hoistway Openings			Major	Major		see below
	8.7.2.10.1	General Requirements			Major	-		
	8.7.2.10.1(a)	General Requirements - All New Entrances			Major	-		
		2.11. Protection of H/W Openings						
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		2.13. Power Operation of H/W Doors and Car Doors						
	8.7.2.10.1(b)	General Requirements - New Entrances w/Existing Entrances			-	Major		
		2.11.2 Types of Entrances						
		2.11.3 Closing of Hoistway Doors						
		2.11.4 Location of Horizontally Sliding or Swinging H/W Doors						
		2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills						
		2.11.6 Opening of Hoistway Doors						
		2.11.7 Glass in Hoistway Doors						
		2.11.8 Weights for Closing or Balancing Doors						
		8.7.2.10.5 Marking of Entrance Assemblies						
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		2.13. Power Operation of H/W Doors and Car Doors						

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.1(c)	General Requirements - Alteration to H/W Entrance			Major	-		
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(d)	General Requirements - Emergency Doors			Major	Major		
		2.11.1	Entrances and Emergency Doors Required					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.1(e)	General Requirements - Access Openings (installed for cleaning)			Major	Major		
		2.11.1.4	Access Opening for Cleaning of Car & H/W Enclosure					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.2	Horizontal Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.11	Entrances, Horizontal Slide Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.11.1	Landing Sills					
		2.11.11.6	Bottom Guides					
	track (b)	2.11.11.2	Hanger Tracks, and Track Supports		Minor B		Minor B	
	frame (c)	2.11.11.3	Entrance Frames		Minor A		Minor A	
		2.11.11.5.1	Panel Overlap					
		2.11.11.5.2	Panel Gaps Clearances					
		2.11.11.5.3	Pockets in Strike Jamb					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hangers (d)	2.11.11.4	Hangers		Minor B		Minor B	
	panels (e)	2.11.11.5(*)	Panels		Minor A		Minor A	
		2.11.11.6	Bottom Guides					
		2.11.11.7	Multipanel Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
	retainers (f)	2.11.11.8	Hoistway Door Safety Retainers		Minor B		Minor B	
	8.7.2.10.3	Vertical-Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.12	Entrances, Vertical Slide Type					
	sills (a)	2.11.10.3	Hinged Hoistway Landing Sills		Minor B		Minor B	
		2.11.12.1	Landing Sills					
	frames (b)	2.11.12.2	Entrances Frames		Minor B		Minor B	
		8.7.2.10.5	Marking of Entrance Assemblies					
	rails (c)	2.11.12.3	Rails		mrr		mrr	
	panels (d)	2.11.12.4	Panels		Minor A		Minor A	
		2.11.12.3	Rails					
		2.11.12.5	Guides					
		2.11.12.6	Counterweighting or Counterbalancing					
		2.11.12.8	Pull Straps					
		8.7.2.10.5	Marking of Entrance Assemblies					
	guides (e)	2.11.12.5	Guides					
	sill guard (f)	2.11.12.7	Sill Guards		mrr		mrr	
	straps (g)	2.11.12.8	Pull Straps					
	8.7.2.10.4	Swing-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.13	Entrances, Swing Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.10.3	Hinged Hoistway Landing Sills					
		2.11.13.1	Landing Sills					
	frames (b)	2.11.13.2	Entrance Frames		Minor B		Minor B	
		2.11.13.4	Hinges					
		8.7.2.10.5	Marking of Entrance Assemblies					
	panels (c)	2.11.13.3	Panels		Minor B		Minor B	
		2.11.13.4	Hinges					
		2.11.13.5	Marking					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hinges (d)	2.11.13.4	Hinges		mrr		mrr	

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.5	Marking of Entrance Assemblies (Alteration to an Entrance Door Panel) Fire Protection Rating not less then existing entrance 8.7.2.10.5(a) NBCC requirements			Major	Major		
	8.7.2.10★1	★ Removing Service To a Floor Bolt entrances shut Remove Interlock From Safety String If Adding Door In front Of Entrance, Gap btwn doors <=125mm Remove COP Floor Button 2.11.6.2 Cannot Lock Out Top/Btm, Designated/Alternate, All Landing in Phase II				Minor B		
	8.7.3.11	Hoistway Door-Locking Devices			See 8.7.2.11			
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓			
	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.2	Interlocks					
		2.12.4	Listing/Certification Locking Devices					
		2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)					n/a
		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)					n/a
		2.12.7	Hoistway Access Switches (n/a for column 5,6)					n/a
	8.7.2.11.2	Mechanical Locks and Electric Contacts			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.3	H/W Door Combination Mechanical Locks & Contacts					
		2.12.4	Listing/Certification Locking Devices					
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8	Braking Systems & Driving Machine Brakes					
	8.7.2.11.3	Parking Devices			Minor A	Minor A		
	8.7.2.11.4 (b)	Addition of Access Switches			-	Minor A		mrr
	8.7.2.11★1	★ Door Safety Retainers 2.11.11.8 Hoistway Door Safety Retainers			Minor B	Minor A	mrr	Minor B
	8.7.2.11.5	Restricted Opening of H/W or Car Doors of Passenger Elevators (Restrictors) (Altered or Installed) 2.12.5 Restricted Opening of H/W or Car Door			Minor B	Minor B	mrr	Minor B
	8.7.3.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A		
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					
		8.7.2.10.2	Horizontal Slide-Type Entrances					
		8.7.2.10.3	Vertical Slide-Type Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
		8.7.3.10	Hoistway Entrances and Openings					
		2.13.	Power Operation of Hoistway Doors and Car Doors					
	8.7.2.12★1	★ Replacement of Door Operator 2.13. Power Operation of Hoistway Doors and Car Doors			-	-	mrr	Minor B
	8.7.2.12★2	★ Replacement of Door Reopening Device			See 8.7.2.13			
	8.7.2.13	Door Reopening Device (Safety Edge) (Altered or Added or Replaced)			Minor B	Minor B	mrr	Minor B
		2.13.4	Closing Limitations for Power Operated HS Doors & Gates					
		2.13.5	Reopening Device for Power Operated Car Doors or Gates if FEO provided, door opening & closing to PHI & II at time of install					
	8.7.3.13	Car Enclosures			See 8.7.2.14			
	8.7.2.14	Car Enclosures, Car Doors and Gates, and Car Illumination			↓ See Below ↓			
	8.7.2.14.1	Installation of New Car Enclosure 2.14. Car: Enclosure, Doors, Gates, Illumination 2.15. Car Frames & Platforms 2.17. Car and counterweight safeties 8.7.2.15.1 Alterations to Car Frames and Platforms			Major	-		
	8.7.2.14.2	Alteration to Existing Cars			Minor A	Minor A		
	8.7.2.14.2(a)	Car Enclosure - Securing of Enclosures 2.14.1.2 Securing of Enclosures			Minor A	Minor A		
	8.7.2.14.2(b)	Top Emergency Exit (Altered or Added) 2.14.1.5 Top Emergency Exits			Minor B	Minor B		

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		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.14.2(c)	Installation of Glass	2.14.1.8 2.14.1.8.1 2.14.1.8.2 2.14.1.8.3 2.14.1.8.4	Glass in Elevator Cars Enclosures include glass Lining of Walls or Ceilings include glass Not Adopted - Type 3C in not permitted, except if mrr Marking of each Glazing Panel	Minor B	Minor B		mrr
	8.7.2.14.2(d)	Specific Equipment in Elevator Car	2.14.1.9 (a) (b) (c) (d) (e) (f)	Equipment Inside Cars Handrails fastening devices for protective linings ceiling mounted hooks/tracks picture frames display boards, plaques <38mm protrusion secured to 2.14.1.2 material to 2.14.2.1 conveyor tracks in freights heating or cooling equipment	Minor B	Minor B		
	8.7.2.14★1	★ Car operating station		verify inspection operation 'if provided' verify stop sw verify switches operate as before (eg. FS, FEO, Access)	Minor B	Minor B	mrr	Minor B
	8.7.2.14★2	★ video cameras / surveillance equipment / video monitors	2.8.1.1 2.14.1.2.3 2.14.2.4	electrical equipment & wiring securing of enclosure equipment Headroom in Elevator Cars	Minor B	Minor B		
	8.7.2.14★3	★ other equipment			Variance			
	8.7.2.14.2(e)	Side Emergency Exits - Secured Shut			Major	-		
	8.7.2.14.2(f)	Car Ventilation	2.14.2.3	Ventilation	Minor B	-		
	8.7.2.14.2(g)	Car Illumination	2.14.7	Illumination of Cars and Lighting Fixtures	Minor B	Minor B		
	8.7.2.14.2(h)	Partitions Installed in Elevator Cars	2.16.1.2	Use of Partitions for Reducing Inside Net Platform Area	Major	Major		
	8.7.2.14.4	Car Enclosure / Car Door or Car Gates			↓ See Below ↓			
	8.7.2.14.4	Alteration to Car Enclosure other than 8.7.2.14.2 - Enclosure Materials	2.14. 2.14.1.7 2.14.7.1.3 2.14.7.1.4	Car: Enclosure, Doors, Gates, Illumination enclosure material flame ratings shall not be diminished car top railing auxiliary lighting car top light & outlet Directors Order 171	DR 171		Minor B	DR 171
	8.7.2.14.4	Alteration to Car Door or Car Gates other than 8.7.2.14.2	2.14. 2.14.1.7 2.14.7.1.3 2.14.7.1.4	Car: Enclosure, Doors, Gates, Illumination car top railing auxiliary lighting car top light & outlet		n/a		n/a
	0.Reg.209/01s30	★ Relocation of Elevator License to remote location			Minor B†	-		
	8.7.2.14★4	★ Car Top Railing	2.14.1.7 2.4	Railing and Equipment on Top of Cars Vertical Car & Cwt Clearances & Runbys	Minor B	Minor A		
	8.7.3.14	Car Frames and Platforms	3.15.	Car Frames & Platforms	Major	-		Major
	8.7.3.15	Safeties		Car or Cwt (plunger gripper see 8.7.3.23.7)	↓ See Below ↓			
	8.7.3.15.1	Car Safeties	3.17.1 3.23. 3.28.	Car Safeties Guide Rails, Guide-Rail Supports, and Fastenings Layout Data	-	Major	mrr	Minor A
	8.7.3.15.2	Counterweight Safeties	3.17.2 3.23. 3.28.	Counterweight Safeties Guide Rails, Guide-Rail Supports, and Fastenings Layout Data	-	Major	mrr	Minor A

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.15.3	Alteration to existing Car or Counterweight Safeties			Major	-	mrr	Minor A
		3.17(*)	Car and counterweight safeties and plunger gripper					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		3.28.	Layout Data					
	8.7.3.16	Governors and Governor Ropes			See 8.7.2.19			
	8.7.2.19	Speed Governors and Governor Ropes			Major	Major	↕ See Below ↕	
	8.7.2.19	2.18.	Speed Governors				mrr	Minor A
	8.7.2.19	2.17.15	Governor Rope Releasing Carriers				mrr	mrr
	8.7.2.19	Governor Ropes of different material or Construction to:				Minor B	Minor B	
			2.18.6 Design of Gov'r Rope Retarding Means for Type B Safeties					
			2.18.7 Traction between Speed Governor Rope & Sheave					
		& testing to	2.17.3 Function and Stopping Distances of Safeties					
	8.7.3.17	Change in Type of Service: Passenger to Freight OR Freight to Passenger			Major	-		
		2.11.1	Entrances and Emergency Doors Required					
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
		2.22.(*)	Buffers & Bumpers					
		3.22.2	Counterweight Buffers					
		3.14.	Car: Enclosure, Doors, Gates, Illumination					
		3.15.	Car Frames & Platforms					
		3.17.	Car and Counterweight Safeties					
		3.21.	Counterweights					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		2.18.(*)	Speed Governors					
		3.16.	Capacity & Loading					
		3.18.	Hydraulic Jacks					
		3.19.	Valves, Pressure Piping, and Fittings					
		3.20.	Ropes and Rope Connections					
		3.24.	Hydraulic Machines and Tanks					
		3.25.	Terminal-Stopping Devices					
		3.26.	Operating Devices and Control Equipment					
		3.27.	Emergency Operation and Signaling Devices					
	8.7.3.18	Change in Class of Loading: [A, B, C1, C2, C3]			Major	-		
		2.16.2	Minimum Rated Load for Freight Elevators					
		3.16.	Capacity & Loading					
	8.7.3.19	Carrying of Passengers on Freight Elevators			Major	-		
		3.16.4	2.16.4 except 2.16.4.3					
		2.16.4	Carrying of Passengers on Freight Elevators					
		2.16.4.1	not accessible to general public					
		2.16.4.2	rated load not less than required by 2.16.1					
		2.16.4.4	H/W entrances to 2.12.1.1 & 2.11.2.1 or 2.11.2.2(e)					
		2.16.4.5	car doors to 2.14.5 Passenger Car Doors					
		2.16.4.6	car enclosure openings to 2.14.2.2 Prohibited Openings					
		2.16.4.7	conforms to 2.12.5 Restricted Opening of H/W or Car Door					
		2.16.4.8	Fs for suspension ropes to Table 2.20.3					
		2.16.4.9	Power Operated vertical doors to 2.16.4.9(a) to (e)					
		★	apron guard to ED CAD or extent pit permits					
		★	2.16.5 Signs Required in Freight Elevator Cars					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.20	Increase in Rated Load			Major	-		
		2.26.1.4	Inspection Operation					
		2.26.1.5	Inspection Operation with Open Door Circuits					
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts					
		3.14.	Car: Enclosure, Doors, Gates, Illumination					
		3.15.	Car Frames & Platforms - ★apron guard to ED CAD/as pit permits					
		3.16.	Capacity & Loading					
		3.17.	Car and Counterweight Safeties					
		3.20.	Ropes and Rope Connections					
		3.21.	Counterweights					
		3.22.	Buffers and Bumpers					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		<u>8.7.3.23.4</u>	Increase in Working Pressure					
	DR 171/02	★ Decrease Deadweight <5% or Increase Deadweight of Car (115 kg or Less) record weight on Aux. Data Tag			Minor B	Minor B		
	DR 171/02	★ Increase Deadweight of Car (>115 kg to 5%) record weight on Aux. Data Tag engineering assessment of related items (except 2.24.3)			Minor A	Minor A		
	8.7.3.21	Increase in Deadweight of Car (Car Wt+Rated Load >5%)			Major	-		
		DR 171/02	Car: Enclosure, Doors, Gates, Illumination					
		3.14.	Car: Enclosure, Doors, Gates, Illumination		n/a			
		3.15.	Car Frames & Platforms - ★apron guard to ED CAD/as pit permits					
		3.16.	Capacity & Loading					
		3.17.	Car and Counterweight Safeties					
		3.20.	Ropes and Rope Connections					
		3.21.	Counterweights					
		3.22.	Buffers and Bumpers					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		3.24.5	Counterweight Sheaves					
		8.7.3.23.4	Increase in Working Pressure					
	8.7.3.22	Change in Rise or Rated Speed			Major	-		
	8.7.3.22.1	Increase or Decrease in Rise			Major	-		
		3.25.	Terminal-Stopping Devices					
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts					
		3.4.1	Bottom Car Clearance					
		3.4.2	Minimum Bottom and Top Car Runby					
		3.4.3	Car Top and Bottom Maximum Runby					
		3.18.2	Plungers					
			If decrease in rise is at lowest end then;					
		2.2.4	Access to Pits					
		2.2.5	Illumination of Pits					
		2.2.6	Stop Switches					
	8.7.3.22.2	Increase in Rated Speed			Major	-		
		2.5.	Horizontal Car and Counterweight Clearances					
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts					
		3.21.	Counterweights					
		3.22.2(*)	Counterweight Buffers					
		3.14.	Car: Enclosure, Doors, Gates, Illumination					
		3.17.(*)	Car and Counterweight Safeties					
		3.16.	Capacity & Loading					
		3.25.	Terminal-Stopping Devices					
		3.26.1	Operating Devices and Control Equipment					
		3.26.2	Inspection Operation					
		3.26.3	Anti-Creep and Leveling Operation					
		3.26.4	Electrical Protective Devices					
		3.26.5	Phase-Reversal and Failure Protection					
		3.26.6	Control and Operating Circuits					
		3.20.	Ropes and Rope Connections					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.22.3	Decrease in Rated Speed 3.4. Bottom and Top Clearances and Runbys for Cars and Cwts 2.18.2 Tripping Speeds for Speed Governors 3.16. Capacity & Loading 3.16.3(b) Capacity & data plates 2.26.4.1 Electrical Equipment and Wiring 2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling			Major	-		
	8.7.3.23	Hydraulic Equipment			↓ See Below ↓			
	8.7.3.23.1	Alteration to	Hydraulic Jacks		Major	-		
	c8.6.12.5.4.1	Replacement of	3.18. Hydraulic Jacks		-	-	Major	
			3.18. Hydraulic Jacks					
	8.7.3.23.2	Alteration to	Plungers		Major	-		
	c8.6.12.5.4.2	Replacement of	3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers		-	-	Minor A	
			3.18.1.2 Roped-Hydraulic Elevator					
	8.7.3.23.3	Alteration to	3.18.2 Plungers		Major	-		
			3.18.3 Cylinders					
			3.18.3 Cylinders - Installed as part of Alteration					
			3.18.3 Cylinder is Altered					
			3.18.3 Cylinder is Sleeved				Minor B	
			3.18.4.1 Metal Stops and/or Other Means					
	c8.6.12.5.4.3	Replacement of	3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers		-	-	Minor A	
			3.18.3 Cylinders					
			3.18.3 Cylinders - Installed as part of Alteration					
			3.18.3 Cylinder is Altered					
			3.18.3 Cylinder is Sleeved					
	8.7.3.23.4	Increase in Working Pressure >5%	3.18.4.1 Metal Stops and/or Other Means					
			3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers					
			3.18.3 Cylinders					
			3.18.3 Cylinders - Installed as part of Alteration					
			3.18.3 Cylinder is Altered					
	8.7.3.23.5	Change in Location of Hydraulic Jack	3.18.4.1 Metal Stops and/or Other Means		Major	-		
			3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers					
			3.18.3 Cylinders					
			3.18.3 Cylinders - Installed as part of Alteration					
	8.7.3.23.6	Relocation of Hydraulic Machine (Power Unit)	3.24.4 Welding		Major	-		
			Part 3 Hydraulic Elevators					
	8.7.3.23.7	Plunger Gripper	3.26.8 Pressure Switch		Minor A	-		
			3.17.3 Plunger Gripper					
			3.1.1(b) strength of pit floor					
	8.7.3.24	Alteration to	3.22.1 no strike when buffers compressed		Minor A	Minor A		
			3.19. replacement of relief valve or check valve or piping or fittings					
	c8.6.12.5.5.2	Replacement of	Relief or Check Valves or Pressure Piping or Fittings		Minor A	Minor A	see c8.6.12.5.2	
			3.19. replacement of relief valve or check valve or piping or fittings					Minor B
	8.7.3.24	Alteration to	Control Valves		Minor A	-	see c8.6.12.5.5	
	c8.6.12.5.5.1	Replacement of	Control Valves				Minor B	
			3.19. replacement of control valve					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.25	Suspension Ropes and Their Connections			↓ See Below ↓			
	8.7.3.25.1	Change in Number of, or Diameter of Ropes 3.20. Ropes and Rope Connections PEO to certify retained sheaves w/different ropes are satisfactory			Major	-		
	8.7.3.25.1	Change in Material / Grade of Ropes 3.20. Ropes and Rope Connections PEO to certify retained sheaves w/different ropes are satisfactory			Minor A	-		
	8.7.3.25.2	Addition of Rope Equalizers 2.20.5 Suspension Rope Equalizers			Minor B	Minor B		
	8.7.3.26	Counterweights - Alteration of			See 8.7.2.22			
	8.7.2.22	Counterweights			Minor A	-		
	8.7.2.22.1	Alteration to any part of a cwt except guiding members 2.21. Counterweights 8.7.2.22.2 Rod Type Counterweights 8.7.2.3 Location and Guarding of Counterweights						
	8.7.2.22.2	Rod Type Cwt - can retain if: Minimum of 2 suspension and 2 tie rods Suspension rods: 2.21.2.1 Material - Cwt Frames & Rods 2.21.2.3 Factor of Safety Tie Rods: 2.21.1.2 Retention of Weight Sections						
	8.7.2.22.3	Roller or similar guide shoes added safety jaws cannot touch rails if not activated			mrr		mrr	
	8.7.3.26	Counterweights - Addition of			-	Major		
		3.4. Bottom and Top Clearances and Runbys for Cars and Cwts 3.6. Protection of Spaces below Hoistway 3.14. Car: Enclosure, Doors, Gates, Illumination 3.15. Car Frames & Platforms 3.17.2 Counterweight Safeties 3.18. Hydraulic Jacks 3.20. Ropes and Rope Connections 3.21. Counterweights 8.7.3.3 Location and Guarding of Counterweights						
	8.7.3.27	Car Buffers and Bumpers (oil buffer only in column 6) 3.21. Counterweights 3.22.2(*) Counterweight Buffers			Major	-	mrr	Minor B
	8.7.3.28	Guide Rails, Supports, and Fastenings (alteration to, or stress increase >5%) 3.23. Guide Rails, Guide-Rail Supports, and Fastenings 3.28. Layout Data			Major	-		
	8.7.3.29	Alteration to Tanks 3.24. Hydraulic Machines and Tanks			Minor B	-	see c8.6.12.5.6	
	8.7.3.29★1	★ Addition of Oil Cooler CSA C22.1 2.7.2 Maintenance Path and Clearance DO 212/07 A.3.01(c) if buried				Minor B		
	c8.6.12.5.6	Replacement of Tanks 3.24. Hydraulic Machines and Tanks			-	-	Minor B	
	8.7.3.30	Terminal-Stopping Devices 3.25. Terminal-Stopping Devices			Minor B	Minor B		
	8.7.3.31	Operating Devices and Control Equipment			↓ See Below ↓			
	8.7.3.31.1	Top-of-Car Operating Devices 3.26.2 Inspection Operation			Minor A	Minor A	mrr	Minor A
	DO 173/02	Addition of Top-of-Car Operating Device			-	Minor A		

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.31.2	Car-Leveling or Truck-Zoning Devices			Minor A	Minor A		
		3.26.3.2 Operation in Leveling or Truck Zone						
	8.7.3.31.3	Alteration to Anti-Creep Leveling Device			Minor B	-		
		3.26.3.1 Anti-Creep Operation						
	c8.6.12.5.7	Replacement of Anti-Creep Leveling Device			-	-		Minor B
		3.26.3.1 Anti-Creep Operation						
	8.7.3.31★1	★ Door By-Pass Switches			Minor A	Minor A		
		2.26.1.5 Inspection Operation with Open Door Circuits						
	8.7.3.31★2	★ Door Monitoring System			Minor A	Minor A		
		2.26.5 System to Prevent Auto Operation w/faulty Door Contacts						
	8.7.3.31.4	Change in Power Supply			Major	-		
		(a) voltage, frequency or # of phases or						
		(b) AC to DC , DC to AC or						
		(c) combination of DC & AC, then						
		electrical to:						
		3.26.1 Operating Devices and Control Equipment						
		3.26.4 Electrical Protective Devices						
		3.26.5 Phase-Reversal and Failure Protection						
		3.26.6(*) Control and Operating Circuits						
	8.7.3.31★3	★ Addition of Soft Start				Minor A		
		2.26.4.1 & 2 CSA C22.1 & B44.1 certified						
		3.26.5 Phase-Reversal and Failure Protection						
	8.7.3.31★4	★ Addition of Power Efficiency Increasing Device				Minor B		
		B44.1 certified						
		2.26.4.1 & 2 CSA C22.1 & B44.1 certified						
	8.7.3.31.5	Controllers						
	8.7.3.31.5(a)	Installation of Elevator Controller (as part of an alteration)			Major	-		see c8.6.12.5.3.1
		2.26.1.4 Inspection Operation						
		2.26.1.5 Inspection Operation with Open Door Circuits						
		2.26.4.1 Electrical Equipment and Wiring						
		2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling						
		2.26.4.3 Positively Opened Contacts						
		2.26.5 Monitor & Prevent Automatic Operation w/ Faulty Door Contacts						
		2.26.7 Installation of Capacitors/Devices Making EPD's Ineffective						
		3.26.2 Inspection Operation						
		3.26.3 Anti-Creep and Leveling Operation						
		3.26.5 Phase-Reversal and Failure Protection						
		3.26.7 Recycling Operation for Multiple or Telescopic Plungers						
		3.26.10 Auxiliary Power Lowering Operation						
		3.25 Terminal-Stopping Devices						
		★ 2.7.5.2 Temperature and Humidity						
		★ 3.27. (*) Firefighters' Emergency Operation - Automatic Elevators - where required by NBCC						
		except 2.27.1 and 2.27.2						
		indicate if Manual PHI Recall is provided						
		indicate if Automatic PHI Recall by FAID's is provided						

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		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	c8.6.12.5.3.1	Replacement of	Elevator Controller		-	-	Major	
		8.7.3.31.5(a)						
		2.26.1.4	Inspection Operation					
		2.26.1.5	Inspection Operation with Open Door Circuits					
		2.26.4.1	Electrical Equipment and Wiring - Including Clearances to CSA C22.1					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
		2.26.4.3	Positively Opened Contacts					
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts					
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective					
		3.26.2	Inspection Operation					
		3.26.3	Anti-Creep and Leveling Operation					
		3.26.5	Phase-Reversal and Failure Protection					
		3.26.7	Recycling Operation for Multiple or Telescopic Plungers					
		3.26.10	Auxiliary Power Lowering Operation					
		3.25.	Terminal-Stopping Devices					
		★ 2.7.5.2	Temperature and Humidity					
		★ 3.27. (*)	Firefighters' Emergency Operation - Automatic Elevators - where required by NBCC except 2.27.1 and 2.27.2 indicate if Manual PHI Recall is provided indicate if Automatic PHI Recall by FAID's is provided					
	8.7.3.31 ★5	Relocation of	Elevator Controller (if control wiring disconnected - reconnected)		Major			
		2.8.2	Electrical Equipment and Wiring Electrical testing as per the original design submission tests					
	8.7.3.31.5(b)	Installation of	Door Controller (as part of an alteration)		Minor A	-	see c8.6.12.5.3.1	
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
	c8.6.12.5.3.1	Replacement of	Door Controller		-	-	Minor B	
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
	8.7.3.31.6	Change in Type of Motion Control			Major	-		
		3.25.	Terminal-Stopping Devices					
		3.26.(*)	Operating Devices and Control Equipment					
		3.27.	Emergency Operation & Signaling Devices - ★ where required by NBCC indicate if Manual PHI Recall is provided indicate if Automatic PHI Recall by FAID's is provided					
	8.7.3.31.7	Change in Type of Operation Control (CPPB, Automatic)			Major	-		
		2.11.1	Entrances and Emergency Doors Required					
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.4	Location of Horizontally Sliding or Swinging H/W Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		2.11.9	Hoistway Door Locking Devices & Power Operation					
		2.11.10	Landing Sill: Guards, Illumination, hinged sills, Tracks					
		2.11.11	Entrances, Horizontal Slide Type					
		2.11.12	Entrances, Vertical Slide Type					
		2.11.13	Entrances, Swing Type					
		3.12.1	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		3.13.	Power Operation of H/W Doors and Car Doors					
		3.14.(*)	Car: Enclosure, Doors, Gates, Illumination					
		3.16.	Capacity & Loading					
		3.25.	Terminal-Stopping Devices					
		3.26.(*)	Operating Devices and Control Equipment					
		3.27.	Emergency Operation & Signaling Devices - ★ where required by NBCC indicate if Manual PHI Recall is provided indicate if Automatic PHI Recall by FAID's is provided					
	8.7.3.31 ★6	★ Addition of Wander Patient Feature - Change in Operation Control			Minor B	Minor B		
		2.11.3.2	- doors closed when not in use					
		2.13.5.4	- door time out					
		2.27.3.1.6(l)	- shall not prevent PHI					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.31★7	★ Addition of Restricted Access - Security / Floor Lock Out OBC-3.2.6.5(4) - shall not prevent floor access When on FEO D.O. Button Remain Operative Under non FEO Conditions, Door Closed When not in Use 2.27.3.1.6(l) - shall not prevent PHI 2.27.3.3.1(i) - permit travel to all landings when on PH II 2.11.6.2 Cannot Lock Out Top& Btm, Designated & Alternate or All Landings in Phase II DR 172/02 Elevators With Phase II Operation & Floor Button Controlled by Cards/Keys			Minor B	Minor B		
	8.7.3.31.8	Emergency Operation and Signaling Devices						
	8.7.3.31.8(a)	Car Emergency Signaling Devices			Minor B	Minor B	mrr	
		2.27.1 Car Emergency Signaling Devices						
	8.7.3.31.8(b)	Emergency or Standby Power			Minor B	Minor A		
		2.27.2 Emergency Or Standby Power systems						
	8.7.3.31.8(c)	Firefighter's Emergency Operation			Minor B	Minor A		
		3.27. (*) Emergency Operation and Signaling Devices ★ except 2.27.1 and 2.27.2 Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory						
	DO 175/02	★ Emerg. Recall Upgrade - from Manual to Automatic & matching code at time of install conformance to auto recall based on F.S. at time of install requirements of DO 175/02			Minor B			
	DO 219/07	★ Emerg. Recall Upgrade Voluntary to Fire Code Retrofit Order 219/07 Firefighter Operation to B44-00U2 or Firefighter Operation to B44-04 or Firefighter Operation to B44-07 Manual PHI Recall is mandatory Automatic PHI Recall by FAID's if required by NBCC or B44-07			Minor B	Minor A		
	8.7.3.31.9	Auxiliary Power Lowering Operation			Minor B	Minor B		
		3.26.10 Auxiliary Power Lowering Operation						
	8.7.3.31.10	Removal of emergency stop switch on passenger elevators remove all related markings / engravings & provide an in-car stop switch to:			Minor B	Minor B		
		2.26.2.21 In-car stop switch						
		2.26.4.3 Positively Opened Contacts						
		2.26.9.3(a) single failure does not render In-Car Stop Switch ineffective						
		3.26.4.2 deceleration rate <1g, anticreep must still function						
	8.7.3.31.11	Electrical Protective Devices					↓ See Below ↓	
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.2 (PES)			Major	Major	mrr	Major
		3.26.2 Electrical Protective Devices - for specified device						
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.1			-	Minor A	mrr	
		3.26.2 Electrical Protective Devices - for specified device						

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					Alteration		Replacement with		
					Modification Change	Addition	Same	Different Make/Model	
					Type of Submission Required				
	8.7.4	Alterations to Elevators w/other Types of Driving Machines							
	8.7.4.1	Rack and Pinion Elevators			Major	-			
		4.1.	Rack and Pinion Elevators						
	8.7.4.2	Screw-Column Elevators			Major	-			
		4.2.	Screw-Column Elevators						
	8.7.4.3	Hand Elevators			Major	-			
	8.7.4.3.1	Hoistway Enclosures and Machinery Space			Major	-			
		4.3.1	Hoistways, H/W Enclosures, and Related Construction						
		4.3.4	Enclosures for Machines and Control Equipment						
	8.7.4.3.2	Top Car and Counterweight Clearances			Major	-			
		4.3.3	Top Clearances						
	8.7.4.3.3	Hoistway Entrances			Major	-			
		4.3.6	Hoistway Entrances						
		4.3.7	Hoistway Gates for Landing Openings						
		4.3.8	Hoistway-Door & Hoistway Gate Locking Devices						
	8.7.4.3.4	Car Enclosures			Major	-			
		4.3.9	Car Enclosures						
		4.3.11	Car Frames and Platforms						
	8.7.4.3.5	Car Frame and Platform			Major	-			
		4.3.11	Car Frames and Platforms						
		4.3.12	Car Compartments						
		4.3.13	Cars Counterbalancing One Another						
		4.3.16	Suspension Means						
	8.7.4.3.6	Capacity and Loading			Major	-			
		4.3.14.1	Minimum Rated Load						
		4.3.14.2	Capacity Plate						
		4.3.19.1	Drive Machine & Sheaves - Factors or Safety						
		4.3.19.2	Driving-Machines						
		4.3.16	Suspension Means						
	8.7.4.3.7	Increase in Rise			Major	-			
		4.3.3.1	Top Car Clearances						
		4.3.3.2	Top Counterweight Clearance						
		4.3.15	Car Safeties						
		4.3.16	Suspension Means						
	8.7.4.3.8	Guide Rails and Fastenings			Major	-			
		4.3.18.1	Guide Rails - Material and Finish						
		4.3.18.2	Strength of Rails and Fastenings						
		4.3.18.3	Extension of Guide Rails at Top & Bottom of H/W						
	8.7.4.3.9	Overhead Beams and Supports			Major	-			
		4.3.5.1	Overhead Beams and Supports						
		4.3.5.2	Access to Machines and Sheaves						
	8.7.4.3.10	Power Attachments			Major	-			

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.5	Alterations to Special Application Elevators						
	8.7.5.1	Inclined Elevators			Major	-		
		5.1.	Inclined Elevators compliance to specific 5.1 sections based on alteration scope				variance	
	8.7.5.2	Limited Use/Limited Application Elevators			See Electric or Hydraulic Elevator			
	8.7.5.2★1	★	8.7.2	Alterations to Electric Elevator & as modified in Section 5.2				
	8.7.5.2★2	★	8.7.3	Alterations to Hydraulic Elevator & as modified in Section 5.2				
	8.7.5.5	Power Sidewalk Elevators			Major	-		
	8.7.5.5.1	Changes in Electrical Wiring or Electrical Equipment			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
	8.7.5.5.2	Sidewalk Door			Major	-		
		5.5.1.11.2	Horizontal Openings in Sidewalks and Exterior Areas					
		5.5.1.11.3	Hinged Type Swing Sidewalk Doors					
		5.5.1.11.4	Vertical Lifting Sidewalk Covers					
	8.7.5.5.3	Change in Car Enclosure, Car Doors, and Gates			Major	-		
		5.5.1.14	Car Enclosure, Car Doors and Gates, Illumination					
	8.7.5.5.4	Bow-Irons and Stanchions			Major	-		
		5.5.1.15.2	Bow-Irons and Stanchions					
	8.7.5.5.5	Increase in Rated Load			Major	-		
		5.5.1.16	Capacity and Loading					
		5.5.1.18	Speed Governors					
		5.5.1.21	Buffers and Bumpers					
		5.5.1.25.4	Maximum Rated Speed					
	8.7.5.5.6	Increase in Rated Speed			Major	-		
		5.5.1.15	Car Frames and Platforms					
		5.5.1.16	Capacity and Loading					
		5.5.1.19	Suspension Ropes					
		5.5.1.22	Guide Rails					
	8.7.5.5.7	Existing Driving Machine			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
		5.5.1.9	Machinery and Sheave Beams, Supports, and Foundations					
		5.5.1.23	Driving Machines and Sheaves					
		5.5.1.25	Operating Devices and Control Equipment					
	8.7.5.5.8	Change in Type of Operating Devices and/or Control Equipment			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
		5.5.1.25	Operating Devices and Control Equipment					
	8.7.5.6	Rooftop Elevators			Major	-		
		5.6.	Rooftop Elevators					
	8.7.5.7	Special Purpose Personnel Elevators			see CAN/CSA B311			

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.6.1	Alterations to Escalators						
	8.7.6.1.1	Change to component parts			mrr	-		mrr
		8.6.12.4.1.1 Replacement parts or components						
		8.6.12.4.1.2 Quality of Work						
	8.7.6.1.1	Addition of Components or Devices			see 8.7.6.1			-
		see applicable 8.7.6.1 requirements for that device						
	8.7.6.1.2	Relocation of Escalator			New	-		
		6.1.	Escalators					
	ED CAD 15.(2)	★ Repositioning of Escalator (within the same building)			Major			
		6.1.3.3.9	Guard at ceiling intersection					
		6.1.3.3.10	Anti-Slide Devices					
		6.1.3.3.11	Deck Barricades					
		6.1.3.4.3	Guards					
		6.1.3.6.6	Floor Opening Protection Adjacent to Escalator Wellway					
		6.1.3.12	Headroom					
		6.1.6.9.1	Caution Signs					
		6.1.7.4.2	certification to B44.1 does not apply					
		6.1.3.6.5	number of flat steps does not apply					
	8.7.6.1.3	Protection of Floor Openings			Minor A	-		
		6.1.1.1	Protection Required					
	8.7.6.1.4	Protection of Trusses and Machinery Spaces Against Fire			Minor A	-		
		6.1.2.1	Protection Required					
	8.7.6.1.5	Construction Requirements						
	8.7.6.1.5(a)	Construction Requirements - Angle of Inclination			Major	-		
	8.7.6.1.5(b)	Construction Requirements - Geometry			Major	-		
		6.1.3.2	Geometry					
	8.7.6.1.5(c)	Any Alteration to the Balustrades			Minor A	Minor A		
		6.1.3.3	Balustrades					
		6.1.3.3.1	Construction					
		6.1.3.3.2	Strength					
		6.1.3.3.3	Use of Glass or Plastic					
		6.1.3.3.4	Interior Low Deck					
		6.1.3.3.5	Loaded Gap between Skirt & Step					
		6.1.3.3.6	Skirt Panels					
		6.1.3.3.7	Dynamic Skirt Panels					
		6.1.3.3.8	Dynamic Skirt Panel Loaded Gap					
		6.1.3.3.9	Step/Skirt Performance Index					
		6.1.3.3.10	Skirt Deflector Devices					
	8.7.6.1.5(d)	Deflector Devices			Minor B			mrr
		6.1.3.3.10	Skirt Deflector Devices					
	8.7.6.1.6	Handrails or Handrail System			Minor A	-		
		6.1.3.2.2	Geometry - Handrail					
		6.1.3.4.1	Handrails - Type Required					
		6.1.3.4.2	Extension Beyond Combplate					
		6.1.3.4.3	Guards (hand or finger)					
		6.1.3.4.4	Handrails - Splicing					
		6.1.3.4.6	Handrail Clearance					
		6.1.6.3.12	Handrail Entry Device					
		6.1.6.4	Handrail Speed Monitoring Device					
	8.7.6.1★1	★ Addition of Handrail Advertising			mrr	variance		
		Variance to 6.1.6.9.2, provide maintenance program						

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.6.1.7	Step System - any alteration to the step system			Major	-	mrr	Minor B
		6.1.3.3.5	Loaded Gap Between Skirt & Step					
		6.1.3.5 (*)	Steps					
		6.1.3.6	Entrance and Egress Ends					
		6.1.3.8	Step Wheel Tracks					
		6.1.3.9.4	Step					
		6.1.3.10.4	Factor of Safety - Steps					
		6.1.3.11	Chains					
		6.1.6.3.3	Broken Step-Chain Device					
		6.1.6.3.9	Step Upthrust Device					
		6.1.6.3.11	Step Level Device					
		6.1.6.3.14	Step Lateral Displacement Device					
		6.1.6.5	Missing Step Device					
	8.7.6.1.8	Combplates			Minor A	-		
		6.1.6.3.13	Comb-Step Impact Devices					
	8.7.6.1.9	Trusses and Girders			Major	-		
		8.7.1.4	Welding - see Code Adoption Document					
		6.1.3.7	Trusses of Girders					
		6.1.3.9.1	Structural Load					
		6.1.3.10.1	Factor of Safety - Trusses and Supporting Structures					
	8.7.6.1.9	New Escalator into Existing Trusses			New	-		
		6.1.	Escalators					
	8.7.6.1.10	Step Wheel Tracks			Major	-		
		6.1.3.8	Step Wheel Tracks					
		6.1.3.9.4	Step					
		6.1.3.10.1	Factor of Safety - Trusses and Supporting Structures					
		8.7.1.4	Welding - see Code Adoption Document					
	8.7.6.1.11	Rated Load and Speed			Major	-		
		6.1.	Escalators					
	8.7.6.1.12	Driving Machine, Motor, and Brake						
	8.7.6.1.12(a)	Driving Machine			Major	-		
		6.1.3.9.2	Machinery					
		6.1.3.10.3	Factor of Safety - Power Transmission Parts					
		6.1.4.1	Limits of Speed					
		6.1.5.1	Connection Between Driving Machine and Main Drive Shaft					
		6.1.5.2	Driving Motor					
		6.1.5.3.1	Escalator Driving-Machine Brake					
		6.1.5.3.2	Main Drive Shaft Brake					
		6.1.6.3.4	Broken Drive-Chain Device					
		6.1.6.3.8	reversal Stop Device					
	8.7.6.1.12(b)	Driving Motor			Major	-		
		6.1.3.9.2	Machinery					
		6.1.3.10.3	Factor of Safety - Power Transmission Parts					
		6.1.4.1	Limits of Speed					
		6.1.5.2	Driving Motor					
		6.1.5.3.1	Escalator Driving-Machine Brake					
		6.1.5.3.2	Main Drive Shaft Brake					
		6.1.6.3.2	Speed Governor					
		6.1.6.3.8	reversal Stop Device					
		6.1.6.3.10	Disconnected Motor Safety Device					
	8.7.6.1.12(c)	Machine Brake			Major	-		
		6.1.3.9.3	Brake					
		6.1.3.10.2	Factor of Safety - Driving Machine Parts					
		6.1.5.3.1	Escalator Driving-Machine Brake					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.6.1.13	Operating and Safety Devices			Minor A	Minor A		
		6.1.6	Operating and Safety Devices (for that device)					
	8.7.6.1★2	★	Removal of step demarcation lights		Minor A	-		-
		6.1.3.3.5	Loaded Gap Between Skirt & Step					
		6.1.3.5.4	Clearance between Steps					
		6.1.3.5.5	Slotting of Steps and Treads					
		6.1.3.5.6	Step Demarcation					
		6.1.3.6.2	Distinction Between Comb and Step					
	8.7.6.1.14	Lighting, Access, and Electrical Work			Minor B	Minor B		
		6.1.7	Lighting, Access, and Electrical Work					
	8.7.6.1.15	Entrance and Egress			Major	-		
		6.1.3.6.1	Combplates					
		6.1.3.6.2	Distinction Between Comb and Step					
		6.1.3.6.3	Adjacent Floor Surfaces					
		6.1.3.6.4	Safety Zone					
	8.7.6.1.16	Controller - Installed as part of an alteration			Major	-		-
		6.1.6.10	Control and Operating Circuits					
		6.1.6.11	Electrically Power Safety Devices					
		6.1.6.12	Installation of Capacitors.. To Make EPD's Ineffective					
		6.1.6.13	Completion of Maintenance Circuits					
		6.1.6.14	Escalator Manual Reset					
		6.1.6.15	Contractors and Relays for Use in Critical Operating Circuits					
	8.7.6.1★3	★	Controller - Replacement of 8.7.6.1.16 Controller		-	-		Major
	8.7.6.1★4		Relocation of 2.8.2 Electrical Equipment and Wiring Electrical testing as per the original design submission tests		Major			
	8.7.6.1★5	★	Addition of Soft start for control systems built to B44-00 and later		-	Minor A		
		6.1.7.4	Electrical Equipment and Wiring					
		6.1.6.10.1	Occurrence of a single ground					
		6.1.6.10.2	Redundancy to be checked					
		6.1.6.10.3	Motors with Static control					
			for control systems built prior to B44-00					
		6.1.7.4	Electrical Equipment and Wiring					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.6.2	Alterations to Moving Walks						
	8.7.6.2.1	Change to component parts 8.6.12.4.1.1 Replacement parts or components 8.6.12.4.1.2 Quality of Work			mrr	-		mrr
	8.7.6.2.1	Addition of Components or Devices see applicable 8.7.6.2 requirements for that device			see 8.7.6.2			-
	8.7.6.2.2	Relocation of Moving Walk 6.2. Moving Walks			New	-		
	8.7.6.2.3	Protection of Floor Openings 6.2.1.1 Protection Required			Minor A	-		
	8.7.6.2.4	Protection of Trusses and Machinery Spaces Against Fire 6.2.2.1 Protection of Supports - Protection Required			Minor A	-		
	8.7.6.2.5	Construction Requirements - Angle of Inclination 6.2. Moving Walks			Major	-		
	8.7.6.2.5	Construction Requirements - Geometry 6.2.3.2 Geometry			Major	-		
	8.7.6.2.5	Construction Requirements - Balustrades 6.2.3.3 Balustrades			Minor A	Minor A		
	8.7.6.2.6	Handrails 6.2.3.2.3 Geometry - Handrail 6.2.3.4 Handrails 6.2.6.3.10 Handrail Entry Device 6.2.6.4 Handrail Speed Monitoring Device			Minor A	-		
	8.7.6.2.7	Treadway System 6.2.3.2.3 Geometry - Handrail 6.2.3.3.5 Skirtless Balustrade 6.2.3.3.6 Skirt Panels 6.2.3.5 Pallet-Type Treadway 6.2.3.6(*) Belt-Type Treadway 6.2.3.8 Entrance and Egress Ends 6.2.3.9 Supporting Structure 6.2.3.10 Rated Load 6.2.3.11 Design Factors of Safety 6.2.3.12.4 Pallet Factor of Safety 6.2.3.12.5 Belt Factor of Safety 6.2.3.13 Chain Drives 6.2.6.3.3 Broken Treadway Device 6.2.6.5 Missing Pallet Device 6.2.6.3.9 Pallet Level Device			Major	-		
	8.7.6.2.8	Combplates 6.2.3.8 Entrance and Egress Ends 6.2.6.3.11 Comb-Pallet Impact Devices			Minor A	-		
	8.7.6.2.9	Trusses and Girders 8.7.1.4 Welding - see Code Adoption Document 6.2.3.9 Supporting Structure 6.2.3.10.1 Structural Load 6.2.3.12.1 Trusses & Supports based on max static load			Major	-		
	8.7.6.2.9	New Moving Walk into Existing Truss 6.2. Moving Walks			New	-		
	8.7.6.2.10	Track System 6.2.3.9 Supporting Structure 6.2.3.10 Rated Load 6.2.3.11.1 Trusses & Supports based on max static load 8.7.1.4 Welding - see Code Adoption Document			Major	-		
	8.7.6.2.11	Rated Load and Speed 6.2. Moving Walks			Major	-		

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		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.6.2.12	Driving Machine			Major	-		
		6.2.3.10.2	Machinery Load					
		6.2.3.11.2	Factor of Safety for Drive Machine Parts					
		6.2.3.11.3	Factor of Safety for Power Transmission members					
		6.2.3.13	Chain Drives					
		6.2.3.14	V-Belt Drives					
		6.2.3.15	Headroom					
		6.2.4	Rated Speed					
		6.2.5.1	Connection Between Driving Machine and Main Drive Shaft					
		6.2.5.3.1	Moving Walk Driving-Machine Brakes					
		6.2.5.3.2	Main Drive Shaft Brake					
		6.2.6.3.4	Broken Drive-Chain Device					
		6.2.6.3.8	Disconnected Motor Safety Device					
	8.7.6.2.12	Drive Motor			Major	-		
		6.2.3.10.2	Machinery Load					
		6.2.3.11.2	Factor of Safety for Drive Machine Parts					
		6.2.3.11.3	Factor of Safety for Power Transmission members					
		6.2.4	Rated Speed					
		6.2.5.2	Driving Motor					
		6.2.5.3.1	Moving Walk Driving-Machine Brakes					
		6.2.6.3.2	Speed Governor					
		6.2.6.3.7	Reversal Stop Device					
		6.2.6.3.8	Disconnected Motor Safety Device					
	8.7.6.2.12	Machine Brake			Major	-		
		6.2.3.10.3	Brake					
		6.2.3.11.2	Factor of Safety for Drive Machine Parts					
		6.2.3.11.3	Factor of Safety for Power Transmission members					
		6.2.5.3.1	Moving Walk Driving-Machine Brakes					
		6.2.5.3.2	Main Drive Shaft Brake					
	8.7.6.2.13	Operating and Safety Devices			Minor A	Minor A		
		6.2.6	Operating and Safety Devices (for that device)					
	8.7.6.2.14	Lighting, Access, and Electrical Work			Minor B	Minor B		
		6.2.7	Lighting, Access, and Electrical Work					
	8.7.6.2.15	Controller - Installed as part of an alteration			Major	-		-
		6.2.6.9	Control and Operating Circuits					
		6.2.6.10	Electrically Power Safety Devices					
		6.2.6.11	Installation of Capacitors.. To Make EPD's Ineffective					
		6.2.6.12	Completion of Maintenance Circuits					
		6.2.6.13	Moving Walk Manual Reset					
		6.2.6.14	Contractors and Relays for Use in Critical Operating Circuits					
	8.7.6.2★1	★ Controller - Replacement of			-	-		Major
		8.7.6.1.16	Controller					
	8.7.6.2★2	Relocation of	Controller (if control wiring disconnected - reconnected)		Major			
		2.8.2	Electrical Equipment and Wiring					
			Electrical testing as per the original design submission tests					
	8.7.6.2★3	★ Addition of Soft start			-	Minor A		
			for control systems built to B44-00 and later					
		6.1.7.4	Electrical Equipment and Wiring					
		6.1.6.10.1	Occurrence of a single ground					
		6.1.6.10.2	Redundancy to be checked					
		6.1.6.10.3	Motors with Static control					
			for control systems built prior to B44-00					
		6.1.7.4	Electrical Equipment and Wiring					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2	Alterations to Electric Elevators						
	8.7.2.1	Hoistway Enclosures			Major	Major		
	8.7.2.1.1	Hoistway Enclosure Walls			Major	Major		
		2.1.1	Hoistway Enclosures					
		2.1.5	Windows and Skylights					
		2.1.6	Projections, Recesses, and Setbacks in H/W					
		2.5.	Horizontal Car and Counterweight Clearances					
		2.7.3.4.2	Access Doors and Openings					
		2.8.	Equipment in Hoistways, Machinery Spaces, Machine Rooms, Control Spaces, and Control Rooms					
		8.7.2.10	Entrances and Hoistway Openings (if change includes an entrance)					
		2.11.1	Entrances and Emergency Doors Required (if blind H/W)					
	8.7.2.1.2	Addition of Elevator to Existing Hoistway			-	New		
		2.5.	Horizontal Car and Counterweight Clearances					
	8.7.2.1.3	Construction at Top of Hoistway			Major	Major		
		2.1.2.1	Construction at Top of the Hoistway					
		2.1.3	Floor Over Hoistways					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.4	Construction at Bottom of Hoistway			Major	Major		
		2.1.2.2	Construction at Bottom of the Hoistway					
		2.1.2.3	Strength of Pit Floor					
		2.2.	Pits					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.5	Control of Smoke and Hot Gases			Major	Major		
		2.1.4	Control of Smoke and Hot Gases					
	8.7.2.2	Pits see other alterations below for non Major Alterations			Major	-		
		2.2.	Pits					
		2.1.2.3	Strength of Pit Floor					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.2	Pit Drains & Sumps			Minor B	Minor A		
		2.2.2.	Pit Drains					
	8.7.2.2	Pit Guards			Minor B	Minor A		
		2.2.3	Guards Between Adjacent Pits					
	8.7.2.2	Pit Access			Minor B	Minor A		
		2.2.4	Pit Access					
	8.7.2.2	Pit Illumination			Minor B	Minor A		
		2.2.5	Illumination of Pits					
	8.7.2.2	Pit Stop Switches			Minor B	Minor A		
		2.2.6	Stop Switches					
	8.7.2.2	Pit Depth			Minor B	Minor A		
		2.2.7	Minimum Pit Depths Required					
	8.7.2.2	Access to Underside of Car			Minor B	Minor A		
		2.2.8	Access to Underside of Car					
	8.7.2.3	Location and Guarding of Counterweights			Major	Major		
		2.3.	Location and Guarding of Counterweights					
		2.5.1.2	Between Car & Cwt and Cwt Guard					
		2.6.	Protection of Space below H/W					
	8.7.2.4	Vertical Car and Counterweight Clearances and Runbys (no reduction allowed)			Major	-		
		2.4.	Vertical Clearances & Runbys for Cars & Cwts					
		8.7.2.17.1	Increase or Decrease in Rise					
		8.7.2.17.2	Increase in Rated Speed					
		8.7.2.25.2	Change in Location of Driving Machine					
	8.7.2.5	Horizontal Car and Counterweight Clearances (no reduction allowed)			Major	-		
		2.5.	Horizontal Car and Counterweight Clearances					
		8.7.2.17.2	Increase in Rated Speed					
	8.7.2.6	Protection of Spaces Below Hoistways			Minor B	Major		
		2.6.	Protection of Space below H/W					

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					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.7	Machine Rooms and Machinery Spaces			↓ See Below ↓			
	8.7.2.7.1	Enclosures - other than specifics of 8.7.2.7.2 to 8.7.2.7.7						
		2.7. (& 3.7.)	New	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	-	Major		
		2.7. (& 3.7.)	Altered	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	Minor A	-		
		CSA C22.1	Electrical Equipment Clearances		Minor B	-		
	8.7.2.7★1	Enclosures - Control Rooms and Control Spaces						
		2.7. (& 3.7.)	New	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	-	Major		
		2.7. (& 3.7.)	Altered	Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	Minor A	-		
		CSA C22.1	Electrical Equipment Clearances		Minor B	-		
	8.7.2.7.2	Means of Access			Minor B	-		
		2.7.3.1	General Requirements					
		2.7.3.2	Access Across Roofs					
		2.7.3.3	Means of Access					
	8.7.2.7.3	Access Doors and Openings			Minor B	Minor B		mrr
		2.7.3.4	Access Doors and Openings					
		2.7.3.5	Stop Switch for Machinery Space or Control Spaces					
	8.7.2.7.4	Headroom (no reduction)			Minor B	Minor B		
		2.7.4	Headroom in M/C Rooms					
	8.7.2.7.5	Windows and Skylights			Minor B	Minor B		
		2.1.5						
	8.7.2.7.6	Lighting (no reduction)			Minor B	Minor A		
		2.7.9.1	Lighting					
	8.7.2.7.7	Ventilation			Minor B	Minor B		
		2.7.9.2	Temperature & Humidity					
	8.7.2.8	Electrical Equipment, Wiring, Pipes, and Ducts in H/W's & M/C Rooms			Minor B	Minor B		
		Installation of New (electrical, wiring, raceways, cables, pipes, ducts)			-	Minor B		
		also installation of Monitoring Equipment, HVAC						
		2.8.	Equipment in Hoistways and Machine Rooms					
			CSA Labeling (or equivalent)					
			C22.1 as required					
		Alteration of Existing (electrical, wiring, raceways, cables, pipes, ducts...)			Minor B	-		
		2.8.	Equipment in Hoistways and Machine Rooms					
	8.7.2.9	Machinery and Sheave Beams, Supports, and Foundations			Major	Major		
		New/Relocated Machinery & Sheave Beams, Supports, Foundation						
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		Building reactions increased by more than 5%						
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		adequacy of building structure verified by P.Eng.						
	8.7.2.10	Entrances and Hoistway Openings			Major	Major		see below
	8.7.2.10.1	General Requirements			Major	-		
	8.7.2.10.1(a)	General Requirements - All New Entrances			Major	-		Major Major
		2.11.	Protection of H/W Openings					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(b)	General Requirements - New Entrances w/Existing Entrances			-	Major		
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.4	Location of Horizontally Sliding or Swinging H/W Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					

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					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.1(c)	General Requirements - Alteration to H/W Entrance			Major	-		
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(d)	General Requirements - Emergency Doors			Major	Major		
		2.11.1	Entrances and Emergency Doors Required					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.1(e)	General Requirements - Access Openings (installed for cleaning)			Major	Major		
		2.11.1.4	Access Opening for Cleaning of Car & H/W Enclosure					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.2	Horizontal Slide-Type Entrances - new entrance and components to meet:			Major	Major		see below
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					Major
		2.11.11	Entrances, Horizontal Slide Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B			Minor B
		2.11.11.1	Landing Sills					
		2.11.11.6	Bottom Guides					
	hanger /track (b)	2.11.11.2	Hanger Tracks, and Track Supports		Minor B			Minor B
	frame (c)	2.11.11.3	Entrance Frames		Minor A			Minor A
		2.11.11.5.1	Panel Overlap					
		2.11.11.5.2	Panel Gaps Clearances					
		2.11.11.5.3	Pockets in Strike Jamb					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hangers (d)	2.11.11.4	Hangers		Minor B			Minor B
	panels (e)	2.11.11.5(*)	Panels		Minor A			Minor A
		2.11.11.6	Bottom Guides					
		2.11.11.7	Multipanel Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
	retainers (f)	2.11.11.8	Hoistway Door Safety Retainers		Minor B			Minor B
	8.7.2.10.3	Vertical-Slide-Type Entrances - new entrance and components to meet:			Major	Major		see below
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					Major
		2.11.12	Entrances, Vertical Slide Type					
	sills (a)	2.11.10.3	Hinged Hoistway Landing Sills		Minor B			Minor B
		2.11.12.1	Landing Sills					
	frames (b)	2.11.12.2	Entrances Frames		Minor B			Minor B
		8.7.2.10.5	Marking of Entrance Assemblies					
	rails (c)	2.11.12.3	Rails		mrr			mrr
	panels (d)	2.11.12.3	Rails		Minor A			Minor A
		2.11.12.4	Panels					
		2.11.12.5	Guides					
		2.11.12.6	Counterweighting or Counterbalancing					
		2.11.12.8	Pull Straps					
		8.7.2.10.5	Marking of Entrance Assemblies					
	guides (e)	2.11.12.5	Guides					
	sill guard (f)	2.11.12.7	Sill Guards		mrr			mrr
	straps (g)	2.11.12.8	Pull Straps					
	8.7.2.10.4	Swing-Type Entrances - new entrance and components to meet:			Major	Major		see below
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					Major
		2.11.13	Entrances, Swing Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B			Minor B
		2.11.10.3	Hinged Hoistway Landing Sills					
		2.11.13.1	Landing Sills					
	frames (b)	2.11.13.2	Entrance Frames		Minor B			Minor B
		2.11.13.4	Hinges					
		8.7.2.10.5	Marking of Entrance Assemblies					
	panels (c)	2.11.13.3	Panels		Minor B			Minor B
		2.11.13.4	Hinges					
		2.11.13.5	Marking					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hinges (d)	2.11.13.4	Hinges		mrr			mrr

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	8.7.2.10.5	Marking of Entrance Assemblies (Alteration to an Entrance Door Panel) Fire Protection Rating not less then existing entrance 8.7.2.10.5(a) NBCC requirements			Major	Major		
	8.7.2.10★1	★ Removing Service To a Floor Bolt entrances shut Remove Interlock From Safety String If Adding Door In front Of Entrance, Gap btwn doors <=125mm Remove COP Floor Button 2.11.6.2 Cannot Lock Out Top/Btm, Designated/Alternate, All Landing in Phase II				Minor B		
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓			
	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.2	Interlocks					
		2.12.4	Listing/Certification Locking Devices					
		2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)				n/a	
		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)				n/a	
		2.12.7	Hoistway Access Switches (n/a for column 5,6)				n/a	
		2.24.8.3	Driving Machine Brake					
	8.7.2.11.2	Mechanical Locks and Electric Contacts			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.3	H/W Door Combination Mechanical Locks & Contacts					
		2.12.4	Listing/Certification Locking Devices					
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8	Braking Systems & Driving Machine Brakes					
	8.7.2.11.3	Parking Devices			Minor A	Minor A		
	8.7.2.11.4	Access Switches and Unlocking Devices						
	8.7.2.11.4 (a)	Addition of Unlocking Devices			-	Minor B	mrr	
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8.3	Driving Machine Brake					
	8.7.2.11.4 (b)	Addition of Access Switches			-	Minor A	mrr	
		2.12.7	Hoistway Access Switches					
		2.24.8	Braking Systems & Driving Machine Brakes					
		2.26.1.4	Inspection Operation					
	8.7.2.11★1	★ Door Safety Retainers			Minor B	Minor A	mrr	Minor B
		2.11.11.8	Hoistway Door Safety Retainers					
	8.7.2.11.5	Restricted Opening of H/W or Car Doors of Passenger Elevators (Restrictors) (Altered or Installed)			Minor B	Minor B	mrr	Minor B
		2.12.5	Restricted Opening of H/W or Car Door					
	8.7.2.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A		
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					
		8.7.2.10.2	Horizontal Slide-Type Entrances					
		8.7.2.10.3	Vertical Slide-Type Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
		★ 2.13.	Power Operation of Hoistway Doors and Car Doors					
	8.7.2.12★1	★ Replacement of Door Operator			-	-	mrr	Minor B
		2.13.	Power Operation of Hoistway Doors and Car Doors					
	8.7.2.13	Door Reopening Device (Safety Edge) (Altered or Added or Replaced)			Minor B	Minor B	mrr	Minor B
		2.13.4	Closing Limitations for Power Operated HS Doors & Gates					
		2.13.5	Reopening Device for Power Operated Car Doors or Gates if FEO provided, door opening & closing to PHI & II at time of install					

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	8.7.2.14	Car Enclosures, Car Doors and Gates, and Car Illumination			↓ See Below ↓			
	8.7.2.14.1	Installation of New Car Enclosure			Major	-		
		2.14.	Car: Enclosure, Doors, Gates, Illumination					
		2.15.	Car Frames & Platforms					
		2.17	Car and counterweight safeties					
		8.7.2.15.1	Alterations to Car Frames and Platforms					
	8.7.2.14.2	Alteration to Existing Cars			Minor A	Minor A		
	8.7.2.14.2(a)	Car Enclosure - Securing of Enclosures			Minor A	Minor A		
		2.14.1.2	Securing of Enclosures					
	8.7.2.14.2(b)	Top Emergency Exit (Altered or Added)			Minor B	Minor B		
		2.14.1.5	Top Emergency Exits					
	8.7.2.14.2(c)	Installation of Glass			Minor B	Minor B		
		2.14.1.8	Glass in Elevator Cars					
		2.14.1.8.1	Enclosures include glass					
		2.14.1.8.2	Lining of Walls or Ceilings include glass					
		2.14.1.8.3	Not Adopted - Type 3C in not permitted, except if mrr					mrr
		2.14.1.8.4	Marking of each Glazing Panel					
	8.7.2.14.2(d)	Specific Equipment in Elevator Car			Minor B	Minor B		
		2.14.1.9	Equipment Inside Cars					
		(a)	Handrails					
		(b)	fastening devices for protective linings					
		(c)	ceiling mounted hooks/tracks					
		(d)	picture frames display boards, plaques <38mm protrusion secured to 2.14.1.2 material to 2.14.2.1					
		(e)	conveyor tracks in freights					
		(f)	heating or cooling equipment					
	8.7.2.14★1	★ Car operating station			Minor B	Minor B	mrr	Minor B
			verify inspection operation 'if provided'					
			verify stop sw					
			verify switches operate as before (eg. FS, FEO, Access)					
	8.7.2.14★2	★ video cameras / surveillance equipment / video monitors			Minor B	Minor B		
		2.8.1.1	electrical equipment & wiring					
		2.14.1.2.3	securing of enclosure equipment					
		2.14.2.4	Headroom in Elevator Cars					
	8.7.2.14★3	★ other equipment				Variance		
	8.7.2.14.2(e)	Side Emergency Exits - Secured Shut			Major	-		
	8.7.2.14.2(f)	Car Ventilation			Minor B	-		
		2.14.2.3	Ventilation					
	8.7.2.14.2(g)	Car Illumination			Minor B	Minor B		
		2.14.7	Illumination of Cars and Lighting Fixtures					
	8.7.2.14.2(h)	Partitions Installed in Elevator Cars			Major	Major		
		2.16.1.2	Use of Partitions for Reducing Inside Net Platform Area					
	8.7.2.14.4	Car Enclosure / Car Door or Car Gates			↓ See Below ↓			
	8.7.2.14.4	Alteration to Car Enclosure other than 8.7.2.14.2 - Enclosure Materials			DR 171		Minor B	DR 171
		2.14.	Car: Enclosure, Doors, Gates, Illumination					
			enclosure material flame ratings shall not be diminished					
		2.14.1.7	car top railing		n/a		n/a	n/a
		2.14.7.1.3	auxiliary lighting					
		2.14.7.1.4	car top light & outlet					
			Directors Order 171					
	8.7.2.14.4	Alteration to Car Door or Car Gates other than 8.7.2.14.2			Minor A	Minor A		
		2.14.	Car: Enclosure, Doors, Gates, Illumination					
		2.14.1.7	car top railing					
		2.14.7.1.3	auxiliary lighting					
		2.14.7.1.4	car top light & outlet					
	O.Reg.209/01s30	★ Relocation of Elevator License to remote location			Minor B†	-		
	8.7.2.14★4	★ Car Top Railing			Minor B	Minor A		
		2.14.1.7	Railing and Equipment on Top of Cars					
		2.4	Vertical Car & Cwt Clearances & Runbys					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.15	Car Frames and Platforms			↓ See Below ↓			
	8.7.2.15.1	Alterations to Car Frames and Platforms			Major	-	Major	
		2.15. Car Frames & Platforms						
	DR 171/02	★ Decrease Deadweight <5% or Increase Deadweight of Car (115 kg or Less) record weight on Aux. Data Tag			Minor B	Minor B		
	DR 171/02	★ Increase Deadweight of Car (>115 kg to 5%) record weight on Aux. Data Tag engineering assessment of related items (except 2.24.3)			Minor A	Minor A		
	8.7.2.15.2	Increase or Decrease in Deadweight of Car (Car Wt+Rated Load > 5%)			Major	-		
		DR 171/02 ★ record weight on Aux. Data Tag						
		2.15.(*). Car Frames & Platforms - ★apron guard to ED CAD/as pit permits						
		2.15.9 Platform Guards (Aprons)						
		2.16. Capacity & Loading						
		2.17. Car & Cwt Safeties						
		2.18. Speed Governors						
		2.20. Suspension Ropes & Connections						
		2.21.(*). Counterweights						
		2.22.(*). Buffers & Bumpers						
		2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings						
		2.24.(*). Driving Machines & Sheaves						
		8.7.2.9 Machinery and Sheave Beams, Supports, Foundations						
	8.7.2.16	Capacity, Loading, and Classification			Major	-		
	8.7.2.16.1	Change in Type of Service: Passenger to Freight OR Freight to Passenger			Major	-		
		2.11.1 Entrances and Emergency Doors Required						
		2.11.2 Types of Entrances						
		2.11.3 Closing of Hoistway Doors						
		2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills						
		2.11.6 Opening of Hoistway Doors						
		2.11.7 Glass in Hoistway Doors						
		2.11.8 Weights for Closing or Balancing Doors						
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		2.13. Power Operation of H/W Doors and Car Doors						
		2.22 (*) Buffers & Bumpers						
		2.14. Car: Enclosure, Doors, Gates, Illumination						
		2.15.(*). Car Frames & Platforms - ★apron guard to ED CAD/as pit permits						
		2.17.(*). Car & Cwt Safeties						
		2.18.(*). Speed Governors						
		2.16. Capacity & Loading						
		2.20. Suspension Ropes & Connections						
		2.24.(*). Driving Machines & Sheaves						
		2.25. Terminal Stopping Devices						
		2.26. Operating Devices and Control Equipment						
		2.27. Emergency Operation & Signaling Devices						
		2.19. Ascending Car Overspeed & Unintended Car Movement Protection						
	8.7.2.16.2	Change in Class of Loading: [from any class to any other class ie A, B, C1, C2, C3]			Major	-		
		2.16.2 Minimum Rated Load for Freight Elevators						
		8.7.2.16.4 Increase in Rated Load						
	8.7.2.16.3	Carrying of Passengers on Freight Elevators			Major	-		
		2.16.4 Carrying of Passengers on Freight Elevators						
		2.16.4.1 not accessible to general public						
		2.16.4.2 rated load not less than required by 2.16.1						
		2.16.4.3 conforms to 2.16.8 Passenger Overload in Down Direction						
		2.16.4.4 H/W entrances to 2.12.1.1 & 2.11.2.1 or 2.11.2.2(e)						
		2.16.4.5 car doors to 2.14.5 Passenger Car Doors						
		2.16.4.6 car enclosure openings to 2.14.2.2 Prohibited Openings						
		2.16.4.7 conforms to 2.12.5 Restricted Opening of H/W or Car Door						
		2.16.4.8 Fs for suspension ropes to Table 2.20.3						
		2.16.4.9 Power Operated vertical doors to 2.16.4.9(a) to (e)						
		★ apron guard to ED CAD or extent pit permits						
		★ 2.16.5 Signs Required in Freight Elevator Cars						

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		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.16.4	Increase in Rated Load		Car doors or gates shall be provided at all car entrances 2.14.4 New to: Passenger & Frt Car Doors & Gates, General Req'mts 2.14.5 New to: Passenger Car Doors 2.14.6 New to: Freight Elevator Car Doors and Gates 2.15.(*) Car Frames & Platforms- ★apron guard to ED CAD/as pit permits 2.16. Capacity & Loading 2.17. Car & Cwt Safeties 2.18.(*) Speed Governors 2.19. Ascending Car Overspeed & Unintended Car Movement Protection 2.20. Suspension Ropes & Connections 2.21.(*) Counterweights 2.22.(*) Buffers & Bumpers 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 2.24. Driving Machines & Sheaves 2.26.1.4 Inspection Operation 2.26.1.5 Inspection Operation with Open Door Circuits 2.26.5 Monitor & Prevent Automatic Operation w/ Faulty Door Contacts 8.7.2.9 Machinery and Sheave Beams, Supports, Foundations	Major	-		
	8.7.2.17	Change in Rise or Rated Speed			Major	-		
	8.7.2.17.1	Increase or Decrease in Rise		2.25. Terminal Stopping Devices retain drum m/c, travel increase < 4570mm 2.4.(*) Vertical Clearances & Runbys for Cars & Cwts If decrease in rise is at lowest end then; 2.2.4 Access to Pits 2.2.5 Illumination of Pits 2.2.6 Stop Switches	Major	-		
	8.7.2.17.2	Increase in Rated Speed			Major	-		
	8.7.2.17.2(a)	Increase in Rated Speed on a Winding Drum machine		Increase in Rated Speed of a winding drum m/c prohibited 8.7.2.17.2(c) except in 8.7.2.17.2(c)	Major	-		
	8.7.2.17.2(b)	Increase in Rated Speed greater than 10% & greater than 0.20m/s		2.4.2 Minimum Bottom Runby for Counterweighted Elevators 2.4.3 Minimum Bottom Runby for Uncounterweighted Elevators 2.4.4 Maximum Bottom Runby 2.4.5 Counterweight Runby Data Plate 2.4.6 Top Car Clearances for Counterweighted Elevators 2.4.7 Top Car Clearances for Uncounterweighted Elevators 2.4.8 Vertical Clearances with Underslung Car Frames 2.4.9 Top Counterweight Clearances 2.4.10 Overhead Clearances - w/No Overhead Beams 2.4.11 Equipment on Top of Car Not Permitted to Strike O/H 2.5. Horizontal Car and Counterweight Clearances 2.22.(*) Buffers & Bumpers Car doors or gates shall be provided at all car entrances 2.14. New doors/gates to: Car: Enclosure, Doors, Gates, Illumination 2.17. Car & Cwt Safeties 2.18.(*) Speed Governors 2.16. Capacity & Loading 2.24. Driving Machines & Sheaves 2.25. Terminal Stopping Devices 2.26.(*) Operating Devices and Control Equipment 2.20. Suspension Ropes & Connections 2.19. Ascending Car Overspeed & Unintended Car Movement Protection	Major	-		
	8.7.2.17.2(c)	Increase in Rated Speed less than 10% & less than 0.20m/s		new spd <.75 for type A safeties new spd <1 w/spring buffer, 2.18.2.1&2 2.18.2.1 Car speed governors 2.18.2.2 counterweight speed governors 8.7.2.27.3 Change in Power Supply	Major	-		

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.17.3	Decrease in Rated Speed 2.4. Vertical Clearances & Runbys for Cars & Cwts 2.18.2 Tripping Speeds for Speed Governors 2.16. Capacity & Loading 2.16.3(*) Capacity and Data Plates 2.26.4.1 Electrical Equipment and Wiring 2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling 2.26.4.3 Positively Opened Contacts			Major	-		
	8.7.2.18	Car and Counterweight Safeties			Major	Major	↓See Below ↓	
	8.7.2.18.1	New Car Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes			-	Major	mrr	Minor A
	8.7.2.18.2	New Cwt Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes			-	Major	mrr	Minor A
	8.7.2.18.3	Existing Car Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes				-	mrr	Minor A
	8.7.2.18.3	Existing Cwt Safeties 2.17. Car & Cwt Safeties 2.18. Speed Governors 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 8.7.2.19 Speed Governors and Governor Ropes			Major	-	mrr	Minor A
	8.7.2.19	Speed Governors and Governor Ropes			Major	Major	↓See Below ↓	
	8.7.2.19	2.18. Speed Governors					mrr	Minor A
	8.7.2.19	2.17.15 Governor Rope Releasing Carriers					mrr	mrr
	8.7.2.19	Governor Ropes of different material or Construction to: 2.18.6 Design Gov'r Rope Retarding Means for Type B Safeties 2.18.7 Traction between Speed Governor Rope & Sheave & testing to 2.17.3 Function and Stopping Distances of Safeties					Minor B	Minor B
	8.7.2.20	Ascending Car Overspeed and Unintended Car Movement Protection (ACO & UCM)			Minor A	Major	mrr	Minor A
		2.19. Ascending Car Overspd & Unintended Car Movement Protection if part of an alteration which includes; change in motion control - 8.7.2.27.5 replacement of an Elevator Controller 8.6.12.5.3.1 or 8.7.2.27.4						
	8.7.2.20★1	★ If Elevators Controllers are pre-B44-00 & have ACO & UCM 2.19. ACO & UCM Protection, EXCEPT◆ ◆ detection means to B44-M90 or the code at time of install 8.9. ◆ Code Data tag to reflect code at time of install			Minor A	-	mrr	Minor A
	8.7.2.20★2	★ If Elevators Controllers are pre-B44-00 & have ACO ONLY 2.19.1 ACO Protection Only, EXCEPT◆ 2.19.3 Emergency Brake EXCEPT◆ ◆ detection means to B44-M90 or the code at time of install 8.9. ◆ Code Data tag to reflect code at time of install			Minor A	-	mrr	Minor A
	8.7.2.20★3	★ Voluntary Addition of Both ACO and UCM where previously not provided 2.19. ACO & UCM Protection EXCEPT◆ ◆ detection means to B44-M90 code or later 2.7. Machinery Spaces, Machine Rooms Control Spaces & Control Rooms as applicable to the equipment installation 8.9. ◆ Code Data tag to reflect code edition used for the alteration				Minor A		

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.21	Suspension Ropes and Their Connections			↓ See Below ↓			
	8.7.2.21.1	Change in Number of, or Diameter of Ropes 2.20. Suspension Ropes & Connections PEO to certify retained sheaves w/different ropes are satisfactory			Major	-		
	8.7.2.21.1	Change in Material / Grade of Ropes 2.20. Suspension Ropes & Connections PEO to certify retained sheaves w/different ropes are satisfactory			Minor A	-		
	8.7.2.21.2	Addition of Rope Equalizers 2.20.5 Suspension Rope Equalizers			Minor B	Minor B		
	8.7.2.21.3	Addition of Auxiliary Rope-Fastening Devices 2.20. Suspension Ropes & Connections			Major	Major		
	8.7.2.22	Counterweights			Minor A	-		
	8.7.2.22.1	Alteration to any part of a cwt except guiding members 2.21. Counterweights 8.7.2.22.2 Rod Type Counterweights 8.7.2.3 Location and Guarding of Counterweights						
	8.7.2.22.2	Rod Type Cwt - can retain if: Minimum of 2 suspension and 2 tie rods Suspension rods: 2.21.2.1 Material - Cwt Frames & Rods 2.21.2.3 Factor of Safety Tie Rods: 2.21.1.2 Retention of Weight Sections						
	8.7.2.22.3	Roller or similar guide shoes added safety jaws cannot touch rails if not activated			mrr		mrr	
	8.7.2.23	Car and Counterweight Buffers and Bumpers (oil buffer only in column 6) 2.22.(*) Buffers & Bumpers			Major	-	mrr	Minor B
	8.7.2.24	Guide Rails, Supports, and Fastenings (alteration to, or stress increase >5%) 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings			Major	-		
	8.7.2.25	Driving Machines and Sheaves			↓ See Below ↓			
	8.7.2.25.1	Alterations to Driving Machines & Sheaves			Major	Major		
	8.7.2.25.1(a)	Installation of 2.7.2 Maintenance Path and Clearance (★editorially omitted) 2.7.2.3 Maintenance Clearance in Machine Rooms & Control Rooms 2.9. Machinery & Sheave Beams, Supports, Foundation 2.10.1 Guarding of Equipment 2.19. Ascending Car Overspeed & Unintended Car Movement Protection 2.20. Suspension Ropes & Connections 2.24. Driving Machines & Sheaves 2.26.8 Release and Application of Driving-Machine Brakes			-	-	see 8.6.12.5.2	
	8.7.2.25.1(b)	Alterations to Driving Machine Components - affected component complies w/ 2.24.2 Sheaves and Drums 2.24.3 Factor of Safety for Driving Machines and Sheaves 2.24.4 Fasteners Transmitting Load 2.24.5 Shafts Fillets and Keys 2.24.6 Cast-Iron Worms and Worm Gears 2.24.7 Friction Gearing and Clutches 2.24.8 Braking Systems & Driving Machine Brakes 2.24.9 Indirect-Driving Machines 2.26.8 Release and Application of Driving-Machine Brakes			Major		mrr	Major
	8.7.2.25.1(c)	Change of Driving Machine Sheave 2.24.2 Sheaves and Drums 2.24.3 Factor of Safety for Driving Machines and Sheaves 2.24.4 Fasteners Transmitting Load 2.20. Suspension Ropes & Connections			Major	-	mrr	Major

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.6.12.5.2	Replacement of	Driving Machine		-	-	Major	
		8.7.2.25.1(a)						
		2.7.2	Maintenance Path and Clearance (★editorially omitted)					
		2.7.2.3	Access to Machinery Spaces/Rooms, Control Spaces/Rooms					
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		2.10.1	Guarding of Equipment					
		2.19.	ACO & UCM Protection, Except ♦					
		♦8.7.2.20★3	if replacement is machine only & ACO / UCM not previously provided					
		2.20.	Suspension Ropes & Connections					
		2.24.	Driving Machines & Sheaves					
		2.26.8	Release and Application of Driving-Machine Brakes					
	8.7.2.25.2	Change in Location of	Driving Machine		Major	-		
	8.7.2.25.2(a)	Change in Location of	Driving Machine w/ no change in Rise		Major	-		
		2.7.2	Maintenance Path and Clearance (★editorially omitted)					
		2.7.2.3	Access to Machinery Spaces/Rooms, Control Spaces/Rooms					
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		2.10.1	Guarding of Equipment					
		2.24.2.3	Traction					
	8.7.2.25.2(b)	Change in Location of	Driving Machine w/ change in Rise		Major	-		
		Part 2 (*)	Electric Elevators					
		8.7.2.5	see also					
		8.7.2.10	see also					
	8.7.2.25★1	★ Replacement of worm and/or gear (specify make)			-	-	mrr	Minor A
	8.7.2.25★2	★ Addition of Machine Guarding			Minor B		mrr	mrr
		2.10.1	Guarding of Equipment					
	8.7.2.26	Terminal-Stopping Devices			Minor B	Minor B		
		2.25.	Terminal Stopping Devices					
	8.7.2.27	Operating Devices and Control Equipment			↓ See Below ↓			
	8.7.2.27.1	Top-of-Car Operating Devices			Minor A	Minor A	mrr	Minor A
		2.26.1.4	Inspection Operation					
	DO 173/02	★ Addition of Top-of-Car Operating Device			-	Minor A		
	8.7.2.27.2	Car-Leveling or Truck-Zoning Devices			Minor A	Minor A		
		2.26.1.6	Operation in Leveling or Truck Zone					
	8.7.2.27★1	★ Door By-Pass Switches			Minor A	Minor A		
		2.26.1.5	Inspection Operation with Open Door Circuits					
	8.7.2.27★2	★ Door Monitoring System			Minor A	Minor A		
		2.26.5	System to Prevent Auto Operation w/faulty Door Contacts					
	8.7.2.27.3	Change in Power Supply			Major	-		
		(a) voltage, frequency or # of phases or						
		(b) AC to DC , DC to AC or						
		(c) combination of DC & AC, then						
		electrical to:						
		2.26.1.1	Types of Operation					
		2.26.1.2	For Car-Switch Operation Elevators					
		2.26.1.3	Add'l Operating Devices for Elevators carrying 1pc. load > than Rated					
		2.26.1.4	Inspection Operation					
		2.26.1.6	Operation in Leveling or Truck Zone					
		2.26.2	Electrical Protective Devices					
		2.26.6	Phase Protection of Motors					
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective					
		2.26.9	Control & Operating Circuits					
		2.26.10	Absorption of Regenerated Power					
		new / modified equipment and wiring to:						
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
		2.26.4.3	Positively Opened Contacts					
		brakes to:						
		2.24.8	Braking Systems & Driving Machine Brakes					
		2.26.8	Release and Application of Driving-Machine Brakes					
		winding drum to:						
		2.25.3.5	Additional Req'mts for Winding Drum Machines					
		see 8.7.2.17.2(b)	Increase in Rated Speed					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.2.27.4	Controllers							
	8.7.2.27.4(a)	Installation of	Elevator Controller (as part of an alteration)		Major	-		see 8.6.12.5.3.1	
		2.25.	Terminal Stopping Devices						
		2.26.1.4	Inspection Operation						
		2.26.1.5	Inspection Operation with Open Door Circuits						
		2.26.4	Electrical Equipment and Wiring						
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts						
		2.26.6	Phase Protection of Motors						
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective						
		2.26.8	Release and Application of Driving-Machine Brakes						
		2.26.9	Control & Operating Circuits						
		2.27.2	Emergency or Standby Power systems						
		2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★where required by NBCC						
			indicate if Manual PHI Recall is provided						
			indicate if Automatic PHI Recall by FAID's is provided						
		2.27.4	Firefighters' Emergency Operation - Non-Automatic Elevators						
		2.27.5	Firefighters' Emergency Operation - Automatic Elevators w/Attendant						
		2.27.6	Firefighters' Emergency Operation - Inspection Operation						
		2.27.7	Firefighters' Emergency Operation - Operating Procedures						
		2.27.8	Switch Keys						
	8.6.12.5.3.1	Replacement of	Elevator Controller		-	-		Major	
		8.7.2.27.4(a)							
		2.25.	Terminal Stopping Devices						
		2.26.1.4	Inspection Operation						
		2.26.1.5	Inspection Operation with Open Door Circuits						
		2.26.4	Electrical Equipment and Wiring						
			- Including Clearances to CSA C22.1						
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts						
		2.26.6	Phase Protection of Motors						
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective						
		2.26.8	Release and Application of Driving-Machine Brakes						
		2.26.9	Control & Operating Circuits						
		2.27.2	Emergency or Standby Power systems						
		2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★where required by NBCC						
			indicate if Manual PHI Recall is provided						
			indicate if Automatic PHI Recall by FAID's is provided						
		2.27.4	Firefighters' Emergency Operation - Non-Automatic Elevators						
		2.27.5	Firefighters' Emergency Operation - Automatic Elevators w/Attendant						
		2.27.6	Firefighters' Emergency Operation - Inspection Operation						
		2.27.7	Firefighters' Emergency Operation - Operating Procedures						
		2.27.8	Switch Keys						
		★ 2.7.5.2	Temperature and Humidity						
	8.7.2.27 ★3	Relocation of	Elevator Controller (if control wiring disconnected - reconnected)		Major				
		2.8.2	Electrical Equipment and Wiring						
			Electrical testing as per the original design submission tests						
	8.7.2.27.4(b)	Installation of	Door Controller (as part of an alteration)		Minor A	-		see 8.6.12.5.3.2	
		2.26.4.1	Electrical Equipment and Wiring						
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling						
	8.6.12.5.3.2	Installation of	Door Controller		-	-		Minor B	
		2.26.4.1	Electrical Equipment and Wiring						
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.27.5	Change in Type of Motion Control - AC, VVVF, DC, SCR			Major	-		
		2.11.1 Entrances and Emergency Doors Required 2.11.2 Types of Entrances 2.11.3 Closing of Hoistway Doors 2.11.4 Location of Horizontally Sliding or Swinging H/W Doors 2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills 2.11.6 Opening of Hoistway Doors 2.11.7 Glass in Hoistway Doors 2.11.8 Weights for Closing or Balancing Doors 2.11.9 Hoistway Door Locking Devices & Power Operation 2.11.10 Landing Sill: Guards, Illumination, hinged sills, Tracks 2.11.11 Entrances, Horizontal Slide Type 2.11.12 Entrances, Vertical Slide Type 2.11.13 Entrances, Swing Type 2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access 2.13. Power Operation of H/W Doors and Car Doors 2.14.(*). Car: Enclosure, Doors, Gates, Illumination 2.16. Capacity & Loading 2.17. Car & Cwt Safeties 2.18.(*). Speed Governors 2.19. Ascending Car Overspeed & Unintended Car Movement Protection 2.25. Terminal Stopping Devices 2.26.(*). Operating Devices and Control Equipment 2.27. Emergency Operation & Signaling Devices - where required by NBCC indicate if Manual PHI Recall is provided indicate if Automatic PHI Recall by FAID's is provided						
	8.7.2.27.6	Change in Type of Operation Control - CPPB, AUTOMATIC			Major	-		
		2.11.1 Entrances and Emergency Doors Required 2.11.2 Types of Entrances 2.11.3 Closing of Hoistway Doors 2.11.4 Location of Horizontally Sliding or Swinging H/W Doors 2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills 2.11.6 Opening of Hoistway Doors 2.11.7 Glass in Hoistway Doors 2.11.8 Weights for Closing or Balancing Doors 2.11.9 Hoistway Door Locking Devices & Power Operation 2.11.10 Landing Sill: Guards, Illumination, hinged sills, Tracks 2.11.11 Entrances, Horizontal Slide Type 2.11.12 Entrances, Vertical Slide Type 2.11.13 Entrances, Swing Type 2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access 2.13. Power Operation of H/W Doors and Car Doors 2.14.(*). Car: Enclosure, Doors, Gates, Illumination 2.16. Capacity & Loading 2.17. Car & Cwt Safeties 2.18.(*). Speed Governors 2.25. Terminal Stopping Devices 2.26.(*). Operating Devices and Control Equipment 2.27. Emergency Operation & Signaling Devices - * where required by NBCC indicate if Manual PHI Recall is provided indicate if Automatic PHI Recall by FAID's is provided						
	8.7.2.27*4	* Addition of Wander Patient Feature - Change in Operation Control			Minor B	Minor B		
		2.11.3.2 - doors closed when not in use 2.13.5.4 - door time out 2.27.3.1.6(l) - shall not prevent PHI						
	8.7.2.27*5	* Addition of Restricted Access - Security / Floor Lock Out			Minor B	Minor B		
		OBC-3.2.6.5(4) - shall not prevent floor access when on FEO D.O. Button Remain Operative Under non FEO Conditions, Door Closed When not in Use 2.27.3.1.6(l) - shall not prevent PHI 2.27.3.3.1(i) - permit travel to all landings when on PH II 2.11.6.2 Cannot Lock Out Top& Btm, Designated & Alternate or All Landings in Phase II DR 172/02 Elevators With Phase II Operation & Floor Button Controlled by Cards/Keys						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.27.7	Removal of emergency stop switch on passenger elevators remove all related markings / engravings & provide an in-car stop switch to: 2.26.2.21 In-car stop switch ★ 2.26.4.3 Positively Opened Contacts ★ 2.26.9.3(a) Single failure does not render In-Car Stop Sw ineffective			Minor B	-		
	8.7.2.27.8	Electrical Protective Devices			↓ See Below ↓			
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.2 (PES) 2.26.2 Electrical Protective Devices - for specified device			Major	Major	mrr	Major
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.1 2.26.2 Electrical Protective Devices - for specified device			-	Minor A		mrr
	8.7.2.28	Emergency Operation and Signaling Devices			↓ See Below ↓			
	8.7.2.28	Car Emergency Signaling Devices 2.27.1 Car Emergency Signaling Devices			Minor B	Minor B		mrr
	8.7.2.28	Emergency or Standby Power 2.27.2 Emergency Or Standby Power systems			Minor B	Minor A		
	8.7.2.28	Firefighter's Emergency Operation 2.27.3 Firefighters' Emergency Operation - Automatic Elevators Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory 2.27.4 Firefighters' Emergency Operation - Non-Automatic Elevators 2.27.5 Firefighters' Emergency Operation - Automatic Elevators w/Attendant 2.27.6 Firefighters' Emergency Operation - Inspection Operation 2.27.7 Firefighters' Emergency Operation - Operating Procedures 2.27.8 Layout Drawings ★ See also provisions of 175/02			Minor B	Minor A		
	8.7.2.28	Addition of Elevator to a Group 2.27. Emergency Operation & Signaling Devices - Mandatory notes re: 2.27.3 FEO for Automatic Elevators Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory			-	Minor A		
	DO 175/02	★ Emerg. Recall Upgrade - from Manual to Automatic & matching code at time of install conformance to auto recall based on F.S. at time of install				Minor B		
	DO 219/07	★ Emerg. Recall Upgrade to comply with a Fire Code Retrofit Order 219/07 Firefighter Operation to B44-00U2 or Firefighter Operation to B44-04 or Firefighter Operation to B44-07 Manual PHI Recall is mandatory Automatic PHI Recall by FAID's if required by NBCC or B44-07			Minor B	Minor A		

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3	Alterations to Hydraulic Elevators						
	8.7.3.1	Hoistway Enclosures			see 8.7.2.1			
	8.7.2.1	Hoistway Enclosures			Major	Major		
	8.7.2.1.1	Hoistway Enclosure Walls			Major	Major		
		2.1.1	Hoistway Enclosures					
		2.1.5	Windows and Skylights					
		2.1.6	Projections, Recesses, and Setbacks in H/W					
		2.5.	Horizontal Car and Counterweight Clearances					
		2.7.3.4.2	Access Doors and Openings					
		2.8.	Equipment in Hoistways, Machinery Spaces, Machine Rooms, Control Spaces, and Control Rooms					
		8.7.2.10	Entrances and Hoistway Openings (if change includes an entrance)					
		2.11.1	Entrances and Emergency Doors Required (if blind H/W)					
	8.7.2.1.2	Addition of Elevator to Existing Hoistway			-	New		
		2.5.	Horizontal Car and Counterweight Clearances					
	8.7.2.1.3	Construction at Top of Hoistway			Major	Major		
		2.1.2.1	Construction at Top of the Hoistway					
		2.1.3	Floor Over Hoistways					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.4	Construction at Bottom of Hoistway			Major	Major		
		2.1.2.2	Construction at Bottom of the Hoistway					
		2.1.2.3	Strength of Pit Floor					
		2.2.	Pits					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.5	Control of Smoke and Hot Gases			Major	Major		
		2.1.4	Control of Smoke and Hot Gases					
	8.7.3.2	Pits			see Electric Elevators			
	8.7.2.2	Pits see other alterations below for non Major Alterations			Major	-		
		2.2.	Pits					
		2.1.2.3	Strength of Pit Floor					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.2	Pit Drains & Sumps			Minor B	Minor A		
		2.2.2.	Pit Drains					
	8.7.2.2	Pit Guards			Minor B	Minor A		
		2.2.3	Guards Between Adjacent Pits					
	8.7.2.2	Pit Access			Minor B	Minor A		
		2.2.4	Pit Access					
	8.7.2.2	Pit Illumination			Minor B	Minor A		
		2.2.5	Illumination of Pits					
	8.7.2.2	Pit Stop Switches			Minor B	Minor A		
		2.2.6	Stop Switches					
	8.7.2.2	Pit Depth			Minor B	Minor A		
		2.2.7	Minimum Pit Depths Required					
	8.7.2.2	Access to Underside of Car			Minor B	Minor A		
		2.2.8	Access to Underside of Car					
	8.7.3.3	Location and Guarding of Counterweights			Major	Major		
		2.3.	Location and Guarding of Counterweights					
		2.5.1.2	Between Car & Cwt and Cwt Guard					
		3.5.	Horizontal car and Counterweight Clearances					
	8.7.3.4	Vertical Car and Counterweight Clearances and Runbys (no reduction allowed)			Major	-		
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts					
		8.7.3.22.1	Increase or Decrease in Rise					
		8.7.3.22.2	Increase in Rated Speed					
		8.7.3.23.5	Change in Location of Hydraulic Jack					
	8.7.3.5	Horizontal Car and Counterweight Clearances (no reduction allowed)			Major	-		
		2.5.	Horizontal Car and Counterweight Clearances					
		8.7.3.22.1	Increase or Decrease in Rise					
		8.7.3.22.2	Increase in Rated Speed					
		8.7.3.23.5	Change in Location of Hydraulic Jack					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.6	Protection of Spaces Below Hoistways			Minor B	Major		
		3.6. Protection of Spaces below Hoistway						
	8.7.3.7	Machine Rooms and Machinery Spaces			see 8.7.2.7			
	8.7.2.7	Machine Rooms and Machinery Spaces			↓ See Below ↓			
	8.7.2.7.1	Enclosures - other than specifics of 8.7.2.7.2 to 8.7.2.7.7						
		2.7. (& 3.7.) New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			-	Major		
		2.7. (& 3.7.) Altered- Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			Minor A	-		
		CSA C22.1 Electrical Equipment Clearances			Minor B	-		
	8.7.2.7★1	Enclosures - Control Rooms and Control Spaces						
		2.7. (& 3.7.) New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			-	Major		
		2.7. (& 3.7.) Altered- Machinery Spaces, Machine Rooms Control Spaces & Control Rooms			Minor A	-		
		CSA C22.1 Electrical Equipment Clearances			Minor B	-		
	8.7.2.7.2	Means of Access			Minor B	-		
		2.7.3.1 General Requirements						
		2.7.3.2 Access Across Roofs						
		2.7.3.3 Means of Access						
	8.7.2.7.3	Access Doors and Openings			Minor B	Minor B		mrr
		2.7.3.4 Access Doors and Openings						
		2.7.3.5 Stop Switch in O/H M/C Space in the H/W						
	8.7.2.7.4	Headroom (no reduction)			Minor B	Minor B		
		2.7.4 Headroom in M/C Rooms						
	8.7.2.7.5	Windows and Skylights			Minor B	Minor B		
		2.1.5						
	8.7.2.7.6	Lighting (no reduction)			Minor B	Minor A		
		2.7.9.1 Lighting						
	8.7.2.7.7	Ventilation			Minor B	Minor B		
		2.7.9.2 Temperature & Humidity						
	8.7.3.8	Electrical Wiring, Pipes, and Ducts in Hoistways and Machine Rooms			Minor B	Minor B		
		Installation of New (electrical, wiring, raceways, cables, pipes, ducts) also installation of Monitoring Equipment, HVAC			-	Minor B		
		2.8. Equipment in Hoistways and Machine Rooms CSA Labeling (or equivalent) C22.1 as required						
		Alteration of Existing (electrical, wiring, raceways, cables, pipes, ducts...)			Minor B	-		
		2.8. Equipment in Hoistways and Machine Rooms						
	8.7.3.9	Machinery and Sheave Beams, Supports and Foundations			Major	Major		
		New/Relocated Machinery & Sheave Beams, Supports, Foundation						
		2.9. Machinery & Sheave Beams, Supports, Foundation						
		Building reactions increased by more than 5%						
		2.9. Machinery & Sheave Beams, Supports, Foundation adequacy of building structure verified by P.Eng.						
	8.7.3.10	Hoistway Entrances and Openings - see 8.7.2.10			see 8.7.2.10			
	8.7.2.10	Entrances and Hoistway Openings			Major	Major		see below
	8.7.2.10.1	General Requirements			Major	-		
	8.7.2.10.1(a)	General Requirements - All New Entrances			Major	-		
		2.11. Protection of H/W Openings						
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		2.13. Power Operation of H/W Doors and Car Doors						
	8.7.2.10.1(b)	General Requirements - New Entrances w/Existing Entrances			-	Major		
		2.11.2 Types of Entrances						
		2.11.3 Closing of Hoistway Doors						
		2.11.4 Location of Horizontally Sliding or Swinging H/W Doors						
		2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills						
		2.11.6 Opening of Hoistway Doors						
		2.11.7 Glass in Hoistway Doors						
		2.11.8 Weights for Closing or Balancing Doors						
		8.7.2.10.5 Marking of Entrance Assemblies						
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		2.13. Power Operation of H/W Doors and Car Doors						

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.1(c)	General Requirements - Alteration to H/W Entrance			Major	-		
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(d)	General Requirements - Emergency Doors			Major	Major		
		2.11.1	Entrances and Emergency Doors Required					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.1(e)	General Requirements - Access Openings (installed for cleaning)			Major	Major		
		2.11.1.4	Access Opening for Cleaning of Car & H/W Enclosure					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.2	Horizontal Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.11	Entrances, Horizontal Slide Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.11.1	Landing Sills					
		2.11.11.6	Bottom Guides					
	track (b)	2.11.11.2	Hanger Tracks, and Track Supports		Minor B		Minor B	
	frame (c)	2.11.11.3	Entrance Frames		Minor A		Minor A	
		2.11.11.5.1	Panel Overlap					
		2.11.11.5.2	Panel Gaps Clearances					
		2.11.11.5.3	Pockets in Strike Jamb					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hangers (d)	2.11.11.4	Hangers		Minor B		Minor B	
	panels (e)	2.11.11.5(*)	Panels		Minor A		Minor A	
		2.11.11.6	Bottom Guides					
		2.11.11.7	Multipanel Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
	retainers (f)	2.11.11.8	Hoistway Door Safety Retainers		Minor B		Minor B	
	8.7.2.10.3	Vertical-Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.12	Entrances, Vertical Slide Type					
	sills (a)	2.11.10.3	Hinged Hoistway Landing Sills		Minor B		Minor B	
		2.11.12.1	Landing Sills					
	frames (b)	2.11.12.2	Entrances Frames		Minor B		Minor B	
		8.7.2.10.5	Marking of Entrance Assemblies					
	rails (c)	2.11.12.3	Rails		mrr		mrr	
	panels (d)	2.11.12.4	Panels		Minor A		Minor A	
		2.11.12.3	Rails					
		2.11.12.5	Guides					
		2.11.12.6	Counterweighting or Counterbalancing					
		2.11.12.8	Pull Straps					
		8.7.2.10.5	Marking of Entrance Assemblies					
	guides (e)	2.11.12.5	Guides					
	sill guard (f)	2.11.12.7	Sill Guards		mrr		mrr	
	straps (g)	2.11.12.8	Pull Straps					
	8.7.2.10.4	Swing-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.13	Entrances, Swing Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.10.3	Hinged Hoistway Landing Sills					
		2.11.13.1	Landing Sills					
	frames (b)	2.11.13.2	Entrance Frames		Minor B		Minor B	
		2.11.13.4	Hinges					
		8.7.2.10.5	Marking of Entrance Assemblies					
	panels (c)	2.11.13.3	Panels		Minor B		Minor B	
		2.11.13.4	Hinges					
		2.11.13.5	Marking					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hinges (d)	2.11.13.4	Hinges		mrr		mrr	

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.5	Marking of Entrance Assemblies (Alteration to an Entrance Door Panel) Fire Protection Rating not less then existing entrance 8.7.2.10.5(a) NBCC requirements			Major	Major		
	8.7.2.10★1	★ Removing Service To a Floor Bolt entrances shut Remove Interlock From Safety String If Adding Door In front Of Entrance, Gap btwn doors <=125mm Remove COP Floor Button 2.11.6.2 Cannot Lock Out Top/Btm, Designated/Alternate, All Landing in Phase II				Minor B		
	8.7.3.11	Hoistway Door-Locking Devices			See 8.7.2.11			
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓			
	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.2	Interlocks					
		2.12.4	Listing/Certification Locking Devices					
		2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)					n/a
		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)					n/a
		2.12.7	Hoistway Access Switches (n/a for column 5,6)					n/a
	8.7.2.11.2	Mechanical Locks and Electric Contacts			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.3	H/W Door Combination Mechanical Locks & Contacts					
		2.12.4	Listing/Certification Locking Devices					
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8	Braking Systems & Driving Machine Brakes					
	8.7.2.11.3	Parking Devices			Minor A	Minor A		
	8.7.2.11.4 (b)	Addition of Access Switches			-	Minor A		mrr
	8.7.2.11★1	★ Door Safety Retainers 2.11.11.8 Hoistway Door Safety Retainers			Minor B	Minor A	mrr	Minor B
	8.7.2.11.5	Restricted Opening of H/W or Car Doors of Passenger Elevators (Restrictors) (Altered or Installed) 2.12.5 Restricted Opening of H/W or Car Door			Minor B	Minor B	mrr	Minor B
	8.7.3.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A		
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					
		8.7.2.10.2	Horizontal Slide-Type Entrances					
		8.7.2.10.3	Vertical Slide-Type Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
		8.7.3.10	Hoistway Entrances and Openings					
		2.13.	Power Operation of Hoistway Doors and Car Doors					
	8.7.2.12★1	★ Replacement of Door Operator 2.13. Power Operation of Hoistway Doors and Car Doors			-	-	mrr	Minor B
	8.7.2.12★2	★ Replacement of Door Reopening Device			See 8.7.2.13			
	8.7.2.13	Door Reopening Device (Safety Edge) (Altered or Added or Replaced)			Minor B	Minor B	mrr	Minor B
		2.13.4	Closing Limitations for Power Operated HS Doors & Gates					
		2.13.5	Reopening Device for Power Operated Car Doors or Gates if FEO provided, door opening & closing to PHI & II at time of install					
	8.7.3.13	Car Enclosures			See 8.7.2.14			
	8.7.2.14	Car Enclosures, Car Doors and Gates, and Car Illumination			↓ See Below ↓			
	8.7.2.14.1	Installation of New Car Enclosure 2.14. Car: Enclosure, Doors, Gates, Illumination 2.15. Car Frames & Platforms 2.17. Car and counterweight safeties 8.7.2.15.1 Alterations to Car Frames and Platforms			Major	-		
	8.7.2.14.2	Alteration to Existing Cars			Minor A	Minor A		
	8.7.2.14.2(a)	Car Enclosure - Securing of Enclosures 2.14.1.2 Securing of Enclosures			Minor A	Minor A		
	8.7.2.14.2(b)	Top Emergency Exit (Altered or Added) 2.14.1.5 Top Emergency Exits			Minor B	Minor B		

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.2.14.2(c)	Installation of Glass	2.14.1.8 2.14.1.8.1 2.14.1.8.2 2.14.1.8.3 2.14.1.8.4	Glass in Elevator Cars Enclosures include glass Lining of Walls or Ceilings include glass Not Adopted - Type 3C in not permitted, except if mrr Marking of each Glazing Panel	Minor B	Minor B		mrr
	8.7.2.14.2(d)	Specific Equipment in Elevator Car	2.14.1.9 (a) (b) (c) (d) (e) (f)	Equipment Inside Cars Handrails fastening devices for protective linings ceiling mounted hooks/tracks picture frames display boards, plaques <38mm protrusion secured to 2.14.1.2 material to 2.14.2.1 conveyor tracks in freights heating or cooling equipment	Minor B	Minor B		
	8.7.2.14★1	★ Car operating station		verify inspection operation 'if provided' verify stop sw verify switches operate as before (eg. FS, FEO, Access)	Minor B	Minor B	mrr	Minor B
	8.7.2.14★2	★ video cameras / surveillance equipment / video monitors			Minor B	Minor B		
	8.7.2.14★3	★ other equipment				Variance		
	8.7.2.14.2(e)	Side Emergency Exits - Secured Shut			Major	-		
	8.7.2.14.2(f)	Car Ventilation	2.14.2.3	Ventilation	Minor B	-		
	8.7.2.14.2(g)	Car Illumination	2.14.7	Illumination of Cars and Lighting Fixtures	Minor B	Minor B		
	8.7.2.14.2(h)	Partitions Installed in Elevator Cars	2.16.1.2	Use of Partitions for Reducing Inside Net Platform Area	Major	Major		
	8.7.2.14.4	Car Enclosure / Car Door or Car Gates			↓ See Below ↓			
	8.7.2.14.4	Alteration to Car Enclosure other than 8.7.2.14.2 - Enclosure Materials	2.14. 2.14.1.7 2.14.7.1.3 2.14.7.1.4	Car: Enclosure, Doors, Gates, Illumination enclosure material flame ratings shall not be diminished car top railing auxiliary lighting car top light & outlet Directors Order 171	DR 171		Minor B	DR 171
	8.7.2.14.4	Alteration to Car Door or Car Gates other than 8.7.2.14.2	2.14. 2.14.1.7 2.14.7.1.3 2.14.7.1.4	Car: Enclosure, Doors, Gates, Illumination car top railing auxiliary lighting car top light & outlet	Minor A	Minor A		
	0.Reg.209/01s30	★ Relocation of Elevator License to remote location			Minor B†	-		
	8.7.2.14★4	★ Car Top Railing	2.14.1.7 2.4	Railing and Equipment on Top of Cars Vertical Car & Cwt Clearances & Runbys	Minor B	Minor A		
	8.7.3.14	Car Frames and Platforms	3.15.	Car Frames & Platforms	Major	-		Major
	8.7.3.15	Safeties		Car or Cwt (plunger gripper see 8.7.3.23.7)	↓ See Below ↓			
	8.7.3.15.1	Car Safeties	3.17.1 3.23. 3.28.	Car Safeties Guide Rails, Guide-Rail Supports, and Fastenings Layout Data	-	Major	mrr	Minor A
	8.7.3.15.2	Counterweight Safeties	3.17.2 3.23. 3.28.	Counterweight Safeties Guide Rails, Guide-Rail Supports, and Fastenings Layout Data	-	Major	mrr	Minor A

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.15.3	Alteration to existing Car or Counterweight Safeties			Major	-	mrr	Minor A
		3.17(*)	Car and counterweight safeties and plunger gripper					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		3.28.	Layout Data					
	8.7.3.16	Governors and Governor Ropes			See 8.7.2.19			
	8.7.2.19	Speed Governors and Governor Ropes			Major	Major	↕ See Below ↕	
	8.7.2.19	2.18.	Speed Governors				mrr	Minor A
	8.7.2.19	2.17.15	Governor Rope Releasing Carriers				mrr	mrr
	8.7.2.19	Governor Ropes of different material or Construction to:				Minor B	Minor B	
			2.18.6 Design of Gov'r Rope Retarding Means for Type B Safeties					
			2.18.7 Traction between Speed Governor Rope & Sheave					
		& testing to	2.17.3 Function and Stopping Distances of Safeties					
	8.7.3.17	Change in Type of Service: Passenger to Freight OR Freight to Passenger			Major	-		
		2.11.1	Entrances and Emergency Doors Required					
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
		2.22.(*)	Buffers & Bumpers					
		3.22.2	Counterweight Buffers					
		3.14.	Car: Enclosure, Doors, Gates, Illumination					
		3.15.	Car Frames & Platforms					
		3.17.	Car and Counterweight Safeties					
		3.21.	Counterweights					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		2.18.(*)	Speed Governors					
		3.16.	Capacity & Loading					
		3.18.	Hydraulic Jacks					
		3.19.	Valves, Pressure Piping, and Fittings					
		3.20.	Ropes and Rope Connections					
		3.24.	Hydraulic Machines and Tanks					
		3.25.	Terminal-Stopping Devices					
		3.26.	Operating Devices and Control Equipment					
		3.27.	Emergency Operation and Signaling Devices					
	8.7.3.18	Change in Class of Loading: [A, B, C1, C2, C3]			Major	-		
		2.16.2	Minimum Rated Load for Freight Elevators					
		3.16.	Capacity & Loading					
	8.7.3.19	Carrying of Passengers on Freight Elevators			Major	-		
		3.16.4	2.16.4 except 2.16.4.3					
		2.16.4	Carrying of Passengers on Freight Elevators					
		2.16.4.1	not accessible to general public					
		2.16.4.2	rated load not less than required by 2.16.1					
		2.16.4.4	H/W entrances to 2.12.1.1 & 2.11.2.1 or 2.11.2.2(e)					
		2.16.4.5	car doors to 2.14.5 Passenger Car Doors					
		2.16.4.6	car enclosure openings to 2.14.2.2 Prohibited Openings					
		2.16.4.7	conforms to 2.12.5 Restricted Opening of H/W or Car Door					
		2.16.4.8	Fs for suspension ropes to Table 2.20.3					
		2.16.4.9	Power Operated vertical doors to 2.16.4.9(a) to (e)					
		★	apron guard to ED CAD or extent pit permits					
		★	2.16.5 Signs Required in Freight Elevator Cars					

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.20	Increase in Rated Load			Major	-		
		2.26.1.4	Inspection Operation					
		2.26.1.5	Inspection Operation with Open Door Circuits					
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts					
		3.14.	Car: Enclosure, Doors, Gates, Illumination					
		3.15.	Car Frames & Platforms - ★apron guard to ED CAD/as pit permits					
		3.16.	Capacity & Loading					
		3.17.	Car and Counterweight Safeties					
		3.20.	Ropes and Rope Connections					
		3.21.	Counterweights					
		3.22.	Buffers and Bumpers					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		<u>8.7.3.23.4</u>	Increase in Working Pressure					
	DR 171/02	★ Decrease Deadweight <5% or Increase Deadweight of Car (115 kg or Less) record weight on Aux. Data Tag			Minor B	Minor B		
	DR 171/02	★ Increase Deadweight of Car (>115 kg to 5%) record weight on Aux. Data Tag engineering assessment of related items (except 2.24.3)			Minor A	Minor A		
	8.7.3.21	Increase in Deadweight of Car (Car Wt+Rated Load >5%)			Major	-		
		DR 171/02	Car: Enclosure, Doors, Gates, Illumination					
		3.14.	Car: Enclosure, Doors, Gates, Illumination		n/a			
		3.15.	Car Frames & Platforms - ★apron guard to ED CAD/as pit permits					
		3.16.	Capacity & Loading					
		3.17.	Car and Counterweight Safeties					
		3.20.	Ropes and Rope Connections					
		3.21.	Counterweights					
		3.22.	Buffers and Bumpers					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		3.24.5	Counterweight Sheaves					
		8.7.3.23.4	Increase in Working Pressure					
	8.7.3.22	Change in Rise or Rated Speed			Major	-		
	8.7.3.22.1	Increase or Decrease in Rise			Major	-		
		3.25.	Terminal-Stopping Devices					
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts					
		3.4.1	Bottom Car Clearance					
		3.4.2	Minimum Bottom and Top Car Runby					
		3.4.3	Car Top and Bottom Maximum Runby					
		3.18.2	Plungers					
			If decrease in rise is at lowest end then;					
		2.2.4	Access to Pits					
		2.2.5	Illumination of Pits					
		2.2.6	Stop Switches					
	8.7.3.22.2	Increase in Rated Speed			Major	-		
		2.5.	Horizontal Car and Counterweight Clearances					
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts					
		3.21.	Counterweights					
		3.22.2(*)	Counterweight Buffers					
		3.14.	Car: Enclosure, Doors, Gates, Illumination					
		3.17.(*)	Car and Counterweight Safeties					
		3.16.	Capacity & Loading					
		3.25.	Terminal-Stopping Devices					
		3.26.1	Operating Devices and Control Equipment					
		3.26.2	Inspection Operation					
		3.26.3	Anti-Creep and Leveling Operation					
		3.26.4	Electrical Protective Devices					
		3.26.5	Phase-Reversal and Failure Protection					
		3.26.6	Control and Operating Circuits					
		3.20.	Ropes and Rope Connections					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.22.3	Decrease in Rated Speed 3.4. Bottom and Top Clearances and Runbys for Cars and Cwts 2.18.2 Tripping Speeds for Speed Governors 3.16. Capacity & Loading 3.16.3(b) Capacity & data plates 2.26.4.1 Electrical Equipment and Wiring 2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling			Major	-		
	8.7.3.23	Hydraulic Equipment			↕ See Below ↕			
	8.7.3.23.1	Alteration to	Hydraulic Jacks		Major	-		
	c8.6.12.5.4.1	Replacement of	3.18. Hydraulic Jacks		-	-	Major	
			3.18. Hydraulic Jacks					
	8.7.3.23.2	Alteration to	Plungers		Major	-		
	c8.6.12.5.4.2	Replacement of	3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers		-	-	Minor A	
			3.18.1.2 Roped-Hydraulic Elevator					
	8.7.3.23.3	Alteration to	3.18.2 Plungers		Major	-		
			3.18.3 Cylinders					
			3.18.3 Cylinders - Installed as part of Alteration					
			3.18.3 Cylinder is Altered				Minor B	
			3.18.3 Cylinder is Sleeved					
			3.18.4.1 Metal Stops and/or Other Means					
	c8.6.12.5.4.3	Replacement of	3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers		-	-	Minor A	
			3.18.3 Cylinders					
			3.18.3 Cylinders - Installed as part of Alteration					
			3.18.3 Cylinder is Altered					
			3.18.3 Cylinder is Sleeved					
	8.7.3.23.4	Increase in Working Pressure >5%	3.18.4.1 Metal Stops and/or Other Means					
			3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers					
			3.18.3 Cylinders		Major	-		
			3.18.3 Cylinders - Installed as part of Alteration					
			3.18.3 Cylinder is Altered					
	8.7.3.23.5	Change in Location of Hydraulic Jack	3.18.4.1 Metal Stops and/or Other Means					
			3.18.1.2 Roped-Hydraulic Elevator					
			3.18.2 Plungers					
			3.18.3 Cylinders		Major	-		
	8.7.3.23.6	Relocation of Hydraulic Machine (Power Unit)	3.18.3 Cylinder is Sleeved		Minor A	-		
			3.26.8 Pressure Switch					
	8.7.3.23.7	Plunger Gripper	3.17.3 Plunger Gripper		Minor A	Minor A		
			3.1.1(b) strength of pit floor					
			3.22.1 no strike when buffers compressed					
			3.24.4 Welding					
	8.7.3.24	Alteration to	Relief or Check Valves or Pressure Piping or Fittings		Minor A	Minor A	see c8.6.12.5.2	
	c8.6.12.5.5.2	Replacement of	Relief or Check Valves or Pressure Piping or Fittings				Minor B	
			3.19. replacement of relief valve or check valve or piping or fittings					
	8.7.3.24	Alteration to	Control Valves		Minor A	-	see c8.6.12.5.5	
	c8.6.12.5.5.1	Replacement of	Control Valves				Minor B	
			3.19. replacement of control valve					

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.25	Suspension Ropes and Their Connections			↓ See Below ↓			
	8.7.3.25.1	Change in Number of, or Diameter of Ropes 3.20. Ropes and Rope Connections PEO to certify retained sheaves w/different ropes are satisfactory			Major	-		
	8.7.3.25.1	Change in Material / Grade of Ropes 3.20. Ropes and Rope Connections PEO to certify retained sheaves w/different ropes are satisfactory			Minor A	-		
	8.7.3.25.2	Addition of Rope Equalizers 2.20.5 Suspension Rope Equalizers			Minor B	Minor B		
	8.7.3.26	Counterweights - Alteration of			See 8.7.2.22			
	8.7.2.22	Counterweights			Minor A	-		
	8.7.2.22.1	Alteration to any part of a cwt except guiding members 2.21. Counterweights 8.7.2.22.2 Rod Type Counterweights 8.7.2.3 Location and Guarding of Counterweights						
	8.7.2.22.2	Rod Type Cwt - can retain if: Minimum of 2 suspension and 2 tie rods Suspension rods: 2.21.2.1 Material - Cwt Frames & Rods 2.21.2.3 Factor of Safety Tie Rods: 2.21.1.2 Retention of Weight Sections						
	8.7.2.22.3	Roller or similar guide shoes added safety jaws cannot touch rails if not activated			mrr		mrr	
	8.7.3.26	Counterweights - Addition of			-	Major		
		3.4. Bottom and Top Clearances and Runbys for Cars and Cwts 3.6. Protection of Spaces below Hoistway 3.14. Car: Enclosure, Doors, Gates, Illumination 3.15. Car Frames & Platforms 3.17.2 Counterweight Safeties 3.18. Hydraulic Jacks 3.20. Ropes and Rope Connections 3.21. Counterweights 8.7.3.3 Location and Guarding of Counterweights						
	8.7.3.27	Car Buffers and Bumpers (oil buffer only in column 6) 3.21. Counterweights 3.22.2(*) Counterweight Buffers			Major	-	mrr	Minor B
	8.7.3.28	Guide Rails, Supports, and Fastenings (alteration to, or stress increase >5%) 3.23. Guide Rails, Guide-Rail Supports, and Fastenings 3.28. Layout Data			Major	-		
	8.7.3.29	Alteration to Tanks 3.24. Hydraulic Machines and Tanks			Minor B	-	see c8.6.12.5.6	
	8.7.3.29★1	★ Addition of Oil Cooler CSA C22.1 2.7.2 Maintenance Path and Clearance DO 212/07 A.3.01(c) if buried				Minor B		
	c8.6.12.5.6	Replacement of Tanks 3.24. Hydraulic Machines and Tanks			-	-	Minor B	
	8.7.3.30	Terminal-Stopping Devices 3.25. Terminal-Stopping Devices			Minor B	Minor B		
	8.7.3.31	Operating Devices and Control Equipment			↓ See Below ↓			
	8.7.3.31.1	Top-of-Car Operating Devices 3.26.2 Inspection Operation			Minor A	Minor A	mrr	Minor A
	DO 173/02	Addition of Top-of-Car Operating Device			-	Minor A		

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.31.2	Car-Leveling or Truck-Zoning Devices			Minor A	Minor A		
		3.26.3.2 Operation in Leveling or Truck Zone						
	8.7.3.31.3	Alteration to Anti-Creep Leveling Device			Minor B	-		
		3.26.3.1 Anti-Creep Operation						
	c8.6.12.5.7	Replacement of Anti-Creep Leveling Device			-	-		Minor B
		3.26.3.1 Anti-Creep Operation						
	8.7.3.31★1	★ Door By-Pass Switches			Minor A	Minor A		
		2.26.1.5 Inspection Operation with Open Door Circuits						
	8.7.3.31★2	★ Door Monitoring System			Minor A	Minor A		
		2.26.5 System to Prevent Auto Operation w/faulty Door Contacts						
	8.7.3.31.4	Change in Power Supply			Major	-		
		(a) voltage, frequency or # of phases or						
		(b) AC to DC , DC to AC or						
		(c) combination of DC & AC, then						
		electrical to:						
		3.26.1 Operating Devices and Control Equipment						
		3.26.4 Electrical Protective Devices						
		3.26.5 Phase-Reversal and Failure Protection						
		3.26.6(*) Control and Operating Circuits						
	8.7.3.31★3	★ Addition of Soft Start				Minor A		
		2.26.4.1 & 2 CSA C22.1 & B44.1 certified						
		3.26.5 Phase-Reversal and Failure Protection						
	8.7.3.31★4	★ Addition of Power Efficiency Increasing Device				Minor B		
		B44.1 certified						
		2.26.4.1 & 2 CSA C22.1 & B44.1 certified						
	8.7.3.31.5	Controllers						
	8.7.3.31.5(a)	Installation of Elevator Controller (as part of an alteration)			Major	-		see c8.6.12.5.3.1
		2.26.1.4 Inspection Operation						
		2.26.1.5 Inspection Operation with Open Door Circuits						
		2.26.4.1 Electrical Equipment and Wiring						
		2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling						
		2.26.4.3 Positively Opened Contacts						
		2.26.5 Monitor & Prevent Automatic Operation w/ Faulty Door Contacts						
		2.26.7 Installation of Capacitors/Devices Making EPD's Ineffective						
		3.26.2 Inspection Operation						
		3.26.3 Anti-Creep and Leveling Operation						
		3.26.5 Phase-Reversal and Failure Protection						
		3.26.7 Recycling Operation for Multiple or Telescopic Plungers						
		3.26.10 Auxiliary Power Lowering Operation						
		3.25 Terminal-Stopping Devices						
		★ 2.7.5.2 Temperature and Humidity						
		★ 3.27. (*) Firefighters' Emergency Operation - Automatic Elevators - where required by NBCC						
		except 2.27.1 and 2.27.2						
		indicate if Manual PHI Recall is provided						
		indicate if Automatic PHI Recall by FAID's is provided						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07			Type of Alteration Work			
		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	c8.6.12.5.3.1	Replacement of	Elevator Controller		-	-	Major	
		8.7.3.31.5(a)						
		2.26.1.4	Inspection Operation					
		2.26.1.5	Inspection Operation with Open Door Circuits					
		2.26.4.1	Electrical Equipment and Wiring					
			- Including Clearances to CSA C22.1					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
		2.26.4.3	Positively Opened Contacts					
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts					
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective					
		3.26.2	Inspection Operation					
		3.26.3	Anti-Creep and Leveling Operation					
		3.26.5	Phase-Reversal and Failure Protection					
		3.26.7	Recycling Operation for Multiple or Telescopic Plungers					
		3.26.10	Auxiliary Power Lowering Operation					
		3.25.	Terminal-Stopping Devices					
		★ 2.7.5.2	Temperature and Humidity					
		★ 3.27. (*)	Firefighters' Emergency Operation - Automatic Elevators - where required by NBCC					
			except 2.27.1 and 2.27.2					
			indicate if Manual PHI Recall is provided					
			indicate if Automatic PHI Recall by FAID's is provided					
	8.7.3.31 ★5	Relocation of	Elevator Controller (if control wiring disconnected - reconnected)		Major			
		2.8.2	Electrical Equipment and Wiring					
			Electrical testing as per the original design submission tests					
	8.7.3.31.5(b)	Installation of	Door Controller (as part of an alteration)		Minor A	-	see c8.6.12.5.3.1	
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
	c8.6.12.5.3.1	Replacement of	Door Controller		-	-	Minor B	
		2.26.4.1	Electrical Equipment and Wiring					
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling					
	8.7.3.31.6	Change in Type of Motion Control			Major	-		
		3.25.	Terminal-Stopping Devices					
		3.26.(*)	Operating Devices and Control Equipment					
		3.27.	Emergency Operation & Signaling Devices - ★ where required by NBCC					
			indicate if Manual PHI Recall is provided					
			indicate if Automatic PHI Recall by FAID's is provided					
	8.7.3.31.7	Change in Type of Operation Control (CPPB, Automatic)			Major	-		
		2.11.1	Entrances and Emergency Doors Required					
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.4	Location of Horizontally Sliding or Swinging H/W Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		2.11.9	Hoistway Door Locking Devices & Power Operation					
		2.11.10	Landing Sill: Guards, Illumination, hinged sills, Tracks					
		2.11.11	Entrances, Horizontal Slide Type					
		2.11.12	Entrances, Vertical Slide Type					
		2.11.13	Entrances, Swing Type					
		3.12.1	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		3.13.	Power Operation of H/W Doors and Car Doors					
		3.14.(*)	Car: Enclosure, Doors, Gates, Illumination					
		3.16.	Capacity & Loading					
		3.25.	Terminal-Stopping Devices					
		3.26.(*)	Operating Devices and Control Equipment					
		3.27.	Emergency Operation & Signaling Devices - ★ where required by NBCC					
			indicate if Manual PHI Recall is provided					
			indicate if Automatic PHI Recall by FAID's is provided					
	8.7.3.31 ★6	★ Addition of Wander Patient Feature - Change in Operation Control			Minor B	Minor B		
		2.11.3.2	- doors closed when not in use					
		2.13.5.4	- door time out					
		2.27.3.1.6(l)	- shall not prevent PHI					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.31★7	★ Addition of Restricted Access - Security / Floor Lock Out OBC-3.2.6.5(4) - shall not prevent floor access When on FEO D.O. Button Remain Operative Under non FEO Conditions, Door Closed When not in Use 2.27.3.1.6(l) - shall not prevent PHI 2.27.3.3.1(i) - permit travel to all landings when on PH II 2.11.6.2 Cannot Lock Out Top& Btm, Designated & Alternate or All Landings in Phase II DR 172/02 Elevators With Phase II Operation & Floor Button Controlled by Cards/Keys			Minor B	Minor B		
	8.7.3.31.8	Emergency Operation and Signaling Devices						
	8.7.3.31.8(a)	Car Emergency Signaling Devices			Minor B	Minor B	mrr	
		2.27.1 Car Emergency Signaling Devices						
	8.7.3.31.8(b)	Emergency or Standby Power			Minor B	Minor A		
		2.27.2 Emergency Or Standby Power systems						
	8.7.3.31.8(c)	Firefighter's Emergency Operation			Minor B	Minor A		
		3.27. (*) Emergency Operation and Signaling Devices ★ except 2.27.1 and 2.27.2 Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory						
	DO 175/02	★ Emerg. Recall Upgrade - from Manual to Automatic & matching code at time of install conformance to auto recall based on F.S. at time of install requirements of DO 175/02			Minor B			
	DO 219/07	★ Emerg. Recall Upgrade Voluntary to Fire Code Retrofit Order 219/07 Firefighter Operation to B44-00U2 or Firefighter Operation to B44-04 or Firefighter Operation to B44-07 Manual PHI Recall is mandatory Automatic PHI Recall by FAID's if required by NBCC or B44-07			Minor B	Minor A		
	8.7.3.31.9	Auxiliary Power Lowering Operation			Minor B	Minor B		
		3.26.10 Auxiliary Power Lowering Operation						
	8.7.3.31.10	Removal of emergency stop switch on passenger elevators remove all related markings / engravings & provide an in-car stop switch to:			Minor B	Minor B		
		2.26.2.21 In-car stop switch						
		2.26.4.3 Positively Opened Contacts						
		2.26.9.3(a) single failure does not render In-Car Stop Switch ineffective						
		3.26.4.2 deceleration rate <1g, anticreep must still function						
	8.7.3.31.11	Electrical Protective Devices					↓ See Below ↓	
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.2 (PES)			Major	Major	mrr	Major
		3.26.2 Electrical Protective Devices - for specified device						
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.1			-	Minor A	mrr	
		3.26.2 Electrical Protective Devices - for specified device						

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					Alteration		Replacement with		
					Modification Change	Addition	Same	Different Make/Model	
					Type of Submission Required				
	8.7.4	Alterations to Elevators w/other Types of Driving Machines							
	8.7.4.1	Rack and Pinion Elevators			Major	-			
		4.1.	Rack and Pinion Elevators						
	8.7.4.2	Screw-Column Elevators			Major	-			
		4.2.	Screw-Column Elevators						
	8.7.4.3	Hand Elevators			Major	-			
	8.7.4.3.1	Hoistway Enclosures and Machinery Space			Major	-			
		4.3.1	Hoistways, H/W Enclosures, and Related Construction						
		4.3.4	Enclosures for Machines and Control Equipment						
	8.7.4.3.2	Top Car and Counterweight Clearances			Major	-			
		4.3.3	Top Clearances						
	8.7.4.3.3	Hoistway Entrances			Major	-			
		4.3.6	Hoistway Entrances						
		4.3.7	Hoistway Gates for Landing Openings						
		4.3.8	Hoistway-Door & Hoistway Gate Locking Devices						
	8.7.4.3.4	Car Enclosures			Major	-			
		4.3.9	Car Enclosures						
		4.3.11	Car Frames and Platforms						
	8.7.4.3.5	Car Frame and Platform			Major	-			
		4.3.11	Car Frames and Platforms						
		4.3.12	Car Compartments						
		4.3.13	Cars Counterbalancing One Another						
		4.3.16	Suspension Means						
	8.7.4.3.6	Capacity and Loading			Major	-			
		4.3.14.1	Minimum Rated Load						
		4.3.14.2	Capacity Plate						
		4.3.19.1	Drive Machine & Sheaves - Factors or Safety						
		4.3.19.2	Driving-Machines						
		4.3.16	Suspension Means						
	8.7.4.3.7	Increase in Rise			Major	-			
		4.3.3.1	Top Car Clearances						
		4.3.3.2	Top Counterweight Clearance						
		4.3.15	Car Safeties						
		4.3.16	Suspension Means						
	8.7.4.3.8	Guide Rails and Fastenings			Major	-			
		4.3.18.1	Guide Rails - Material and Finish						
		4.3.18.2	Strength of Rails and Fastenings						
		4.3.18.3	Extension of Guide Rails at Top & Bottom of H/W						
	8.7.4.3.9	Overhead Beams and Supports			Major	-			
		4.3.5.1	Overhead Beams and Supports						
		4.3.5.2	Access to Machines and Sheaves						
	8.7.4.3.10	Power Attachments			Major	-			

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	8.7.5	Alterations to Special Application Elevators						
	8.7.5.1	Inclined Elevators			Major	-		
		5.1.	Inclined Elevators compliance to specific 5.1 sections based on alteration scope				variance	
	8.7.5.2	Limited Use/Limited Application Elevators			See Electric or Hydraulic Elevator			
	8.7.5.2★1	★	8.7.2	Alterations to Electric Elevator & as modified in Section 5.2				
	8.7.5.2★2	★	8.7.3	Alterations to Hydraulic Elevator & as modified in Section 5.2				
	8.7.5.5	Power Sidewalk Elevators			Major	-		
	8.7.5.5.1	Changes in Electrical Wiring or Electrical Equipment			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
	8.7.5.5.2	Sidewalk Door			Major	-		
		5.5.1.11.2	Horizontal Openings in Sidewalks and Exterior Areas					
		5.5.1.11.3	Hinged Type Swing Sidewalk Doors					
		5.5.1.11.4	Vertical Lifting Sidewalk Covers					
	8.7.5.5.3	Change in Car Enclosure, Car Doors, and Gates			Major	-		
		5.5.1.14	Car Enclosure, Car Doors and Gates, Illumination					
	8.7.5.5.4	Bow-Irons and Stanchions			Major	-		
		5.5.1.15.2	Bow-Irons and Stanchions					
	8.7.5.5.5	Increase in Rated Load			Major	-		
		5.5.1.16	Capacity and Loading					
		5.5.1.18	Speed Governors					
		5.5.1.21	Buffers and Bumpers					
		5.5.1.25.4	Maximum Rated Speed					
	8.7.5.5.6	Increase in Rated Speed			Major	-		
		5.5.1.15	Car Frames and Platforms					
		5.5.1.16	Capacity and Loading					
		5.5.1.19	Suspension Ropes					
		5.5.1.22	Guide Rails					
	8.7.5.5.7	Existing Driving Machine			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
		5.5.1.9	Machinery and Sheave Beams, Supports, and Foundations					
		5.5.1.23	Driving Machines and Sheaves					
		5.5.1.25	Operating Devices and Control Equipment					
	8.7.5.5.8	Change in Type of Operating Devices and/or Control Equipment			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
		5.5.1.25	Operating Devices and Control Equipment					
	8.7.5.6	Rooftop Elevators			Major	-		
		5.6.	Rooftop Elevators					
	8.7.5.7	Special Purpose Personnel Elevators			see CAN/CSA B311			

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					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.6.1	Alterations to Escalators						
	8.7.6.1.1	Change to component parts 8.6.12.4.1.1 Replacement parts or components 8.6.12.4.1.2 Quality of Work			mrr	-		mrr
	8.7.6.1.1	Addition of Components or Devices see applicable 8.7.6.1 requirements for that device			see 8.7.6.1			-
	8.7.6.1.2	Relocation of Escalator			New	-		
	ED CAD 15.(2)	★ Repositioning of Escalator (within the same building)			Major			
		6.1. Escalators						
		6.1.3.3.9 Guard at ceiling intersection						
		6.1.3.3.10 Anti-Slide Devices						
		6.1.3.3.11 Deck Barricades						
		6.1.3.4.3 Guards						
		6.1.3.6.6 Floor Opening Protection Adjacent to Escalator Wellway						
		6.1.3.12 Headroom						
		6.1.6.9.1 Caution Signs						
		6.1.7.4.2 certification to B44.1 does not apply						
		6.1.3.6.5 number of flat steps does not apply						
	8.7.6.1.3	Protection of Floor Openings			Minor A	-		
		6.1.1.1 Protection Required						
	8.7.6.1.4	Protection of Trusses and Machinery Spaces Against Fire			Minor A	-		
		6.1.2.1 Protection Required						
	8.7.6.1.5	Construction Requirements						
	8.7.6.1.5(a)	Construction Requirements - Angle of Inclination			Major	-		
	8.7.6.1.5(b)	Construction Requirements - Geometry			Major	-		
		6.1.3.2 Geometry						
	8.7.6.1.5(c)	Any Alteration to the Balustrades			Minor A	Minor A		
		6.1.3.3 Balustrades						
		6.1.3.3.1 Construction						
		6.1.3.3.2 Strength						
		6.1.3.3.3 Use of Glass or Plastic						
		6.1.3.3.4 Interior Low Deck						
		6.1.3.3.5 Loaded Gap between Skirt & Step						
		6.1.3.3.6 Skirt Panels						
		6.1.3.3.7 Dynamic Skirt Panels						
		6.1.3.3.8 Dynamic Skirt Panel Loaded Gap						
		6.1.3.3.9 Step/Skirt Performance Index						
		6.1.3.3.10 Skirt Deflector Devices						
	8.7.6.1.5(d)	Deflector Devices			Minor B			mrr
		6.1.3.3.10 Skirt Deflector Devices						
	8.7.6.1.6	Handrails or Handrail System			Minor A	-		
		6.1.3.2.2 Geometry - Handrail						
		6.1.3.4.1 Handrails - Type Required						
		6.1.3.4.2 Extension Beyond Combplate						
		6.1.3.4.3 Guards (hand or finger)						
		6.1.3.4.4 Handrails - Splicing						
		6.1.3.4.6 Handrail Clearance						
		6.1.6.3.12 Handrail Entry Device						
		6.1.6.4 Handrail Speed Monitoring Device						
	8.7.6.1★1	★ Addition of Handrail Advertising Variance to 6.1.6.9.2, provide maintenance program			mrr	variance		

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		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
Job Reference:					Type of Submission Required			
	8.7.6.1.7	Step System - any alteration to the step system			Major	-	mrr	Minor B
		6.1.3.3.5	Loaded Gap Between Skirt & Step					
		6.1.3.5 (*)	Steps					
		6.1.3.6	Entrance and Egress Ends					
		6.1.3.8	Step Wheel Tracks					
		6.1.3.9.4	Step					
		6.1.3.10.4	Factor of Safety - Steps					
		6.1.3.11	Chains					
		6.1.6.3.3	Broken Step-Chain Device					
		6.1.6.3.9	Step Upthrust Device					
		6.1.6.3.11	Step Level Device					
		6.1.6.3.14	Step Lateral Displacement Device					
		6.1.6.5	Missing Step Device					
	8.7.6.1.8	Combplates			Minor A	-		
		6.1.6.3.13	Comb-Step Impact Devices					
	8.7.6.1.9	Trusses and Girders			Major	-		
		8.7.1.4	Welding - see Code Adoption Document					
		6.1.3.7	Trusses of Girders					
		6.1.3.9.1	Structural Load					
		6.1.3.10.1	Factor of Safety - Trusses and Supporting Structures					
	8.7.6.1.9	New Escalator into Existing Trusses			New	-		
		6.1.	Escalators					
	8.7.6.1.10	Step Wheel Tracks			Major	-		
		6.1.3.8	Step Wheel Tracks					
		6.1.3.9.4	Step					
		6.1.3.10.1	Factor of Safety - Trusses and Supporting Structures					
		8.7.1.4	Welding - see Code Adoption Document					
	8.7.6.1.11	Rated Load and Speed			Major	-		
		6.1.	Escalators					
	8.7.6.1.12	Driving Machine, Motor, and Brake						
	8.7.6.1.12(a)	Driving Machine			Major	-		
		6.1.3.9.2	Machinery					
		6.1.3.10.3	Factor of Safety - Power Transmission Parts					
		6.1.4.1	Limits of Speed					
		6.1.5.1	Connection Between Driving Machine and Main Drive Shaft					
		6.1.5.2	Driving Motor					
		6.1.5.3.1	Escalator Driving-Machine Brake					
		6.1.5.3.2	Main Drive Shaft Brake					
		6.1.6.3.4	Broken Drive-Chain Device					
		6.1.6.3.8	reversal Stop Device					
	8.7.6.1.12(b)	Driving Motor			Major	-		
		6.1.3.9.2	Machinery					
		6.1.3.10.3	Factor of Safety - Power Transmission Parts					
		6.1.4.1	Limits of Speed					
		6.1.5.2	Driving Motor					
		6.1.5.3.1	Escalator Driving-Machine Brake					
		6.1.5.3.2	Main Drive Shaft Brake					
		6.1.6.3.2	Speed Governor					
		6.1.6.3.8	reversal Stop Device					
		6.1.6.3.10	Disconnected Motor Safety Device					
	8.7.6.1.12(c)	Machine Brake			Major	-		
		6.1.3.9.3	Brake					
		6.1.3.10.2	Factor of Safety - Driving Machine Parts					
		6.1.5.3.1	Escalator Driving-Machine Brake					

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	8.7.6.1.13	Operating and Safety Devices			Minor A	Minor A		
		6.1.6	Operating and Safety Devices (for that device)					
	8.7.6.1★2	★ Removal of step demarcation lights			Minor A	-		-
		6.1.3.3.5	Loaded Gap Between Skirt & Step					
		6.1.3.5.4	Clearance between Steps					
		6.1.3.5.5	Slotting of Steps and Treads					
		6.1.3.5.6	Step Demarcation					
		6.1.3.6.2	Distinction Between Comb and Step					
	8.7.6.1.14	Lighting, Access, and Electrical Work			Minor B	Minor B		
		6.1.7	Lighting, Access, and Electrical Work					
	8.7.6.1.15	Entrance and Egress			Major	-		
		6.1.3.6.1	Combplates					
		6.1.3.6.2	Distinction Between Comb and Step					
		6.1.3.6.3	Adjacent Floor Surfaces					
		6.1.3.6.4	Safety Zone					
	8.7.6.1.16	Controller - Installed as part of an alteration			Major	-		-
		6.1.6.10	Control and Operating Circuits					
		6.1.6.11	Electrically Power Safety Devices					
		6.1.6.12	Installation of Capacitors.. To Make EPD's Ineffective					
		6.1.6.13	Completion of Maintenance Circuits					
		6.1.6.14	Escalator Manual Reset					
		6.1.6.15	Contractors and Relays for Use in Critical Operating Circuits					
	8.7.6.1★3	★ Controller - Replacement of 8.7.6.1.16 Controller			-	-		Major
	8.7.6.1★4	Relocation of 2.8.2 Electrical Equipment and Wiring Electrical testing as per the original design submission tests			Major			
	8.7.6.1★5	★ Addition of Soft start for control systems built to B44-00 and later			-	Minor A		
		6.1.7.4	Electrical Equipment and Wiring					
		6.1.6.10.1	Occurrence of a single ground					
		6.1.6.10.2	Redundancy to be checked					
		6.1.6.10.3	Motors with Static control					
		for control systems built prior to B44-00						
		6.1.7.4	Electrical Equipment and Wiring					

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					Alteration		Replacement with	
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					Type of Submission Required			
	8.7.6.2	Alterations to Moving Walks						
	8.7.6.2.1	Change to component parts 8.6.12.4.1.1 Replacement parts or components 8.6.12.4.1.2 Quality of Work			mrr	-		mrr
	8.7.6.2.1	Addition of Components or Devices see applicable 8.7.6.2 requirements for that device			see 8.7.6.2			-
	8.7.6.2.2	Relocation of Moving Walk 6.2. Moving Walks			New	-		
	8.7.6.2.3	Protection of Floor Openings 6.2.1.1 Protection Required			Minor A	-		
	8.7.6.2.4	Protection of Trusses and Machinery Spaces Against Fire 6.2.2.1 Protection of Supports - Protection Required			Minor A	-		
	8.7.6.2.5	Construction Requirements - Angle of Inclination 6.2. Moving Walks			Major	-		
	8.7.6.2.5	Construction Requirements - Geometry 6.2.3.2 Geometry			Major	-		
	8.7.6.2.5	Construction Requirements - Balustrades 6.2.3.3 Balustrades			Minor A	Minor A		
	8.7.6.2.6	Handrails 6.2.3.2.3 Geometry - Handrail 6.2.3.4 Handrails 6.2.6.3.10 Handrail Entry Device 6.2.6.4 Handrail Speed Monitoring Device			Minor A	-		
	8.7.6.2.7	Treadway System 6.2.3.2.3 Geometry - Handrail 6.2.3.3.5 Skirtless Balustrade 6.2.3.3.6 Skirt Panels 6.2.3.5 Pallet-Type Treadway 6.2.3.6(*) Belt-Type Treadway 6.2.3.8 Entrance and Egress Ends 6.2.3.9 Supporting Structure 6.2.3.10 Rated Load 6.2.3.11 Design Factors of Safety 6.2.3.12.4 Pallet Factor of Safety 6.2.3.12.5 Belt Factor of Safety 6.2.3.13 Chain Drives 6.2.6.3.3 Broken Treadway Device 6.2.6.5 Missing Pallet Device 6.2.6.3.9 Pallet Level Device			Major	-		
	8.7.6.2.8	Combplates 6.2.3.8 Entrance and Egress Ends 6.2.6.3.11 Comb-Pallet Impact Devices			Minor A	-		
	8.7.6.2.9	Trusses and Girders 8.7.1.4 Welding - see Code Adoption Document 6.2.3.9 Supporting Structure 6.2.3.10.1 Structural Load 6.2.3.12.1 Trusses & Supports based on max static load			Major	-		
	8.7.6.2.9	New Moving Walk into Existing Truss 6.2. Moving Walks			New	-		
	8.7.6.2.10	Track System 6.2.3.9 Supporting Structure 6.2.3.10 Rated Load 6.2.3.11.1 Trusses & Supports based on max static load 8.7.1.4 Welding - see Code Adoption Document			Major	-		
	8.7.6.2.11	Rated Load and Speed 6.2. Moving Walks			Major	-		

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		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.6.2.12	Driving Machine			Major	-			
		6.2.3.10.2	Machinery Load						
		6.2.3.11.2	Factor of Safety for Drive Machine Parts						
		6.2.3.11.3	Factor of Safety for Power Transmission members						
		6.2.3.13	Chain Drives						
		6.2.3.14	V-Belt Drives						
		6.2.3.15	Headroom						
		6.2.4	Rated Speed						
		6.2.5.1	Connection Between Driving Machine and Main Drive Shaft						
		6.2.5.3.1	Moving Walk Driving-Machine Brakes						
		6.2.5.3.2	Main Drive Shaft Brake						
		6.2.6.3.4	Broken Drive-Chain Device						
		6.2.6.3.8	Disconnected Motor Safety Device						
	8.7.6.2.12	Drive Motor			Major	-			
		6.2.3.10.2	Machinery Load						
		6.2.3.11.2	Factor of Safety for Drive Machine Parts						
		6.2.3.11.3	Factor of Safety for Power Transmission members						
		6.2.4	Rated Speed						
		6.2.5.2	Driving Motor						
		6.2.5.3.1	Moving Walk Driving-Machine Brakes						
		6.2.6.3.2	Speed Governor						
		6.2.6.3.7	Reversal Stop Device						
		6.2.6.3.8	Disconnected Motor Safety Device						
	8.7.6.2.12	Machine Brake			Major	-			
		6.2.3.10.3	Brake						
		6.2.3.11.2	Factor of Safety for Drive Machine Parts						
		6.2.3.11.3	Factor of Safety for Power Transmission members						
		6.2.5.3.1	Moving Walk Driving-Machine Brakes						
		6.2.5.3.2	Main Drive Shaft Brake						
	8.7.6.2.13	Operating and Safety Devices			Minor A	Minor A			
		6.2.6	Operating and Safety Devices (for that device)						
	8.7.6.2.14	Lighting, Access, and Electrical Work			Minor B	Minor B			
		6.2.7	Lighting, Access, and Electrical Work						
	8.7.6.2.15	Controller - Installed as part of an alteration			Major	-		-	
		6.2.6.9	Control and Operating Circuits						
		6.2.6.10	Electrically Power Safety Devices						
		6.2.6.11	Installation of Capacitors.. To Make EPD's Ineffective						
		6.2.6.12	Completion of Maintenance Circuits						
		6.2.6.13	Moving Walk Manual Reset						
		6.2.6.14	Contractors and Relays for Use in Critical Operating Circuits						
	8.7.6.2★1	★ Controller - Replacement of			-	-		Major	
		8.7.6.1.16	Controller						
	8.7.6.2★2	Relocation of	Controller (if control wiring disconnected - reconnected)		Major				
		2.8.2	Electrical Equipment and Wiring						
			Electrical testing as per the original design submission tests						
	8.7.6.2★3	★ Addition of Soft start			-	Minor A			
			for control systems built to B44-00 and later						
		6.1.7.4	Electrical Equipment and Wiring						
		6.1.6.10.1	Occurrence of a single ground						
		6.1.6.10.2	Redundancy to be checked						
		6.1.6.10.3	Motors with Static control						
			for control systems built prior to B44-00						
		6.1.7.4	Electrical Equipment and Wiring						

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.7	Alterations to Dumbwaiters and Material Lifts						
	8.7.7.1	Dumbwaiters and Material Lifts Without Automatic Transfer Devices			Major	-		
		Alteration to a Power and Hand Dumbwaiters			Major	-		
		7.1.	Power and Hand Dumbwaiters					
		7.2.	Electric and Hand Dumbwaiters					
		7.3.	Hydraulic Dumbwaiters					
		Alteration to a Material Lifts			Major	-		
		7.4.	Material Lifts					
		7.5.	Electric Material Lifts					
		7.6.	Hydraulic Material Lifts					
	8.7.7.1.1	General Alterations other than 8.7.7.1.2			Major	-		
		Part 7	Dumbwaiters and Material Lifts					
	8.7.7.1.2	Increase in Rated Load			Major	-		
		7.2.(*)	Electric and Hand Dumbwaiters w/o Transfer Devices					
		7.3.(*)	Hydraulic Dumbwaiters w/o Transfer Devices					
		7.4.	Material Lifts					
		7.5.	Electric Material Lifts					
		7.6.	Hydraulic Material Lifts					
	8.7.7.2	Addition of Automatic Transfer Device			Major	-		
		Part 2	Electric Elevators					
		Part 3	Hydraulic Elevators					
	8.7.7.3.1	Material Lifts and Dumbwaiters With Automatic Transfer Devices			N/A	N/A		
		exempt if requirements of CAD 2.3(j) are met						
	8.7.7.3.2	Material Lifts and Dumbwaiters - remove Transfer Device			New	-		
		7.1. to 7.3.	for Dumbwaiters					
		7.4. to 7.6	Material Lifts w/o Transfer Devices					
	8.7.7.3.3	Material Lifts altered to an Elevator			New	-		
		Part 2	Electric Elevators					
		Part 3	Hydraulic Elevators					
	8.7.7.3.4	Material Lift or Dumbwaiter w/ Transfer Device Altered to a D/W			New	-		
		7.1.	Power and Hand Dumbwaiters w/Auto Transfer Devices					
		7.2.	Electric and Hand Dumbwaiters w/o Transfer Devices					
		7.3.	Hydraulic Dumbwaiters w/o Transfer Devices					
	225/07	Alterations to Freight Platform Lifts						
	225/07	★	Alteration to a Type 'A' Freight Platform Lift		Major	-		
		7.4.	as applicable to Material Lifts Type 'B' ♦					
		7.5.	as applicable to Material Lifts Type 'B' ♦					
		7.6.	as applicable to Material Lifts Type 'B' ♦					
		♦ excluding requirements related to in-car operating devices & Riders						
	225/07	★	Alteration to a Type 'B' Freight Platform Lift		Major	-		
		7.4.	as applicable to Material Lifts Type 'B'					
		7.5.	as applicable to Material Lifts Type 'B'					
		7.6.	as applicable to Material Lifts Type 'B'					



Elevating and Amusement Devices Safety Division	Ref. No.: 226 / 07	Rev. No.: 1
DIRECTOR'S ORDER	Date: November 26, 2007	Date: March 2, 2009

IN THE MATTER OF:

**THE TECHNICAL STANDARDS AND SAFETY ACT 2000,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01(Elevating Devices) made under the
*Technical Standards and Safety Act 2000***

Subject:

- **Alterations of Elevators, Dumbwaiters, Material Lifts, Freight Platforms, Escalators and Moving Walks per the CSA B44-07 Code**
- **Procedure for Design Submissions and Inspections**

Sent to: **ALL ELEVATOR CONTRACTORS**

1. Introduction

- 1.1 As of January 1, 2008, Director's Order 200/05 is revoked and replaced with the requirements of Director's Order 226/07. Revision 1 of this document is effective immediately.
- 1.2 With the release of Elevating Devices Code Adoption (CAD) Amendment - 225/07 you have been notified that the new edition **CSA-B44-07, Safety Code for Elevators** will apply to each **newly installed or altered** elevating device for which the DESIGN is submitted to the Technical Standards and Safety Authority (TSSA) for registration on or after the 1st day of January 2008.
- 1.3 The requirements for alterations are in Section 8.7 and 8.6.12.5 of the new Code. Contractors are advised to study the Code requirements when any alteration is to be carried out.
- 1.4 The purpose of this Director's Order is to:
- (a) advise which types of upgrades are classified as alterations
 - (b) indicate the format of the submission required, by categorizing the work as "major" or "minor A" or "minor B".
 - (c) supplement the adoption of B44-07 Section 8.7 "Alterations"
- 1.5 Attached to this Director's Order is the Alteration Checklist (similar to that provided in 200/05).
- (a) Changes from the 200/05 Checklist are denoted on the new 226/07 Checklist in red text. Red text has also been used to show changes intended to provide clarity.
 - (b) Where changes are intended to introduce a new TSSA-specific requirement these changes are identified with a ★ on the Checklist.
 - (c) Where B44 requirements are impacted either by this order or by Code Adoption Amendment - 225/07, those changes are noted with pink highlight on the Alteration Checklist
 - (d) The changes in the Alteration Checklist related to revision 1 are shown in green text
 - (e) A reference to the CAD in the Alteration Checklist in column 2a is an indication that the stated requirement has been amended. Users should refer to the latest CAD Amendment #225/07 for details

2. Application

This Order applies to work carried out on those elevating devices which are the subject of the Code Adoption Document Amendment 225/07 and includes: elevators, dumbwaiters, material lifts, freight platforms, escalators, moving walks, rack and pinion elevators, screw column elevators, hand elevators, inclined elevators, LULA elevators, power sidewalk elevators, and rooftop elevators.

3. **Order to Contractors Carrying out Alterations**

Each alteration to an elevating device listed in section 2. Application, for which the DESIGN is submitted for registration to TSSA on or after the 1st day of January 2008, shall be carried out in accordance with this Order.

4. **Definitions**

(a) **“alteration”:**

- i) means an alteration or replacement, removal or addition of any component or part of an elevating device that results in, or may result in, a change in the original design, inherent safety or operational characteristics of the elevating device, and “altered” has a corresponding meaning (O.Reg. 209/01);
- ii) any change to equipment, including its parts, components, and/or subsystems, other than maintenance, repair, or replacement (CSA B44-07);

(b) **alteration, as part of an:** a repair or replacement that is included with other work that is classified as an alteration (CSA B44-07);

(c) **maintenance:** means,

- i) regularly scheduled work or other action taken to ensure that an elevating device is and will remain in safe operating condition and ‘maintain’ has a corresponding meaning (O.Reg. 209/01);
- ii) and includes, an inspection and examination at regular intervals of all parts and functions of the elevating device (O.Reg. 209/01s.32(3));
- iii) cleaning, lubricating and adjusting all its parts at regular intervals and repairing or replacing worn or defective components in order to prevent the device from becoming unsafe for operation (O.Reg.209/01 s.32(3));
- iv) repairing or replacing damaged or broken parts (O.Reg. 209/01s.32(3));
- v) such other examinations or work as is required by this Regulation, the applicable code or standard referred to in the code adoption document or by an inspector (O.Reg. 209/01s.32(3)).
- vi) a process of routine examination, lubrication, cleaning, and adjustment of parts, components, and/or subsystems for the purpose of ensuring performance in accordance with the applicable Code requirements (CSA B44-07);

(d) **replacement:** the substitution of a device or component and/or subsystems, in its entirety, with a unit that is the same as the original for the purpose of ensuring performance in accordance with applicable Code requirements (CSA B44-07);

(e) **repair:** reconditioning or renewal of parts, components, and/or subsystems necessary to keep equipment in compliance with applicable Code requirements (CSA B44-07).

5. **Alterations**

5.1 Work performed on an elevating device other than worked performed as maintenance, repair, or replacement is an alteration. Part 8, Section 8.6 of the B44-07 Safety Code for Elevators deals with “Maintenance, Repair, and Replacement”, while Section 8.7 of the code deals with “Alterations”. This order elaborates on these requirements and includes a 33 page Alteration Checklist, which extracts the various alterations, and in table form displays a list of applicable sub-requirements. The “Alteration Checklist” also identifies the type of submission required by TSSA. (see 8 Alteration Checklist for more information about this table)

5.2 **Type of Alteration Work**

Columns 3 to 6 of the Alteration Checklist classify the type of work as one of the following types:

(a) **Alteration: Modification / Change** (column 3)

means a change to the original design or characteristics of a component, assembly or the device as a whole, such as material, strength, size, dimension, rating, setting, function, operational mode, design parameters etc., whereby the change may be made on existing equipment or by substituting new modified equipment. Note that a change of the component make or model, without any other change, may constitute an alteration under this Director’s Order (see item (d) below).

- (b) **Alteration: Addition** (column 4)
means addition of a new component or a design feature, not previously provided e.g. addition of top-of-car operating devices.
- (c) **Replacement with same** (column 5)
means the substituted device, assembly or component is the same as the original, and either;
- (i) B44- Section 8.6.12.5 classifies the specific replacements as alterations and requires that the substituted component and/or the elevating device as a whole meets the specific requirements of the latest Code edition, or
 - (ii) this order recognizes the replacement of the noted item as an alteration, and requires an appropriate submission, as referenced in 1.4
- (d) **Replacement with different make and model** (column 6)
means that the substituted device, assembly or component is the same as the original in its design, performance and safety characteristics, except that it is of a different make and/or model and this order recognizes the replacement of the noted item as an alteration, and requires an appropriate submission, as referenced in 1.4.

Note: In addition to the work described in 5.2 and listed in the Checklist, any other work performed on an elevating device that results in a change to the inherent safety or operational characteristics will constitute an alteration, even though there may be no change in the original design. The list in the attached Checklist is not all-inclusive.

6. **Type of Design Submission**

6.1 Based on the type of alteration work, as per 5.2 above, the Alteration Checklist provides additional information to determine the type of the submission required. The entries in the various columns may be one of the following:

Major	-	means Major alterations
Minor A	-	means Minor alteration type A
Minor B	-	means Minor alteration type B
Blanks (columns 5&6)	-	work that would not constitute an alteration
mrr	-	means the designated scope of work is permitted under the requirements related to maintenance repair and replacement
n/a	-	means TSSA has permitted an exception to a compliance requirement however, if another alteration activity requires compliance to the exempted requirement, the exemption no longer applies
New	-	means, not an alteration but a new installation
†	-	means that no inspection is required following the alteration
variance	-	this activity can only be considered after approval of a variance
★	-	TSSA-designated alteration or requirement
CAD	-	a reference to the CAD in the Alteration Checklist in column 2a is an indication that the stated requirement has been amended. Users should refer to the latest CAD Amendment #225/07 for details.

Note: The definitions for "major" and "minor" alterations as defined in O.Regulation 209/01 have been used. Although "Minor A" and "Minor B" are no longer defined in Ontario Regulation 209/01, in this Order we continue to use terms "Minor A" and "Minor B" in order to facilitate the needs of the contractors respecting the timing, scope and format of submissions and inspections.

7. **Requirements for Design Submissions and Inspections**

- 7.1 A design submission or notification (in the case of a Minor B) must clearly specify, for each alteration covered, whether the type of the alteration work is a "modification", or "addition", or "replacement".
- 7.2 Where a design submission covers alterations to more than one component or feature, which would require different types of submissions, the type of such submission will be of the "highest rank", e.g. combination of Minor B and Major will be designated as a Major alteration.

7.2.1 Major Alteration:

7.2.1.1 The design submission shall be registered before the major alteration commences, except as permitted in subsection 7(2) of O.Reg 209/01.

7.2.1.2 The alteration shall be inspected by TSSA prior to returning to service.

7.2.2 Minor Alteration type A and B:

7.2.1.1 According to Section 19 of O.Reg 209/01, the design submission shall be submitted for registration not later than 30 days after returning the elevating device to service. However, contractors are advised to submit the documents in advance of the work start to ensure that no expense will be incurred should the registration of the proposed design or a requested variance be rejected.

¹Effective January 1, 2009, the design submission shall be submitted for registration not later than 30 days after completion of a minor alteration.

7.2.1.2 Minor A and B alterations are permitted to be returned to service after work completion, however, the contractor who completed the alteration shall arrange for a “special inspection” to be carried out not later than² 60 days from the date of the completion of the alteration, and shall arrange for performance of tests required by the inspector. A registered design submission or notification shall be available at the time of inspection.

²Effective January 1, 2009, the contractor who completed the minor alteration shall ensure that a “special inspection” has been requested within 60 days after returning the elevator to service.

7.3 Signatures

7.3.1 According to subsection 15.(6) of O.Reg 209/01, all individual documents composing the design submission for any Major or Minor A alteration shall bear the **signature and seal, or electronic equivalent, of the professional engineer** who prepared or approved the design submission.

7.3.2 In the case of Minor B alterations, an officer or director of the Company applying for registration may sign the design submission documents or the Notification, if the officer or director is a mechanic. Minor B’s that are electronically transmitted shall be deemed acceptable provided that the signature box of the Minor B Notification form contains the name, designation and mechanic license number of a registered and licensed mechanic who supervised and is competent to oversee the scope of the minor B alteration. Example: Signature: John Smith, EDM-A, 00999999

7.4 Specification Forms

7.4.1 Alterations should be submitted on the appropriate Specification Sheets (depending on device type) and should itemize all entries which are **Directly** and **Indirectly** affected by the alteration scope.

Example: Cab Interior Modification resulting in an increase in cab weight

- Directly affected are interior finishes and flame ratings
- Indirectly affected are items such as rope factor of safety (elec.) or cylinder column strength (hyd.)
- Sufficient details are to be provided to show compliance verification.

A list of altered components should also be summarized in box 189 (or equivalent).

7.4.2 Items which are not affected by the alterations should be noted with either:

- N/C or **No Change** or
- The **Original Entry** followed by **Existing**. Example Car Wt.: **1812 kg - Existing**

7.4.3 Where a “major alteration” and “minor alteration” affects only a very few items, the abridged form may be used instead of the full specification form provided clarity is not compromised. The Abridged form should specify: box numbers, descriptions, and new entry values. (Example: 34. Rated Working Pressure: 3445 kPa)

7.4.4 Some predefined templates exist for Minor B type alterations and are available from the TSSA web site. These templates shall be utilized where appropriate to ensure all relevant entries are completed and included in the submission. Multiple Minor B notification templates may be utilized to fully cover the scope of work and only one Minor B fee shall apply.

8.2.3 Column 2a, 2b and 2c:

Column 2 describes the scope and applicable sub requirements.

- Column 2a is the primary title of the alteration activity (e.g. interlocks)
- Column 2b is the list of sub requirements by reference number (e.g. 2.12.1, 2.12.2...)
- Column 2c is a description of the referenced sub requirement. (e.g. General, Interlocks,...)

8.2.4 Column 3, 4, 5 and 6:

The headings of Columns 3 to 6 define the “Type of Alteration Work” as Modification Change, Addition, Replacement with Same, and Replacement with Different. See 5.2 of this order.

The contents of Columns 3 to 6 define the “Type of Design Submission” as, Major Alteration, Minor A Alteration, or Minor B – Notification. See 5.3 of this order.

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'x'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference: _____			Type of Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Submission Type Required			
	8.7.2	Alterations to Electric Elevators						
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓			
X	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B
x	(A)	2.12.1	General					
x		2.12.2	Interlocks					
x		2.12.4	Listing/Certification Locking Devices					
x	(B)	2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)				n/a	(C)
x		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)				n/a	
x		2.12.7	Hoistway Access Switches (n/a for column 5,6)			(D)	n/a	
x		2.24.8.3	Driving Machine Brake					
X	8.7.2.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A		
x		8.7.2.10.1	Entrances & H/W Openings - General Req'mts					
x	(E)	8.7.2.10.2	Horizontal Slide-Type Entrances					
		8.7.2.10.3	Vertical Slide-Type Entrances					
x		8.7.2.10.5	Marking of Entrance Assemblies					
x		2.13.	Power Operation of Hoistway Doors and Car Doors					
X	8.7.2.12*1	★	Replacement of Door Operator		-	-	mrr	Minor B
x	(G)	2.13.	Power Operation of Hoistway Doors and Car Doors					
X	DO 173/02	★	Addition of Top-of-Car Operating Device		-	Minor A		
		CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators					
		(H)						

Fig 2 – Sample Alteration Checklist

Figure 2 Notes:

- A – indicates 8.7.2.11.1 Interlocks is part of the alteration scope
- B – indicates which sub-requirements have been included (2.12.5 and 2.12.7 are excluded, ok due to specific exemption)
- C – n/a denotes that TSSA has made this requirement optional (note compliance to 2.12.6 was indicated in this example)
- D – specifies the submission type – In the example a Minor A alteration is required to be submitted
- E – this sub-requirement, related to vertical slide entrances, was not selected as it is not applicable to the installation
- F – compliance to 2.13 is a TSSA-designated supplemental requirement
- G – shows two TSSA-designated alterations, one denoted as 8.7.2.12*1, the other per DO 173/02.
- H – a reference to CAD on the Alteration Checklist in column 2a is an indication that the stated requirement has been amended; users should refer to the latest CAD Amendment #225/07 for details

Roland Hadaller, P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards & Safety Act, 2000*

This Director's Order has been developed in consultation with the TSSA Elevating Devices Advisory Council.

0	1	2a	2b	2c	3	4	5	6	
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.2	Alterations to Electric Elevators							
	8.7.2.1	Hoistway Enclosures			Major	Major			
	8.7.2.1.1	Hoistway Enclosure Walls			Major	Major			
		2.1.1	Hoistway Enclosures						
		2.1.5	Windows and Skylights						
		2.1.6	Projections, Recesses, and Setbacks in H/W						
		2.5.	Horizontal Car and Counterweight Clearances						
		2.7.3.4.2	Access Doors and Openings						
		2.8.	Equipment in Hoistways, Machinery Spaces, Machine Rooms, Control Spaces, and Control Rooms						
		8.7.2.10	Entrances and Hoistway Openings (if change includes an entrance)						
		2.11.1	Entrances and Emergency Doors Required (if blind H/W)						
	8.7.2.1.2	Addition of Elevator to Existing Hoistway			-	New			
		2.5.	Horizontal Car and Counterweight Clearances						
	8.7.2.1.3	Construction at Top of Hoistway			Major	Major			
		2.1.2.1	Construction at Top of the Hoistway						
		2.1.3	Floor Over Hoistways						
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys						
	8.7.2.1.4	Construction at Bottom of Hoistway			Major	Major			
		2.1.2.2	Construction at Bottom of the Hoistway						
		2.1.2.3	Strength of Pit Floor						
		2.2.	Pits						
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys						
	8.7.2.1.5	Control of Smoke and Hot Gases			Major	Major			
		2.1.4	Control of Smoke and Hot Gases						
	8.7.2.2	Pits see other alterations below for non Major Alterations			Major	-			
		2.2.	Pits						
		2.1.2.3	Strength of Pit Floor						
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys						
	8.7.2.2	Pit Drains & Sumps			Minor B	Minor B			
		2.2.2.	Pit Drains						
	8.7.2.2	Pit Guards			Minor B	Minor A			
		2.2.3	Guards Between Adjacent Pits						
	8.7.2.2	Pit Access			Minor B	Minor A			
		2.2.4	Pit Access						
	8.7.2.2	Pit Illumination			Minor B	Minor B			
		2.2.5	Illumination of Pits						
	8.7.2.2	Pit Stop Switches			Minor B	Minor A			
		2.2.6	Stop Switches						
	8.7.2.2	Pit Depth			Minor B	Minor A			
		2.2.7	Minimum Pit Depths Required						
	8.7.2.2	Access to Underside of Car			Minor B	Minor A			
		2.2.8	Access to Underside of Car						
	8.7.2.3	Location and Guarding of Counterweights			Major	Major			
		2.3.	Location and Guarding of Counterweights						
		2.5.1.2	Between Car & Cwt and Cwt Guard						
		2.6.	Protection of Space below H/W						
	8.7.2.4	Vertical Car and Counterweight Clearances and Runbys (no reduction allowed)			Major	-			
		2.4.	Vertical Clearances & Runbys for Cars & Cwts						
		8.7.2.17.1	Increase or Decrease in Rise						
		8.7.2.17.2	Increase in Rated Speed						
		8.7.2.25.2	Change in Location of Driving Machine						
	8.7.2.5	Horizontal Car and Counterweight Clearances (no reduction allowed)			Major	-			
		2.5.	Horizontal Car and Counterweight Clearances						
		8.7.2.17.2	Increase in Rated Speed						
	8.7.2.6	Protection of Spaces Below Hoistways			Minor B	Major			
		2.6.	Protection of Space below H/W						

0 Conforms to B44 Mark with 'X'	1 B44-07 Reference Number	2a 2b 2c Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:	3 4 5 6			
			Type of Alteration Work			
			Alteration		Replacement with	
			Modification Change	Addition	Same	Different Make/Model
Type of Submission Required						
	8.7.2.7	Machine Rooms and Machinery Spaces	↓ See Below ↓			
	8.7.2.7.1	Enclosures - other than specifics of 8.7.2.7.2 to 8.7.2.7.7				
		2.7. (& 3.7.) New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	-	Major		
		2.7. (& 3.7.) Altered- Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	Minor A	-		
		CSA C22.1 Electrical Equipment Clearances	Minor B	-		
	8.7.2.7*1	Enclosures - Control Rooms and Control Spaces				
		2.7. (& 3.7.) New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	-	Major		
		2.7. (& 3.7.) Altered - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms	Minor A	-		
		CSA C22.1 Electrical Equipment Clearances	Minor B	-		
	8.7.2.7.2	Means of Access	Minor B	-		
		2.7.3.1 General Requirements				
		2.7.3.2 Access Across Roofs				
		2.7.3.3 Means of Access				
	8.7.2.7.3	Access Doors and Openings	Minor B	Minor B		mrr
		2.7.3.4 Access Doors and Openings				
		2.7.3.5 Stop Switch for Machinery Space or Control Spaces				
	8.7.2.7.4	Headroom (no reduction)	Minor B	Minor B		
		2.7.4 Headroom in M/C Rooms				
	8.7.2.7.5	Windows and Skylights	Minor B	Minor B		
		2.1.5				
	8.7.2.7.6	Lighting (no reduction)	Minor B	Minor A		
		2.7.9.1 Lighting				
	8.7.2.7.7	Ventilation	Minor B	Minor B		
		2.7.9.2 Temperature & Humidity				
	8.7.2.8	Electrical Equipment, Wiring, Pipes, and Ducts in H/W's &M/C Rooms	Minor B	Minor B		mmr Minor B
		Installation of New (electrical equipment, wiring, raceways, cables, pipes, ducts) also installation of Monitoring Equipment, HVAC	-	Minor B		
		2.8. Equipment in Hoistways and Machine Rooms CSA Labeling (or equivalent) C22.1 as required				
		Alteration of Existing (electrical equipment, wiring, raceways, cables, pipes, ducts...)	Minor B	-		
		2.8. Equipment in Hoistways and Machine Rooms				
	8.7.2.9	Machinery and Sheave Beams, Supports, and Foundations	Major	Major		
		New/Relocated Machinery & Sheave Beams, Supports, Foundation				
		2.9. Machinery & Sheave Beams, Supports, Foundation				
		Building reactions increased by more than 5%				
		2.9. Machinery & Sheave Beams, Supports, Foundation adequacy of building structure verified by P.Eng.				
	8.7.2.10	Entrances and Hoistway Openings	Major	Major		see below
	8.7.2.10.1	General Requirements	Major	-		
	8.7.2.10.1(a)	General Requirements - All New Entrances	Major	-		Major Major
		2.11. Protection of H/W Openings				
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access				
		2.13. Power Operation of H/W Doors and Car Doors				
	8.7.2.10.1(b)	General Requirements - New Entrances w/Existing Entrances	-	Major		
		2.11.2 Types of Entrances				
		2.11.3 Closing of Hoistway Doors				
		2.11.4 Location of Horizontally Sliding or Swinging H/W Doors				
		2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills				
		2.11.6 Opening of Hoistway Doors				
		2.11.7 Glass in Hoistway Doors				
		2.11.8 Weights for Closing or Balancing Doors				
		8.7.2.10.5 Marking of Entrance Assemblies				
		2.12. H/W-Door Locking Devices, Elec. Contacts, H/W Access				
		2.13. Power Operation of H/W Doors and Car Doors				

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.1(c)	General Requirements - Alteration to H/W Entrance 2.11.3 Closing of Hoistway Doors 2.11.5 Projection of Entrances & Equip. Beyond Land'g Sills 2.11.7 Glass in Hoistway Doors 2.11.8 Weights for Closing or Balancing Doors 8.7.2.10.5 Marking of Entrance Assemblies 2.12 H/W-Door Locking Devices, Elec. Contacts, H/W Access 2.13 Power Operation of H/W Doors and Car Doors			Major	-		
	8.7.2.10.1(d)	General Requirements - Emergency Doors 2.11.1 Entrances and Emergency Doors Required 8.7.2.10.5 Marking of Entrance Assemblies			Major	Major		
	8.7.2.10.1(e)	General Requirements - Access Openings (installed for cleaning) 2.11.1.4 Access Opening for Cleaning of Car & H/W Enclosure 8.7.2.10.5 Marking of Entrance Assemblies			Major	Major		
	8.7.2.10.2	Horizontal Slide-Type Entrances - new entrance and components to meet: 8.7.2.10.1 Entrances & H/W Openings - General Req'mts 2.11.11 Entrances, Horizontal Slide Type			Major	Major		see below
	sills (a)	2.11.10.1 Landing-Sill Guards 2.11.11.1 Landing Sills 2.11.11.6 Bottom Guides			Minor B			Minor B
	hanger /track (b)	2.11.11.2 Hanger Tracks, and Track Supports			Minor B			Minor B
	frame (c)	2.11.11.3 Entrance Frames 2.11.11.5.1 Panel Overlap 2.11.11.5.2 Panel Gaps Clearances 2.11.11.5.3 Pockets in Strike Jamb 8.7.2.10.5 Marking of Entrance Assemblies			Minor A			Minor A
	hangers (d)	2.11.11.4 Hangers			Minor B			Minor B
	panels (e)	2.11.11.5(*) Panels 2.11.11.6 Bottom Guides 2.11.11.7 Multipanel Entrances 8.7.2.10.5 Marking of Entrance Assemblies			Minor A			Minor A
	retainers (f)	2.11.11.8 Hoistway Door Safety Retainers			Minor B			Minor B
	8.7.2.10.3	Vertical-Slide-Type Entrances - new entrance and components to meet: 8.7.2.10.1 Entrances & H/W Openings - General Req'mts 2.11.12 Entrances, Vertical Slide Type			Major	Major		see below
	sills (a)	2.11.10.3 Hinged Hoistway Landing Sills 2.11.12.1 Landing Sills			Minor B			Minor B
	frames (b)	2.11.12.2 Entrances Frames 8.7.2.10.5 Marking of Entrance Assemblies			Minor B			Minor B
	rails (c)	2.11.12.3 Rails			mrr			mrr
	panels (d)	2.11.12.3 Rails 2.11.12.4 Panels 2.11.12.5 Guides 2.11.12.6 Counterweighting or Counterbalancing 2.11.12.8 Pull Straps 8.7.2.10.5 Marking of Entrance Assemblies			Minor A			Minor A
	guides (e)	2.11.12.5 Guides						
	sill guard (f)	2.11.12.7 Sill Guards			mrr			mrr
	straps (g)	2.11.12.8 Pull Straps						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.10.4	Swing-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.13	Entrances, Swing Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.10.3	Hinged Hoistway Landing Sills					
	frames (b)	2.11.13.1	Landing Sills					
		2.11.13.2	Entrance Frames		Minor B		Minor B	
		2.11.13.4	Hinges					
	panels (c)	8.7.2.10.5	Marking of Entrance Assemblies					
		2.11.13.3	Panels		Minor B		Minor B	
		2.11.13.4	Hinges					
		2.11.13.5	Marking					
	hinges (d)	8.7.2.10.5	Marking of Entrance Assemblies					
		2.11.13.4	Hinges		mrr		mrr	
	8.7.2.10.5	Marking of Entrance Assemblies (Alteration to an Entrance Door Panel)			Major	Major		
			Fire Protection Rating not less then existing entrance					
		8.7.2.10.5(a)	NBCC requirements					
	8.7.2.10★1	★ Removing Service To a Floor			Minor B			
			Bolt entrances shut					
			Remove Interlock From Safety String					
			If Adding Door In front Of Entrance, Gap btwn doors <=125mm					
			Remove COP Floor Button					
		2.11.6.2	Cannot Lock Out Top/Btm, Designated/Alternate, All Landing in Phase II					
		2.12.7	Hoistway Access Switches - if floor was previously the access location					
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓			
	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.2	Interlocks					
		2.12.4	Listing/Certification Locking Devices					
		2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)				n/a	
		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)				n/a	
		2.12.7	Hoistway Access Switches (n/a for column 5,6)				n/a	
		2.24.8.3	Driving Machine Brake					
	8.7.2.11.2	Mechanical Locks and Electric Contacts			Major	Major	mrr	Minor B
		2.12.1	General					
		2.12.3	H/W Door Combination Mechanical Locks & Contacts					
		2.12.4	Listing/Certification Locking Devices					
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8	Braking Systems & Driving Machine Brakes					
	8.7.2.11.3	Parking Devices			Minor A	Minor A		
	8.7.2.11.4	Access Switches and Unlocking Devices						
	8.7.2.11.4 (a)	Addition of Unlocking Devices			-	Minor B	mrr	
		2.12.6	Hoistway Door Unlocking Devices					
		2.24.8.3	Driving Machine Brake					
	8.7.2.11.4 (b)	Addition of Access Switches			-	Minor A	mrr	
		2.12.7	Hoistway Access Switches					
		2.24.8	Braking Systems & Driving Machine Brakes					
		2.26.1.4	Inspection Operation					
	8.7.2.11★1	★ Door Safety Retainers			Minor B	Minor A	mrr	Minor B
		2.11.11.8	Hoistway Door Safety Retainers					
	8.7.2.11.5	Restricted Opening of H/W or Car Doors of Passenger Elevators (Restrictors) (Altered or Installed)			Minor B	Minor B	mrr	Minor B
		2.12.5	Restricted Opening of H/W or Car Door					

0	1	2a	2b	2c	3	4	5	6				
									Type of Alteration Work			
									Alteration		Replacement with	
									Modification Change	Addition	Same	Different Make/Model
Type of Submission Required												
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement										
	Job Reference:											
	8.7.2.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A						
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts									
		8.7.2.10.2	Horizontal Slide-Type Entrances									
		8.7.2.10.3	Vertical Slide-Type Entrances									
		8.7.2.10.5	Marking of Entrance Assemblies									
		★ 2.13.	Power Operation of Hoistway Doors and Car Doors									
	8.7.2.12★1	★ Replacement of Door Operator			-	-	mrr	Minor B				
		2.13.	Power Operation of Hoistway Doors and Car Doors									
	8.7.2.13	Door Reopening Device (Safety Edge) (Altered or Added or Replaced)			Minor B	Minor B	mrr	Minor B				
		2.13.4	Closing Limitations for Power Operated HS Doors & Gates									
		2.13.5	Reopening Device for Power Operated Car Doors or Gates if FEO provided, door opening & closing to PHI & II at time of install									
	8.7.2.14	Car Enclosures, Car Doors and Gates, and Car Illumination			↓ See Below ↓							
	8.7.2.14.1	Installation of New Car Enclosure			Major	-						
		CAD 2.14.	Car: Enclosure, Doors, Gates, Illumination									
		2.15.	Car Frames & Platforms									
		2.17	Car and counterweight safeties									
		8.7.2.15.1	Alterations to Car Frames and Platforms									
	8.7.2.14.2	Alteration to Existing Cars			Minor A	Minor A						
	8.7.2.14.2(a)	Car Enclosure - Securing of Enclosures			Minor A	Minor A						
		2.14.1.2	Securing of Enclosures									
	8.7.2.14.2(b)	Top Emergency Exit (Altered or Added)			Minor B	Minor B						
		2.14.1.5	Top Emergency Exits									
	8.7.2.14.2(c)	Installation of Glass			Minor B	Minor B						
		2.14.1.8	Glass in Elevator Cars									
		2.14.1.8.1	Enclosures include glass									
		2.14.1.8.2	Lining of Walls or Ceilings include glass									
		CAD 2.14.1.8.3	Not Adopted - Type 3C in not permitted, except if mrr				mrr					
		2.14.1.8.4	Marking of each Glazing Panel									
	8.7.2.14.2(d)	Specific Equipment in Elevator Car			Minor B	Minor B						
		2.14.1.9	Equipment Inside Cars									
		(a)	Handrails									
		(b)	fastening devices for protective linings									
		(c)	ceiling mounted hooks/tracks									
		(d)	picture frames display boards, plaques <38mm protrusion secured to 2.14.1.2 material to 2.14.2.1									
		(e)	conveyor tracks in freights									
		(f)	heating or cooling equipment									
	8.7.2.14★1	★ Car operating station			Minor B	Minor B	mrr	Minor B				
			verify inspection operation 'if provided'									
			verify stop sw									
			verify switches operate as before (eg. FS, FEO, Access)									
	8.7.2.14★2	★ video cameras / surveillance equipment / video monitors			Minor B	Minor B						
		2.8.2.1	electrical equipment & wiring									
		2.14.1.2.3	securing of enclosure equipment									
		2.14.2.4	Headroom in Elevator Cars									
	8.7.2.14★3	★ other equipment			Variance							
	8.7.2.14.2(e)	Side Emergency Exits - Secured Shut			Major	-						
	8.7.2.14.2(f)	Car Ventilation			Minor B	-						
		2.14.2.3	Ventilation									
	8.7.2.14.2(g)	Car Illumination			Minor B	Minor B						
		2.14.7	Illumination of Cars and Lighting Fixtures									
	8.7.2.14.2(h)	Partitions Installed in Elevator Cars			Major	Major						
		2.16.1.2	Use of Partitions for Reducing Inside Net Platform Area									

0	1	2a	2b	2c	3	4	5	6
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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
					↓ See Below ↓			
	8.7.2.14.4	Car Enclosure / Car Door or Car Gates			DR 171		Minor B	DR 171
	8.7.2.14.4	Alteration to Car Enclosure other than 8.7.2.14.2 - Enclosure Materials CAD 2.14. Car: Enclosure, Doors, Gates, Illumination enclosure material flame ratings shall not be diminished 2.14.1.7 car top railing 2.14.7.1.3 auxiliary lighting 2.14.7.1.4 car top light & outlet Directors Order 171			n/a	n/a	n/a	
	8.7.2.14.4	Alteration to Car Door or Car Gates other than 8.7.2.14.2 CAD 2.14. Car: Enclosure, Doors, Gates, Illumination 2.14.1.7 car top railing 2.14.7.1.3 auxiliary lighting 2.14.7.1.4 car top light & outlet			Minor A	Minor A		
	O.Reg 209/01s30 8.7.2.14★4	★ Relocation of Elevator License to remote location ★ Car Top Railing			Minor B†	-	Minor A	
		2.14.1.7	Railing and Equipment on Top of Cars					
		2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.15	Car Frames and Platforms			↓ See Below ↓			
	8.7.2.15.1	Alterations to Car Frames and Platforms			Major	-	Major	
		2.15.	Car Frames & Platforms					
	DR 171/02	★ Decrease Deadweight <5% or Increase Deadweight of Car (115 kg or Less) record weight on Aux. Data Tag			Minor B	Minor B		
	DR 171/02	★ Increase Deadweight of Car (>115 kg to 5%) record weight on Aux. Data Tag engineering assessment of related items (except 2.24.3)			Minor A	Minor A		
	8.7.2.15.2	Increase or Decrease in Deadweight of Car (Car Wt+Rated Load> 5%)			Major	-		
		DR 171/02	★ record weight on Aux. Data Tag					
		2.15.(*)	Car Frames & Platforms - ★ apron guard to ED CAD/as pit permits					
		2.15.9	Platform Guards (Aprons)					
		2.16.	Capacity & Loading					
		2.17.	Car & Cwt Safeties					
		2.18.	Speed Governors					
		2.20.	Suspension Ropes & Connections					
		2.21.(*)	Counterweights					
		2.22.(*)	Buffers & Bumpers					
		2.23.	Car & Cwt Guides Rails, Guide Rail Support, Fastenings					
		2.24.(*)	Driving Machines & Sheaves					
		8.7.2.9	Machinery and Sheave Beams, Supports, Foundations					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.16	Capacity, Loading, and Classification			Major	-		
	8.7.2.16.1	Change in Type of Service: Passenger to Freight OR Freight to Passenger			Major	-		
		2.11.1	Entrances and Emergency Doors Required					
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
		2.22 (*)	Buffers & Bumpers					
		CAD 2.14.	Car: Enclosure, Doors, Gates, Illumination					
		2.14.1.7.1	railing - to the extent the existing vertical clearances allow					
		2.15. (*)	Car Frames & Platforms - ★ apron guard to ED CAD/as pit permits					
		2.17. (*)	Car & Cwt Safeties					
		2.18. (*)	Speed Governors					
		2.16.	Capacity & Loading					
		2.20.	Suspension Ropes & Connections					
		2.24. (*)	Driving Machines & Sheaves					
		2.25.	Terminal Stopping Devices					
		2.26.	Operating Devices and Control Equipment					
		2.27.	Emergency Operation & Signaling Devices					
		2.27.1	Car Emergency Signaling Devices					
		2.27.2	Emergency or Standby Power Systems					
		CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators ★					
	EP 228/07		★ see provisions of EP 228/07					
			★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:					
			Manual PHI Recall is provided					
			Automatic PHI Recall by FAID's is provided					
			★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:					
			Manual PHI Recall is provided					
			Automatic PHI Recall by FAID's is provided also					
			Phase 1 Recall & Phase 2 In-car provided OR					
			Phase 1 Recall only - no Phase 2 In-car provided					
		2.19.	Ascending Car Overspeed & Unintended Car Movement Protection					
	8.7.2.16.2	Change in Class of Loading: [from any class to any other class ie A, B, C1, C2, C3]			Major	-		
		2.16.2	Minimum Rated Load for Freight Elevators					
		8.7.2.16.4	Increase in Rated Load					
	8.7.2.16.3	Carrying of Passengers on Freight Elevators			Major	-		
		2.16.4	Carrying of Passengers on Freight Elevators					
		2.16.4.1	not accessible to general public					
		2.16.4.2	rated load not less than required by 2.16.1					
		2.16.4.3	conforms to 2.16.8 Passenger Overload in Down Direction					
		2.16.4.4	H/W entrances to 2.12.1.1 & 2.11.2.1 or 2.11.2.2(e)					
		2.16.4.5	car doors to 2.14.5 Passenger Car Doors					
		2.16.4.6	car enclosure openings to 2.14.2.2 Prohibited Openings					
		2.16.4.7	conforms to 2.12.5 Restricted Opening of H/W or Car Door					
		2.16.4.8	Fs for suspension ropes to Table 2.20.3					
		2.16.4.9	Power Operated vertical doors to 2.16.4.9(a) to (e)					
		★	apron guard to ED CAD or extent pit permits					
		★	2.16.5 Signs Required in Freight Elevator Cars					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.16.4	Increase in Rated Load Car doors or gates shall be provided at all car entrances 2.14.4 New to: Passenger & Frt Car Doors & Gates, General Req'mts 2.14.5 New to: Passenger Car Doors 2.14.6 New to: Freight Elevator Car Doors and Gates 2.15.(*) Car Frames & Platforms- ★apron guard to ED CAD/as pit permits 2.16. Capacity & Loading 2.17. Car & Cwt Safeties 2.18.(*) Speed Governors 2.19. Ascending Car Overspeed & Unintended Car Movement Protection 2.20. Suspension Ropes & Connections 2.21.(*) Counterweights 2.22.(*) Buffers & Bumpers 2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings 2.24. Driving Machines & Sheaves 2.26.1.4 Inspection Operation 2.26.1.5 Inspection Operation with Open Door Circuits 2.26.5 Monitor & Prevent Automatic Operation w/ Faulty Door Contacts <u>8.7.2.9</u> Machinery and Sheave Beams, Supports, Foundations			Major	-		
	8.7.2.17	Change in Rise or Rated Speed			Major	-		
	8.7.2.17.1	Increase or Decrease in Rise 2.25. Terminal Stopping Devices retain drum m/c, travel increase < 4570mm 2.4.(*) Vertical Clearances & Runbys for Cars & Cwts If decrease in rise is at lowest end then; 2.2.4 Access to Pits 2.2.5 Illumination of Pits 2.2.6 Stop Switches			Major	-		
	8.7.2.17.2	Increase in Rated Speed			Major	-		
	8.7.2.17.2(a)	Increase in Rated Speed on a Winding Drum machine Increase in Rated Speed of a winding drum m/c prohibited <u>8.7.2.17.2(c)</u> except as permitted 8.7.2.17.2(c)			Major	-		
	8.7.2.17.2(b)	Increase in Rated Speed except as per 8.7.2.17.2(c) 2.4.2 Minimum Bottom Runby for Counterweighted Elevators 2.4.3 Minimum Bottom Runby for Uncounterweighted Elevators 2.4.4 Maximum Bottom Runby 2.4.5 Counterweight Runby Data Plate 2.4.6 Top Car Clearances for Counterweighted Elevators 2.4.7 Top Car Clearances for Uncounterweighted Elevators 2.4.8 Vertical Clearances with Underslung Car Frames 2.4.9 Top Counterweight Clearances 2.4.10 Overhead Clearances - w/No Overhead Beams 2.4.11 Equipment on Top of Car Not Permitted to Strike O/H 2.5. Horizontal Car and Counterweight Clearances 2.22.(*) Buffers & Bumpers Car doors or gates shall be provided at all car entrances CAD 2.14. New doors/gates to: Car: Enclosure, Doors, Gates, Illumination 2.17. Car & Cwt Safeties 2.18.(*) Speed Governors 2.16. Capacity & Loading 2.24. Driving Machines & Sheaves 2.25. Terminal Stopping Devices 2.26.(*) Operating Devices and Control Equipment 2.20. Suspension Ropes & Connections 2.19. Ascending Car Overspeed & Unintended Car Movement Protection			Major	-		

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.2.17.2(c)	Increase in Rated Speed	less than 10% & less than 0.20m/s new spd <.75 for type A safeties new spd <1 w/spring buffer, 2.18.2.1&.2		Major	-			
		2.18.2.1	Car speed governors						
		2.18.2.2	counterweight speed governors						
		8.7.2.27.3	Change in Power Supply						
	8.7.2.17.3	Decrease in Rated Speed			Major	-			
		2.4.	Vertical Clearances & Runbys for Cars & Cwts						
		2.18.2	Tripping Speeds for Speed Governors						
		2.16.	Capacity & Loading						
		2.16.3(*)	Capacity and Data Plates						
		2.26.4.1	Electrical Equipment and Wiring						
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling						
		2.26.4.3	Positively Opened Contacts						
	8.7.2.18	Car and Counterweight Safeties			Major	Major	⇩See Below ⇩		
	8.7.2.18.1	New Car Safeties			-	Major	mrr	Minor A	
		2.17.	Car & Cwt Safeties						
		2.18.	Speed Governors						
		2.23.	Car & Cwt Guides Rails, Guide Rail Support, Fastenings						
		8.7.2.19	Speed Governors and Governor Ropes						
	8.7.2.18.2	New Cwt Safeties			-	Major	mrr	Minor A	
		2.17.	Car & Cwt Safeties						
		2.18.	Speed Governors						
		2.23.	Car & Cwt Guides Rails, Guide Rail Support, Fastenings						
		8.7.2.19	Speed Governors and Governor Ropes						
	8.7.2.18.3	Existing Car Safeties				-	mrr	Minor A	
		2.17.	Car & Cwt Safeties						
		2.18.	Speed Governors						
		2.23.	Car & Cwt Guides Rails, Guide Rail Support, Fastenings						
		8.7.2.19	Speed Governors and Governor Ropes						
	8.7.2.18.3	Existing Cwt Safeties			Major	-	mrr	Minor A	
		2.17.	Car & Cwt Safeties						
		2.18.	Speed Governors						
		2.23.	Car & Cwt Guides Rails, Guide Rail Support, Fastenings						
		8.7.2.19	Speed Governors and Governor Ropes						
	8.7.2.19	Speed Governors and Governor Ropes			Major	Major	⇩See Below ⇩		
	8.7.2.19	2.18.	Speed Governors				mrr	Minor A	
	8.7.2.19	2.17.15	Governor Rope Releasing Carriers				mrr	mrr	
	8.7.2.19	Governor Ropes of different material or Construction to:					Minor B	Minor B	
			2.18.6 Design Gov'r Rope Retarding Means for Type B Safeties						
			2.18.7 Traction between Speed Governor Rope & Sheave						
		& testing to	2.17.3 Function and Stopping Distances of Safeties						

0 Conforms to B44 Mark with 'X'	1 B44-07 Reference Number	2a	2b	2c	3 4 5 6			
					Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.20			Ascending Car Overspeed and Unintended Car Movement Protection (ACO & UCM)	Minor A	Major	mrr	Minor A
				2.19. Ascending Car Overspd & Unintended Car Movement Protection if part of an alteration which includes; change in motion control - 8.7.2.27.5 replacement of an Elevator Controller 8.6.12.5.3.1 or 8.7.2.27.4				
	8.7.2.20★1	★		If Elevators Controllers are pre-B44-00 & have ACO & UCM	Minor A	-	mrr	Minor A
				2.19. ACO & UCM Protection, EXCEPT+ + detection means to B44-M90 or the code at time of install 8.9. + Code Data tag to reflect code at time of install				
	8.7.2.20★2	★		If Elevators Controllers are pre-B44-00 & have ACO ONLY	Minor A	-	mrr	Minor A
				2.19.1 ACO Protection Only, EXCEPT+ 2.19.3 Emergency Brake EXCEPT+ + detection means to B44-M90 or the code at time of install 8.9. + Code Data tag to reflect code at time of install				
	8.7.2.20★3	★		Voluntary Addition of Both ACO and UCM where previously not provided		Minor A		
				2.19. ACO & UCM Protection EXCEPT+ + detection means to B44-M90 code or later 2.7. Machinery Spaces, Machine Rooms Control Spaces & Control Rooms as applicable to the equipment installation 8.9. + Code Data tag to reflect code edition used for the alteration				
	8.7.2.21			Suspension Ropes and Their Connections		↓ See Below ↓		
	8.7.2.21.1			Change in Number of, or Diameter of Ropes	Major	-		
				2.20. Suspension Ropes & Connections PEO to certify retained sheaves w/different ropes are satisfactory				
	8.7.2.21.1			Change in Material / Grade of Ropes	Minor A	-		
				2.20. Suspension Ropes & Connections PEO to certify retained sheaves w/different ropes are satisfactory				
	8.7.2.21.2			Addition of Rope Equalizers	Minor B	Minor B		
				2.20.5 Suspension Rope Equalizers				
	8.7.2.21.3			Addition of Auxiliary Rope-Fastening Devices	Major	Major		
				2.20. Suspension Ropes & Connections				
	8.7.2.22			Counterweights	Minor A	-		
	8.7.2.22.1			Alteration to any part of a cwt except guiding members				
				2.21. Counterweights 8.7.2.22.2 Rod Type Counterweights 8.7.2.3 Location and Guarding of Counterweights				
	8.7.2.22.2			Rod Type Cwt - can retain if: Minimum of 2 suspension and 2 tie rods Suspension rods:				
				2.21.2.1 Material - Cwt Frames & Rods 2.21.2.3 Factor of Safety Tie Rods:				
				2.21.1.2 Retention of Weight Sections				
	8.7.2.22.3			Roller or similar guide shoes added safety jaws cannot touch rails if not activated		mrr		mrr
	8.7.2.23			Car and Counterweight Buffers and Bumpers (oil buffer only in column 6)	Major	-	mrr	Minor B
				2.22.(*) Buffers & Bumpers				
	8.7.2.24			Guide Rails, Supports, and Fastenings (alteration to, or stress increase >5%)	Major	-		
				2.23. Car & Cwt Guides Rails, Guide Rail Support, Fastenings				

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.2.25	Driving Machines and Sheaves			↓ See Below ↓				
	8.7.2.25.1	Alterations to Driving Machines & Sheaves			Major	Major			
	8.7.2.25.1(a)	Installation of Driving Machine Replaced (as part of an alteration)			-	-	see 8.6.12.5.2		
		2.7.2 Maintenance Path and Clearance (★editorially omitted)							
		2.7.2.3 Maintenance Clearance in Machine Rooms & Control Rooms							
		2.9 Machinery & Sheave Beams, Supports, Foundation							
		2.10.1 Guarding of Equipment							
		2.19 Ascending Car Overspeed & Unintended Car Movement Protection							
		2.20 Suspension Ropes & Connections							
		2.24 Driving Machines & Sheaves							
		2.26.8 Release and Application of Driving-Machine Brakes							
	8.7.2.25.1(b)	Alterations to Driving Machine Components - affected component complies w/			Major		mrr	Major	
		2.24.2 Sheaves and Drums							
		2.24.3 Factor of Safety for Driving Machines and Sheaves							
		2.24.4 Fasteners Transmitting Load							
		2.24.5 Shafts Fillets and Keys							
		2.24.6 Cast-Iron Worms and Worm Gears							
		2.24.7 Friction Gearing and Clutches							
		2.24.8 Braking Systems & Driving Machine Brakes					mrr	Major	
		2.24.9 Indirect-Driving Machines							
		2.26.8 Release and Application of Driving-Machine Brakes							
	8.7.2.25.1(c)	Change of Driving Machine Sheave			Major	-	mrr	Major	
		2.24.2 Sheaves and Drums							
		2.24.3 Factor of Safety for Driving Machines and Sheaves							
		2.24.4 Fasteners Transmitting Load							
		2.20 Suspension Ropes & Connections							
	8.6.12.5.2	Replacement of Driving Machine			-	-	Major		
		8.7.2.25.1(a)							
		2.7.2 Maintenance Path and Clearance (★editorially omitted)							
		2.7.2.3 Access to Machinery Spaces/Rooms, Control Spaces/Rooms							
		2.9 Machinery & Sheave Beams, Supports, Foundation							
		2.10.1 Guarding of Equipment							
		2.19 ACO & UCM Protection, Except +							
		+ 8.7.2.20★3 if replacement is machine only, ACO / UCM w/reduced detection req'mts permitted							
		2.20 Suspension Ropes & Connections							
		2.24 Driving Machines & Sheaves							
		2.26.8 Release and Application of Driving-Machine Brakes							
	8.7.2.25.2	Change in Location of Driving Machine			Major	-			
	8.7.2.25.2(a)	Change in Location of Driving Machine w/ no change in Rise			Major	-			
		2.7.2 Maintenance Path and Clearance (★editorially omitted)							
		2.7.2.3 Access to Machinery Spaces/Rooms, Control Spaces/Rooms							
		2.9 Machinery & Sheave Beams, Supports, Foundation							
		2.10.1 Guarding of Equipment							
		2.24.2.3 Traction							
	8.7.2.25.2(b)	Change in Location of Driving Machine w/ change in Rise			Major	-			
		Part 2 (*) Electric Elevators							
		8.7.2.5 see also							
		8.7.2.10 see also							
	8.7.2.25★1	★ Replacement of worm and/or gear (specify make)			-	-	mrr	Minor A	
	8.7.2.25★2	★ Addition of Machine Guarding			Minor B		mrr	mrr	
		2.10.1 Guarding of Equipment							
	DSO 235/09	★ Addition of a Motor to an ERM Machine			Minor A		-	-	
		2.24.3 Factors of Safety for Driving Machines							
		2.24.3.1 Factor of Safety Based on Alternating / Reversing Stresses							
		2.24.3.2 Factor of Safety at Emergency Braking							
		2.24.4 Fasteners Transmitting Load							
		2.24.4.1 Fasteners and Rigid Connections							
		2.24.5 Shafts Fillets and Keys							

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.26	Terminal-Stopping Devices			Minor B	Minor B		
		2.25. Terminal Stopping Devices						
	8.7.2.27	Operating Devices and Control Equipment			↓ See Below ↓			
	8.7.2.27.1	Top-of-Car Operating Devices			Minor A	Minor A	mrr	Minor A
		2.26.1.4 Inspection Operation						
	DO 173/02	★ Addition of Top-of-Car Operating Device			-	Minor A		
	8.7.2.27.2	Car-Leveling or Truck-Zoning Devices			Minor A	Minor A		
		2.26.1.6 Operation in Leveling or Truck Zone						
	8.7.2.27*1	★ Door By-Pass Switches			Minor A	Minor A		
		2.26.1.5 Inspection Operation with Open Door Circuits						
	8.7.2.27*2	★ Door Monitoring System			Minor A	Minor A		
		2.26.5 System to Prevent Auto Operation w/faulty Door Contacts						
	8.7.2.27.3	Change in Power Supply			Major	-		
		(a) voltage, frequency or # of phases or						
		(b) AC to DC , DC to AC or						
		(c) combination of DC & AC, then						
		electrical to:						
		2.26.1.1 Types of Operation						
		2.26.1.2 For Car-Switch Operation Elevators						
		2.26.1.3 Add'l Operating Devices for Elevators carrying 1pc. load > than Rated						
		2.26.1.4 Inspection Operation						
		2.26.1.6 Operation in Leveling or Truck Zone						
		2.26.2 Electrical Protective Devices						
		2.26.6 Phase Protection of Motors						
		2.26.7 Installation of Capacitors/Devices Making EPD's Ineffective						
		2.26.9 Control & Operating Circuits						
		2.26.10 Absorption of Regenerated Power						
		new / modified equipment and wiring to:						
		2.26.4.1 Electrical Equipment and Wiring						
		2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling						
		2.26.4.3 Positively Opened Contacts						
		brakes to:						
		2.24.8 Braking Systems & Driving Machine Brakes						
		2.26.8 Release and Application of Driving-Machine Brakes						
		winding drum to:						
		2.25.3.5 Additional Req'mts for Winding Drum Machines see 8.7.2.17.2(b) Increase in Rated Speed						

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									Type of Alteration Work			
									Alteration		Replacement with	
									Modification Change	Addition	Same	Different Make/Model
Type of Submission Required												
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement										
	Job Reference:											
	8.7.2.27.4 8.7.2.27.4(a)	Controllers Installation of	Elevator Controller (as part of an alteration)		Major	-	see 8.6.12.5.3.1					
		CAD 8.7.2.27.4(a)	Elevator Controller									
		2.25.	Terminal Stopping Devices									
		2.26.1.4	Inspection Operation									
		2.26.1.5	Inspection Operation with Open Door Circuits									
		2.26.4	Electrical Equipment and Wiring									
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts									
		2.26.6	Phase Protection of Motors									
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective									
		2.26.8	Release and Application of Driving-Machine Brakes									
		2.26.9	Control & Operating Circuits									
		2.27.2	Emergency or Standby Power systems									
		2.27.3	Firefighters' Emergency Operation - Automatic Elevators									
	EP 228/07	CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★ where required by NBCC									
			★ see provisions of EP 228/07									
			★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:									
			Manual PHI Recall is provided									
			Automatic PHI Recall by FAID's is provided									
			★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:									
			Manual PHI Recall is provided									
			Automatic PHI Recall by FAID's is provided also									
			Phase 1 Recall & Phase 2 In-car provided OR									
			Phase 1 Recall only - no Phase 2 In-car provided									
		2.27.4	Firefighters' Emergency Operation - Non-Automatic Elevators									
		2.27.5	Firefighters' Emergency Operation - Automatic Elevators w/Attendant									
		2.27.6	Firefighters' Emergency Operation - Inspection Operation									
		2.27.7	Firefighters' Emergency Operation - Operating Procedures									
		2.27.8	Switch Keys									
		★ 2.7.9.2	Temperature and Humidity									
	8.6.12.5.3.1	Replacement of	Elevator Controller		-	-	Major					
		CAD 8.7.2.27.4(a)	Elevator Controller									
		2.25.	Terminal Stopping Devices									
		2.26.1.4	Inspection Operation									
		2.26.1.5	Inspection Operation with Open Door Circuits									
		2.26.4	Electrical Equipment and Wiring									
			- Including Clearances to CSA C22.1									
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts									
		2.26.6	Phase Protection of Motors									
		2.26.7	Installation of Capacitors/Devices Making EPD's Ineffective									
		2.26.8	Release and Application of Driving-Machine Brakes									
		2.26.9	Control & Operating Circuits									
		2.27.2	Emergency or Standby Power systems									
	EP 228/07	CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★ where required by NBCC									
			★ see provisions of EP 228/07									
			★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:									
			Manual PHI Recall is provided									
			Automatic PHI Recall by FAID's is provided									
			★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:									
			Manual PHI Recall is provided									
			Automatic PHI Recall by FAID's is provided also									
			Phase 1 Recall & Phase 2 In-car provided OR									
			Phase 1 Recall only - no Phase 2 In-car provided									
		2.27.4	Firefighters' Emergency Operation - Non-Automatic Elevators									
		2.27.5	Firefighters' Emergency Operation - Automatic Elevators w/Attendant									
		2.27.6	Firefighters' Emergency Operation - Inspection Operation									
		2.27.7	Firefighters' Emergency Operation - Operating Procedures									
		2.27.8	Switch Keys									
		★ 2.7.9.2	Temperature and Humidity									

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		Different Make/Model
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.2.27*3	Relocation of 2.8.2	Elevator Controller (if control wiring disconnected - reconnected) Electrical Equipment and Wiring Electrical testing as per the original design submission tests		Major				
	8.7.2.27.4(b)	Installation of 2.26.4.1 2.26.4.2	Door Controller (as part of an alteration) Electrical Equipment and Wiring Drive Machine Controllers for Stopping/Starting/Controlling		Minor A	-		see 8.6.12.5.3.2	
	8.6.12.5.3.2	Installation of 2.26.4.1 2.26.4.2	Door Controller Electrical Equipment and Wiring Drive Machine Controllers for Stopping/Starting/Controlling		-	-		Minor B	
	8.7.2.27.5	Change in Type of Motion Control - AC, VVVF, DC, SCR CAD 8.7.2.27.5	Change in Type of Motion Control		Major	-			
		2.11.1(*)	Entrances and Emergency Doors Required						
		2.11.2	Types of Entrances						
		2.11.3	Closing of Hoistway Doors						
		2.11.4	Location of Horizontally Sliding or Swinging H/W Doors						
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills						
		2.11.6(*)	Opening of Hoistway Doors						
		2.11.8	Weights for Closing or Balancing Doors						
		2.11.9	Hoistway Door Locking Devices & Power Operation						
		2.11.11.8	Hoistway Door Safety Retainers						
		2.11.12.8	Pull Straps						
		2.12.(*)	H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		2.13.	Power Operation of H/W Doors and Car Doors						
		CAD 2.14.(*)	Car: Enclosure, Doors, Gates, Illumination						
		2.14.1.7.1	railing - to the extent the existing vertical clearances allow						
		2.16.(*)	Capacity & Loading						
		2.17.(*)	Car & Cwt Safeties						
		2.18.(*)	Speed Governors						
		2.19.	Ascending Car Overspeed & Unintended Car Movement Protection						
		2.25.	Terminal Stopping Devices						
		2.26.(*)	Operating Devices and Control Equipment						
		2.27.	Emergency Operation & Signaling Devices - where required by NBCC, or provided voluntarily						
		2.27.1	Car Emergency Signaling Devices						
		2.27.2	Emergency ro Standby Power Systems						
		CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★						
	EP 228/07		★ see provisions of EP 228/07						
			★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:						
			Manual PHI Recall only is provided						
			Automatic PHI Recall by FAID's is provided						
			★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:						
			Manual PHI Recall is provided						
			Automatic PHI Recall by FAID's is provided also						
			Phase 1 Recall & Phase 2 In-car provided OR						
			Phase 1 Recall only - no Phase 2 In-car provided						
			indicate if Manual PHI Recall is provided						
			indicate if Automatic PHI Recall by FAID's is provided						
	★	2.7.9.2	Temperature and Humidity						

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		Scope of Alteration - B44 - 2007			Alteration		Replacement with	
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model
	Job Reference:				Type of Submission Required			
	8.7.2.27.6	Change in Type of Operation Control - CPPB, AUTOMATIC			Major	-		
		CAD	8.7.2.27.6	Change in Type of Operation Control				
			2.11.1	Entrances and Emergency Doors Required				
			2.11.2	Types of Entrances				
			2.11.3	Closing of Hoistway Doors				
			2.11.4	Location of Horizontally Sliding or Swinging H/W Doors				
			2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills				
			2.11.6	Opening of Hoistway Doors				
			2.11.7	Glass in Hoistway Doors				
			2.11.8	Weights for Closing or Balancing Doors				
			2.11.9	Hoistway Door Locking Devices & Power Operation				
			2.11.10	Landing Sill: Guards, Illumination, hinged sills, Tracks				
			2.11.11	Entrances, Horizontal Slide Type				
			2.11.12	Entrances, Vertical Slide Type				
			2.11.13	Entrances, Swing Type				
			2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access				
			2.13.	Power Operation of H/W Doors and Car Doors				
		CAD	2.14.(*)	Car: Enclosure, Doors, Gates, Illumination				
			2.16.	Capacity & Loading				
			2.17.	Car & Cwt Safeties				
			2.18.(*)	Speed Governors				
			2.25.	Terminal Stopping Devices				
			2.26.(*)	Operating Devices and Control Equipment				
			2.27.	Emergency Operation & Signaling Devices - ★ where required by NBCC				
			2.27.1	Car Emergency Signaling Devices				
			2.27.2	Emergency or Standby Power Systems				
		CAD	2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★				
	EP 228/07			★ see provisions of EP 228/07				
				★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:				
				Manual PHI Recall only is provided				
				Automatic PHI Recall by FAID's is provided				
				★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:				
				Manual PHI Recall is provided				
				Automatic PHI Recall by FAID's is provided also				
				Phase 1 Recall & Phase 2 In-car provided OR				
				Phase 1 Recall only - no Phase 2 In-car provided				
				indicate if Manual PHI Recall is provided				
				indicate if Automatic PHI Recall by FAID's is provided				
			★ 2.7.9.2	Temperature and Humidity				
	8.7.2.27★4	★	Addition of Wander Patient Feature - Change in Operation Control		Minor B	Minor B		
			2.11.3.2	- doors closed when not in use				
			2.13.5.4	- door time out				
			2.27.3.1.6(l)	- shall not prevent PHI				
	8.7.2.27★5	★	Addition of Restricted Access - Security / Floor Lock Out		Minor B	Minor B		
			OBC-3.2.6.5(4) - shall not prevent floor access when on FEO					
			D.O. Button Remain Operative Under non FEO Conditions, Door Closed When not in Use					
			2.27.3.1.6(l)	- shall not prevent PHI				
			2.27.3.3.1(i)	- permit travel to all landings when on PH II				
			2.11.6.2	Cannot Lock Out Top& Btm, Designated & Alternate or All Landings in Phase II				
			DR 172/02	Elevators With Phase II Operation & Floor Button Controlled by Cards/Keys				
	8.7.2.27.7		Removal of emergency stop switch on passenger elevators		Minor B	-		
			remove all related markings / engravings & provide an in-car stop switch to:					
			2.26.2.21	In-car stop switch				
		★	2.26.4.3	Positively Opened Contacts				
		★	2.26.9.3(a)	Single failure does not render In-Car Stop Sw ineffective				

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.27.8	Electrical Protective Devices			↓ See Below ↓			
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.2 (PES)			Major	Major	mrr	Major
		2.26.2	Electrical Protective Devices - for specified device					
	8.7.2.27.8	Alteration or Addition of an Electrical Protective Device if device meets 2.26.4.3.1			-	Minor A	mrr	
		2.26.2	Electrical Protective Devices - for specified device					
	8.7.2.28	Emergency Operation and Signaling Devices			↓ See Below ↓			
	8.7.2.28	Car Emergency Signaling Devices			Minor B	Minor B	mrr	
		2.27.1	Car Emergency Signaling Devices					
	8.7.2.28	Emergency or Standby Power			Minor B	Minor A		
		2.27.2	Emergency Or Standby Power systems					
	8.7.2.28	Firefighter's Emergency Operation			Minor B	Minor A		
		CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory					
		2.27.4	Firefighters' Emergency Operation - Non-Automatic Elevators					
		2.27.5	Firefighters' Emergency Operation - Automatic Elevators w/Attendant					
		2.27.6	Firefighters' Emergency Operation - Inspection Operation					
		2.27.7	Firefighters' Emergency Operation - Operating Procedures					
		2.27.8	Layout Drawings ★ See also provisions of 175/02					
	8.7.2.28	Addition of Elevator to a Group			-	Minor A		
		2.27.	Emergency Operation & Signaling Devices -Mandatory					
		2.27.1	Car Emergency Signaling Devices					
		2.27.2	Emergency or Standby Power Systems					
		CAD 8.7.2.28	Emergency Operation & Signaling Devices ★ FEO feature (or equivalent) matches car w/ highest FEO requirements notes re: 2.27.3-FEO for Automatic Elevators Manual PHI Recall is mandatory Automatic PHI Recall by FAID's is mandatory					
	DO 175/02	★ Emerg. Recall Upgrade - from Manual to Automatic & matching code at time of instal conformance to auto recall based on F.S. at time of install			Minor B			
	DO 219/07 EP 228/07	★ Emerg. Recall Upgrade to comply with a Fire Code Retrofit Order 219/07 see provisions of EP 228/07 Firefighter Operation to B44-00U2 or Firefighter Operation to B44-04 or Firefighter Operation to B44-07 Manual PHI Recall is mandatory Automatic PHI Recall by FAID's if required by NBCC or B44-07			Minor B	Minor A		

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3	Alterations to Hydraulic Elevators						
	8.7.3.1	Hoistway Enclosures			see 8.7.2.1			
	8.7.2.1	Hoistway Enclosures			Major	Major		
	8.7.2.1.1	Hoistway Enclosure Walls			Major	Major		
		2.1.1	Hoistway Enclosures					
		2.1.5	Windows and Skylights					
		2.1.6	Projections, Recesses, and Setbacks in H/W					
		2.5.	Horizontal Car and Counterweight Clearances					
		2.7.3.4.2	Access Doors and Openings					
		2.8.	Equipment in Hoistways, Machinery Spaces, Machine Rooms, Control Spaces, and Control Rooms					
		8.7.2.10	Entrances and Hoistway Openings (if change includes an entrance)					
		2.11.1	Entrances and Emergency Doors Required (if blind H/W)					
	8.7.2.1.2	Addition of Elevator to Existing Hoistway			-	New		
		2.5.	Horizontal Car and Counterweight Clearances					
	8.7.2.1.3	Construction at Top of Hoistway			Major	Major		
		2.1.2.1	Construction at Top of the Hoistway					
		2.1.3	Floor Over Hoistways					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.4	Construction at Bottom of Hoistway			Major	Major		
		2.1.2.2	Construction at Bottom of the Hoistway					
		2.1.2.3	Strength of Pit Floor					
		2.2.	Pits					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.1.5	Control of Smoke and Hot Gases			Major	Major		
		2.1.4	Control of Smoke and Hot Gases					
	8.7.3.2	Pits			see Electric Elevators			
	8.7.2.2	Pits see other alterations below for non Major Alterations			Major	-		
		2.2.	Pits					
		2.1.2.3	Strength of Pit Floor					
		8.7.2.4	Vertical Car & Cwt Clearances & Runbys					
	8.7.2.2	Pit Drains & Sumps			Minor B	Minor B		
		2.2.2.	Pit Drains					
	8.7.2.2	Pit Guards			Minor B	Minor A		
		2.2.3	Guards Between Adjacent Pits					
	8.7.2.2	Pit Access			Minor B	Minor A		
		2.2.4	Pit Access					
	8.7.2.2	Pit Illumination			Minor B	Minor B		
		2.2.5	Illumination of Pits					
	8.7.2.2	Pit Stop Switches			Minor B	Minor A		
		2.2.6	Stop Switches					
	8.7.2.2	Pit Depth			Minor B	Minor A		
		2.2.7	Minimum Pit Depths Required					
	8.7.2.2	Access to Underside of Car			Minor B	Minor A		
		2.2.8	Access to Underside of Car					
	8.7.3.3	Location and Guarding of Counterweights			Major	Major		
		2.3.	Location and Guarding of Counterweights					
		2.5.1.2	Between Car & Cwt and Cwt Guard					
		3.5.	Horizontal car and Counterweight Clearances					
	8.7.3.4	Vertical Car and Counterweight Clearances and Runbys (no reduction allowed)			Major	-		
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts					
		8.7.3.22.1	Increase or Decrease in Rise					
		8.7.3.22.2	Increase in Rated Speed					
		8.7.3.23.5	Change in Location of Hydraulic Jack					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.5	Horizontal Car and Counterweight Clearances (no reduction allowed)			Major	-		
		2.5.	Horizontal Car and Counterweight Clearances					
		8.7.3.22.1	Increase or Decrease in Rise					
		8.7.3.22.2	Increase in Rated Speed					
		8.7.3.23.5	Change in Location of Hydraulic Jack					
	8.7.3.6	Protection of Spaces Below Hoistways			Minor B	Major		
		3.6.	Protection of Spaces below Hoistway					
	8.7.3.7	Machine Rooms and Machinery Spaces			see 8.7.2.7			
	8.7.2.7	Machine Rooms and Machinery Spaces			↓ See Below ↓			
	8.7.2.7.1	Enclosures - other than specifics of 8.7.2.7.2 to 8.7.2.7.7						
		2.7. (& 3.7.)	New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms		-	Major		
		2.7. (& 3.7.)	Altered- Machinery Spaces, Machine Rooms Control Spaces & Control Rooms		Minor A	-		
		CSA C22.1	Electrical Equipment Clearances		Minor B	-		
	8.7.2.7★1	Enclosures - Control Rooms and Control Spaces						
		2.7. (& 3.7.)	New - Machinery Spaces, Machine Rooms Control Spaces & Control Rooms		-	Major		
		2.7. (& 3.7.)	Altered- Machinery Spaces, Machine Rooms Control Spaces & Control Rooms		Minor A	-		
		CSA C22.1	Electrical Equipment Clearances		Minor B	-		
	8.7.2.7.2	Means of Access			Minor B	-		
		2.7.3.1	General Requirements					
		2.7.3.2	Access Across Roofs					
		2.7.3.3	Means of Access					
	8.7.2.7.3	Access Doors and Openings			Minor B	Minor B		mrr
		2.7.3.4	Access Doors and Openings					
		2.7.3.5	Stop Switch in O/H M/C Space in the H/W					
	8.7.2.7.4	Headroom (no reduction)			Minor B	Minor B		
		2.7.4	Headroom in M/C Rooms					
	8.7.2.7.5	Windows and Skylights			Minor B	Minor B		
		2.1.5						
	8.7.2.7.6	Lighting (no reduction)			Minor B	Minor A		
		2.7.9.1	Lighting					
	8.7.2.7.7	Ventilation			Minor B	Minor B		
		2.7.9.2	Temperature & Humidity					
	8.7.3.8	Electrical Wiring, Pipes, and Ducts in Hoistways and Machine Rooms			Minor B	Minor B	mrr	Minor B
		Installation of New (electrical equipment, wiring, raceways, cables, pipes, ducts) also installation of Monitoring Equipment, HVAC			-	Minor B		
		2.8.	Equipment in Hoistways and Machine Rooms CSA Labeling (or equivalent) C22.1 as required					
		Alteration of Existing (electrical equipment, wiring, raceways, cables, pipes, ducts...)			Minor B	-		
		2.8.	Equipment in Hoistways and Machine Rooms					
	8.7.3.9	Machinery and Sheave Beams, Supports and Foundations			Major	Major		
		New/Relocated Machinery & Sheave Beams, Supports, Foundation						
		2.9.	Machinery & Sheave Beams, Supports, Foundation					
		Building reactions increased by more than 5%						
		2.9.	Machinery & Sheave Beams, Supports, Foundation adequacy of building structure verified by P.Eng.					

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.10	Hoistway Entrances and Openings - see 8.7.2.10			see 8.7.2.10			
	8.7.2.10	Entrances and Hoistway Openings			Major	Major	see below	
	8.7.2.10.1	General Requirements			Major	-		
	8.7.2.10.1(a)	General Requirements - All New Entrances			Major	-		
		2.11.	Protection of H/W Openings					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(b)	General Requirements - New Entrances w/Existing Entrances			-	Major		
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.4	Location of Horizontally Sliding or Swinging H/W Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(c)	General Requirements - Alteration to H/W Entrance			Major	-		
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		8.7.2.10.5	Marking of Entrance Assemblies					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
	8.7.2.10.1(d)	General Requirements - Emergency Doors			Major	Major		
		2.11.1	Entrances and Emergency Doors Required					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.1(e)	General Requirements - Access Openings (installed for cleaning)			Major	Major		
		2.11.1.4	Access Opening for Cleaning of Car & H/W Enclosure					
		8.7.2.10.5	Marking of Entrance Assemblies					
	8.7.2.10.2	Horizontal Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below	
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major	
		2.11.11	Entrances, Horizontal Slide Type					
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B	
		2.11.11.1	Landing Sills					
		2.11.11.6	Bottom Guides					
	track (b)	2.11.11.2	Hanger Tracks, and Track Supports		Minor B		Minor B	
	frame (c)	2.11.11.3	Entrance Frames		Minor A		Minor A	
		2.11.11.5.1	Panel Overlap					
		2.11.11.5.2	Panel Gaps Clearances					
		2.11.11.5.3	Pockets in Strike Jamb					
		8.7.2.10.5	Marking of Entrance Assemblies					
	hangers (d)	2.11.11.4	Hangers		Minor B		Minor B	
	panels (e)	2.11.11.5(*)	Panels		Minor A		Minor A	
		2.11.11.6	Bottom Guides					
		2.11.11.7	Multipanel Entrances					
		8.7.2.10.5	Marking of Entrance Assemblies					
	retainers (f)	2.11.11.8	Hoistway Door Safety Retainers		Minor B		Minor B	

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		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.2.10.3	Vertical-Slide-Type Entrances - new entrance and components to meet:			Major	Major	see below		
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major		
		2.11.12	Entrances, Vertical Slide Type						
	sills (a)	2.11.10.3	Hinged Hoistway Landing Sills		Minor B		Minor B		
		2.11.12.1	Landing Sills						
	frames (b)	2.11.12.2	Entrances Frames		Minor B		Minor B		
		8.7.2.10.5	Marking of Entrance Assemblies						
	rails (c)	2.11.12.3	Rails		mrr		mrr		
	panels (d)	2.11.12.4	Panels		Minor A		Minor A		
		2.11.12.3	Rails						
		2.11.12.5	Guides						
		2.11.12.6	Counterweighting or Counterbalancing						
		2.11.12.8	Pull Straps						
		8.7.2.10.5	Marking of Entrance Assemblies						
	guides (e)	2.11.12.5	Guides						
	sill guard (f)	2.11.12.7	Sill Guards		mrr		mrr		
	straps (g)	2.11.12.8	Pull Straps						
	8.7.2.10.4	Swing-Type Entrances - new entrance and components to meet:			Major	Major	see below		
		8.7.2.10.1	Entrances & H/W Openings - General Req'mts				Major		
		2.11.13	Entrances, Swing Type						
	sills (a)	2.11.10.1	Landing-Sill Guards		Minor B		Minor B		
		2.11.10.3	Hinged Hoistway Landing Sills						
	frames (b)	2.11.13.1	Landing Sills		Minor B		Minor B		
		2.11.13.2	Entrance Frames						
		2.11.13.4	Hinges						
		8.7.2.10.5	Marking of Entrance Assemblies						
	panels (c)	2.11.13.3	Panels		Minor B		Minor B		
		2.11.13.4	Hinges						
		2.11.13.5	Marking						
	hinges (d)	8.7.2.10.5	Marking of Entrance Assemblies						
		2.11.13.4	Hinges		mrr		mrr		
	8.7.2.10.5	Marking of Entrance Assemblies (Alteration to an Entrance Door Panel)			Major	Major			
			Fire Protection Rating not less then existing entrance						
		8.7.2.10.5(a)	NBCC requirements						
	8.7.2.10★1	★	Removing Service To a Floor		Minor B				
			Bolt entrances shut						
			Remove Interlock From Safety String						
			If Adding Door In front Of Entrance, Gap btwn doors <=125mm						
			Remove COP Floor Button						
		2.11.6.2	Cannot Lock Out Top/Btm, Designated/Alternate, All Landing in Phase II						
		2.12.7	Hoistway Access Switches - if floor was previously the access location						
	8.7.3.11	Hoistway Door-Locking Devices			See 8.7.2.11				
	8.7.2.11	Hoistway Door-Locking Devices, Access Switches & Parking Devices			↓ See Below ↓				
	8.7.2.11.1	Interlocks			Major	Major	mrr	Minor B	
		2.12.1	General						
		2.12.2	Interlocks						
		2.12.4	Listing/Certification Locking Devices						
		2.12.5	Restricted Opening of H/W or Car Door (n/a for column 5,6)				n/a		
		2.12.6	Hoistway Door Unlocking Devices (n/a for column 5,6)				n/a		
		2.12.7	Hoistway Access Switches (n/a for column 5,6)				n/a		

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					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.11.2	Mechanical Locks and Electric Contacts			Major	Major	mrr	Minor B
		2.12.1 General						
		2.12.3 H/W Door Combination Mechanical Locks & Contacts						
		2.12.4 Listing/Certification Locking Devices						
		2.12.6 Hoistway Door Unlocking Devices						
		2.24.8 Braking Systems & Driving Machine Brakes						
	8.7.2.11.3	Parking Devices			Minor A	Minor A		
	8.7.2.11.4	Access switches and Unlocking Devices						
	8.7.2.11.4 (a)	Addition of Unlocking Devices			-	Minor B	mrr	
		2.12.6 Hoistway Door Unlocking Devices						
		2.24.8.3 Driving Machine Brake						
	8.7.2.11.4 (b)	Addition of Access Switches			-	Minor A	mrr	
		2.12.7 Hoistway Access Switches						
		2.24.8 Braking Systems & Driving Machine Brakes						
		2.26.1.4 Inspection Operation						
	8.7.2.11★1	★ Door Safety Retainers			Minor B	Minor A	mrr	Minor B
		2.11.11.8 Hoistway Door Safety Retainers						
	8.7.2.11.5	Restricted Opening of H/W or Car Doors of Passenger Elevators (Restrictors) (Altered or Installed)			Minor B	Minor B	mrr	Minor B
		2.12.5 Restricted Opening of H/W or Car Door						
	8.7.3.12	Power Operation of Hoistway Doors (Addition / Alteration to Power Open or Close)			Minor A	Minor A		
		8.7.2.10.1 Entrances & H/W Openings - General Req'mts						
		8.7.2.10.2 Horizontal Slide-Type Entrances						
		8.7.2.10.3 Vertical Slide-Type Entrances						
		8.7.2.10.5 Marking of Entrance Assemblies						
		8.7.3.10 Hoistway Entrances and Openings						
		★ 2.13. Power Operation of Hoistway Doors and Car Doors						
	8.7.2.12★1	★ Replacement of Door Operator			-	-	mrr	Minor B
		2.13. Power Operation of Hoistway Doors and Car Doors						
	8.7.2.12★2	★ Replacement of Door Reopening Device					See 8.7.2.13	
	8.7.2.13	Door Reopening Device (Safety Edge) (Altered or Added or Replaced)			Minor B	Minor B	mrr	Minor B
		2.13.4 Closing Limitations for Power Operated HS Doors & Gates						
		2.13.5 Reopening Device for Power Operated Car Doors or Gates if FEO provided, door opening & closing to PHI & II at time of install						
	8.7.3.13	Car Enclosures					See 8.7.2.14	
	8.7.2.14	Car Enclosures, Car Doors and Gates, and Car Illumination					↓ See Below ↓	
	8.7.2.14.1	Installation of New Car Enclosure			Major	-		
		CAD 2.14. Car: Enclosure, Doors, Gates, Illumination						
		2.15. Car Frames & Platforms						
		2.17. Car and counterweight safeties						
		8.7.2.15.1 Alterations to Car Frames and Platforms						
	8.7.2.14.2	Alteration to Existing Cars			Minor A	Minor A		
	8.7.2.14.2(a)	Car Enclosure - Securing of Enclosures			Minor A	Minor A		
		2.14.1.2 Securing of Enclosures						
	8.7.2.14.2(b)	Top Emergency Exit (Altered or Added)			Minor B	Minor B		
		2.14.1.5 Top Emergency Exits						
	8.7.2.14.2(c)	Installation of Glass			Minor B	Minor B		
		2.14.1.8 Glass in Elevator Cars						
		2.14.1.8.1 Enclosures include glass						
		2.14.1.8.2 Lining of Walls or Ceilings include glass						
		CAD 2.14.1.8.3 Not Adopted - Type 3C in not permitted, except if mrr					mrr	
		2.14.1.8.4 Marking of each Glazing Panel						
	8.7.2.14.2(d)	Specific Equipment in Elevator Car			Minor B	Minor B		
		2.14.1.9 Equipment Inside Cars						
		(a) Handrails						
		(b) fastening devices for protective linings						
		(c) ceiling mounted hooks/tracks						
		(d) picture frames display boards, plaques <38mm protrusion secured to 2.14.1.2 material to 2.14.2.1						
		(e) conveyor tracks in freights						
		(f) heating or cooling equipment						

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement <i>Superseded</i>			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.2.14★1	★ Car operating station		verify inspection operation 'if provided' verify stop sw verify switches operate as before (eg. FS, FEO, Access)	Minor B	Minor B	mrr	Minor B
	8.7.2.14★2	★ video cameras / surveillance equipment / video monitors		2.8.2.1 electrical equipment & wiring 2.14.1.2.3 securing of enclosure equipment 2.14.2.4 Headroom in Elevator Cars	Minor B	Minor B		
	8.7.2.14★3	★ other equipment			Variance			
	8.7.2.14.2(e)	Side Emergency Exits - Secured Shut			Major	-		
	8.7.2.14.2(f)	Car Ventilation			Minor B	-		
		2.14.2.3 Ventilation						
	8.7.2.14.2(g)	Car Illumination			Minor B	Minor B		
		2.14.7 Illumination of Cars and Lighting Fixtures						
	8.7.2.14.2(h)	Partitions Installed in Elevator Cars			Major	Major		
		2.16.1.2 Use of Partitions for Reducing Inside Net Platform Area						
	8.7.2.14.4	Car Enclosure / Car Door or Car Gates			↓ See Below ↓			
	8.7.2.14.4	Alteration to Car Enclosure other than 8.7.2.14.2 - Enclosure Materials			DR 171		Minor B	DR 171
		CAD 2.14. Car: Enclosure, Doors, Gates, Illumination		enclosure material flame ratings shall not be diminished				
		2.14.1.7 car top railing			n/a		n/a	n/a
		2.14.7.1.3 auxiliary lighting						
		2.14.7.1.4 car top light & outlet						
		Directors Order 171						
	8.7.2.14.4	Alteration to Car Door or Car Gates other than 8.7.2.14.2			Minor A	Minor A		
		CAD 2.14. Car: Enclosure, Doors, Gates, Illumination						
		2.14.1.7 car top railing			n/a			
		2.14.7.1.3 auxiliary lighting						
		2.14.7.1.4 car top light & outlet						
	0.Reg.209/01s30	★ Relocation of Elevator License to remote location			Minor B†	-		
	8.7.2.14★4	★ Car Top Railing			Minor B	Minor A		
		2.14.1.7 Railing and Equipment on Top of Cars						
		2.4 Vertical Car & Cwt Clearances & Runbys						
	8.7.3.14	Car Frames and Platforms			Major	-		Major
		3.15. Car Frames & Platforms						
	8.7.3.15	Safeties		Car or Cwt (plunger gripper see 8.7.3.23.7)	↓ See Below ↓			
	8.7.3.15.1	Car Safeties			-	Major	mrr	Minor A
		3.17.1 Car Safeties						
		3.23. Guide Rails, Guide-Rail Supports, and Fastenings						
		3.28. Layout Data						
	8.7.3.15.2	Counterweight Safeties			-	Major	mrr	Minor A
		3.17.2 Counterweight Safeties						
		3.23. Guide Rails, Guide-Rail Supports, and Fastenings						
		3.28. Layout Data						
	8.7.3.15.3	Alteration to existing Car or Counterweight Safeties			Major	-	mrr	Minor A
		3.17(*) Car and counterweight safeties and plunger gripper						
		3.23. Guide Rails, Guide-Rail Supports, and Fastenings						
		3.28. Layout Data						

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.16	Governors and Governor Ropes			See 8.7.2.19			
	8.7.2.19	Speed Governors and Governor Ropes			Major	Major	↕ See Below ↕	
	8.7.2.19	2.18.	Speed Governors				mrr	Minor A
	8.7.2.19	2.17.15	Governor Rope Releasing Carriers				mrr	mrr
	8.7.2.19	Governor Ropes of different material or Construction to:					Minor B	Minor B
			2.18.6 Design of Gov'r Rope Retarding Means for Type B Safeties					
			2.18.7 Traction between Speed Governor Rope & Sheave					
			& testing to 2.17.3 Function and Stopping Distances of Safeties					
	8.7.3.17	Change in Type of Service: Passenger to Freight OR Freight to Passenger			Major	-		
		2.11.1	Entrances and Emergency Doors Required					
		2.11.2	Types of Entrances					
		2.11.3	Closing of Hoistway Doors					
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills					
		2.11.6	Opening of Hoistway Doors					
		2.11.7	Glass in Hoistway Doors					
		2.11.8	Weights for Closing or Balancing Doors					
		2.12.	H/W-Door Locking Devices, Elec. Contacts, H/W Access					
		2.13.	Power Operation of H/W Doors and Car Doors					
		2.22.(*)	Buffers & Bumpers					
		3.22.2	Counterweight Buffers					
		3.14.	Car: Enclosure, Doors, Gates, Illumination					
		CAD 2.14.	Car: Enclosure, Doors, Gates, Illumination					
		2.14.1.7.1	railing - to the extent the existing vertical clearances allow					
		3.15.	Car Frames & Platforms					
		3.17.	Car and Counterweight Safeties					
		3.21.	Counterweights					
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings					
		2.18.(*)	Speed Governors					
		3.16.	Capacity & Loading					
		3.18.	Hydraulic Jacks					
		3.19.	Valves, Pressure Piping, and Fittings					
		3.20.	Ropes and Rope Connections					
		3.24.	Hydraulic Machines and Tanks					
		3.25.	Terminal-Stopping Devices					
		3.26.	Operating Devices and Control Equipment					
		3.27.	Emergency Operation and Signaling Devices					
		2.27.1	Car Emergency Signaling Devices					
		2.27.2	Emergency or Standby Power Systems					
		CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators ★					
			★ see provisions of EP 228/07					
			★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:					
			Manual PHI Recall only is provided					
			Automatic PHI Recall by FAID's is provided					
			★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:					
			Manual PHI Recall is provided					
			Automatic PHI Recall by FAID's is provided also					
			Phase 1 Recall & Phase 2 In-car provided OR					
			Phase 1 Recall only - no Phase 2 In-car provided					
	8.7.3.18	Change in Class of Loading: [A, B, C1, C2, C3]			Major	-		
		2.16.2	Minimum Rated Load for Freight Elevators					
		3.16.	Capacity & Loading					

0	1	2a	2b	2c	3	4	5	6	
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.3.19	Carrying of Passengers on Freight Elevators			Major	-			
		3.16.4	2.16.4 except 2.16.4.3						
		2.16.4	Carrying of Passengers on Freight Elevators						
		2.16.4.1	not accessible to general public						
		2.16.4.2	rated load not less than required by 2.16.1						
		2.16.4.4	H/W entrances to 2.12.1.1 & 2.11.2.1 or 2.11.2.2(e)						
		2.16.4.5	car doors to 2.14.5 Passenger Car Doors						
		2.16.4.6	car enclosure openings to 2.14.2.2 Prohibited Openings						
		2.16.4.7	conforms to 2.12.5 Restricted Opening of H/W or Car Door						
		2.16.4.8	Fs for suspension ropes to Table 2.20.3						
		2.16.4.9	Power Operated vertical doors to 2.16.4.9(a) to (e)						
		★	apron guard to ED CAD or extent pit permits						
		★	2.16.5 Signs Required in Freight Elevator Cars						
	8.7.3.20	Increase in Rated Load			Major	-			
		2.26.1.4	Inspection Operation						
		2.26.1.5	Inspection Operation with Open Door Circuits						
		2.26.5	Monitor & Prevent Automatic Operation w/ Faulty Door Contacts						
		3.14.	Car: Enclosure, Doors, Gates, Illumination						
		CAD 2.14.	Car: Enclosure, Doors, Gates, Illumination						
		3.15.	Car Frames & Platforms - ★ apron guard to ED CAD/as pit permits						
		3.16.	Capacity & Loading						
		3.17.	Car and Counterweight Safeties						
		3.20.	Ropes and Rope Connections						
		3.21.	Counterweights						
		3.22.	Buffers and Bumpers						
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings						
		8.7.3.23.4	Increase in Working Pressure						
	DR 171/02	★	Decrease Deadweight <5% or Increase Deadweight of Car (115 kg or Less)		Minor B	Minor B			
			record weight on Aux. Data Tag						
	DR 171/02	★	Increase Deadweight of Car (>115 kg to 5%)		Minor A	Minor A			
			record weight on Aux. Data Tag						
			engineering assessment of related items (except 2.24.3)						
	8.7.3.21	Increase in Deadweight of Car (Car Wt+Rated Load >5%)			Major	-			
		DR 171/02	Car: Enclosure, Doors, Gates, Illumination						
		3.14.	Car: Enclosure, Doors, Gates, Illumination		n/a				
		CAD 2.14.	Car: Enclosure, Doors, Gates, Illumination						
		3.15.	Car Frames & Platforms - ★ apron guard to ED CAD/as pit permits						
		3.16.	Capacity & Loading						
		3.17.	Car and Counterweight Safeties						
		3.20.	Ropes and Rope Connections						
		3.21.	Counterweights						
		3.22.	Buffers and Bumpers						
		3.23.	Guide Rails, Guide-Rail Supports, and Fastenings						
		3.24.5	Counterweight Sheaves						
		8.7.3.23.4	Increase in Working Pressure						

0	1	2a	2b	2c	3	4	5	6			
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work						
					Alteration		Replacement with				
					Modification Change	Addition	Same	Different Make/Model			
					Type of Submission Required						
	8.7.3.22	Change in Rise or Rated Speed			Major	-					
	8.7.3.22.1	Increase or Decrease in Rise			Major	-					
		3.25.	Terminal-Stopping Devices								
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts								
		3.4.1	Bottom Car Clearance								
		3.4.2	Minimum Bottom and Top Car Runby								
		3.4.3	Car Top and Bottom Maximum Runby								
		3.18.2	Plungers								
			If decrease in rise is at lowest end then;								
		2.2.4	Access to Pits								
		2.2.5	Illumination of Pits								
		2.2.6	Stop Switches								
	8.7.3.22.2	Increase in Rated Speed			Major	-					
		2.5.	Horizontal Car and Counterweight Clearances								
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts								
		3.21.	Counterweights								
		3.22.2(*)	Counterweight Buffers								
		3.14.	Car: Enclosure, Doors, Gates, Illumination								
		CAD 2.14.	Car: Enclosure, Doors, Gates, Illumination								
		3.17.(*)	Car and Counterweight Safeties								
		3.16.	Capacity & Loading								
		3.25.	Terminal-Stopping Devices								
		3.26.1	Operating Devices and Control Equipment								
		3.26.2	Inspection Operation								
		3.26.3	Anti-Creep and Leveling Operation								
		3.26.4	Electrical Protective Devices								
		3.26.5	Phase-Reversal and Failure Protection								
		3.26.6	Control and Operating Circuits								
		3.20.	Ropes and Rope Connections								
	8.7.3.22.3	Decrease in Rated Speed			Major	-					
		3.4.	Bottom and Top Clearances and Runbys for Cars and Cwts								
		2.18.2	Tripping Speeds for Speed Governors								
		3.16.	Capacity & Loading								
		3.16.3(b)	Capacity & data plates								
		2.26.4.1	Electrical Equipment and Wiring								
		2.26.4.2	Drive Machine Controllers for Stopping/Starting/Controlling								

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.23	Hydraulic Equipment			↓ See Below ↓			
	8.7.3.23.1	Alteration to	Hydraulic Jacks		Major	-		
		3.18.	Hydraulic Jacks					
	8.6.12.5.4.1	Replacement of	Hydraulic Jacks		-	-	Major	
		3.18.	Hydraulic Jacks					
	8.7.3.23.2	Alteration to	Plungers		Major	-		
		3.18.1.2	Roped-Hydraulic Elevator					
		3.18.2	Plungers					
	8.6.12.5.4.2	Replacement of	Plungers		-	-	Minor A	
		3.18.1.2	Roped-Hydraulic Elevator					
		3.18.2	Plungers					
	8.7.3.23.3	Alteration to	Cylinders		Major	-		
		3.18.3	Cylinders - Installed as part of Alteration					
		3.18.3	Cylinder is Altered					
		3.18.3	Cylinder is Sleeved		Minor B			
		3.18.4.1	Metal Stops and/or Other Means					
		3.18.1.2	Roped-Hydraulic Elevator					
		3.18.2	Plungers					
	8.6.12.5.4.3	Replacement of	Cylinders		-	-	Minor A	
		3.18.3	Cylinders - Installed as part of Alteration					
		3.18.3	Cylinder is Altered					
		3.18.3	Cylinder is Sleeved					
		3.18.4.1	Metal Stops and/or Other Means					
		3.18.1.2	Roped-Hydraulic Elevator					
		3.18.2	Plungers					
	8.7.3.23.4	Increase in Working Pressure >5%			Major	-		
		3.18.(*)	Hydraulic Jacks					
		3.19.(*)	Valves, Pressure Piping, and Fittings					
		3.24.1	Marking Plates					
		3.24.2	Tanks					
		3.24.3	Atmosphere Storage and Discharge Tanks					
		3.24.4	Welding					
	8.7.3.23.5	Change in Location of Hydraulic Jack			Major	-		
		Part 3	Hydraulic Elevators					
	8.7.3.23.6	Relocation of Hydraulic Machine (Power Unit)			Minor A	-		
		3.26.8	Pressure Switch					
	8.7.3.23.7	Plunger Gripper			Minor A	Minor A		
		3.17.3	Plunger Gripper					
		3.1.1(b)	strength of pit floor					
		3.22.1	no strike when buffers compressed					
	8.7.3.24	Alteration to	Relief or Check Valves or Pressure Piping or Fittings		Minor A	Minor A	see 8.6.12.5.2	
	8.6.12.5.5.2	Replacement of	Relief or Check Valves or Pressure Piping or Fittings				Minor B	
		3.19.	replacement of relief valve or check valve or piping or fittings					
	8.7.3.24	Alteration to	Control Valves		Minor A	-	see 8.6.12.5.5	
	8.6.12.5.5.1	Replacement of	Control Valves				Minor B	
		3.19.	replacement of control valve					

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.3.25	Suspension Ropes and Their Connections			↓ See Below ↓			
	8.7.3.25.1	Change in Number of, or Diameter of Ropes 3.20. Ropes and Rope Connections PEO to certify retained sheaves w/different ropes are satisfactory			Major	-		
	8.7.3.25.1	Change in Material / Grade of Ropes 3.20. Ropes and Rope Connections PEO to certify retained sheaves w/different ropes are satisfactory			Minor A	-		
	8.7.3.25.2	Addition of Rope Equalizers 2.20.5 Suspension Rope Equalizers			Minor B	Minor B		
	8.7.3.26	Counterweights - Alteration of			See 8.7.2.22			
	8.7.2.22	Counterweights			Minor A	-		
	8.7.2.22.1	Alteration to any part of a cwt except guiding members 2.21. Counterweights 8.7.2.22.2 Rod Type Counterweights 8.7.2.3 Location and Guarding of Counterweights						
	8.7.2.22.2	Rod Type Cwt - can retain if: Minimum of 2 suspension and 2 tie rods Suspension rods: 2.21.2.1 Material - Cwt Frames & Rods 2.21.2.3 Factor of Safety Tie Rods: 2.21.1.2 Retention of Weight Sections						
	8.7.2.22.3	Roller or similar guide shoes added safety jaws cannot touch rails if not activated			mrr		mrr	
	8.7.3.26	Counterweights - Addition of			-	Major		
		3.4. Bottom and Top Clearances and Runbys for Cars and Cwts 3.6. Protection of Spaces below Hoistway 3.14. Car: Enclosure, Doors, Gates, Illumination CAD 2.14. Car: Enclosure, Doors, Gates, Illumination 3.15. Car Frames & Platforms 3.17.2 Counterweight Safeties 3.18. Hydraulic Jacks 3.20. Ropes and Rope Connections 3.21. Counterweights 8.7.3.3 Location and Guarding of Counterweights						
	8.7.3.27	Car Buffers and Bumpers (oil buffer only in column 6) 3.21. Counterweights 3.22.2(*) Counterweight Buffers			Major	-	mrr	Minor B
	8.7.3.28	Guide Rails, Supports, and Fastenings (alteration to, or stress increase >5%) 3.23. Guide Rails, Guide-Rail Supports, and Fastenings 3.28. Layout Data			Major	-		
	8.7.3.29	Alteration to Tanks 3.24. Hydraulic Machines and Tanks			Minor B	-	see 8.6.12.5.6	
	8.7.3.29★1	★ Addition of Oil Cooler CSA C22.1 2.7.2 Maintenance Path and Clearance DO 212/07 A.3.01(c) if buried				Minor B		
	8.6.12.5.6	Replacement of Tanks 3.24. Hydraulic Machines and Tanks			-	-	Minor B	
	8.7.3.30	Terminal-Stopping Devices 3.25. Terminal-Stopping Devices			Minor B	Minor B		

0	1	2a	2b	2c	3	4	5	6	
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.3.31	Operating Devices and Control Equipment			↓ See Below ↓				
	8.7.3.31.1	Top-of-Car Operating Devices			Minor A	Minor A	mrr	Minor A	
	DO 173/02	Addition of Top-of-Car Operating Device			-	Minor A			
	8.7.3.31.2	Car-Leveling or Truck-Zoning Devices			Minor A	Minor A			
		3.26.3.2 Operation in Leveling or Truck Zone							
	8.7.3.31.3	Alteration to Anti-Creep Leveling Device			Minor B	-			
		3.26.3.1 Anti-Creep Operation							
	8.6.12.5.7	Replacement of Anti-Creep Leveling Device			-	-	Minor B		
		3.26.3.1 Anti-Creep Operation							
	8.7.3.31*1	★ Door By-Pass Switches			Minor A	Minor A			
		2.26.1.5 Inspection Operation with Open Door Circuits							
	8.7.3.31*2	★ Door Monitoring System			Minor A	Minor A			
		2.26.5 System to Prevent Auto Operation w/faulty Door Contacts							
	8.7.3.31.4	Change in Power Supply			Major	-			
		(a) voltage, frequency or # of phases or							
		(b) AC to DC , DC to AC or							
		(c) combination of DC & AC, then							
		electrical to:							
		3.26.1 Operating Devices and Control Equipment							
		3.26.4 Electrical Protective Devices							
		3.26.5 Phase-Reversal and Failure Protection							
		3.26.6(*) Control and Operating Circuits							
	8.7.3.31*3	★ Addition of Soft Start				Minor A			
		2.26.4.1 & 2 CSA C22.1 & B44.1 certified							
		3.26.5 Phase-Reversal and Failure Protection							
	8.7.3.31*4	★ Addition of Power Efficiency Increasing Device				Minor B			
		B44.1 certified							
		2.26.4.1 & 2 CSA C22.1 & B44.1 certified							
	8.7.3.31.5	Controllers							
	8.7.3.31.5(a)	Installation of Elevator Controller (as part of an alteration)			Major	-	see 8.6.12.5.3.1		
		2.26.1.4 Inspection Operation							
		2.26.1.5 Inspection Operation with Open Door Circuits							
		2.26.4.1 Electrical Equipment and Wiring							
		2.26.4.2 Drive Machine Controllers for Stopping/Starting/Controlling							
		2.26.4.3 Positively Opened Contacts							
		2.26.5 Monitor & Prevent Automatic Operation w/ Faulty Door Contacts							
		2.26.7 Installation of Capacitors/Devices Making EPD's Ineffective							
		3.26.2 Inspection Operation							
		3.26.3 Anti-Creep and Leveling Operation							
		3.26.5 Phase-Reversal and Failure Protection							
		3.26.7 Recycling Operation for Multiple or Telescopic Plungers							
		3.26.10 Auxiliary Power Lowering Operation							
		3.25. Terminal-Stopping Devices							
		★ 2.7.9.2 Temperature and Humidity							
		★ 3.27. (*) Firefighters' Emergency Operation - Automatic Elevators - where required by NBCC except 2.27.1 and 2.27.2							
		CAD 2.27.3 Firefighters' Emergency Operation - Automatic Elevators - ★							
		★ see provisions of EP 228/07							
		★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:							
		Manual PHI Recall only is provided							
		Automatic PHI Recall by FAID's is provided							
		★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:							
		Manual PHI Recall is provided							
		Automatic PHI Recall by FAID's is provided also							
		Phase 1 Recall & Phase 2 In-car provided OR							
		Phase 1 Recall only - no Phase 2 In-car provided							
		indicate if Manual PHI Recall is provided							
		indicate if Automatic PHI Recall by FAID's is provided							

0	1	2a	2b	2c	3	4	5	6				
									Type of Alteration Work			
									Alteration		Replacement with	
									Modification Change	Addition	Same	Different Make/Model
Type of Submission Required												
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement										
		Job Reference:										
		8.6.12.5.3.1	Replacement of 8.7.3.31.5(a) 2.26.1.4 2.26.1.5 2.26.4.1 2.26.4.2 2.26.4.3 2.26.5 2.26.7 3.26.2 3.26.3 3.26.5 3.26.7 3.26.10 3.25. ★ 2.7.9.2 ★ 3.27. (*)	Elevator Controller Inspection Operation Inspection Operation with Open Door Circuits Electrical Equipment and Wiring - Including Clearances to CSA C22.1 Drive Machine Controllers for Stopping/Starting/Controlling Positively Opened Contacts Monitor & Prevent Automatic Operation w/ Faulty Door Contacts Installation of Capacitors/Devices Making EPD's Ineffective Inspection Operation Anti-Creep and Leveling Operation Phase-Reversal and Failure Protection Recycling Operation for Multiple or Telescopic Plungers Auxiliary Power Lowering Operation Terminal-Stopping Devices Temperature and Humidity Firefighters' Emergency Operation - Automatic Elevators - where required by NBCC except 2.27.1 and 2.27.2	-	-	Major					
		CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★ ★ see provisions of EP 228/07 ★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via: Manual PHI Recall only is provided Automatic PHI Recall by FAID's is provided ★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided: Manual PHI Recall is provided Automatic PHI Recall by FAID's is provided also Phase 1 Recall & Phase 2 In-car provided OR Phase 1 Recall only - no Phase 2 In-car provided indicate if Manual PHI Recall is provided indicate if Automatic PHI Recall by FAID's is provided									
		8.7.3.31 ★ 5	Relocation of 2.8.2	Elevator Controller (if control wiring disconnected - reconnected) Electrical Equipment and Wiring Electrical testing as per the original design submission tests	Major							
		8.7.3.31.5(b)	Installation of 2.26.4.1 2.26.4.2	Door Controller (as part of an alteration) Electrical Equipment and Wiring Drive Machine Controllers for Stopping/Starting/Controlling	Minor A	-	see 8.6.12.5.3.1					
		8.6.12.5.3.1	Replacement of 2.26.4.1 2.26.4.2	Door Controller Electrical Equipment and Wiring Drive Machine Controllers for Stopping/Starting/Controlling	-	-	Minor B					
		8.7.3.31.6	Change in Type of Motion Control 3.25. 3.26.(*) 3.27. 2.27.1 2.27.2 CAD 2.27.3	Terminal-Stopping Devices Operating Devices and Control Equipment Emergency Operation & Signaling Devices - ★ where required by NBCC, or provided voluntarily Car Emergency Signaling Devices Emergency or Standby Power Systems Firefighters' Emergency Operation - Automatic Elevators - ★ ★ see provisions of EP 228/07 ★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via: Manual PHI Recall only is provided Automatic PHI Recall by FAID's is provided ★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided: Manual PHI Recall is provided Automatic PHI Recall by FAID's is provided also Phase 1 Recall & Phase 2 In-car provided OR Phase 1 Recall only - no Phase 2 In-car provided indicate if Manual PHI Recall is provided indicate if Automatic PHI Recall by FAID's is provided	Major	-						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.3.31.7	Change in Type of Operation Control (CPPB, Automatic)			Major	-			
		2.11.1	Entrances and Emergency Doors Required						
		2.11.2	Types of Entrances						
		2.11.3	Closing of Hoistway Doors						
		2.11.4	Location of Horizontally Sliding or Swinging H/W Doors						
		2.11.5	Projection of Entrances & Equip. Beyond Land'g Sills						
		2.11.6	Opening of Hoistway Doors						
		2.11.7	Glass in Hoistway Doors						
		2.11.8	Weights for Closing or Balancing Doors						
		2.11.9	Hoistway Door Locking Devices & Power Operation						
		2.11.10	Landing Sill: Guards, Illumination, hinged sills, Tracks						
		2.11.11	Entrances, Horizontal Slide Type						
		2.11.12	Entrances, Vertical Slide Type						
		2.11.13	Entrances, Swing Type						
		3.12.1	H/W-Door Locking Devices, Elec. Contacts, H/W Access						
		3.13.	Power Operation of H/W Doors and Car Doors						
		3.14.(*)	Car: Enclosure, Doors, Gates, Illumination						
		CAD 2.14.	Car: Enclosure, Doors, Gates, Illumination						
		3.16.	Capacity & Loading						
		3.25.	Terminal-Stopping Devices						
		3.26.(*)	Operating Devices and Control Equipment						
		3.27.	Emergency Operation & Signaling Devices - ★ where required by NBCC, or provided voluntarily						
		2.27.1	Car Emergency Signaling Devices						
		2.27.2	Emergency or Standby Power Systems						
		CAD 2.27.3	Firefighters' Emergency Operation - Automatic Elevators - ★						
			★ see provisions of EP 228/07						
			★ to the same level of activation (or greater) as required by NBCC at time of original installation, Activation is via:						
			Manual PHI Recall only is provided						
			Automatic PHI Recall by FAID's is provided						
			★ if voluntarily provided (not required by NBCC or Fire Code) Activation is via / Feature Provided:						
			Manual PHI Recall is provided						
			Automatic PHI Recall by FAID's is provided also						
			Phase 1 Recall & Phase 2 In-car provided OR						
			Phase 1 Recall only - no Phase 2 In-car provided						
			indicate if Manual PHI Recall is provided						
			indicate if Automatic PHI Recall by FAID's is provided						
		★ 2.7.9.2	Temperature and Humidity						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.3.31★6	★	Addition of Wander Patient Feature - Change in Operation Control		Minor B	Minor B			
			2.11.3.2 - doors closed when not in use						
			2.13.5.4 - door time out						
			2.27.3.1.6(l) - shall not prevent PHI						
	8.7.3.31★7	★	Addition of Restricted Access - Security / Floor Lock Out		Minor B	Minor B			
			OBC-3.2.6.5(4) - shall not prevent floor access When on FEO						
			D.O. Button Remain Operative Under non FEO Conditions, Door Closed When not in Use						
			2.27.3.1.6(l) - shall not prevent PHI						
			2.27.3.3.1(i) - permit travel to all landings when on PH II						
			2.11.6.2 Cannot Lock Out Top& Btm, Designated & Alternate or All Landings in Phase II						
			DR 172/02 Elevators With Phase II Operation & Floor Button Controlled by Cards/Keys						
	8.7.3.31.8		Emergency Operation and Signaling Devices						
	8.7.3.31.8(a)		Car Emergency Signaling Devices		Minor B	Minor B		mrr	
			2.27.1 Car Emergency Signaling Devices						
	8.7.3.31.8(b)		Emergency or Standby Power		Minor B	Minor A			
			2.27.2 Emergency Or Standby Power systems						
	8.7.3.31.8(c)		Firefighter's Emergency Operation		Minor B	Minor A			
			3.27. (*) Emergency Operation and Signaling Devices						
		CAD	2.27.3 Firefighters' Emergency Operation - Automatic Elevators★						
			★ except 2.27.1 and 2.27.2						
			Manual PHI Recall is mandatory						
			Automatic PHI Recall by FAID's is mandatory						
	DO 175/02	★	Emerg. Recall Upgrade - from Manual to Automatic & matching code at time of instal			Minor B			
			conformance to auto recall based on F.S. at time of instal						
			requirements of DO 175/02						
	DO 219/07	★	Emerg. Recall Upgrade Voluntary to Fire Code Retrofit Order 219/07		Minor B	Minor A			
	EP 228/07		see provisions of EP 228/07						
			Firefighter Operation to B44-00U2 or						
			Firefighter Operation to B44-04 or						
			Firefighter Operation to B44-07						
			Manual PHI Recall is mandatory						
			Automatic PHI Recall by FAID's if required by NBCC or B44-07						
	8.7.3.31.9		Auxiliary Power Lowering Operation		Minor B	Minor B			
			3.26.10 Auxiliary Power Lowering Operation						
			include testing procedure						
	8.7.3.31.10		Removal of emergency stop switch on passenger elevators		Minor B	Minor B			
			remove all related markings / engravings & provide an in-car stop switch to:						
			2.26.2.21 In-car stop switch						
			2.26.4.3 Positively Opened Contacts						
			2.26.9.3(a) single failure does not render In-Car Stop Switch ineffective						
			3.26.4.2 deceleration rate <1g, anticreep must still function						
	8.7.3.31.11		Electrical Protective Devices					↓ See Below ↓	
	8.7.2.27.8		Alteration or Addition of an Electrical Protective Device		Major	Major		mrr Major	
			if device meets 2.26.4.3.2 (PES)						
			3.26.2 Electrical Protective Devices - for specified device						
	8.7.2.27.8		Alteration or Addition of an Electrical Protective Device		-	Minor A		mrr	
			if device meets 2.26.4.3.1						
			3.26.2 Electrical Protective Devices - for specified device						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.4	Alterations to Elevators w/other Types of Driving Machines						
	8.7.4.1	Rack and Pinion Elevators			Major	-		
		4.1.	Rack and Pinion Elevators					
	8.7.4.2	Screw-Column Elevators			Major	-		
		4.2.	Screw-Column Elevators					
	8.7.4.3	Hand Elevators			Major	-		
	8.7.4.3.1	Hoistway Enclosures and Machinery Space			Major	-		
		4.3.1	Hoistways, H/W Enclosures, and Related Construction					
		4.3.4	Enclosures for Machines and Control Equipment					
	8.7.4.3.2	Top Car and Counterweight Clearances			Major	-		
		4.3.3	Top Clearances					
	8.7.4.3.3	Hoistway Entrances			Major	-		
		4.3.6	Hoistway Entrances					
		4.3.7	Hoistway Gates for Landing Openings					
		4.3.8	Hoistway-Door & Hoistway Gate Locking Devices					
	8.7.4.3.4	Car Enclosures			Major	-		
		4.3.9	Car Enclosures					
		4.3.11	Car Frames and Platforms					
	8.7.4.3.5	Car Frame and Platform			Major	-		
		4.3.11	Car Frames and Platforms					
		4.3.12	Car Compartments					
		4.3.13	Cars Counterbalancing One Another					
		4.3.16	Suspension Means					
	8.7.4.3.6	Capacity and Loading			Major	-		
		4.3.14.1	Minimum Rated Load					
		4.3.14.2	Capacity Plate					
		4.3.19.1	Drive Machine & Sheaves - Factors or Safety					
		4.3.19.2	Driving-Machines					
		4.3.16	Suspension Means					
	8.7.4.3.7	Increase in Rise			Major	-		
		4.3.3.1	Top Car Clearances					
		4.3.3.2	Top Counterweight Clearance					
		4.3.15	Car Safeties					
		4.3.16	Suspension Means					
	8.7.4.3.8	Guide Rails and Fastenings			Major	-		
		4.3.18.1	Guide Rails - Material and Finish					
		4.3.18.2	Strength of Rails and Fastenings					
		4.3.18.3	Extension of Guide Rails at Top & Bottom of H/W					
	8.7.4.3.9	Overhead Beams and Supports			Major	-		
		4.3.5.1	Overhead Beams and Supports					
		4.3.5.2	Access to Machines and Sheaves					
	8.7.4.3.10	Power Attachments			Major	-		

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.5	Alterations to Special Application Elevators						
	8.7.5.1	Inclined Elevators			Major	-		
		5.1.	Inclined Elevators compliance to specific 5.1 sections based on alteration scope			variance		
	8.7.5.2	Limited Use/Limited Application Elevators			See Electric or Hydraulic Elevator			
	8.7.5.2*1	★	8.7.2	Alterations to Electric Elevator & as modified in Section 5.2				
	8.7.5.2*2	★	8.7.3	Alterations to Hydraulic Elevator & as modified in Section 5.2				
	8.7.5.5	Power Sidewalk Elevators			Major	-		
	8.7.5.5.1	Changes in Electrical Wiring or Electrical Equipment			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
	8.7.5.5.2	Sidewalk Door			Major	-		
		5.5.1.11.2	Horizontal Openings in Sidewalks and Exterior Areas					
		5.5.1.11.3	Hinged Type Swing Sidewalk Doors					
		5.5.1.11.4	Vertical Lifting Sidewalk Covers					
	8.7.5.5.3	Change in Car Enclosure, Car Doors, and Gates			Major	-		
		5.5.1.14	Car Enclosure, Car Doors and Gates, Illumination					
	8.7.5.5.4	Bow-Irons and Stanchions			Major	-		
		5.5.1.15.2	Bow-Irons and Stanchions					
	8.7.5.5.5	Increase in Rated Load			Major	-		
		5.5.1.16	Capacity and Loading					
		5.5.1.18	Speed Governors					
		5.5.1.21	Buffers and Bumpers					
		5.5.1.25.4	Maximum Rated Speed					
	8.7.5.5.6	Increase in Rated Speed			Major	-		
		5.5.1.15	Car Frames and Platforms					
		5.5.1.16	Capacity and Loading					
		5.5.1.19	Suspension Ropes					
		5.5.1.22	Guide Rails					
	8.7.5.5.7	Existing Driving Machine			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
		5.5.1.9	Machinery and Sheave Beams, Supports, and Foundations					
		5.5.1.23	Driving Machines and Sheaves					
		5.5.1.25	Operating Devices and Control Equipment					
	8.7.5.5.8	Change in Type of Operating Devices and/or Control Equipment			Major	-		
		5.5.1.8	Equipment in Hoistways & Machine Rooms					
		5.5.1.25	Operating Devices and Control Equipment					
	8.7.5.6	Rooftop Elevators			Major	-		
		5.6.	Rooftop Elevators					
	8.7.5.7	Special Purpose Personnel Elevators			see CAN/CSA B311			

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.6.1	Alterations to Escalators						
	8.7.6.1.1	Change to component parts 8.6.12.4.1.1 Replacement parts or components 8.6.12.4.1.2 Quality of Work			mrr	-		mrr
	8.7.6.1.1	Addition of Components or Devices see applicable 8.7.6.1 requirements for that device			see 8.7.6.1			-
	8.7.6.1.2	Relocation of Escalator			New	-		
	ED CAD 15.(2)	★ Repositioning of Escalator (within the same building)			Major			
		6.1.	Escalators					
		6.1.3.3.11	Guard at ceiling intersection					
		6.1.3.3.12	Anti-Slide Devices					
		6.1.3.3.13	Deck Barricades					
		6.1.3.4.3	Guards					
		6.1.3.6.6	Floor Opening Protection Adjacent to Escalator Wellway					
		6.1.3.12	Headroom					
		6.1.6.9.1	Caution Signs					
		6.1.7.4.2	certification to B44.1 does not apply					
		6.1.3.6.5	number of flat steps does not apply					
	8.7.6.1.3	Protection of Floor Openings			Minor A	-		
		6.1.1.1	Protection Required					
	8.7.6.1.4	Protection of Trusses and Machinery Spaces Against Fire			Minor A	-		
		6.1.2.1	Protection Required					
	8.7.6.1.5	Construction Requirements						
	8.7.6.1.5(a)	Construction Requirements - Angle of Inclination			Major	-		
	8.7.6.1.5(b)	Construction Requirements - Geometry			Major	-		
		6.1.3.2	Geometry					
	8.7.6.1.5(c)	Any Alteration to the Balustrades			Minor A	Minor A		
		6.1.3.3	Balustrades					
		6.1.3.3.1	Construction					
		6.1.3.3.2	Strength					
		6.1.3.3.3	Use of Glass or Plastic					
		6.1.3.3.4	Interior Low Deck					
		6.1.3.3.5	Loaded Gap between Skirt & Step					
		6.1.3.3.6	Skirt Panels					
		6.1.3.3.7	Dynamic Skirt Panels					
		6.1.3.3.8	Dynamic Skirt Panel Loaded Gap					
		6.1.3.3.9	Step/Skirt Performance Index					
		6.1.3.3.10	Skirt Deflector Devices					
	8.7.6.1.5(d)	Deflector Devices			Minor B			mrr
		6.1.3.3.10	Skirt Deflector Devices					
	8.7.6.1.6	Handrails or Handrail System			Minor A	-		
		6.1.3.2.2	Geometry - Handrail					
		6.1.3.4.1	Handrails - Type Required					
		6.1.3.4.2	Extension Beyond Combplate					
		6.1.3.4.3	Guards (hand or finger)					
		6.1.3.4.4	Handrails - Splicing					
		6.1.3.4.6	Handrail Clearance					
		6.1.6.3.12	Handrail Entry Device					
		6.1.6.4	Handrail Speed Monitoring Device					
	8.7.6.1★1	★ Addition of Handrail Advertising			mrr	variance		
		Variance to 6.1.6.9.2, provide maintenance program						

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Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.6.1.7	Step System - any alteration to the step system			Major	-	mrr	Minor B	
		6.1.3.3.5 Loaded Gap Between Skirt & Step							
		6.1.3.5 (*) Steps							
		6.1.3.6 Entrance and Egress Ends							
		6.1.3.8 Step Wheel Tracks							
		6.1.3.9.4 Step							
		6.1.3.10.4 Factor of Safety - Steps							
		6.1.3.11 Chains							
		6.1.6.3.3 Broken Step-Chain Device							
		6.1.6.3.9 Step Upthrust Device							
		6.1.6.3.11 Step Level Device							
		6.1.6.3.14 Step Lateral Displacement Device							
		6.1.6.5 Missing Step Device							
	8.7.6.1.8	Complates			Minor A	-			
		6.1.6.3.13 Comb-Step Impact Devices							
	8.7.6.1.9	Trusses and Girders			Major	-			
		8.7.1.4 Welding - see Code Adoption Document							
		6.1.3.7 Trusses of Girders							
		6.1.3.9.1 Structural Load							
		6.1.3.10.1 Factor of Safety - Trusses and Supporting Structures							
	8.7.6.1.9	New Escalator into Existing Trusses			New	-			
		6.1. Escalators							
	8.7.6.1.10	Step Wheel Tracks			Major	-			
		6.1.3.8 Step Wheel Tracks							
		6.1.3.9.4 Step							
		6.1.3.10.1 Factor of Safety - Trusses and Supporting Structures							
		8.7.1.4 Welding - see Code Adoption Document							
	8.7.6.1.11	Rated Load and Speed			Major	-			
		6.1. Escalators							
	8.7.6.1.12	Driving Machine, Motor, and Brake							
	8.7.6.1.12(a)	Driving Machine			Major	-			
		6.1.3.9.2 Machinery							
		6.1.3.10.3 Factor of Safety - Power Transmission Parts							
		6.1.4.1 Limits of Speed							
		6.1.5.1 Connection Between Driving Machine and Main Drive Shaft							
		6.1.5.2 Driving Motor							
		6.1.5.3.1 Escalator Driving-Machine Brake							
		6.1.5.3.2 Main Drive Shaft Brake							
		6.1.6.3.4 Broken Drive-Chain Device							
		6.1.6.3.8 reversal Stop Device							
	8.7.6.1.12(b)	Driving Motor			Major	-			
		6.1.3.9.2 Machinery							
		6.1.3.10.3 Factor of Safety - Power Transmission Parts							
		6.1.4.1 Limits of Speed							
		6.1.5.2 Driving Motor							
		6.1.5.3.1 Escalator Driving-Machine Brake							
		6.1.5.3.2 Main Drive Shaft Brake							
		6.1.6.3.2 Speed Governor							
		6.1.6.3.8 reversal Stop Device							
		6.1.6.3.10 Disconnected Motor Safety Device							
	8.7.6.1.12(c)	Machine Brake			Major	-			
		6.1.3.9.3 Brake							
		6.1.3.10.2 Factor of Safety - Driving Machine Parts							
		6.1.5.3.1 Escalator Driving-Machine Brake							

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		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.6.1.13	Operating and Safety Devices			Minor A	Minor A			
		6.1.6	Operating and Safety Devices (for that device)						
	8.7.6.1★2	★	Removal of step demarcation lights		Minor A	-		-	
		6.1.3.3.5	Loaded Gap Between Skirt & Step						
		6.1.3.5.4	Clearance between Steps						
		6.1.3.5.5	Slotting of Steps and Treads						
		6.1.3.5.6	Step Demarcation						
		6.1.3.6.2	Distinction Between Comb and Step						
	8.7.6.1.14	Lighting, Access, and Electrical Work			Minor B	Minor B			
		6.1.7	Lighting, Access, and Electrical Work						
	8.7.6.1.15	Entrance and Egress			Major	-			
		6.1.3.6.1	Combplates						
		6.1.3.6.2	Distinction Between Comb and Step						
		6.1.3.6.3	Adjacent Floor Surfaces						
		6.1.3.6.4	Safety Zone						
	8.7.6.1.16	Controller - Installed as part of an alteration			Major	-		-	
		6.1.6.10	Control and Operating Circuits						
		6.1.6.11	Electrically Power Safety Devices						
		6.1.6.12	Installation of Capacitors.. To Make EPD's Ineffective						
		6.1.6.13	Completion of Maintenance Circuits						
		6.1.6.14	Escalator Manual Reset						
		6.1.6.15	Contractors and Relays for Use in Critical Operating Circuits						
	8.7.6.1★3	★	Controller - Replacement of		-	-		Major	
		8.7.6.1.16	Controller						
	8.7.6.1★4		Relocation of Controller (if control wiring disconnected - reconnected)		Major				
		2.8.2	Electrical Equipment and Wiring						
			Electrical testing as per the original design submission tests						
	8.7.6.1★5	★	Addition of Soft start		-	Minor A			
			for control systems built to B44-00 and later						
		6.1.7.4	Electrical Equipment and Wiring						
		6.1.6.10.1	Occurrence of a single ground						
		6.1.6.10.2	Redundancy to be checked						
		6.1.6.10.3	Motors with Static control						
			for control systems built prior to B44-00						
		6.1.7.4	Electrical Equipment and Wiring						

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.6.2	Alterations to Moving Walks						
	8.7.6.2.1	Change to component parts 8.6.12.4.1.1 Replacement parts or components 8.6.12.4.1.2 Quality of Work			mrr	-	mrr	
	8.7.6.2.1	Addition of Components or Devices see applicable 8.7.6.2 requirements for that device			see 8.7.6.2		-	
	8.7.6.2.2	Relocation of Moving Walk			New	-		
	6.2.	Moving Walks						
	8.7.6.2.3	Protection of Floor Openings			Minor A	-		
	6.2.1.1	Protection Required						
	8.7.6.2.4	Protection of Trusses and Machinery Spaces Against Fire			Minor A	-		
	6.2.2.1	Protection of Supports - Protection Required						
	8.7.6.2.5	Construction Requirements - Angle of Inclination			Major	-		
	6.2.	Moving Walks						
	8.7.6.2.5	Construction Requirements - Geometry			Major	-		
	6.2.3.2	Geometry						
	8.7.6.2.5	Construction Requirements - Balustrades			Minor A	Minor A		
	6.2.3.3	Balustrades						
	8.7.6.2.6	Handrails			Minor A	-		
	6.2.3.2.3	Geometry - Handrail						
	6.2.3.4	Handrails						
	6.2.6.3.10	Handrail Entry Device						
	6.2.6.4	Handrail Speed Monitoring Device						
	8.7.6.2.7	Treadway System			Major	-		
	6.2.3.2.3	Geometry - Handrail						
	6.2.3.3.5	Skirtless Balustrade						
	6.2.3.3.6	Skirt Panels						
	6.2.3.5	Pallet-Type Treadway						
	6.2.3.6(*)	Belt-Type Treadway						
	6.2.3.8	Entrance and Egress Ends						
	6.2.3.9	Supporting Structure						
	6.2.3.10	Rated Load						
	6.2.3.11	Design Factors of Safety						
	6.2.3.12.4	Pallet Factor of Safety						
	6.2.3.12.5	Belt Factor of Safety						
	6.2.3.13	Chain Drives						
	6.2.6.3.3	Broken Treadway Device						
	6.2.6.5	Missing Pallet Device						
	6.2.6.3.9	Pallet Level Device						
	8.7.6.2.8	Complates			Minor A	-		
	6.2.3.8	Entrance and Egress Ends						
	6.2.6.3.11	Comb-Pallet Impact Devices						
	8.7.6.2.9	Trusses and Girders			Major	-		
	8.7.1.4	Welding - see Code Adoption Document						
	6.2.3.9	Supporting Structure						
	6.2.3.10.1	Structural Load						
	6.2.3.12.1	Trusses & Supports based on max static load						
	8.7.6.2.9	New Moving Walk into Existing Truss			New	-		
	6.2.	Moving Walks						
	8.7.6.2.10	Track System			Major	-		
	6.2.3.9	Supporting Structure						
	6.2.3.10	Rated Load						
	6.2.3.11.1	Trusses & Supports based on max static load						
	8.7.1.4	Welding - see Code Adoption Document						

0	1	2a	2b	2c	3	4	5	6	
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1			Type of Alteration Work				
		Scope of Alteration - B44 - 2007			Alteration		Replacement with		
		Part, Section or Requirement			Modification Change	Addition	Same	Different Make/Model	
		Job Reference:			Type of Submission Required				
	8.7.6.2.11	Rated Load and Speed			Major	-			
		6.2. Moving Walks							
	8.7.6.2.12	Driving Machine			Major	-			
		6.2.3.10.2 Machinery Load							
		6.2.3.11.2 Factor of Safety for Drive Machine Parts							
		6.2.3.11.3 Factor of Safety for Power Transmission members							
		6.2.3.13 Chain Drives							
		6.2.3.14 V-Belt Drives							
		6.2.3.15 Headroom							
		6.2.4 Rated Speed							
		6.2.5.1 Connection Between Driving Machine and Main Drive Shaft							
		6.2.5.3.1 Moving Walk Driving-Machine Brakes							
		6.2.5.3.2 Main Drive Shaft Brake							
		6.2.6.3.4 Broken Drive-Chain Device							
		6.2.6.3.8 Disconnected Motor Safety Device							
	8.7.6.2.12	Drive Motor			Major	-			
		6.2.3.10.2 Machinery Load							
		6.2.3.11.2 Factor of Safety for Drive Machine Parts							
		6.2.3.11.3 Factor of Safety for Power Transmission members							
		6.2.4 Rated Speed							
		6.2.5.2 Driving Motor							
		6.2.5.3.1 Moving Walk Driving-Machine Brakes							
		6.2.6.3.2 Speed Governor							
		6.2.6.3.7 Reversal Stop Device							
		6.2.6.3.8 Disconnected Motor Safety Device							
	8.7.6.2.12	Machine Brake			Major	-			
		6.2.3.10.3 Brake							
		6.2.3.11.2 Factor of Safety for Drive Machine Parts							
		6.2.3.11.3 Factor of Safety for Power Transmission members							
		6.2.5.3.1 Moving Walk Driving-Machine Brakes							
		6.2.5.3.2 Main Drive Shaft Brake							
	8.7.6.2.13	Operating and Safety Devices			Minor A	Minor A			
		6.2.6 Operating and Safety Devices (for that device)							
	8.7.6.2.14	Lighting, Access, and Electrical Work			Minor B	Minor B			
		6.2.7 Lighting, Access, and Electrical Work							
	8.7.6.2.15	Controller - Installed as part of an alteration			Major	-		-	
		6.2.6.9 Control and Operating Circuits							
		6.2.6.10 Electrically Power Safety Devices							
		6.2.6.11 Installation of Capacitors.. To Make EPD's Ineffective							
		6.2.6.12 Completion of Maintenance Circuits							
		6.2.6.13 Moving Walk Manual Reset							
		6.2.6.14 Contractors and Relays for Use in Critical Operating Circuits							
	8.7.6.2★1	★ Controller - Replacement of			-	-		Major	
		8.7.6.1.16 Controller							
	8.7.6.2★2	Relocation of	Controller (if control wiring disconnected - reconnected)		Major				
		2.8.2 Electrical Equipment and Wiring							
			Electrical testing as per the original design submission tests						
	8.7.6.2★3	★ Addition of Soft start			-	Minor A			
		for control systems built to B44-00 and later							
		6.1.7.4 Electrical Equipment and Wiring							
		6.1.6.10.1 Occurrence of a single ground							
		6.1.6.10.2 Redundancy to be checked							
		6.1.6.10.3 Motors with Static control							
		for control systems built prior to B44-00							
		6.1.7.4 Electrical Equipment and Wiring							

0	1	2a	2b	2c	3	4	5	6
Conforms to B44 Mark with 'X'	B44-07 Reference Number	Alteration Checklist for Director's Order 226 / 07-r1 Scope of Alteration - B44 - 2007 Part, Section or Requirement Job Reference:			Type of Alteration Work			
					Alteration		Replacement with	
					Modification Change	Addition	Same	Different Make/Model
					Type of Submission Required			
	8.7.7	Alterations to Dumbwaiters and Material Lifts						
	8.7.7.1	Dumbwaiters and Material Lifts Without Automatic Transfer Devices			Major	-		
		Alteration to a Power and Hand Dumbwaiters			Major	-		
		7.1.	Power and Hand Dumbwaiters					
		7.2.	Electric and Hand Dumbwaiters					
		7.3.	Hydraulic Dumbwaiters					
		Alteration to a Material Lifts			Major	-		
		7.4.	Material Lifts					
		7.5.	Electric Material Lifts					
		7.6.	Hydraulic Material Lifts					
	8.7.7.1.1	General Alterations other than 8.7.7.1.2			Major	-		
		Part 7	Dumbwaiters and Material Lifts					
	8.7.7.1.2	Increase in Rated Load			Major	-		
		7.2.(*)	Electric and Hand Dumbwaiters w/o Transfer Devices					
		7.3.(*)	Hydraulic Dumbwaiters w/o Transfer Devices					
		7.4.	Material Lifts					
		7.5.	Electric Material Lifts					
		7.6.	Hydraulic Material Lifts					
	8.7.7.2	Addition of Automatic Transfer Device			Major	-		
		Part 2	Electric Elevators					
		Part 3	Hydraulic Elevators					
	8.7.7.3.1	Material Lifts and Dumbwaiters With Automatic Transfer Devices			N/A	N/A		
		exempt if requirements of CAD 2.3(j) are met						
	8.7.7.3.2	Material Lifts and Dumbwaiters - remove Transfer Device			New	-		
		7.1. to 7.3.	for Dumbwaiters					
		7.4. to 7.6	Material Lifts w/o Transfer Devices					
	8.7.7.3.3	Material Lifts altered to an Elevator			New	-		
		Part 2	Electric Elevators					
		Part 3	Hydraulic Elevators					
	8.7.7.3.4	Material Lift or Dumbwaiter w/ Transfer Device Altered to a D/W			New	-		
		7.1.	Power and Hand Dumbwaiters w/Auto Transfer Devices					
		7.2.	Electric and Hand Dumbwaiters w/o Transfer Devices					
		7.3.	Hydraulic Dumbwaiters w/o Transfer Devices					
	225/07	Alterations to Freight Platform Lifts						
	225/07	★ Alteration to a Type 'A' Freight Platform Lift			Major	-		
		7.4.	as applicable to Material Lifts Type 'B' +					
		7.5.	as applicable to Material Lifts Type 'B' +					
		7.6.	as applicable to Material Lifts Type 'B' +					
		+ excluding requirements related to in-car operating devices & Riders						
	225/07	★ Alteration to a Type 'B' Freight Platform Lift			Major	-		
		7.4.	as applicable to Material Lifts Type 'B'					
		7.5.	as applicable to Material Lifts Type 'B'					
		7.6.	as applicable to Material Lifts Type 'B'					



Elevating and Amusement Devices Safety Division	Ref. No.: 227 / 07	Rev. No.:
Information / Interpretation Bulletin	Date: July 3, 2007	Date:

Subject: Replacement of ThyssenKrupp Traction Sheave Brake or Sheave Jammer in relation to Director's Safety Order 207/06 revision 1 (December 5,2006)

Sent to: All elevating device contractors, consultants and mechanics

1.0 Introduction

- a) This bulletin is intended to remind all contractors and maintenance personnel, of the requirements to replace all ThyssenKrupp Northern Elevator sheave brakes (sheave jammer) **no later than August 1, 2007** as per Director's Safety Order 207/06 revision 1. It is also intended to advise industry members and owners of the process to follow in the event that they are unable to meet the **August 1, 2007 deadline** due to back ordered replacement devices.
- b) Contractors and Owners are reminded that devices which are not in compliance with Directors' Safety Order 207/06 rev. 1 **OR** have not applied for a variance as detailed in Section 2.0 below by **August 1st 2007**, must remove their elevating device(s) from service.

2.0 Variance Application - Instructions to Owners and or Contractors

Owners or contractors who have a signed contract or purchase order for the replacement of the sheave jammer may apply to the Director for a variance in which they may request an extension to the deadline. The application for variance shall include the following:

- a) A completed and signed Variance Application form. The application must indicate why the August 1st, 2007 deadline cannot be met as well as the date the equipment is expected to be received and the date by which it will be installed and fully operational. Given the original deadline has not been met, it is expected that the completion date shown on the variance application will be as soon as possible after the equipment is received. Copies of the Application for Variance are available on the TSSA website:
<http://www.tssa.org/regulated/elevating/elevatingForms.asp>
- b) A copy of the purchase order or contract between the owner and elevator contractor. Pricing may be deleted or blacked out.
- c) A copy of the "Traction Sheave Brake (Sheave Jammer) Maintenance Log" (page 8 of Director's Safety Order 192/05 rev. 2) with the result of no less than last two quarterly tests with pass results (requirement 2.5 of Director's Safety Order 192/05) showing the current sheave jammer is being maintained to optimum levels, to provide mitigation of hazards while the replacement order is delayed.

- d) A statement from the owner and the maintaining contractor indicating that they will continue to conduct quarterly testing and monthly maintenance of the existing sheave jammer as required by in Director's Safety Order 192/05 rev. 2 until such time as all requirements of Director's Safety Order 207/06 rev. 1 have been met.

3.0 Prior to Completion of Work

Contractors are reminded that prior to requesting an on site inspection for the replacement of the sheave jammer, the contractor is required to:

- a) submit a Minor A Alteration to TSSA not later than 10 working days, and arrange for a "special inspection" to be carried out not later than 60 days after, for a performance test in the presence of a TSSA.
- b) include in the minor A submission those items listed in Section 2.2 of Director's Safety Order 207/06 rev. 1

Archive
Compliance Past Due

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Elevating and Amusement Devices Safety Division	Ref. No.: 228 / 07	Rev. No.:
Enforcement Procedure Bulletin	Date: October 1, 2007	Date:

Subject: TSSA Enforcement Procedure and Minimum Requirements for Activation of Firefighters' Emergency Operation (FEO) on Elevators subjected to an Alteration
Sent to: Elevator Contractors, Mechanics and Inspectors

1. INTRODUCTION

An increasing number of elevator installations are being altered in existing buildings and in many cases include an upgrade to current code requirements for Firefighters' Emergency Operation. The following procedure has been prepared to provide guidance to elevator inspectors when completing inspections **on altered installations where activation of FEO is through various fire alarm initiating devices (FAID's) connected to the building fire alarm system** and to inform contractors and mechanics of the minimum requirements for these types of installations.

This enforcement procedure is only to be used when performing an inspection on an alteration to an existing elevating device.

* See Appendix A for Definitions of terms used in this Bulletin.

2. ISSUE

When completing initial inspections on altered devices inspectors are finding various fire alarm initiating devices (FAID) hooked up to the fire alarm system. Section 2.27.3.2.2(a) of CSA B44 Safety Code for Elevators stipulates that automatic recall shall activate if initiated by a smoke detector or the building fire alarm system.

The confusion is in the text that states **or the building fire alarm system**, this interpretation will help to create consistency on alteration inspections.

3. INTERPRETATION & ENFORCEMENT

The following must be met in order to have **automatic recall**:

- If the building is equipped with a sprinkler system on every floor;
 - it is acceptable to allow the buildings fire system pressure switch to recall the elevators,
 - the buildings fire system pressure shall be tested at the time of inspection.
- If the machine room has a sprinkler;
 - a smoke detector must be provided as per the CSA B44 code.
- If the building is equipped with hall pull stations at every floor;
 - there must as a minimum be a smoke detector at the main floor that will send the elevator to the alternate recall level.
 - **the pull station at the main recall level, although part of the building fire alarm system shall not recall the elevators.**

Note: FEO testing will be per the applicable FEO checklist.

The inspector must keep in mind that a combination of the above mentioned may be encountered. There are currently proposed changes before the code committee that will stipulate that every floor must have a dedicated smoke detector or heat detector where the environment is not suitable for smoke detectors.

4. RATIONALE

This enforcement procedure will eliminate the possibility of the elevator being recalled to the designated landing by a pull station at the designated landing in the event that the designated landing is the fire floor and cause the elevator to recall to an alternate level as a result of dedicated smoke detector.

To ensure that initiation of Phase 1 operation is by automatic means and that pull-stations are not used at the designated landing on existing buildings. Pull stations are not deemed to be fire detectors.

5. EFFECTIVE DATE

This enforcement procedure is effective immediately.

**Rob Kremer, Engineering Manager
EDAD Program**

**Roger Neate, Operations Manager
EDAD Program**

This Bulletin has been developed in consultation with the Elevating Devices Advisory Council and the Field Advisory Committee.

APPENDIX – A

Definitions and references

CSA B44-04 Requirement 2.27.3.2.2

In jurisdictions enforcing the NBCC, automatic Emergency Recall Operation shall be permitted when the following devices, complying with the requirements in the NBCC, initiate the operation:

- (a) smoke detectors installed in each elevator lobby, or the building fire alarm system
- (b) smoke detectors installed in the elevator lobby at the designated level, if that floor area is not sprinklered throughout
- (c) smoke detectors installed in the machine room if the machine room is sprinklered

Fire Alarm Initiating Devices are referred to as fire detectors in the National Building Code of Canada (NBCC). *Fire detector* means a device that detects a fire condition and automatically initiates an electrical signal to actuate an *alert signal* or *alarm signal* and includes *heat detectors* and *smoke detectors*.

Ontario Building Code

3.2.4.14. Elevator Emergency Return

- (1) Except as permitted by Sentence (3), in a *building* having elevators that serve *storeys* above the *first storey* and that are equipped with an automatic emergency recall feature, *smoke detectors* shall be installed in the elevator lobbies on the recall level so that when these *smoke detectors* are actuated, the elevators will automatically return directly to an alternate floor level.
- (2) *Smoke detectors* required by Sentence (1) shall be designed as part of the *building* fire alarm system.

3.2.6.8. Emergency Operation of Elevators

- (5) Automatic emergency recall operation shall be provided for all elevators serving *storeys* above the *first storey* in unsprinklered *buildings*.



Elevating and Amusement Devices Safety Division	Ref. No.: 228 / 07	Rev. No.: 1
Enforcement Procedure Bulletin	Date: October 1, 2007	Date: December 22, 2008

Subject: TSSA Enforcement Procedure and Minimum Requirements for Activation of Firefighters' Emergency Operation (FEO) on **Elevators subjected to an Alteration**
Sent to: Elevator Contractors, Mechanics and Inspectors

1. INTRODUCTION

An increasing number of elevator installations are being altered in existing buildings and in many cases include requirements related to Firefighters' Emergency Operation. The following enforcement procedure has been prepared to provide guidance to contractors, consultants, mechanics and elevator inspectors when FEO is being added or altered.

2. CODE ADOPTION DOCUMENT (CAD) REQUIREMENTS

The requirements for Firefighter's Emergency Operation (section 2.27.3 of B44-07) have been amended by ED CAD Amendment Document 225/07.

CAD 2.27.3 requires **automatic recall** on all newly installed automatic elevators, regardless of building height. B44 section 8.7 Alterations, requires compliance with 2.27.3 (see CAD 2.27.3) when specific alterations are undertaken.

The interpretation and enforcement information contained in this document and the provisions in ED CAD Amendment Document 225/07 and in Director's Order 226/07 are all intended to explain the requirements for altered installations where FEO is a sub-requirement of a selected alteration. (example: 2.27.3 is a sub-requirement of Alteration 8.7.2.27.4).

If the intent is to provide a fully compliant FEO installation, like that required for a new installation, the alteration scope should reference 8.7.2.28 for electric elevators or 8.7.3.31.8(c) for hydraulic elevators – in which case this enforcement procedure bulletin is not applicable.

If the alteration is to an installation originally installed under B44-07 or later this enforcement procedure bulletin is not applicable.

3. INTERPRETATION & ENFORCEMENT

It is not the intent that existing buildings, modernized under the alteration requirements of B44 section 8.7, have their building fire alarm systems fully upgraded to meet the latest design requirements for new elevators. However, some conditions apply.

For **High buildings** ♦ see Table 3.1 (below), which illustrates the FEO initiation requirements before and after an FEO-related alteration.

For **other buildings** * see subsection 3.2 *Other Buildings* (below), which specifies the minimum requirements for an FEO-related alteration.

3.1 For High Buildings per the Ontario Building Code (OBC)

OBC High Building					
	The Recall Method Prior to Alteration⁵		➔	The Recall Method After Alteration⁴	
Unsprinklered	Manual Recall Only	- NOT PERMITTED		Manual Recall Only	- NOT PERMITTED
	Auto Recall by SD's or BFAS (Recall by PS	- REQUIRED - permitted) ^{1,6}		Auto Recall by SD's or BFAS (Recall by PS	- REQUIRED - see notes) ^{1,2,6}
	Alternate Level SD at Recall Level	- REQUIRED - REQUIRED ⁷		Alternate Level SD at Recall Level	- REQUIRED - REQUIRED ⁷
Sprinklered	Manual Recall	- REQUIRED		Manual Recall	- REQUIRED
	Auto Recall by SD's Auto Recall by BFAS	- permitted ³ - permitted ³		Auto Recall by SD's Auto Recall BFAS	- permitted - permitted
	(Recall by PS	- permitted) ^{1,6}		(Recall by PS	- see notes) ^{1,2,6}

Table 3.1

SD Smoke Detectors

BFAS Building Fire Alarm System - per OBC BFAS must include SD's - includes manual pull stations

PS Pull Stations

¹ Pull Stations² are part of the BFAS, and can therefore initiate recall

² Not permitted for new installations or alterations to devices **ORIGINALLY** installed to B44-07 or later

³ Not required by OBC

⁴ There is no intention to force existing buildings to install a BFAS or SD's in order to meet the full requirements of 2.27.3 of B44-07 (full auto-recall)

⁵ These elevating devices were installed to an edition of B44 prior to B44-07

⁶ Activation of this device will cause the elevator to recall to the Recall Level

⁷ Activation of this device will cause the elevator to recall to the Alternate Level

3.2 *For Other Buildings (*Buildings that are not covered by the OBC High Building Designation)

For buildings where the OBC did not impose requirements for a building fire alarm system or for low buildings with elevator equipment installed prior to the B44-07 code, Firefighter's Emergency Operation (FEO) or equivalent was not mandatory. **In these cases, the addition of FEO during an alteration is voluntary.**

The addition of FEO (as a sub-requirement of a selected alteration) shall conform to **CAD 2.27.3 with the following exceptions:**

- Manual recall is permitted.
- Phase 1 Recall without Phase 2 In-Car Operation is permitted.
- The use of pull stations to initiate recall is permitted, provided all the requirements in **Table 3.1** for high buildings are met.
- Automatic Recall initiated by Fire Alarm Initiating Devices (FAIDs) dedicated solely to elevator recall can be provided as a means to initiate automatic recall. A full BFAS is not necessary.
- Under no circumstances shall the method of recall be diminished below what was provided at the time of the original installation or any subsequent enhancement to the method of recall if the method was upgraded.

3.3 Additional Information

The following points are applicable to **automatic recall**:

- If the building is equipped with a sprinkler system on every floor;
 - it is acceptable to allow the building's fire system pressure switch to recall the elevators.
- If the machine room has a sprinkler;
 - a smoke detector must be provided (see CSA B44 code).

Note: FEO testing will be per the applicable FEO checklist.

4. RATIONALE

While the latest edition of the B44 Safety Code for Elevators expands on previous FEO requirements for new installations, existing buildings and their elevator systems may not be capable of meeting today's requirements without significant building upgrades. So, while it is not the intent to require an FEO system that is equivalent to a new installation, any alteration involving an FEO upgrade must meet the requirements of 3.1 or 3.2 as appropriate. The purpose of this enforcement procedure is to provide guidance when FEO is being added or altered.

If the pull station in an unsprinklered building located at the designated level (main recall floor) can cause the elevator to recall (to the main recall floor), this enforcement procedure highlights the requirements to provide a dedicated smoke detector at the designated level (main recall floor) which will force the elevator to recall to an alternate level (alternate recall floor).

Also recognized is the need on occasion to provide at least a minimum level of protection, such as the addition of phase 1 only. This will ensure elevators are recalled and thus excluded from use during a fire emergency.

5. EFFECTIVE DATE

This enforcement procedure is effective immediately.

**Rob Kremer, Engineering Manager
EDAD Program**

**Roger Neate, Operations Manager
EDAD Program**

This Bulletin has been developed in consultation with the Elevating Devices Advisory Council and the Field Advisory Committee.

APPENDIX – A

Definitions and references

CSA B44-04 Requirement 2.27.3.2.2

In jurisdictions enforcing the NBCC, automatic Emergency Recall Operation shall be permitted when the following devices, complying with the requirements in the NBCC, initiate the operation:

- (a) smoke detectors installed in each elevator lobby, or the building fire alarm system
- (b) smoke detectors installed in the elevator lobby at the designated level, if that floor area is not sprinklered throughout
- (c) smoke detectors installed in the machine room if the machine room is sprinklered

Fire Alarm Initiating Devices are referred to as fire detectors in the National Building Code of Canada (NBCC). *Fire detector* means a device that detects a fire condition and automatically initiates an electrical signal to actuate an *alert signal* or *alarm signal* and includes *heat detectors* and *smoke detectors*.

Ontario Building Code (97)

3.2.4.14. Elevator Emergency Return

- (1) Except as permitted by Sentence (3), in a *building* having elevators that serve *storeys* above the *first storey* and that are equipped with an automatic emergency recall feature, *smoke detectors* shall be installed in the elevator lobbies on the recall level so that when these *smoke detectors* are actuated, the elevators will automatically return directly to an alternate floor level.
- (2) *Smoke detectors* required by Sentence (1) shall be designed as part of the *building* fire alarm system.
- (3) The alternate floor recall feature required by Sentence (1) is not required if the *floor area* containing the recall level is *sprinklered*.

◇3.2.6. Additional Requirements for High Buildings

3.2.6.1. Application

- (1) This Subsection applies to a building
 - (a) of Group A, D, E or F major occupancy classification that is more than
 - (i) 36 m high, measured between grade and the floor level of the top storey, or
 - (ii) 18 m high, measured between grade and the floor level of the top storey, and in which the cumulative or total occupant load on or above any storey above grade, other than the first storey, divided by 1.8 times the width in metres of all exit stairs at that storey, exceeds 300,
 - (b) containing a Group B major occupancy in which the floor level of the highest storey of that major occupancy is more than 18 m above grade,
 - (c) containing a floor area or part of a floor area located above the third storey designed or intended As a Group B, Division 2 or 3 occupancy, and
 - (d) containing a Group C major occupancy whose floor level is more than 18 m above grade.

3.2.6.8. Emergency Operation of Elevators

- (1) Manual emergency recall shall be provided for all elevators serving *storeys* above the *first storey*.
- (5) Automatic emergency recall operation shall be provided for all elevators serving *storeys* above the *first storey* in unsprinklered *buildings*.
- (6) The automatic emergency recall feature in Sentence (5) shall be actuated by
 - (a) *smoke detectors* installed in each elevator lobby on each storey, or
 - (b) the *building* fire alarm system.
- (7) *Smoke detectors* in Sentence (6) shall be designed as part of the *building* fire alarm system.



Elevating and Amusement Devices Safety Division	Ref. No.: 229/07	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: October 10, 2007	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT* 2000,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the *Technical Standards and Safety Act* 2000**

Subject: Required changes to unloading areas of chair lifts for the 2007/08 season
Sent to: All Chair Lift Owners / Operators

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under the *Technical Standards & Safety Act* 2000 hereby orders the following:

1. ORDER

- 1.1. Prior to operating for the 2007/2008 season, all owners of chair lifts will remove all "Prepare to Unload" sign(s) from the lift towers, structures or terminals.
- 1.2. Prior to operating for the 2007/2008 season, all owners of chair lifts shall relocate the "Raise Restraining Device" sign and install an additional sign as follows:
- a) The "Raise Restraining Device" sign (with pictogram) shall be removed from its current location, and relocated to the "Lift Bar Point". A new sign shall be mounted directly underneath the "Raise Restraining Device" sign that conveys the message "Raise Bar Here" and includes an arrow pointing to the "Lift Bar Point". See Figure 1.
 - b) The signs shall be installed along the unloading path, just before the unloading terminal. These signs shall be in compliance with CSA Z98-01, Section 3.32. Note that the location of the sign along the unloading path is different for fixed and detachable lifts.
 - c) The signs shall be placed in clear view of the chair occupants at approximate eye level to the average rider and be free of obstructions. The signs can be mounted to the right or left of the lift path, and the Resort has the option to put two new signs, one on each side of the path if preferred. The yellow and red "New" sign as shown in Figure 1 below is optional.
 - d) Where a "Raise Restraining Device" sign was not already present, or is illegible due to damage or age, a new sign shall be installed at the "Lift Bar Point".

Fixed Grips – "Lift Bar Point"

- e) The location of the "Lift Bar Point" is determined by the horizontal distance based on time, in seconds from the actual unloading point.

To calculate location for sign placement: determine location of the “unloading point” and measure back to the “Lift Bar Point”, a distance of “A” metres. (See Figure 2 / Table 1)

Distance “A” (metres) = Lift speed (metre/second) x 4 seconds

The height of the sign is dependent on the height of the chair at the “Lift Bar Point”. The sign shall be placed in clear view of the chair occupants at approximate eye level to the average rider.

Dimensions are shown in Figure 2 below, with acceptable maximum and minimum values listed in Table 1.

Detachable Grips – “Lift Bar Point”

- f) The sign(s) shall be placed at the entrance to the unloading terminal.

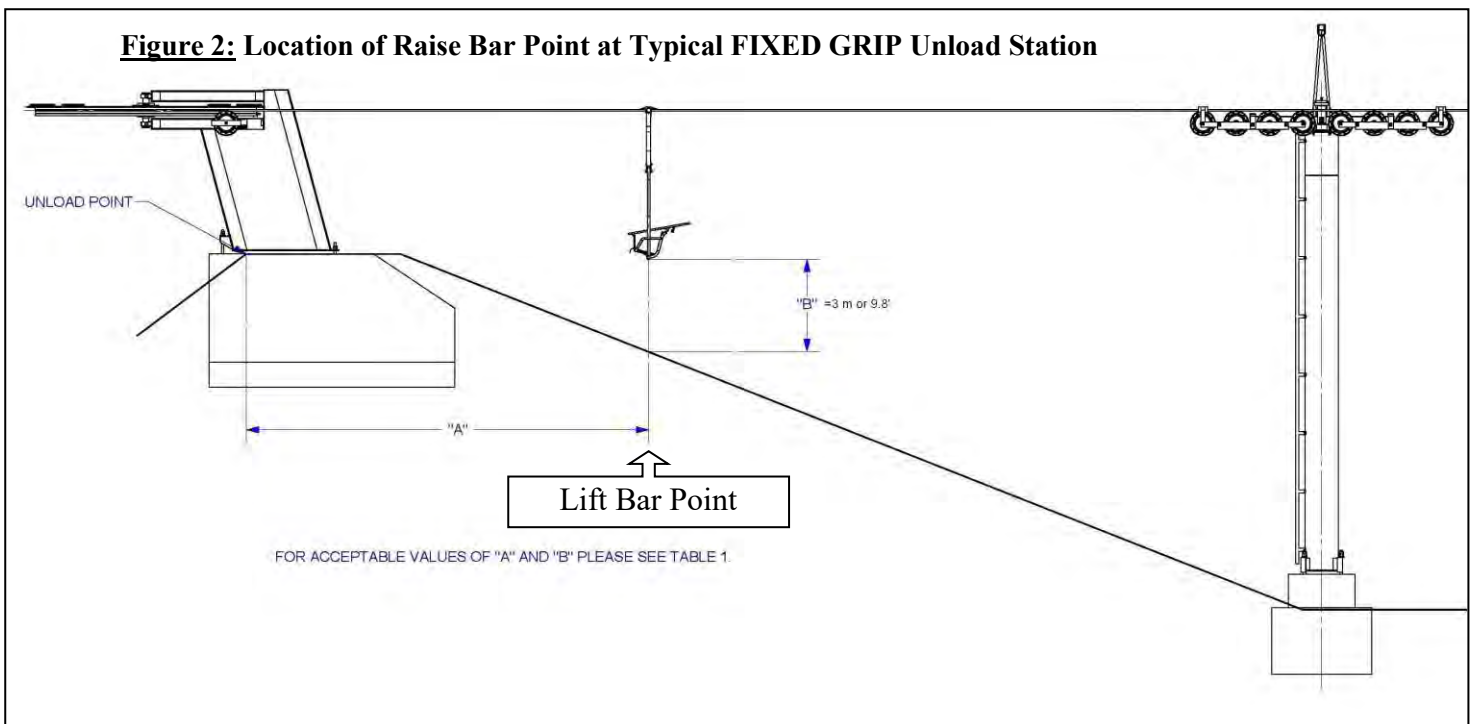


Table 1
Minimum & Maximum Values of “A” and “B” Based on Lift Speed

LIFT SPEED (m/s)	LIFT SPEED (fpm)	REQUIRED MINIMUM		RECOMMENDED MAXIMUM	
		Horizontal distance 'A' (metres) to SIGN	Horizontal distance 'A' (feet) to SIGN	Vertical distance 'B' (metres)	Vertical distance 'B' (feet)
1.5	295.3	6.0	19.7	3.0	9.8
1.6	315.0	6.4	21.0	3.0	9.8
1.7	334.6	6.8	22.3	3.0	9.8
1.8	354.3	7.2	23.6	3.0	9.8
1.9	374.0	7.6	24.9	3.0	9.8
2.0	393.7	8.0	26.2	3.0	9.8
2.1	413.4	8.4	27.6	3.0	9.8
2.2	433.1	8.8	28.9	3.0	9.8
2.3	452.8	9.2	30.2	3.0	9.8
2.4	472.4	9.6	31.5	3.0	9.8
2.5	492.1	10.0	32.8	3.0	9.8
2.6	511.8	10.4	34.1	3.0	9.8
2.7	531.5	10.8	35.4	3.0	9.8
2.8	551.2	11.2	36.7	3.0	9.8

- 1.3. Ongoing observation and feedback from the ski industry is critical to a successful drive toward zero falls. To monitor the effects of changes to the unloading area, at least three times during the 2007/2008 season, all owners of chair lifts shall report information as follows:
- a) Ski resort operators shall observe a minimum of **100 unloads** from each chairlift, at three separate times during the ski season and record on the available form the distance patrons are raising the restraining device prior to the UNLOAD Point.
 - b) Complete one form and provide the results of the 100 unload observations for each chair lift during each of the following time frames:
 - Christmas Break: December 26 to January 1
 - Mid Season: February 1 to 5
 - March Break: March 10 to 14
 - c) The required form for data collection will be available in downloadable format from the website by October 31st, 2007. This information shall be submitted to TSSA by e-mailing to zerofalls@tssa.org or faxing to 416-231-7525 within 14 days of the corresponding week’s end: January 15th, February 19th and March 28th respectively.

1.4. Variances

If any directions contained within this Order cannot be met, a variance application must be submitted. The variance shall be submitted in a form acceptable to the Director, and shall detail the reasons why compliance is not possible, and shall detail the alternative means of improvement that will be implemented.

<http://www.tssa.org/regulated/ski/skiForms.asp>

Note: Photographs submitted with variance applications must be sent as attachments to an email, sent in paper copy or on a compact disc via regular post. A facsimile of a photograph does not yield a useful image.

Note: Section 37 of the Act provides that “every person who fails to comply with an order; is guilty of an offence and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both, if the person is a body corporate, to a fine of not more than \$1,000,000.

Roland Hadaller P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*,

This Director's Order has been developed in consultation with the Ontario Snow Resorts Association.

2. BACKGROUND

On January 4, 2007, two small children fell out of different chair lifts on the same day. TSSA investigated these incidents and formed a Risk Reduction Group (RRG) to investigate and provide recommendations.

Data collection is showing that for many patrons, the 'Prepare to Unload' (PTU) sign is synonymous with "Lift Bar" and because the PTU sign is most commonly mounted on the last tower before the unloading terminal, patrons are lifting the bar far before it is necessary and often at excessive heights. Evidence is suggesting that regardless of the individual interpretation, the PTU sign has become a trigger to lift the restraining device despite the terrain or height of the chair.

3. INTRODUCTION

The RRG was formed in January of 2007 and consisted of ski industry representatives, the TSSA, manufacturers, and industry consulting engineers. The required changes defined in this bulletin are due in part to feedback received from the ski industry and the data obtained from the questionnaires distributed with Safety Alert Bulletin 221/07. Changes defined herein do not define an all-encompassing solution to the issue of children falling from chair lifts, but instead, comprise the beginning of an iterative and ongoing process.

The RRG has defined four separate and equally important focus areas in need of change and improvement:

1. Public Education
2. Staff Training
3. Designate "Lift Bar Point"
4. Minimize the possible fall distance at the "Lift Bar Point"

4. ADDITIONAL RECOMMENDATIONS

4.1. Public Education

The public is any person that rides a chair lift. This group can be divided into two subgroups: the experienced and the beginner. The approach to education of these two groups must be different, but are equally important. Beginners come without preconceived ideas or bad habits. The experienced will be riding with beginners, setting the example and influencing beginners far beyond their first lesson.

4.1.1 Educate the Beginners

The majority of beginners will take a ski lesson at some point. This is an ideal opportunity to educate the public not only in methods for learning to ski or snowboard, but also to make it to the top of the lift safely and to unload properly. Snow school training should focus on promotion of 'Look Load Lower' (LLL) and client supervision.

New and updated LLL posters will be available for 2007/08. This year, take a look at your current signs and consider removing non-mandated obsolete or aging signs that contribute to sign noise. Consider posting the new LLL posters at the bottom of beginner lifts.

4.1.2 Re-Educate the Experienced Skier/Snowboarder

Experienced skiers and snowboarders can be some of the worst offenders when it comes to lifting the bar too early. Their familiarity with the process and complacency when it comes to safety rules is not only putting themselves in danger, but the children who are riding along with them. These groups must be re-educated.

Industry-wide involvement is required to change the current attitudes of the public. The season ticket holders, the members and the expert skiers need to be re-educated on the acceptable point to lift the bar. This education, and a change in attitude of resort employees, in parallel with new signs and the appearance of the unload area change will put into motion a change in the attitudes of all skiers within Ontario.

Returning skiers/snowboarders will notice the new signs and the change in appearance of the unloading area. Lift attendants at the loading and unloading stations should be instructed to continue to enforce the rules and instruct patrons to lower the bar upon departure of the loading station, and to keep the bar down until reaching the "LIFT BAR POINT". An elevated level of surveillance and enforcement is recommended as a way to capture the attention of seasoned skiers and snowboarders.

4.2. Staff Training

Management shall prepare procedures and observe their unloading and loading attendants at the beginning of the season with the following questions in mind:

- Is enough supervision present at the loading station to minimize the risk of misloads?
- Can the loading station attendant(s) adequately supervise chair loading and also ensure that patrons are putting the bar down?
- Who has the responsibility to instruct patrons in the chair to put their bar down? Are they aware of their responsibilities?
- How will the unload station attendant communicate to patrons who are lifting the bar too early?
- Are the attendants trained on how to handle situations with patrons who do not follow the rules?
- Do we have a policy regarding patrons who repeatedly break rules? How do we catch repeat offenders?
- Do we have a policy regarding inexperienced skiers/snowboarders who are riding alone?
- Are all groups (Ski School, Ski Patrol, Lift Attendants, Public) aware of our current and/or new policies?

4.3. Minimizing the Fall Distance at the Lift Bar Point

It is recommended that the possible fall distance be limited to no more than 3 metres at the “Lift Bar Point”.

Instructing patrons to raise the restraining device only when at the unloading station or only in locations where the distance to the ground is within acceptable limits is the ideal, the intention is to minimize the potential fall distance without creating another hazard. It is also important to minimize the risk of injury by providing surfaces beneath the unloading zone that are the least likely to cause serious injury, and ideally, absorb impact.

Fill can be added to decrease the possible fall distance at the “LIFT BAR POINT”. Temporary fill such as hay bails could be used and covered with snow.

Alternatively, where fill cannot be used to reduce the distance to within an acceptable 3 metre range, safety nets can be installed. Where a safety net is installed, a ‘Minor A’ type submission shall be submitted.

4.4. Best Practices

A useful list of best practices created by the RRG titled “Working together to Stop Falls From Carriers” is attached to this director’s order for your review and reference.



Working together to STOP...

Falls from Carriers

The intent of this best practices document is to assist the ski industry with their training and operating procedures. The primary focus is to work to eliminate chairlift rider incidents. Through this initiative we can educate novice and young chairlift riders and ski industry personnel to promote, practice and participate in safe chairlift use and operation protocols throughout Ontario. The body best suited for delivery of each point is illustrated in brackets.

1. Talk to first time riders about proper methods of loading, riding and unloading. *(Ski Professionals, Ski Patrol, Lift Operations)*
2. Younger riders may need multiple reminders of proper methods of loading, riding and unloading. *(Ski Professionals, Ski Patrol, Lift Operations)*
3. Ensure that all signage is visible. *(Lift Operations)*
4. Ensure that all signage is understood. *(Ski Professionals, Ski Patrol, Lift Operations, TSSA)*
5. Introduce and promote the Look Load and Lower programme. *(Ski Professionals, Ski Patrol, Lift Operations, TSSA)*
6. Consider taking poles away from novice and young riders. *(Ski Professionals, Ski Patrol, Lift Operations)*
7. Use additional personal in the line up to help organize and educate riders. *(Ski Professionals, Ski Patrol, Lift Operations)*
8. Critique the position of the lift operator(s) and provide constructive feedback if necessary. *(Lift Operations)*
9. Critique the loading and unloading ramps and provide constructive feedback if necessary. *(Lift Operations)*
10. Verbalize to riders to lower restraining device and not to raise it too early. *(Ski Professionals, Ski Patrol, Lift Operations)*
11. Verbalize to young riders not to “shimmy out” onto the seat edge prior to the unloading ramp. *(Ski Professionals, Ski Patrol)*
12. Ensure the “Raise Restraining Device” sign is not located too far from unloading area. *(Lift Operations, TSSA)*
13. Reward young riders that practice safe riding. *(Ski Professionals, Ski Patrol)*
14. Strongly endorse a “no-nonsense” policy and enforce it. *(Ski Professionals, Ski Patrol, Lift Operations)*
15. Promote friendly communication and cross training between ski area departments. Work together to promote safety and encourage best practices. (special encouragement between snow school and coaches, ski patrol and lift operations). *(Ski Professionals, Ski Patrol, Lift Operations)*



Elevating and Amusement Devices Safety Division	Ref. No.: 231 / 08	Rev. No.:
Enforcement Procedure Bulletin	Date: November 27, 2008	Date:

Subject: Safe Roof Top Access to Elevating Device Machinery Spaces
Sent to: Owners, Contractors and Consultants

1. INTRODUCTION

The elevating devices regulation provides requirements related to safe access to elevating device machinery spaces where passage over roof tops is required. In this regard, Ontario Regulation 209/01 (Elevating Devices) requires:

37. Every owner of an elevating device shall ensure that,
- (a) there is unobstructed access to and egress from the elevating device;
 - (b) there is a safe and unobstructed access to the machinery space, including the electrical equipment, of the elevating device regardless of weather conditions; O.Reg.209/01,s.37

This regulatory requirement applies to all new and existing installations.

In addition, the B44 Safety Code for Elevators that was applicable at the time of the original elevating device installation may have specific requirements related to roof top walkways.

This information bulletin clarifies the minimum safety requirements applicable to the building based on the original installation date of the elevator equipment.

2. GENERAL REQUIREMENT

All building owners that have a roof top parapet less than 1070 mm (42") in height at the perimeter of the building, (subject to the requirements in section 4) shall have either:

- an engineered safety system in place, or
- a walkway and railing* as required by the applicable edition of CSA B44 Safety Code for Elevators to provide for safe access of workers where passage across roof tops is required to access machinery spaces.

3. BACKGROUND

Prior to B44-M85 Safety Code for Elevators the need for a walkway and railing applied if the roof slope was more than 15 degrees. With the release of the 1985 edition of CSA Standard CAN3-B44-M85 - Safety Code of Elevators (effective for design submissions received after April 1, 1986, or initial inspections after October 1, 1986), a new requirement was published regarding access across roof tops. If the roof top did not have a 1070mm high parapet around the access way a "substantial walkway not less than 600mm wide, equipped with a standard railing 1070mm high" was required.

4. INSTRUCTIONS

4.1. All Buildings with passageways over roof tops must address the following:

- Safe, unobstructed passage
 - o walkways with railings* (or lifelines as permitted in 4.3)
 - o snow removal as needed

- o secure footing
- o no standing water
- Adequate lighting
 - o Where natural lighting is inadequate to ensure the safety of any worker, artificial lighting shall be provided and shadows and glare shall be reduced to a minimum.
- Upkeep of safety equipment
 - o Every building walkway, lifeline, and fixed ladder must also be maintained in safe and proper working order to prevent any risk of injury.

4.2. For Buildings where Elevator installations required compliance to an edition prior to B44-M85

Buildings affected by a B44 edition prior to B44-M85, where the roof does not have a parapet greater than 1070 mm in height at the perimeter (and where no railing requirements was specified by B44), shall be provided with:

- a) a lifeline that is engineered to accommodate a travel restraint (safety belt) or fall arrest system in accordance to current requirements of the Occupational Health and Safety Regulations, or
- b) a walkway and railing¹ for compliance with O.Reg 209/01,s.37, or
- c) equivalent safety such as a new means of access to eliminate the hazard.

4.3. For Buildings where Elevator installations required compliance with B44-M85 or later:

Buildings affected by B44-M85 or later editions shall have a walkway and railing*. An engineered lifeline will only be permitted as a temporary solution during the construction phase of the walkway.

4.4. *Walkway and Railing Requirements

Where a walkway and railing is required, it shall meet the applicable requirements of:

- a) the Occupational Health and Safety Regulation O.Reg 851 OR
- b) the B44 Safety Code for Elevators applicable at the time of the installation.

Reference Document	Walkway and Railing Requirements				
	Width (mm)	Height (mm)	Midrail	Toeboard	Other requirements
OH&S O.Reg 213/91 ¹		900 to 1100	yes	100mm 89mm if wood	Detailed strength requirements
OH&S O.Reg 851	550 min	910 to 1070		125mm high, only if tools or other objects may fall on a worker	Strength to OBC
B44-M85	600	1070		no	2500 mm post spacing
B44-94					2400 mm post spacing
B44-00					
A17.1S-2005 / B44-04S1-06 to B44-07			100mm high ²	B44 includes strength values which are not referenced by the roof top access rule	

¹ Provided as a reference only – applicable only during construction of the building

² Enforcement of A17.1S-2005 / B44-04S1-06 was effective January 20, 2006 for all MRL installations.
Enforcement of B44-07 began January 1, 2008

5. ENFORCEMENT

5.1. Where walkways and railings are required (4.3), as a minimum they must meet the following:

- a) 550 mm wide
- b) 910 - 1100mm high top rail
- c) A mid rail
- d) Strength no less than required by OH&S Act – R.R.O. 1990 Reg. 851

Installations built / commissioned to B44-07 shall also be provide with:

- e) 100 mm high toe board

6. Sample Summary of Owner Responsibilities

Owners of buildings with **walkways installed to B44-M85 or later** are required to:

- Provide safe roof top access to machinery space in the form of a B44 or OH&S compliant railing and walkway are required by [Reg/Code: B44-M85 to B4-94 clause 2.3.3.2 / B44-00 or later requirement 2.7.3.2.2 / O.Reg 209/01, s.37]

Owners of buildings with **walkways installed prior to B44-M85** are required to:

- Provide safe roof top access to machinery space in the form of a B44 or OH&S compliant railing and walkway or an OH&S compliant lifeline as required by [Reg/Code: O.Reg 209/01, s.37]

With respect to **lighting requirements** owners must:

- Provide adequate lighting for safe roof top access to the elevator machinery space per [Reg/Code: O.Reg 209/01, s.37]

With respect to **walkways or railings or lighting** owners must ensure:

- Safe roof top access to machinery spaces shall be maintained per [Reg/Code: O.Reg 209/01, s.37]

Failure to comply with these requirements may result in additional inspection fees, loss of service of your elevating device, or enforcement action under the *Technical Standard and Safety Act, 2000*.

Every person who contravenes or fails to comply with any provision of the *Technical Standards and Safety Act, 2000* or regulations is guilty of an offence punishable on conviction is liable to a fine of not more than \$50,000 or imprisonment for a term of not more than one year or both, or if the person is a body corporate to a fine of not more than \$1,000,000.

7. SUPPORTING DOCUMENTATION

7.1. Referenced Documents

- Technical Standard and Safety Act, 2000, S.O 2000
- Ontario Regulation 209/01 (Elevating Devices)
- Occupational Health and Safety Act, R.S.O 1990
- Occupational Health and Safety Act – R.R.O. 1990 Reg. 851 Industrial Establishments
- Occupational Health and Safety Act – O.Reg 231/91 Construction Projects
- Building Code Act, 1992 - O. Reg. 350/06
- CAN/CSA B44 Safety Code for Elevators (B44), as amended (by Directors Orders or as specified by the Elevating Devices Code Adoption Document)
- CAN/CSA Z259 Connecting Components for Personal Fall Arrest Systems (PFAS)

7.2. Section References

Occupational Health and Safety Act – R.R.O. 1990 Reg. 851 (Industrial Establishments)

14. (1) A guardrail shall,
- (a) have a top rail located not less than 91 and not more than 107 centimetres above the surface to be guarded;
 - (b) have a mid rail;
 - (c) if tools or other objects may fall on a worker, have a toe-board that extends from the surface to be guarded to a height of at least 125 millimetres; and
 - (d) be free of splinters and protruding nails.
- (2) A guardrail shall be constructed to meet the structural requirements for guards as set out in the Building Code. R.R.O. 1990, Reg. 851, s. 14.

Building Code Act, 1992 - O. Reg. 350/06

3.4.6.4. Handrails

- (9) Handrails and their supports shall be designed and constructed to withstand the loading values obtained from the nonconcurrent application of,
- (a) a concentrated load not less than 0.9 kN (200 lb-f) applied at any point and in any direction for all handrails, and
 - (b) a uniform load not less than 0.7 kN/m (157 lb-f) applied in any direction to handrails not located within dwelling units.

A17.1-2007 / B44-07 Safety Code for Elevators

2.10.2.4 Strength of Standard Railing

When forces are applied separately:

- no permanent deformation is permitted
- deflection shall not be more than 75mm (3 in.)

Forces:

- a) 890 N (200 lbf) lateral or downward, at any point along the top rail,
- b) 666 N (150 lbf) lateral or downward, at any point along the intermediate rail
- c) 225 N (50 lbf) lateral direction to the toe-board.

B44 Sections related to access via roof tops

- B44-1975 to B44-94 2.3.3.2 Access Across Roofs
- B44-00 2.7.3.2 Access Across Roofs
- B44-04, B44-07, 2.7.3.2 Passage Across Roofs

Rob Kremer, P. Eng.,
Engineering Manager, EDAD Program

Roger Neate
Operations Manager, EDAD Program

This Bulletin has been developed in consultation with the TSSA Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.: 232/08	Rev. No.: 1.
DIRECTOR'S ORDER	Date: November 25, 2008	Date: August 1, 2012

IN THE MATTER OF

*The Technical Standards And Safety Act, 2000,
S.O. 2000, c. 16*

- and -

**ONTARIO REGULATION 222/01
(Certification and Training of Elevating Device Mechanics)
made under the
*Technical Standards and Safety Act, 2000***

Subject: Elevating Device Mechanic Continuing Education Requirements
Sent to: All Mechanics, Mechanics-in-Training, Registered Contractors and Training Providers

Pursuant to subsection 32.(1) of the *Technical Standards and Safety Act, 2000* (the "Act"), the Director hereby orders the following:

1. ORDER

- 1.1.1 **Effective January 1, 2011**, all classes of Elevating Device Mechanics (EDMs) shall fully complete the continuing education requirement as a condition of each certificate renewal.
- 1.1.2 The continuing education requirement referred to in clause 1.1.1 of this order shall include instruction on the following topics:
- a) 6 hours on safe work practices and related topics that may include product-specific safety applications or procedures;
 - b) 3 hours on the Act, its regulations, applicable code(s), director's orders/bulletins, and related topics; and
 - c) 3 hours on technical training related to the elevator industry, which may include cross-discipline training involving curriculum that may have an impact on the elevator trade.
- 1.2.1 An applicant for a certificate renewal, regardless of certificate class, shall receive the continuing education training referred to in clause 1.1.1 of this order from an accredited training provider approved by the director.
- 1.3.1 An application for renewal shall include proof that the applicant has successfully completed the continuing education requirement referred to in clause 1.1.1 of this order.
- 1.3.2 Proof of completion of the continuing education requirement referred to in clause 1.1.1 of this order must be received by TSSA either prior to submitting a renewal application or as an attachment to the renewal application.

- 1.3.3 The proof of completion referred to in clause 1.3.1 of this order shall be submitted in the format set out by TSSA and must be issued by an accredited training provider.
- 1.4 EDM-T certificate holders who are enrolled in and attending classroom apprenticeship training (towards an EDM-A certificate) or a classroom training program (towards an EDM-B through EDM-F certificate) through an accredited training provider are exempt from the requirements of this order, so long as the training has taken place since the previous renewal.

2. BACKGROUND

A coroner's inquest into the death of an elevator mechanic made two recommendations related to continuous education for elevator mechanics. These recommendations are shown below:

- *“All elevator mechanics shall undertake periodic refresher training to ensure that they maintain their competency, particularly in areas where specific training and/or knowledge has not been utilized on a regular basis.”*
- *“[TSSA] shall adopt a reporting system whereby licensed mechanics would submit a summary of education, training and job experience gained during the previous two years, as a condition of re-certification.”*

These recommendations were discussed at the Training & Certification Advisory Board (TCAB) which formed a subcommittee to develop continuing education training requirements for elevator mechanics. The subcommittee presented their proposal to the TCAB who endorsed the 12 hours of continuing education. As a result, all Elevating Device Mechanics will require continuing education credits in order to renew their mechanic's certificate.

The revised Order is **effective January 1, 2013. Renewal applicants with an expiry date of January 1, 2013 or later must have successfully completed the continuing education requirements before submitting a renewal application. The continuing education requirement applies to each and every certificate renewal.**

NOTES:

1. Only certificates from accredited training providers will be accepted as proof of completion of the continuing education requirements. Training received from non-accredited training providers will not be accepted.
2. Only Training Providers listed on the TSSA website are to be considered accredited.

Roland Hadaller, P. Eng.
Director, Elevating Devices Regulation,
Technical Standards and Safety Act, 2000

This Order has been developed in consultation with the Elevating Devices Advisory Council and Training & Certification Advisory Board.



Elevating and Amusement Devices Safety Division	Ref. No.: 233/08	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: November 3, 2008	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT 2000*,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the *Technical Standards and Safety Act 2000***

Subject: Continued data collection and monitoring
Sent to: All Chair Lift Owners / Operators

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under the *Technical Standards & Safety Act 2000* hereby orders the following:

1. ORDER

1.1 In continuation with Director's Order 229/07, ongoing monitoring and feedback is required by all owners of chair lifts during the 2008/09 season. Operations Managers shall:

- a) Observe a minimum of **100 unloads** from each chairlift, at two designated times during the upcoming season and record the distance patrons are raising the restraining device prior to the 'unload point'. Explanation of the measurements required can be found in D.S.O. 229/07 or in the data collection form.
- b) Complete one form for each chair lift and provide the results during each of the following weeks:

Survey Period	Date Report due to TSSA
January 12 - 18, 2009	February 1, 2009
February 16 - 22, 2009	March 8, 2009
- c) Email the completed forms to zerofalls@tssa.org or fax to 416-734-5435 by the deadlines given above. The updated form for results reporting will be available for download from the TSSA website: www.tssa.org.
- d) The data collection must be completed by, or under the direct supervision of the Operations Manager or equivalent. The same person should complete the data collection at both times.

Note: Section 37 of the Act provides that "every person who fails to comply with an order; is guilty of an offence and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both, if the person is a body corporate, to a fine of not more than \$1,000,000.

Roland Hadaller P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*,

This Director's Order has been developed in consultation with the Zero Falls Risk Reduction Group.

3300 Bloor Street West, 14th Floor, Centre Tower, Toronto, Ontario M8X 2X4
Telephone: 416-734-3300 Fax: 416-231-5435 Toll Free: 1-877-682-8772
Putting Public Safety First

2. BACKGROUND

The Zero Falls Risk Reduction Group (RRG) was formed in January of 2007. As a result of the efforts of the group, a data collection exercise was initiated in parallel with sign changes, in addition to recommendations for improving and promoting public education, resort policy changes as well as staff training.

3. INTRODUCTION

The intention of the continued data collection is for ongoing monitoring of short-term progress. The results from the first season have been positive: the public education and enforcement efforts of Operators and Lift Attendants have resulted in a 24% reduction in the time exposure to risk¹ of from 2006/07 to 2007/08. Resorts with greater enforcement and a zero tolerance policy reported excellent compliance.

Suggestions or questions can be directed to zerofalls@tssa.org

Archive
Compliance Past Due

¹ Time Exposure to Risk is defined as the time a chair lift passenger is exposed to the risk of a fall of greater than 3m after the safety bar is lifted.



Elevating and Amusement Devices Safety Division	Ref. No.: 233/08	Rev. No.: 01
DIRECTOR'S SAFETY ORDER	Date: November 3, 2008	Date: Feb 6, 2009

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT 2000*,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the *Technical Standards and Safety Act 2000***

Subject: Continued data collection and monitoring
Sent to: All Chair Lift Owners / Operators

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under the *Technical Standards & Safety Act 2000* hereby orders the following:

1. ORDER

- 1.1 In continuation with Director's Order 229/07, ongoing monitoring and feedback is required by all owners of chair lifts during the 2008/09 season. Operations Managers shall:
- a) Observe a minimum of **100 unloads** from each chairlift, at two designated times during the upcoming season and record the distance patrons are raising the restraining device prior to the 'unload point'. Explanation of the measurements required can be found in D.S.O. 229/07 or in the data collection form.
 - b) Complete one form for each chair lift and provide the results during each of the following weeks:

Survey Period	Date Report due to TSSA
January 12 - 18, 2009	February 1, 2009
February 16 - 22, 2009	March 8, 2009
 - c) Email the completed forms to zerofalls@tssa.org or fax to 416-231-5435 by the deadlines given above. The updated form for results reporting will be available for download from the TSSA website: www.tssa.org.
 - d) The data collection must be completed by, or under the direct supervision of the Operations Manager or equivalent. The same person should complete the data collection at both times.

Note: Section 37 of the Act provides that "every person who fails to comply with an order; is guilty of an offence and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both, if the person is a body corporate, to a fine of not more than \$1,000,000.

Roland Hadaller P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*,

This Director's Order has been developed in consultation with the Zero Falls Risk Reduction Group.

3300 Bloor Street West, 14th Floor, Centre Tower, Toronto, Ontario M8X 2X4
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Archive
Compliance Past Due

¹ Time Exposure to Risk is defined as the time a chair lift passenger is exposed to the risk of a fall of greater than 3m after the safety bar is lifted.



Elevating and Amusement Devices Safety Division	Ref. No.: 234 / 09	Rev. No.:
Enforcement Procedure Bulletin	Date: June 11, 2009	Date:

Subject: Plunger Gripper Inspection and Testing Frequency
Sent to: Contractors, Consultants and Elevating Device Mechanics

1. INTRODUCTION

This enforcement procedure bulletin is intended to clarify the requirement for inspection and testing of plunger grippers.

Despite plunger grippers not being specifically addressed in *B44.2 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks*, the requirements to inspect and test safety devices and overspeed devices exist in the elevating device regulation.

2. REQUIREMENTS

Ontario Regulation 209/01 (Elevating Devices) provides:

33. (1) Where maintenance is carried out on an elevator, dumbwaiter, lift for persons with physical disabilities or a freight platform lift that is equipped with a safety device, overspeed and uncontrolled low speed protective device, the maintenance referred to in subsection 32 (3) shall include an inspection and testing of such devices in accordance with requirements for periodic inspection set out in the code adoption document. O. Reg. 209/01, s. 33 (1).

33. (4) The inspection and tests required under subsections (1), (2) and (3) shall be carried out at intervals determined in accordance with subsection 32 (2) as long as the interval between the inspections or tests is not longer than 12 months. O. Reg. 209/01, s. 33 (4).

Plunger grippers are safety devices as referenced in subsection 33 (1) above, and must therefore be inspected and tested in accordance with requirements for periodic inspection. As specified in subsection 33.(4) above, the interval between these inspections and tests shall not exceed 12 months.

3. PROCEDURE

Contractors shall ensure that elevating device installations which incorporate a plunger gripper conform to the following:

- The plunger gripper and its related activation means shall be inspected and tested at intervals not exceeding 12 months.
- Testing of the plunger gripper is permitted with no load in the car and with the car moving in the down direction.
- Testing may be done at any speed up to and including the rated speed of the installation.
- Successful test results shall be recorded and signed off in a log book.

4. SUPPORTING DOCUMENTATION

- Ontario Regulation 209/01, (Elevating Devices)

This enforcement procedure bulletin is effective immediately.

Rob Kremer, P. Eng.,
Engineering Manager, EDAD Program

This Bulletin has been developed in consultation with the TSSA Elevating Devices Advisory Council.

Roger Neate
Operations Manager, EDAD Program



Elevating and Amusement Devices Safety Division	Ref. No.: 235 / 09	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: June 11, 2009	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000,*
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices) made under the
*Technical Standards and Safety Act, 2000***

Subject: Addition of an Electric Motor to Northern ERM Machine
Applicable to: Owners, Contractors, Consultants and EDM Mechanics

Pursuant to his authority under subsections 14.(1) and 30.(1) of the *Technical Standards and Safety Act, 2000,* the Director orders the following:

1. ORDER

1.1. Not later than September 1, 2009, all contractors who maintain installations where Northern ERM machines have been altered by the addition of a motor to the end of the original motor shall report these elevating devices and their locations to TSSA on the attached reporting form.

2. INTRODUCTION

There are some elevator installations where electric motors have been added to existing Northern ERM Machines.

A motor replacement that does not result in a change in the original design, inherent safety or operational characteristics of the elevating device falls under the category of "Maintenance, Repair and Replacement" and will not require an alteration design submission. Motor additions to ERM machines that were performed in the past may have been done on the assumption that this activity was a motor replacement and therefore no alteration paperwork was forwarded to TSSA. Recent interactions between TSSA and elevator industry contractors have resulted in a clarifying of the requirements.

Ontario Regulation 209/01 defines "alteration" as follows:

alteration: means an alteration or replacement, removal or addition of any component or part of an elevating device that results in, or may result in, a change in the original design, inherent safety or operational characteristics of the elevating device, and "altered" has a corresponding meaning;

The addition of a motor to a driving machine (as opposed to a motor replacement) is classified as an alteration and requires an alteration submission. (See Attachment 'A' for reference photo).

3. REPORTING

Upon identification of an altered ERM installation as described in this safety order, contractors shall report the findings to TSSA on the form provided.

If an alteration design submission has not been submitted for the altered ERM installation, TSSA will issue a direction to the owner requesting an engineering design submission for the alteration work.

4. ENGINEERING ASSESSMENT and DESIGN SUBMISSION

As a minimum, an engineering assessment of the alteration shall consider the following B44 requirements:

- a) Section 8.7.2.25.1 of B44 deals with alterations made to driving machine components and requires the affected components to conform to 2.24.2 through 2.24.9 and 2.26.8. Specific focus should be given to the following B44 code requirements:
 - 2.24.3 Factors of Safety for Driving Machines
 - 2.24.3.1 Factor of Safety Based on Alternating / Reversing Stresses
 - 2.24.3.2 Factor of Safety at Emergency Braking
 - 2.24.4 Fasteners Transmitting Load
 - 2.24.4.1 Fasteners and Rigid Connections
 - 2.24.5 Shafts, Fillets and Keys
- b) Where the electric motor was once secured to the machine frame and foot mounted motors are now provided, the assessment should consider the adequacy of the new motor mounting / fastening details.
- c) Section 8.7.2.8 of B44 deals with electrical equipment, wiring, pipes, and ducts in hoistways and machine rooms. The assessment should ensure that the installation of new electrical equipment, wiring, raceways, cables, or ducts shall conform to the applicable requirements of section 2.8 of B44.
- d) The assessment shall be forwarded to TSSA in the form of a Minor A alteration.

5. INSPECTION

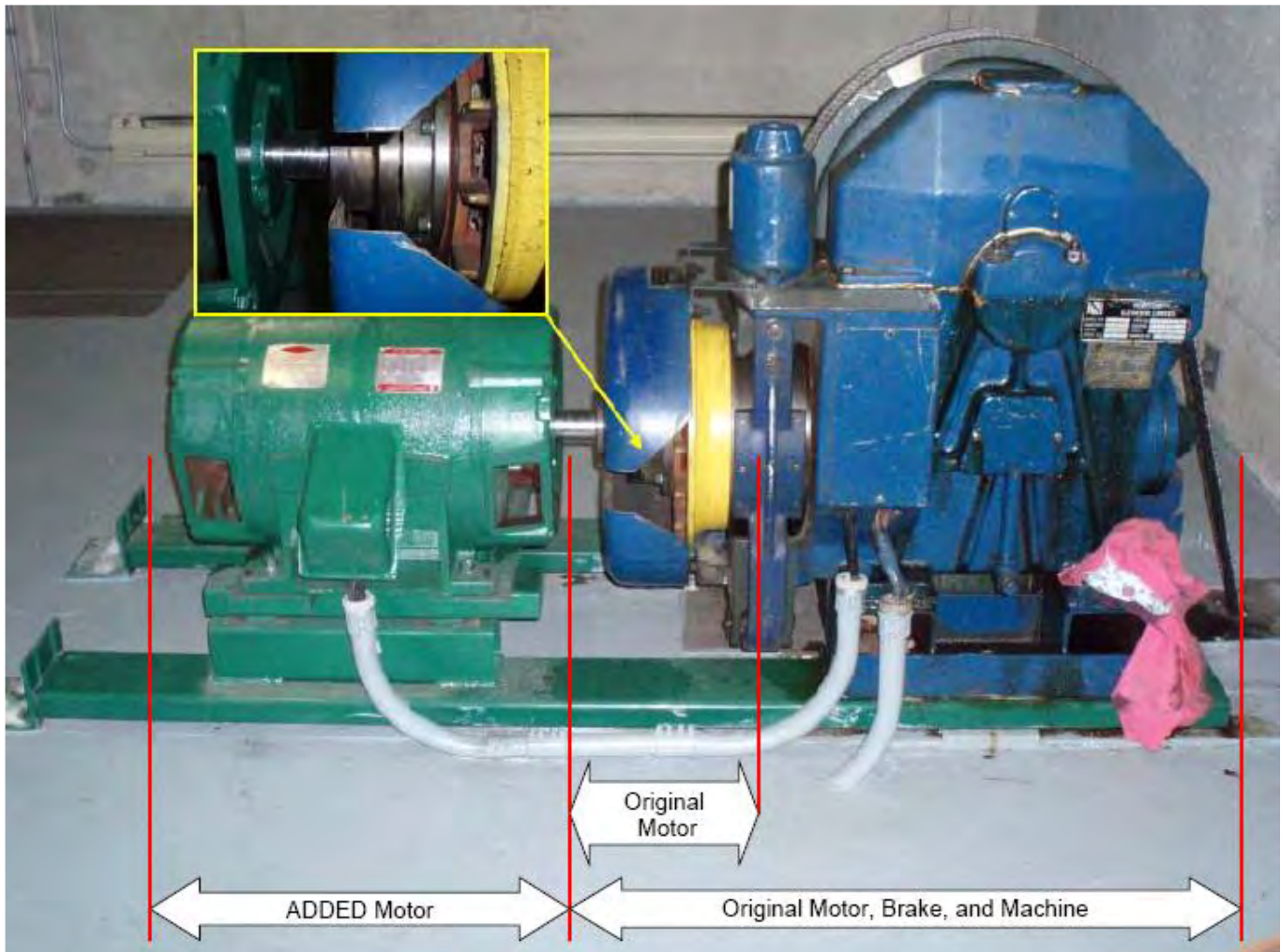
These installations will be subject to a field inspection. Upon completion of a site inspection contractors are required to record in a maintenance log book that the requirements of 235/09 have been complied with.

Roland Hadaller, P.Eng.

Director, Ontario Regulations 209/01(Elevating Devices) made under the *Technical Standards and Safety Act, 2000*

This Order has been developed in consultation with the Elevating Devices Advisory Council.

Attachment 'A'



Notes:

1. Original Motor is still existing – not replaced.
2. Added motor is bolted to existing motor and foot mounted.
3. In this example channels have been added to extend the machine base.
4. Wiring & conduit have been added to supply the added motor.



Elevating and Amusement Devices Safety Division	Ref. No.:
DIRECTOR'S SAFETY ORDER REPORTING FORM	235 / 09

Subject: Addition of an Electric Motor to Northern ERM Machine

Contractor to return this form via fax or email to:

Attention: Director of Elevating Devices
Fax: 416 231 5435
Email: eddesignsubmittal@tssa.org

The elevating device(s) identified with installation number(s):

_____ Installation Number(s)

and located at:

_____ ED Device Address

has been altered via the addition of an electric motor to the existing motor as described in Director's Safety Order 235/09.

Name of person completing this reporting form _____
print name

Position / Title _____

Name of Firm _____



Elevating and Amusement Devices Safety Division	Ref. No.:	Rev. No.:
	236 / 08	
Safety Alert Bulletin	Date:	Date:
	December 18, 2008	

Subject: Structural failure due to water intrusion & ice expansion
Sent to: All Chair Lift Owners / Operators

1. INTRODUCTION

A recent incident on a ski lift in British Columbia involving tower failure due to water intrusion has prompted the release of this safety alert.

2. ALERT

The possibility of structural failure exists in circumstances where there is a potential for water to accumulate inside any enclosed structural assembly. This is due to the freezing of water and the resulting expansion of ice.

Deleted:

Doppelmayr CTEC issued Safety Alert Bulletin SA-06-022 on December 31, 2006, which noted that accumulated water within tower tubes can have catastrophic effects upon structural integrity when it freezes.

3. INSTRUCTIONS

While the Doppelmayr bulletin specifically referenced a particular model of tower, it should be noted that any tower design that has a sealed base, or other structural assembly that may accumulate water, could similarly be affected if there is a pathway for water intrusion.

All chair lift owners/operators should immediately perform a close visual inspection of their above-ground passenger ropeways including all tower components and tower bases, for signs of water accumulation inside any structure. Evidence of such may appear as bulging, weeping or cracks in the welds. As an additional precaution, operators should perform soundings of any hollow structural component. For towers, it is suggested to strike the vertical face of the tower at several locations in an ascending order starting from the tower base along the entire tower length with a dead-blow hammer. A solid dead sound compared to a more bell-like (hollow) tone may indicate the presence of water in the tower. If any indications are noted, the owner/operator should immediately remove the device from service and contact the manufacturer for further instructions. TSSA should also be notified.

Where drain holes at the tower base are provided, operators should maintain the functionality of the drain holes. Care must be taken to eliminate or minimize any obvious source of water intrusion.

4. BACKGROUND

The Doppelmayr CTEC bulletin SA-06-022 was originally issued in response to a specific incident. A copy of this bulletin is available at: <http://www.tssa.org/regulated/ski/skiSafety.asp?loc3=mfrbulletins>

On December 16, 2008, an incident occurred at Whistler Blackcomb in BC in which a tower sustained a structural failure. The owner of the device indicated that this failure occurred after water seeped into the tower and froze, causing the tower splice to rupture.

TSSA is issuing this safety alert bulletin in response to both incidents and to create a greater awareness of the hazards of water intrusion in towers.

Rob Kremer, P.Eng.
Engineering Manager, EDAD Program

Roger Neate
Operations Manager, EDAD Program



Elevating and Amusement Devices Safety Division	Ref. No.: 237 / 08	Rev. No.:
Safety Alert Bulletin	Date: December 23, 2008	Date:

Subject: Maintaining Safe Clearances Around Chair Lift Carriers
Sent to: All Chair Lift Owners / Operators

1. INTRODUCTION

A recent incident on a ski lift in Ontario where snow making equipment inadvertently rotated into the path of a chairlift and came in contact with a chair and passenger has prompted the release of this safety alert.

2. ALERT

All chair lift owners are reminded of the importance of continually ensuring that entire length of the ropeway is kept clear of any objects that may come in contact with the carriers or rope. Attention should also be paid to equipment that may not normally be in the path but has the capability of moving into the path such as pivoting or rotating snowmaking guns.

3. INSTRUCTIONS

All owners are reminded of the requirement to perform a daily visual inspection of the entire length of the ropeway as per 11.12.1 of the CSA Z98 Passenger Ropeways standard.

4. BACKGROUND

TSSA recently investigated an incident where new snow making equipment was installed in the vicinity of a chairlift. Over a period of time, the gun rotated into the path of the carriers, became entangled with a chair and seriously injured a passenger.

TSSA is issuing this safety alert bulletin in response to this incident to create a greater awareness of the hazards of equipment near passenger ropeways.

Rob Kremer, P.Eng.
Engineering Manager, EDAD Program

Roger Neate
Operations Manager, EDAD Program



Elevating and Amusement Devices Safety Division	Ref. No.: 238 / 09	Rev. No.:
Elevating Devices Code Adoption Document - Amendment	Date: January 29, 2010	Date:

IN THE MATTER OF:

THE TECHNICAL STANDARDS AND SAFETY ACT, 2000, S.O. 2000, c. 16 (the "Act")

- and -

**ONTARIO REGULATION 223/01
(Codes and Standards Adopted by Reference) made under the Act**

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Adoption of CSA B355-09, Lifts for Persons with Physical Disabilities

Sent to: All Elevating Device Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices), pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD), as amended, published by the Technical Standards & Safety Authority is further amended as follows;

1.0 Change to Part VII ELEVATING DEVICES FOR PERSONS WITH PHYSICAL DISABILITIES

Effective August 1, 2010,

Section 36 of the CAD is revoked and replaced by the following:

- 36.(1) Each newly installed lift for persons with physical disabilities shall conform to the requirements of CSA Standard B355-09, Lifts for persons with physical disabilities and any applicable changes set out in the CAD.
- 36.(2) All lifts for persons with physical disabilities shall conform to the maintenance requirements of CSA B355-09 Lifts for persons with physical disabilities Annex B and any applicable changes set out in the CAD.

Subsection 41.(d) of the CAD is revoked and replaced by the following:

- (d) provide instruction to users that an unoccupied platform of an unenclosed stair platform lift shall not be called or sent from a landing station unless it is in the raised and folded position.

Part VII Elevating Devices for Persons with Physical Disabilities is amended with the addition of section 45:

- 45. (1) Maintenance Log Book
The log book shall, as a minimum, contain the following information:
 - (a) Building name and/or address,
 - (b) TSSA or MCCR installation number,
 - (c) Contractor's and Owner's name,
 - (d) Year and month when a specific task is performed,

- (e) The code section, reference or clause number associated with a maintenance task, a description of the task performed and the prescribed maintenance frequency of the task,
- (f) The printed name(s) and signature(s) of the person(s) who completed the required maintenance task.
- (g) Where a part directly affecting the safe operation of the elevating device is found to be defective, the record of the maintenance task shall not be signed off until the defect is adjusted, repaired or replaced.

45.(2) Location of the Log Book

- (a) The log book will be retained in the machine room or at the device location. If it is kept in another location in the building, a notice shall be posted in the machine room indicating the alternate location.

2.0 INSTRUCTIONS

- (a) The CSA Standard B355-09, Lifts for Persons with Physical Disabilities is available from the Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, ON, L4W 5N6, telephone 1-800-463-6727, 416 747 4044 or online www.shopcsa.ca.
- (b) Elevating Device Regulation 209/01 requires all mechanics to have full knowledge of the codes applicable to the elevating devices on which they are assigned to work, and therefore mechanics involved in the construction, installation and maintenance of lifts for persons with physical disabilities shall be familiar with the Regulation, applicable codes and subject requirements.
- (c) Electronic copies of the
 - *Technical Standards and Safety Act, 2006*, and
 - Elevating Devices Regulation 209/01
 can be obtained free of charge from Government of Ontario web site <http://www.e-laws.gov.on.ca/> or from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>.
- (d) Electronic copies of the
 - Elevating Devices Code Adoption Document
 can be obtained free of charge from the TSSA web site at <http://www.tssa.org/regulated/elevating/elevatingSafety.asp?loc3=act>

3.0 NOTES

- 3.1 Contractors are urged to study **CSA Standard B355-09, Lifts for Persons with Physical Disabilities** carefully to ensure conformance by the specified date.

Major revisions / additions in CSA-B355-09 from CSA-B355S1-02 include:

- New definitions added for
 - Levelling
 - Levelling Device
 - Levelling Device, anti-creep
 - Levelling Device, automatic
 - Levelling zone
- 4.1.3 600mm dimension was 500mm
- 4.8.3 Emergency lighting shall consist of at least 2 lights
- 5.1.3 600mm dimension was 500mm

- 5.2.3.1 Last sentence added to remind designers that a control circuit failure shall not render the interlock function ineffective. Does not require interlock recertification but control circuits must be in compliance.
- 5.4.2(a) Access to the pit **shall** be by means of lowest landing door.
- 6.1.4. New requirement for manual moving of the carriage.
- 6.4.1.2 Updated reference for roller chains to ANSI/ASME B29.100
- 6.4.1.3 Connecting links of chain to be as strong as chain
- 6.4.1.4 Chains must lie in a single plane (2 dimensional plane)
- 6.6.2.1.2 Revised to allow relief pressure of up to 150% of working pressure, old 6.6.2.1.3 deleted
- 6.6.2.3 Title changed to add the word “Manual” and new requirement to show the direction of operations for lowering the carriage
- 6.6.2.4 Modified re: location of the shutoff valve.
- 6.6.6 The words “levelling device” added to the title
- 7.2.3.1 The words “where applicable” added
- 7.2.5.1(b) Modified – safeties to operate simultaneously, etc.
- 7.2.6.2 Clarified by adding the words “except the seat”
- 7.4.2 Clarified to allow the seat height to be reduced
- 7.4.6 Clarified by adding the words “of the chair”
- 7.6.3.2 Safety flap dimension increased to 152mm.
- 7.7.3 600mm dimension was 500mm
- 8.1.2 Electrical equipment shall conform to CAN/CSA-B44.1/ASME A17.5
- 8.2.4.1 Travel restriction re automatic leveling deleted
- 8.3.3 Revised requirements for emergency operation
- 8.4.2 Protection in case of failure completely rewritten. Must now protect against a single failure of:
 - a single switch that does not have contacts that are positively separated mechanically (includes magnetically operated switch)
 - device that limits the unlocking zone or leveling zone
- 8.4.2.3 modified re:
 - when to check redundant devices and,
 - when a failure is detected, when to shut down the lift
- 8.5.2.1(c) modified to require a push to stop device
- 8.5.2.1(d) modified to allow 8.5.2.2 and 8.5.2.3 device to be constant pressure
- 8.5.11 new requirement for manual moving device
- Section 10 new requirement for alterations
- Table 1 corrected

3.2 Conformance with the above requirements as well as all other requirements in CSA Standard B355-09, Lifts for persons with physical disabilities shall be demonstrated in the design submission and at the initial inspection, as applicable.

3.3 Annex B of B355-09 establishes fixed maintenance frequencies and requires at least two maintenance visits per year.

4.0 EFFECTIVE DATES FOR DESIGN SUBMISSIONS

4.1 **Design submissions** received by TSSA for registration on or after the **1st day of August 2010**, shall demonstrate conformance to the requirements of CSA Standard B355-09, Lifts for Persons with Physical Disabilities.

- a) Compliance with CSA Standard B355-09 shall be stated in the design submission specification sheets or in a separate affidavit.
- b) Submissions received between **June 1, 2010** and **July 31, 2010** may comply with B355-00 including supplement B355s1-02 or CSA Standard B355-09.
- c) Any designs submitted before **June 1, 2010** and based on the CSA Standard B355-09 code must be accompanied by a request for variance.
- d) Pre-applications will not be accepted.
 - Complete submissions, for installations designed to B355-00 including supplement B355s1-02 must be received before **August 1, 2010**
 - Device submissions received on or after **August 1, 2010** must comply with B355-09.

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*.

This Order has been developed in consultation with the Elevating Devices Advisory Council



Elevating and Amusement Devices Safety Division	Ref. No.: 239 / 10	Rev. No.:
Elevating Devices Code Adoption Document - Amendment	Date: June 21, 2010	Date:

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000, S.O. 2000, c. 16* (the “Act”)

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Annual Testing of Firefighters’ Emergency Operation

Applicable to: Elevator Owners &/or Licensees, Elevator Contractors, Mechanics and Inspectors

The Director of Ontario Regulation 209/01 (Elevating Devices) pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD), as amended, published by the Technical Standards & Safety Authority is further amended as follows:

1.0 Change to Part III Elevators, Dumbwaiters, Escalators, Moving Walks, Material Lifts and Freight Platform lifts

Effective January 1, 2011,

Section 6.1(ff) of the CAD is revoked and replaced by the following:

(ff) Section 8.11 - Periodic Inspection and Test Requirements, are not adopted

Section 6.1(gg) of the CAD is revoked and replaced by the following:

(gg) Firefighters’ Emergency Operation

- (a) Elevators that incorporate any form of Firefighters’ Emergency Operation are required to have this operating mode tested on an annual basis to verify that the firefighters’ feature is operational and ready for use by firefighters or emergency personnel if required during a fire or other emergency.
- (b) The required inspection checks of this operating mode shall either be recorded on the **“Maintenance Checklist for Firefighters’ Emergency Operation - Record of Inspection Checks”** form provided by the designated administrative authority or on a form containing not less than the tests prescribed on this form.

- (c) The owner or the owner's authorized agent may perform the necessary annual testing provided they are trained and instructed in the use of Firefighters' Emergency Operation.
- (d) A record of findings shall be made and recorded and shall be available to elevator personnel and to the authority having jurisdiction. Any deficiencies identified during the testing shall be rectified. Note: It is the responsibility of the elevating devices owner to ensure firefighters' emergency operation testing is performed annually.

2.0 OVERVIEW

Elevator owners and/or licensees are required to test the basic functionality of their elevators' Firefighters' Emergency Operation features, where this mode of operation is provided. Testing shall be performed annually.

Tests performed on or after January 1, 2011 shall utilize the "**Maintenance Checklist for Firefighters' Emergency Operation - Record of Inspection Checks**" form (attached), or shall cover the inspection checks required by this form. A fillable copy of the form is available at www.tssa.org.

The "**Maintenance Checklist for Firefighters' Emergency Operation - Record of Inspection Checks**" form has been prepared to provide guidance to building owners, elevator contractors, mechanics and inspectors regarding the minimum expectations around these annual testing requirements.

3.0 BACKGROUND

In 1975 the elevator safety code introduced for the first time a new operating mode aimed at firefighter's that offered them control of an elevator so that in a fire or other emergency they could command the elevators travel as needed.

Since the introduction of this feature in 1975, there have been a number operational changes and name changes associated with this form of operating mode.

The current elevator code refers to this operating mode as "**Firefighters' Emergency Operation (FEO)**", but elevators installed under other editions of B44 Safety Code for Elevators may have referred to this operating mode as:

- **Fire Recall / Fire Service,**
- **Firefighters' Recall / Firefighters' Service, or**
- **Special Emergency Recall / Special Emergency Service.**

Despite the various names given to this fire operating mode, any elevator system that incorporates a form of firefighter operation is required to have this operating mode tested.

The different names used to reference these operating modes should not be confused with the term Firefighters' Elevator, which is a reference to an elevator specifically identified for firefighter use as specified in the building code.

Annual testing is to verify that the firefighters' feature is operational and that it is ready for use by firefighters or emergency personnel if required during a fire or other emergency. Annual testing need not be as extensive as the acceptance test that was conducted during the inspection when the elevator was first commissioned for public use. This requirement however does not prevent a more comprehensive verification of the firefighter's feature. A minimum number of tests are included in the attached "Maintenance Checklist for **Firefighters' Emergency Operation - Record of Inspection Checks**" check sheet.

4.0 DEFINITIONS

Authorized Personnel: persons who have been instructed in the operation of the equipment and designated by the owner to use the equipment;

Elevator Personnel: persons who have been trained in the construction, maintenance, repair, inspection, or testing of equipment;

Emergency Personnel: persons who have been trained in the operation of emergency or standby power and firefighters' emergency operation or emergency evacuation;

Phase I Emergency Recall Operation: the operation of an elevator where it is automatically or manually recalled to the recall level and removed from normal service because of activation of firefighters' emergency operation;

Phase II Emergency In-Car Operation: the operation of an elevator by firefighters where the travel is under their control.

Roland Hadaller, P. Eng.

Director, Ontario Regulation 209/01 (Elevating Devices) made under the Technical Standards and Safety Act, 2000

This Code Adoption Document has been developed in consultation with the Elevating Devices Advisory Council and the Field Advisory Committee.

Maintenance Checklist for Firefighters' Emergency Operation - Record of Inspection Checks

Installation No:		Date of Test:	
Tested by:		Last Tested on :	

Item	Description	Pass	Fail
1	Check for availability of the key used to initiate recall of elevators. Available to only authorized, emergency and elevator personnel. A separate key shall be provided for <u>each switch</u> . ¹		
2	Recall the elevator to the recall level by use of the Phase 1 recall switch located in the lobby of the designated landing.		
3	Verify that the same key can be used to initiate Phase 2 operation in the car.		
4	Verify that the in-car Fire Operation switch functions as follows: (Switch should be marked as either: "OFF-ON" or "OFF-HOLD-ON")		
5	Verify that <u>constant pressure</u> of the car door buttons (in both the open and close directions) is required to complete a full door open or full door close sequence. Where no door close button is provided constant pressure of a floor button is permitted.		
6	Verify Phase 2 operation (by use of the in-car fire operation switch) by running the elevator a minimum of one floor. (buildings with several floors should be tested over more floors)		
6.1	Upon arrival at a floor, operate the doors. Confirm operation as required in Item 5. Also verify that during closing obstruct any electronic door opening device to ensure it is rendered ineffective.		
6.1	<u>Register a Call:</u> When in the "ON" position floor selection is established by means of registering a car call and closing of the doors by means of the door close button or where no door close button is provided, constant pressure of the floor selection means.		
6.2	Confirm 'security restricted' floors are overridden when running the elevator on Phase 2.		
6.3	<u>Cancel a Call:</u> <ul style="list-style-type: none"> • Cancellation of car calls is by momentary use of the "HOLD" position. • Where there is no "HOLD" position, in a two position switch, momentary use of the "OFF" position shall cancel car calls. • When provided, the 'Cancel Call' button shall cancel car calls. 		
6.4	When in the "HOLD" position with the car at a landing other than the recall level and the doors in the fully open position, a car call may not be registered and the car door shall not be able to close.		
6.5	When in the "OFF" position and the car is at a landing other than the recall level, the doors shall close automatically and when the doors reach the fully closed position, the car shall return automatically as if on 'Phase I recall' to the designated landing or the recall level.		

Record of Findings	Resolved on:

- Depending on the code edition to which this elevator was installed, this firefighters' operating mode may have been referred to as either; Fire Recall / Fire Service, Firefighters' Recall / Firefighters' Service, Special Emergency Recall / Special Emergency Service, or Firefighters' Emergency Operation (FEO).
 - Phase 1 recall refers to the action where elevators are recalled to the recall level via the recall switch.
 - Phase 2 refers to the mode of operation when control of the elevator is achieved by enabling the firefighter key switch in the elevator.
 - Conformance with these requirements is the responsibility of the owner as part of elevator maintenance.
 - While comprehensive testing is possible, above are the minimum suggested requirements only.
 - Authorized Personnel: persons instructed in the operation of the equipment and designated by the owner to use the equipment,
- ¹ Sufficient keys must be available for emergency personal to operating multiple elevators at a time in an emergency or fire scene if required.

A copy of this report shall be available to elevator personnel and the elevating devices safety inspector.



Elevating and Amusement Devices Safety Division	Ref. No.: 240/09	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: December 16, 2009	Date:

IN THE MATTER OF:

**THE *TECHNICAL STANDARDS AND SAFETY ACT 2000*,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the *Technical Standards and Safety Act 2000***

Subject: Raising the Chair Lift Safety Bar - Continued data collection and monitoring
Sent to: All Chair Lift Owners / Operators

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under the *Technical Standards & Safety Act 2000* hereby orders the following:

1. ORDER

- 1.1 In continuation with Director's Order 233/08, ongoing monitoring and feedback is required by all owners of chair lifts during the 2009/10 season. Operations Managers shall:
- a) Observe a minimum of **100 unloads** from each chairlift, at two designated times during the upcoming season and record the distance patrons are raising the restraining device prior to the 'unload point'. Explanation of the measurements required can be found in D.S.O. 229/07 or in the data collection form.
 - b) Complete one form for each chair lift and provide the results during each of the following weeks:

Survey Period	Date Report due to TSSA
January 11 - 17, 2010	February 1, 2010
February 15 - 21, 2010	March 8, 2010
 - c) Email the completed forms to zerofalls@tssa.org by the deadlines given above. The form for results reporting is available for download from the TSSA website: www.tssa.org.
 - d) The data collection must be completed by, or under the direct supervision of the Operations Manager or equivalent. The same person should complete the data collection at both times.

Note: Section 37 of the Act provides that "every person who fails to comply with an order; is guilty of an offence and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both, if the person is a body corporate, to a fine of not more than \$1,000,000.

Roland Hadaller P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*,

This Director's Order has been developed in consultation with the Zero Falls Risk Reduction Group.



Elevating and Amusement Devices Safety Division	Ref. No.:	Rev. No.:
	241 / 10	
Enforcement Procedure Bulletin	Date:	Date:
	April 9, 2010	

Subject: Escalator/Moving Walks: Monthly Application of Friction Reducing Agent on Skirts Panels, Start Up Procedures, and Skirt Step Index Measurements
Applicable to: Escalator Owners / Licensees, Contractors, Consultants and Mechanics

1. INTRODUCTION

This enforcement procedure (EP) bulletin is intended to remind owners about the requirements related to:

- a) the application of friction reducing agents* on escalator skirts and
- b) escalator and moving walk daily prestart checks

*The application of friction reducing agents may not be required if the escalator is conformant with the "Step/Skirt Performance Index" requirements. Refer to section 4 below.

2. REQUIREMENTS

The following requirements were adopted via **Code Adoption Document – Amendment 225/07, Ontario Regulation 209/01 (Elevating Devices)**.

2.1. Clause 5.2.1 of the B44.2-07 (Application of Friction Reducing Spray)

♦ The following maintenance procedures shall be performed at intervals not exceeding one month:

- (f) Where skirt panels are not made of low friction material or permanently treated with a friction-reducing material, a friction reducing agent shall be applied. ♦

2.2. Requirement 8.6.11.5 of the A17.1-2007/B44-07 (Escalator or Moving Walk Start-Up Procedures)

♦ 8.6.11.5 Escalator or Moving Walk Startup.

8.6.11.5.2 The following procedure shall be utilized when starting an escalator or moving walk:

- a. Prior to starting the unit, observe the steps or pallets and both landing areas to ensure no persons are on the unit or about to board. Run the unit away from the landing.
- b. Verify correct operation of the starting switch.
- c. Verify correct operation of the stop buttons.
- d. Verify correct operation of each stop button cover alarm, if furnished.
- e. Visually examine the steps or treadway for damaged or missing components; combplates for broken or missing teeth; skirt or dynamic skirt panels and balustrades for damage.
- f. Verify that both handrails travel at substantially the same speed as the steps or the treadway, are free from damage or pinch points, and that entry guards are in place. Visually verify that all steps, pallets, or the treadway is properly positioned.
- g. Verify that ceiling intersection guards, anti-slide devices, deck barricades, and caution signs are securely in place.
- h. Verify that demarcation lighting is illuminated, if furnished.
- i. Check for uniform lighting on steps/tread not contrasting with surrounding areas.

- j. Verify that the safety zone is clear of obstacles and that the landing area and adjacent floor area are free from foreign matter and slipping or tripping hazards.
- k. Check for any unusual noise or vibration during operation. If any of these conditions is unsatisfactory, the unit shall be placed out of service. Barricade the landing areas and notify the responsible party of the problem. ♦

3. PROCEDURES

a) Monthly Application of Friction Reducing Agent

In order to ensure compliance with Section 5.2.1 (f) of the B44.2-07, the owner in consultation with their escalator maintenance contractor shall examine all of their escalators to identify those escalators that do not have skirt panels made of, or permanently treated with anti-friction material.

The owner shall ensure that a friction reducing agent is applied to skirts of the identified devices at monthly intervals.

The application of the friction reducing agent can be carried out by anyone authorized and trained by the owner for that purpose. Special care must be taken to avoid spraying the antifriction agent on to the steps.

Records for each escalator, detailing the date anti-friction agent was applied along with the signature and printed name of the person who carried out the task shall be kept on site, in the form of a log, and made available to an inspector upon request. The records shall be kept for five years.

Owners are reminded that it is their responsibility to ensure that the application of the friction reducing agent is carried out regularly, even in cases where the maintaining contractor has agreed to complete this task on the owner's behalf.

Owners shall also ensure that the friction reducing agent is not removed inadvertently by cleaning staff, unless applied again immediately after cleaning the skirts.

Owners or contractors shall ensure that all skirt panels are in good condition and are not worn, do not have gaps between panels, holes, dents or any other deformation. If such conditions exist they shall be repaired or replaced immediately.

Owners or maintenance contractors, who find a device that is not in compliance with the requirements of this bulletin, shall immediately remove the device from service until compliance is achieved.

Maintenance contractors shall ensure that the step to skirt clearance dimension is maintained within the acceptable limits of the applicable code, and that the steps and combplates mesh adequately to reduce the risk of entrapments at the combplates.

b) Escalator and Moving Walk Start Up Procedures

Requirement 8.6.11.5 of A17.1/B44-07 requires a series of checks prior to start-up of escalators and moving walks. Owners must ensure these start-up procedures are followed to ensure compliance to the regulatory requirements. Escalators and moving walks that are subject to 24 hour operation shall be checked daily by authorized personnel.

A record of authorized and trained personnel shall be kept on the premises where the escalator(s) or moving walk(s) are located and shall be available to the authority having jurisdiction.

While it is a requirement to carry out the checks contained in the Escalator or Moving Walk Start-up procedure, it is not a requirement to record 'who' started the escalator.

To monitor and record the essential activities related to daily start-up checks, see the attached Escalator / Moving Walk Daily Start-Up Log. Copies can be obtained from www.tssa.org see ED-241-10 Start-Up Log.

4. STEP/SKIRT PERFORMANCE INDEX

The next edition of CSA-B44 (2010) will adopt the Step/Skirt Performance Index (SSPI) requirements for new **and existing devices**. The SSPI is a calculated value that is based on skirt friction and the gap between the escalator step and skirt panel.

With the release of the **B44-85** edition of the code, friction reducing sprays were no longer permitted as a means to reduce friction. Instead "new design requirements" for skirt panels were introduced. However escalators installed prior to the 1985 code edition may have relied on sprays to ensure skirt friction was kept to a minimum, **and this regular application of spray is still required unless conformance to the applicable SSPI is demonstrated.**

The code requirements for SSPI are as follows:

- New escalators must record an SSPI value of 0.15 or less
- New or Existing installations built to B44-00 update 4 or later, that are equipped with skirt deflector devices, must record an SSPI value of 0.25 or less, and
- Existing installations built to B44-00 or prior, that are equipped with skirt deflector devices, must report an SSPI value of 0.40 or less.

Despite the requirements specified in 2.1 of this enforcement procedure bulletin (re: treating or spraying escalator skirts with a friction reducing agent), where escalators are tested and can demonstrate and subsequently document compliance with the applicable SSPI, the requirement to apply a friction reducing agent can be ignored. However, **owners and contractors should note that the Step/Skirt Performance Index must be measured annually and a record of acceptable findings shall be kept in the escalator log book.**

IMPORTANT NOTE: The adoption of the 2010 Edition of B44 (effective mid/late 2011) will:

- no longer permit friction reducing sprays
- require conformance to the Skirt Step Performance Index (SSPI)** exclusively.

****Failure to meet the SSPI may force changes or upgrades to escalator skirt panels.**

5. BACKGROUND

Due to several incidents in Ontario involving escalator entrapments which resulted in both minor and serious injuries, TSSA created an Escalator Entrapment Risk Reduction Group. This group which was made up of Industry representatives, Owners, Consultants and TSSA engineering and inspection staff, produced recommendations based on the data gathered from inspections and incidents in Ontario and studies carried out in other jurisdictions.

This Enforcement Procedure Bulletin was prepared using some of the recommendations provided by the Risk Reduction Group.

Owners of escalator and moving walks should also take note that with the next edition of the A17.1/B44-2010 safety code for elevators and escalators, the following requirement will be adopted:

- ◆ 8.6.8.3.3 *The escalator step/skirt performance index shall be one of the following, whichever is applicable:*
- (a) ≤ 0.15
 - (b) ≤ 0.25 for escalators installed under ASME A17.1a-2002/CSA B44-00 Update 1 and later editions and when a skirt deflector device complying with the requirements of 6.1.3.3.7 is provided
 - (c) ≤ 0.4 for escalators installed under ASME A17.1-2000/CSA B44-00 and earlier editions and a skirt deflector device is provided. ◆

Item (c) above pertains to existing escalators which may not have been manufactured to meet the requirements of the escalator step/skirt performance index. As such the addition of skirt deflector devices on these escalators may be necessary to conform with the code requirements provided the SSPI is ≤ 0.4 , otherwise skirt panels may require replacement.

6. ENFORCEMENT

Should an inspector find a device in non compliance with:

- 5.2.1 (f) of the B44.2-07 (or a failure to demonstrate / document the alternative SSPI as described above) or
- requirement 8.6.11.5 of the A17.1/B44-07 (start-up procedures)

the escalator or moving walk may be removed from service and may remain out of service until compliance is achieved.

This enforcement procedure bulletin is effective immediately.

Rob Kremer, P.Eng.,
Engineering Manager, EDAD Program

Dean McLellan
Incident Management Specialist, EDAD Program

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This Bulletin has been developed in consultation with the TSSA Elevating Devices Advisory Council.

ESCALATOR / MOVING WALK DAILY START-UP LOG

Building:		Address:	
Installation No.		Week Start Date:	
		Problem Reporting Phone #:	

Initials of the person performing the start-up check →									
Ref	Check List Item	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
1	Approach / walk-on area								
2	Comb segments <i>broken teeth</i>								
3	Handrail inlet device								
4	Start switch <i>(note: run unit away from the landing)</i>								
5	Stop switch								
6	Stop switch cover alarms if furnished								
7	Step / pallet side clearance								
8	Approach / walk-on area								
9	Comb segments <i>broken teeth</i>								
10	Handrail inlet device								
11	Start switch <i>(note: run unit away from the landing)</i>								
12	Stop switch								
13	Stop switch cover alarms <i>if furnished</i>								
14	Step / pallet side clearance								
14	Handrail condition <i>cracks, pinch points</i>								
15	Handrail speed <i>closely matches step speed</i>								
16	Balustrades								
17	Skirt panels <i>damage, raised surfaces/objects</i>								
18	Unusual noises								
19	Unusual vibrations								
20	Demarcation lights <i>if furnished</i>								
21	Ceiling intersection guards								
22	Anti-slide devices								
23	Deck barricades								
24	Caution Signs								
25	Steps / pallets / treadways <i>damage</i>								
26	Ambient lighting <i>adequate</i>								
27	Skirt brushes								

Escalators and moving walks shall be started only by authorized personnel* trained in compliance with the required procedures.

Escalators and moving walks subject to 24-h operation shall be checked daily by authorized personnel.

A record of trained authorized personnel shall be kept on the premises and shall be available to the authority having jurisdiction.

*authorized personnel: persons who have been instructed in the operation of the equipment and designated by the owner to use the equipment.



Elevating and Amusement Devices Safety Division	Ref. No.: 242 / 10	Rev. No.:
Enforcement Procedure Bulletin	Date: November 1, 2010	Date:

Subject: Signing of Logbooks for Completed Maintenance Tasks
Applicable to: Elevating Device Mechanics, Contractors, Consultants, and Owners

1. INTRODUCTION & INTERPRETATION

1.1. “Complete and Compliant”

A mechanic’s signature and date, for a log book entry that is used to denote that a specific maintenance; task, test, examination, inspection or check has been completed, shall only be signed off once the action is complete and the status of the device or component associated with that task is in compliance with the applicable code¹ and regulatory requirements.

Where a log book signature applies to a group of tasks, no mechanic shall sign off unless the group of tasks is fully complete and the devices or components associated with that group are in compliance with the applicable code and regulatory requirements.

A signed off task on a log book entry shall only be used to denote a “Complete and Compliant” state.

Note: The use of a log book notes section to record findings, corrective actions or planned corrective actions is not prohibited. See 8.6.1.4 of B44 for information related to documenting tasks, call backs and other maintenance records. Where corrective actions are in progress, refer to B44 8.6.12.2.3 for requirements related to parts affecting safe operation. These devices may require shut-down until remedial activities are complete.

¹“Applicable code” generally refers to the code under which the component or device was installed or altered.

1.2. Maintenance and Maintenance Tasks

Every elevating device is required to be maintained by a registered contractor.

By definition, maintenance includes the actions associated with inspection, examination, testing, cleaning, lubricating, repairing and adjusting of parts and components at regular intervals to prevent the elevating device from becoming unsafe or in non-compliance with the applicable codes¹ and regulatory requirements.

Per B44 (8.6.12.2.3 see also 8.6.1.2.2), “Where a part directly affecting the safety of the operation is found to be defective, it shall be immediately adjusted, repaired, or replaced.” If this is not possible the device must be removed from service.

Compliance with the applicable code and regulatory requirement means that the device or component is functioning properly. Additionally, maintenance mechanics must apply a standard of care as shown below;

O.Reg 209/01 s32.4

A person who carries out an inspection ... shall ensure that the elevating device is in a safe operating condition and shall take all steps and reasonable precautions in the circumstances to ensure that the parts and functions will remain in a safe operating condition until the next scheduled inspection and examination. O. Reg. 209/01, s. 32 (4).

1.3. Log Books

Pursuant to Ontario Regulation 209/01 (Elevating Devices)

34. (1) Every owner of an elevating device and every contractor shall maintain a log book for each elevating device that they own or maintain, and the log book shall contain up-to-date data on,
(a) all maintenance functions required to be recorded in the log book by the applicable code, standard or requirement referred to in the code adoption document or any applicable director's order; and
(b) such other data as are required to be kept in the log book by this Regulation. O. Reg. 209/01, s. 34 (1); O. Reg. 252/08, s. 20.

For additional log book requirements related to B44 elevating devices refer to; O.Reg 209/01 (Elevating Devices), 8.6.12 of B44, CAD amendment 225/07-r3 and Directors Order 99/92.

For additional log book requirements related to B355 devices refer to; O.Reg 209/01 (Elevating Devices), Appendix B of B355, CAD amendment 238/09, Bulletin 197/06-r1 and Directors Order 183/03.

2. SUPPORTING DOCUMENTATION

- Ontario Regulation 209/01 Elevating Devices
- Elevating Devices Code Adoption Document including amendments; 238/09 and 225/07-r3
- Rulings, Orders and Bulletins 99/92, 183/03 and 197/06
- A17.1/B44 Code – 8.6.12.2 General Maintenance Requirements
- B44.2 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks
- B355 Lifts for persons with physical disabilities – Appendix B

3. BACKGROUND

Based on inconsistent practices observed in the field related to the signing off of maintenance tasks in a log book, this bulletin intends to clarify that log book entries shall not be signed off unless the related task is completed in full and the respective part or component is in a regulatory and code compliant state.

Rob Kremer, P.Eng.
Engineering Manager, EDAD Program

Ted Gervais,
Regional Supervisor, EDAD Program

This Bulletin has been developed in consultation with the Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.: 243 / 10	Rev. No.:
Information Bulletin	Date: April 9, 2010	Date:

Subject: Hydraulic Elevators with buried hydraulic jacks with single bulkhead cylinders
Applicable to: Owners of single bulkhead buried cylinders
Contractors, Consultants and Elevating Device Mechanics

1 INTRODUCTION & IMPORTANT NOTICE TO OWNERS

Buried cylinders with single bottoms found on older model hydraulic elevators can fail catastrophically and cause injury to riders.

Hydraulic elevators installed prior to the 1977 code requirements could have buried cylinders with single bottoms.

Pending changes to the elevator code will require mitigation for buried cylinders with single bottoms (commonly referred to as single bulkhead cylinders). **These code changes are expected to be completed and adopted in Ontario mid to late 2011.**

The new code requirements as extracted from B44 Safety Code for Elevators are as follows;

8.6.5.8 Safety Bulkhead.

Hydraulic cylinders installed below ground shall conform to 3.18.3.4, or the elevator shall conform to 8.6.5.8(a) or 8.6.5.8(b):

- (a) the elevator shall be provided with car safeties conforming to 3.17.1 and guide rails, guide-rail supports, and fastenings conforming to 3.23.1; or
- (b) the elevator shall be provided with a plunger gripper conforming to 3.17.3. The plunger gripper shall grip the plunger when the applicable maximum governor tripping speed in Table 2.18.2.1 is achieved. ♦

1.1 Upcoming Changes

The new requirements mean that hydraulic elevators with buried single bulkhead cylinders will either have to;

- a) be equipped with a car safety or
- b) be equipped with a plunger gripper or
- c) **replace the existing single bottom cylinder** with a new double bulkhead cylinder complete with a method of corrosion protection.

1.2 Interim & Ongoing Safety Measures

In 1999 TSSA introduced requirements for elevating device contractors to look for effects of corrosion on in-ground hydraulic cylinders with the release of safety alert bulletin 143/99.

A key component of this bulletin was an oil log, intended to flag installations where oil was being added without a viable explanation about where the missing oil went.

Following a hydraulic cylinder failure in Ontario in 2006, TSSA reviewed and heightened the requirements related to oil monitoring and introduced an enhanced oil loss monitoring program with regulatory amendment 212/07.

The heightened requirements forced contractors to account for all oil, lost or added, from an elevators hydraulic system. Contractors must also ensure their oil monitoring programs are documented, and include training records about who received training and when.

With respect to safety, owners and contractors play an important part, and in this regard owners need to be aware of the importance of oil loss monitoring. As part of their due diligence, owners should be asking contractors for documentation that verifies oil loss monitoring is being conducted. On installations known to have single bottom cylinders, oil loss monitoring activities shall occur monthly.

Note: Oil loss monitoring applies to **all** hydraulic elevator installation with **buried** piping or **buried** cylinders. Only those locations with single bottom cylinders require that the monitoring activity be conducted monthly.

2 **PREPARING FOR UPCOMING CHANGES IN THE CODE - NOTICE TO OWNERS**

With the adoption of the upcoming code requirements, owners of hydraulic elevators with single bottom cylinders will need to begin planning for necessary changes to their elevator equipment.

It is advisable that owners begin researching options on how best to deal with single bottom cylinders in order to determine the costs associated with the various options and to determine which is the preferred approach for a given building.

While the timelines for equipment compliance are not yet established, it may be beneficial to know that the new code requirements will publish late 2010, early 2011 and their requirements will likely be adopted in Ontario by mid to late 2011. It is expected that compliance to the requirements will span a few years with an eventual full compliance target in 2013.

3 **BACKGROUND**

Design requirements for buried cylinders have evolved over time.

Hydraulic elevators installed prior to the 1977 code did not require cylinders with double bottoms. Cylinder corrosion tends to be more aggressive where the cylinder has been welded. This corrosion can lead to a catastrophic failure at the bottom of the cylinder that can result in the elevator dropping into the pit at a high rate of speed.

TSSA is not aware of any single bulkhead cylinder that failed catastrophically without prior signs of unexplained loss of oil.

TSSA issued Elevating Devices Code Adoption Document Amendment 212/07 requiring oil loss monitoring for all hydraulic elevators as a means to recognize early warning signs of potential failure. For elevators with buried single bottom cylinders, this monitoring must be done on a monthly basis.

During periodic inspections of hydraulic elevators with buried single bottom cylinders, TSSA inspectors are finding cases where the oil loss monitoring required by 212 / 07 is not being done on a monthly basis.

Roland Hadaller, P. Eng.

Director, Ontario Regulation 209/01 (Elevating Devices) made under the Technical Standards and Safety Act, 2000

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This Bulletin has been developed in consultation with the Elevating Devices Advisory Council.

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Putting Public Safety First



Elevating and Amusement Devices Safety Division	Ref. No.: 244 / 10	Rev. No.:
DIRECTOR'S INFORMATION BULLETIN	Date: April 28, 2010	Date:

IN THE MATTER OF:

**THE TECHNICAL STANDARDS AND SAFETY ACT, 2000,
S.O. 2000, c. 16**

- and -

ONTARIO REGULATION 209/01 (Elevating Devices)

- and -

ONTARIO REGULATION 222/01 (Certification and Training of Elevating Device Mechanics)

made under the Technical Standards and Safety Act, 2000

Subject: Maintenance and Repair of Elevating Devices by Qualified Mechanics
Applicable to: Elevator Contractors and Consultants

1. INTRODUCTION

All elevator contractors and consultants are reminded that if personnel, other than those whose regular duties include servicing of elevating devices, are assigned to this work in the event of a labour disruption on elevating devices, they must be qualified in accordance with the TSS Act and Regulation 209/01. Specific requirements are provided as follows for clarification.

Ontario Regulation 209/01 (Elevating Devices)

1. (1) In this Regulation,

“mechanic” means a person who holds a certificate referred to in section 4 of Ontario Regulation 222/01 made under the Act;

“mechanic-in-training” means a person who works under the supervision of a mechanic for the purpose of obtaining the qualifying time and experience required to obtain a certificate referred to in section 4 of Ontario Regulation 222/01;

24. (1) No person shall undertake any work on an elevating device unless the person is employed by a contractor and is either a mechanic or a mechanic-in-training working under the supervision of a mechanic. O. Reg. 252/08, s. 15.

(2) No person shall be involved in a task that is necessarily ancillary or incidental to the installation or maintenance of an elevating device unless he or she is supervised by a mechanic. O. Reg. 209/01, s. 24 (2).

(3) No mechanic shall be assigned or undertake work beyond the scope of his or her certificate or, in the case of passenger ropeway mechanics, beyond the scope of his or her experience or training. O. Reg. 209/01, s. 24 (3).

Ontario Regulation 222/01 (Certification and Training of Elevating Device Mechanics)

1. (1) In this Regulation,

“mechanic” has the same meaning as in Ontario Regulation 209/01;

4. (1) No person shall work on an elevating device as a mechanic without first having obtained a certificate from the director designating the person as one or more of the following:

1. An elevating device mechanic, class A (an “EDM-A certificate”). ...
9. An elevating device mechanic-in-training, Class T (an “EDM-T certificate”). O. Reg. 222/01, s. 4 (1).

Maintenance and repair of elevators, escalators, and other elevating devices must be performed in accordance with the requirements of the Ontario Regulation 209/01, and Ontario Regulation 222/01, under the Technical Standards and Safety Act, 2000.

Individuals who are assigned work on an elevating device must be certified for that class of device or be a TSSA registered trainee (EDM-T) under the appropriate supervision. To meet this requirement the EDM-T must;

- Posses a TSSA Mechanic in Training Passport document or obtain a Skills Passport document from Service Ontario. The purpose of this document is to record the practical training that you acquire. This is a **mandatory** document. There is no cost to order the passport, which includes free delivery. When ordering, use publication #231848. The link is provided below to order the Skills Passport document from the Service Ontario website: <https://www.publications.serviceontario.ca/ecom/>

Skills Passport. Please note that not all sections of the passport are mandatory. The signed off sections should accurately reflect the individual’s duties throughout his/her period of training.

Please note that Skills Passport can only be signed off by a certified supervising mechanic.

Roland Hadaller, P.Eng.

Director,

Ontario Regulation 209/01(Elevating Devices) and Ontario Regulation 222/01(Certification and Training of Elevating Device Mechanics) made under the *Technical Standards and Safety Act, 2000*



Elevating and Amusement Devices Safety Division	Ref. No.: 245 / 10	Rev. No.:
DIRECTOR'S ORDER	Date: December 1, 2010	Date:

IN THE MATTER OF:

**THE TECHNICAL STANDARDS AND SAFETY ACT 2000,
S.O. 2000, c. 16**

- and -

**ONTARIO REGULATION 209/01(Elevating Devices)
made under the *Technical Standards and Safety Act 2000***

Subject: Installation or Upgrade of CAR TOP GUARDRAILS on existing elevators (pre B44-07)
Applicable to: Elevator Owners / Licensees, Contractors, and Consultants

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under section 31 of the *Technical Standards & Safety Act* hereby orders the following:

1 ORDER TO ELEVATOR OWNERS

1.1 By December 1, 2013 ,

all elevators equipped with a car top that is intended to serve as a platform for a worker, "where the perpendicular distance between the edges of the car enclosure top and the adjacent hoistway enclosure exceeds 300 mm (12 in.) horizontal clearance and on sides where there is no hoistway enclosure", [A17.1/B44 2.14.1.7.1] shall be equipped with a guardrail in conformance with section 3, except as provided for in section 4.

1.2 Owners are reminded that O Reg 209/01 (Elevating Devices), as amended, s. 25(3) requires owners to "ensure that any alteration to the elevating device is made by a contractor registered under section 21." Owners are also reminded that the requirements for safe worker access on a platform are established within R.R.O. 1990, Reg. 851 (Regulations for Industrial Establishments made under the Occupational Health and Safety Act), Section 13.

2 ORDER to CONTRACTORS

2.1 Contractors who undertake the work of installing a new car top guardrail or upgrading an existing car top guardrail shall ensure the guardrail conforms to the requirements in section 3 of this order.

2.2 Where overhead clearances prevent the direct installation of a 1070 mm (42 in.) high guardrail (per section 3) the requirements of section 4 of this order shall also apply.

2.3 Guardrail clearances and car top marking shall be in compliance with ASME A17.1b-2009/CSA B44-09 section 2.14.1.7 including the reference dimensions provided in Appendix G.

2.4 The installation or alteration of a car top guardrail is a Minor A alteration (refer to TSSA designated alteration 8.7.2.14★4 in Director's Order 226-07-r1). All information required to adequately convey the scope of the alteration shall be provided. Items such as, but not limited to; runby's, overheads, horizontal and vertical clearances, non standard railing designs, railing setback from the car top perimeter, electrical switches and electrical schematic changes if collapsible, and fall arrest anchor points, shall be addressed if

required. Each submission must include confirmation that the guardrail design complies with the dimensional, loading, fastening and deflection criteria detailed in Reg. 851 (Regulations for Industrial Establishments), O. Reg. 350/06 (Building Code) and A17.1/B44 Safety Code for Elevators.

Note: TSSA has developed a specific Minor A template for the addition of a car top guardrail which is available at www.tssa.org. Submissions limited to the addition of a car top guardrail and submitted on the appropriate Minor A template do not require inclusion of an alteration checklist.

- 2.5** Guards as defined herein are not expected to meet the “openings through” restrictions as defined in O. Reg. 350/06 (Building Code). There shall be no requirement for providing any opening size protection between the top and mid guardrails, or the mid rail and toe board elements as described herein.
- 2.6** Where existing elevator car top guardrails, installed prior to the A17.1-2007/B44-07 Code do not meet the requirements or provisions as defined in Section 3 or 4 as set out herein, including deflection, lateral and vertical design force requirements, existing car top guardrails must be altered to meet compliance standards and requirements as defined herein. Guardrails designed and installed in compliance with B44-07 prior to June 1, 2011 need not be upgraded.

3 STANDARD GUARDRAIL REQUIREMENTS

- 3.1** Car top guardrails shall,
- (a) have a top rail not less than 1070 mm (42 in.) above the working surface;
 - (b) have a mid rail (or equivalent structural member);
 - (c) have a toe-board to a height of 125 mm (5 in.) above the working surface.
- 3.2** Guards shall be fixed in position and designed to resist the loads^{1,2} specified in O. Reg. 350/06 (Building Code) Article 4.1.5.15, as required by Reg. 851 (Regulations for Industrial Establishments) Section 14(2). See table in 5.2 for reference.
- 3.3** When the forces of A17.1/B44 2.10.2.4 are applied the railing shall not deflect beyond the perimeter of the car top [A17.1/B44 2.14.1.7.1], and in no case shall the deflection exceed 75mm (3 in.).

¹ For Limit States Design a principal load factor of 1.5 applies per sentence 4.1.3.2(5) of O. Reg. 350/06 (Building Code).

² For Allowable Stress Design, typically 66% of ultimate stress (1.5 safety factor) is applied to material strength, in which case the stated loads are not factored.

4 ALTERNATIVE to 1070 mm (42 in.) HIGH GUARDRAIL

4.1 910 mm to 1070 mm (36 in. to 42 in.)

Where a standard guardrail per Section 3 cannot be provided due to overhead clearance issues, the requirements of 3.1(a) are permitted to be reduced to height between 910 mm and 1070 mm.

Note: Railings between 910mm and 1070mm should be designed to the maximum extent existing clearances allow. (This order applies to existing elevator installations - railing heights less than 1070mm are not permitted for new elevating device installations.)

4.2 Foldable / Collapsible

Where a standard guardrail per Section 3 or the requirements of 4.1 cannot be provided due to overhead clearance issues, a foldable, collapsible or other stowable design shall be acceptable provided that;

- (a) the car will not operate in “top-of-car inspection operation” unless the railing is in the fully extended position,

- (b) the car will not operate in; “normal operation”, “hoistway access operation”, or any type of “inspection operation” other than “top-of-car inspection operation”, unless the railing is in the fully retracted position,
- (c) switches used to monitor the fully collapsed position shall have contacts that are positively opened mechanically when the railing is moved from its fully collapsed position (leaving the collapsed position will forcibly/positively remove the car from all modes of operation and top-of-car operation cannot be engaged until the extended position is reached),
- (d) the switch used to monitor the fully collapsed position shall comply with the requirements of the car top transfer switch when in the open position, except the top-of-car operation shall not be permitted until the guardrail is in the fully extended position,
- (e) switches used to monitor the fully extended position shall have contacts that are positively opened mechanically when the railing is moved from its fully extended position (leaving the extended position will forcibly/positively remove the car from top-of-car operation and other modes of operation cannot be engaged until the collapsed position is reached),
- (f) related circuits for switches used to monitor the fully collapsed and fully extended position of the guardrail shall comply with 2.26.9.3 and 2.26.9.4 of A17.1-2007/B44-07,
- (g) electrical means shall be provided to prevent upward movement of the car beyond the point required to maintain top of car clearances when the railing is not in the fully collapsed position,
- (h) when in the fully extended position the handrail shall meet the requirements of Section 3.
- (i) a suitably designed and marked fall arrest anchor point shall be provided if there is worker exposure to a fall hazard (per Section 85 of Reg. 851, Regulations for Industrial Establishments) while engaging or lowering the alternative height guardrail provided for in section 4.2

5 SUPPORTING MATERIALS

5.1 Referenced Documentation

- ASME A17.1 -2007/ CSA B44 - 07 Safety Code for Elevators
- ASME A17.1b -2009/ CSA B44 - 09 Safety Code for Elevators
- Occupational Health and Safety Act - R.R.O. 1990 Reg. 851 (Regulations for Industrial Establishments)
- Building Code Act, 1992, O.Reg. 350/06 (Building Code)

5.2 Summary of Guardrail Requirements

DIMENSIONAL REQUIREMENTS			
Guard Component	Occupational Health and Safety Act - R.R.O. 1990, Reg. 851	A17.1 / B44	Standard Guardrail per Section 3
Top Rail - height	910 to 1070 mm (36 to 42 in.) [Section 14(1)(a)]	1070 mm (42 in.) [2.10.2.1]	1070mm (42 in.)
Mid Rail	~ mid way [Section 14(1)(b)]	approximately centered [2.10.2.2]	~ mid way
Toe Board - height	125 mm (5 in.) ³ [Section 14(1)(c)]	100 mm (4 in.) [2.10.2.3]	125 mm (5 in.)

³ if tools or other objects may fall on a worker

STRENGTH REQUIREMENTS						
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	
Guard Component	Description of Requirement	Occupational Health and Safety Act - R.R.O. 1990, Reg. 851	Building Code Act, 1992 O.Reg. 350/06 (Building Code)	A17.1 / B44 ⁶ Use for deflection criteria only	Standard Guardrail per Section 3	
Top Rail	lateral force	Structural requirements as set out in the Building Code [Section 14(2)]	1000 N (225 lbf) or 750N/m (52 lbf/ft) ⁴ [4.1.5.15(1)(c)]	890 N (200 lbf) [2.10.2.4(a)]	Strength to Building Code (Column 4, see OBC for details)	
	vertical force		1500 N/m (103 lbf/ft) [4.1.5.15(4)]	890 N (200 lbf) [2.10.2.4(a)]		
Mid Rail	force in any direction		500 N (112 lbf) ⁵ [4.1.5.15(2)]	666 N (150 lbf) [2.10.2.4(b)]		Deflection to A17.1/B44 (when loaded to column 5)
Toe Board				225 N (50 lbf) [2.10.2.4(c)]		

⁴ whichever force governs

⁵ over a 100mmx100mm area, at any point producing the most critical effect [4.1.5.15(2) of O.Reg. 350/06]

⁶ force values as required by Occupational Safety and Health Administration (US) requirements - used for deflection criteria

6 BACKGROUND

- 6.1 Early editions of CSA B44 Safety Code for Elevators provided little direction regarding requirements for car top railings. The 2000 Code edition of A17.1/B44 introduced criteria for when railings should be provided on car tops and detailed height requirements. The 2005 supplement to A17.1/B44 introduced strength values and these values were adopted in 2007 for all elevating device installations in Ontario. The current strength values stated in A17.1/B44 are borrowed from the Occupational Health and Safety Administration (US) requirements.
- 6.2 As a result of a recent incident, new awareness has brought attention to the area of elevator personnel safety on elevator car tops.
- 6.3 A task group consisting of the **Provincial Labour-Management Health and Safety Community**, the **Elevator/Escalator Labour-Management Health and Safety Committee**, the **Ministry of Labour**, owner representatives from TSSA's **Elevating Devices Advisory Council** and TSSA convened to review fall protection issues and recommended the retrofitting of elevator car tops with guardrails.

Roland Hadaller, P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices) appointed under the *Technical Standards and Safety Act*, 2000

This Bulletin has been developed in consultation with the Elevating Devices Advisory Council and the Field Advisory Committee.



Elevating and Amusement Devices Safety Division	Ref. No.: 246 / 11	Rev. No.:
Elevating Devices Code Adoption Document - Amendment	Date: April 25, 2011	Date:

IN THE IN THE MATTER OF:

THE TECHNICAL STANDARDS AND SAFETY ACT, 2000, S.O. 2000, c. 16 (the "Act")

- and -

ONTARIO REGULATION 223/01

(Codes and Standards Adopted by Reference) made under the Act

- and -

ONTARIO REGULATION 209/01(Elevating Devices) made under the Act

Subject: Elevating Device Code Adoption Document Amendment:
Consolidation of Amendments and Adoption of Z98

Applicable to: All Elevating Device Contractors, Consultants and Elevating Device Mechanics

The Director of Ontario Regulation 209/01 (Elevating Devices), pursuant to section 4 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), hereby provides notice that the Elevating Devices Code Adoption Document dated June 1, 2001 (CAD), as amended, published by the Technical Standards & Safety Authority is further amended as follows;

A. Changes to Part I General, Part II General Technical Requirements , Part III Elevators, Dumbwaiters, Escalators, Moving Walks, Material Lifts and Freight Platform Lifts, Part IV Manlifts, Part VI Construction Hoists, and Part VII Elevating Devices for Persons with Physical Disabilities.

1. Effective immediately, Part I, II, III, IV, VI and VII is revoked and replaced by Parts 1, 2, 3, 4, 6, and 7 of this document.

B. Changes to Part V Passenger Ropeways

1. Effective October 1, 2011, Part V Passenger Ropeways is revoked and replaced by Part 5 of this document.

Part 1

1 GENERAL

1.1 Definitions

1.1.1 The terms in this Code Adoption Document (Document) have the same meaning as in the Act or the Regulation unless otherwise specified herein.

1.1.2 Where a provision of a code or standard adopted in this Code Adoption Document (Document) is inconsistent with the requirements of this Document, the provision of this Document shall prevail.

1.1.3 In this Document,

- (a) “Regulation” means Ontario Regulation 209/01 (Elevating Devices) - made under the *Technical Standards and Safety Act*.
- (b) “CSA” means the Canadian Standards Association.
- (c) “CAN” means a standard recognised as a National Standard of Canada and approved by the Standards Council of Canada.
- (d) “ANSI” means the American National Standards Institute.
- (e) “freight elevator-P” means a freight elevator upon which passengers are permitted to ride;
- (f) “common-mode failure” means the result of an event(s) which because of dependencies, causes a coincidence of failure states of components in two or more separate channels of a redundancy system, leading to the defined system failing to perform its intended function. [CAD Amendment 216-07]
- (g) “software system failure” means a behaviour of the software, including its support (host) hardware, that is not in accordance with the intended function. [CAD Amendment 216-07]
- (h) “solid-state device” means an element that can control current flow without moving parts. [CAD Amendment 216-07]

1.2 Exceptions

- 1.2.1 Except where otherwise indicated, this Document applies to all elevating devices and parts thereof.
- 1.2.2 Despite subsection 1.2.1 and unless otherwise specified in the Regulation, in this Document or by the director, the codes and standards referred to in this Document do not apply to existing elevating devices except for those sections respecting alterations, the inspection, testing, maintenance, operation and use of the elevating device, including signage and instructions relating to the use of the elevating device.

Part 2

2 GENERAL TECHNICAL REQUIREMENTS

2.1 Welding

- 2.1.1 The welding of a steel structure on an elevating device shall conform to the requirements of CSA Standard W59-03, Welded Steel Construction (Metal Arc Welding). [CAD Amendment 246-11]
- 2.1.2 The welding of a steel structure on an elevating device shall be undertaken by a fabricator or contractor qualified to the requirements of CSA Standard W47.1-03, Certification of Companies for Fusion Welding of Steel Structures. [CAD Amendment 246-11]
- 2.1.3 The field welding of piping and fittings on an elevating device shall conform to the requirements of CSA Standard B51-03, Code for the Construction and Inspection of Boilers. [CAD Amendment 246-11]
- 2.1.4 Despite subsections 2.1.1, 2.1.2 and 2.1.3, an equivalent welding standard may be used if it is acceptable to the director.

2.2 Electrical

2.2.1 Electrical equipment shall conform to the requirements of,

- (a) Ontario Electrical Safety Code as amended from time to time; and [CAD Amendment 246-11]
- (b) CAN/CSA B44.1/ASME A17.5-04, Elevator and Escalator Electrical Equipment, or [CAD Amendment 246-11]
- (c) CAN/CSA C22.2 No. 14, Industrial Control Equipment (applicable to elevating devices other than elevators, escalators, moving walks, dumbwaiters, material lifts, and lifts for persons with physical disabilities). [CAD Amendment 246-11]

2.3 Rope Clips

2.3.1 Where clips are permitted to fasten metal rope in an elevating device,

- (a) the minimum number of clips to be used on each rope ends shall be,
 - (1) two clips for rope under nine millimetres in diameter,
 - (2) three clips for rope nine millimetres in diameter and over but under sixteen millimetres in diameter,
 - (3) four clips for rope sixteen millimetres in diameter and over but under nineteen millimetres in diameter;
- (b) the rope end shall be bent over a heart-shaped thimble that has a groove of a radius equal to that of the rope or shall be provided with protection that a director considers equivalent;
- (c) the clips shall be spaced at a distance apart equal to six times the rope diameter from the short end of the rope;
- (d) U-type clips shall be placed so that the U bolts bear on the short or dead end of the rope and the bases bear on the load part of the rope; and
- (e) the nuts on the clips shall not be fully tightened until after the rope has been under load and all nuts shall be fully tightened while the rope is still loaded.

2.4 Rope Replacement (17/84) & (122/95)

2.4.1 When changing or shortening ropes on counterweighted elevators, the installation shall be provided with a data plate permanently and securely attached in the pit, in the vicinity of the counterweight buffer, indicating the maximum designed counterweight runby. [CAD Amendment 246-11]

2.4.2 The minimum stranding for cables used to relate any car or landing door shall be not less than 7 x 19 construction. [CAD Amendment 246-11]

2.5 Relocation of an Elevating Device

2.5.1 Where an elevating device is relocated it shall meet the requirements of the applicable code or standard adopted in this Document, unless otherwise specified in this Document or by the director.

2.6 Alteration

2.6.1 Where an alteration is made to an elevating device the altered components and functions and those components and functions that are affected by the alterations shall conform to the requirements of codes or standards adopted in this Document.

2.6.2 Unless otherwise specified in this Document or by the director, and without limiting generality of the Regulation, the following alteration to an elevating device shall constitute a major alteration:

(a) An increase by more than 10 per cent in,

- (1) the rated speed of the load-carrying unit,
- (2) the maximum capacity, or
- (3) the dead-weight of the machine, load-carrying unit or counter-weight;

(b) except for construction hoists, an increase or decrease in the distance of the travel of the load-carrying unit;

(c) a change in,

- (1) the method or type of operation,
- (2) the method or type of motion control,
- (3) the type or size of guide rails or other guiding means for the load-carrying unit or counter-weight,
- (4) the type of safety device or other safety stopping device for the load-carrying unit or counter-weight,
- (5) the power supply to the machine,
- (6) the type of driving machine or brake,
- (7) the location of ;
 - a) the elevating device,
 - b) elevating device controller, [CAD Amendment 246-11]
 - c) the machine,
 - d) the load-carrying unit,
 - e) the counter-weight, or
- (8) the working pressure of a hydraulic system by more than 10 per cent;

(d) a replacement of the controller; [CAD Amendment 246-11]

(e) changes that would result in a reclassification of the elevating device; and

(f) the addition of an entrance to the elevating device.

2.6.3 Unless otherwise specified in this Document or by the director, and without limiting the generality of the Regulation, any action or work performed on an elevating device that is not specified in subsection **2.6.2**

and that results in a change to the original design or the operational characteristics of the elevating device or affects the inherent safety level of the elevating device, shall constitute a minor alteration.

2.7 Rack and Pinion Safeties [CAD Amendment 213-07]

- 2.7.1 Any repair or rebuild of a type 'D' rack and pinion safety where the manufacturer has stated that such work shall only be performed by the manufacturer, may either be;
- (a) repaired, rebuilt or replaced by the manufacturer; or
 - (b) repaired or rebuilt in accordance with a procedure certified by a professional engineer.
- 2.7.2 The procedure referred to in clause **2.7.1(b)** shall be filed with the director and shall be available to the inspector upon request. [CAD Amendment 213-07]

2.8 Format of Submission Documents

- 2.8.1 Where a design submission is in paper format it shall;
- (a) be submitted as one copy unless the submission includes oversized drawings;
 - (b) drawings that are not legible when printed on 11" x 17" paper are considered oversized and shall be submitted as four paper copies as well as in an electronic media form that contains the oversized drawings in unprotected PDF, JPEG or TIFF format;
 - (c) pages larger than 11"x17" provided in hardcopy shall be folded and submitted without any binding. [CAD Amendment 246-11]
- 2.8.2 Electronically submitted design submissions shall be as follows;
- (a) filled specification sheets shall be provided in excel format;
 - (b) other supporting documentation shall be provided in unprotected PDF, excel or word format;
 - (c) where electronic pages exceed 11"x17" paper size, the information shall be legible to the smallest detail when printed to 11"x17", otherwise they shall also be provided as four hardcopies;
 - (d) pages larger than 11"x17" provided in hardcopy shall be folded and submitted without any binding;
 - (e) documents received electronically, will be returned electronically at the conclusion of the design review. [CAD Amendment 246-11]

2.9 Hydraulic Elevating Device Oil Loss Monitoring Program [CAD Amendment 212-07-r1]

- 2.9.1 Every contractor who maintains a hydraulic elevating device with buried cylinders or buried piping shall ensure there is a written oil loss monitoring program.
- 2.9.2 A "hydraulic elevating device" means a non-portable device for hoisting and lowering or moving persons or freight and includes an elevator, dumbwaiter, manlift, incline lift, construction hoist, stage lift, platform lift and special elevating device that incorporates one or more hydraulic cylinders.
- 2.9.3 The purpose of the oil loss monitoring program is to identify any loss of oil which cannot be accounted for in the hydraulic system.

2.9.4 If a contractor performs maintenance on a hydraulic elevating device with buried cylinders or buried piping, the contractor shall ensure that a written oil loss monitoring program is developed and maintained before the contractor performs work on the hydraulic elevating device.

2.9.5 The oil loss monitoring program shall include: [CAD Amendment 246-11]

- (a) the requirement to provide an oil loss monitoring log (“OLM log”) for each hydraulic elevating device with buried cylinders or buried piping;
- (b) the requirement for the OLM log to reference the elevating device installation number;
- (c) the requirement to establish a fixed reference level for the oil and the requirement to mark the reference level on the tank, dip stick or other suitable location via permanent means;

Note: “permanent” implies affixed in such a manner so as to not be easily removed or repositioned.

- (d) the requirement to document in the OLM log the location of the mark for the fixed reference level;
- (e) the requirement to check that the oil level is at the established reference point when the device is level with the lowest landing during each scheduled maintenance visit;
- (f) if the fixed reference level needs to be intentionally adjusted, the requirement to document and record the changes to the established reference level and reason for establishing the new reference level;
- (g) the requirement to record in the OLM log any quantity of oil added or removed from the hydraulic system;
- (h) that during each maintenance visit, even if no oil is added, the requirement to record in the OLM log the oil level and the date of the scheduled maintenance visit;
- (i) if oil is added or removed, the requirement to record in the OLM log the dates oil was added or removed from the hydraulic system;
- (j) the requirement to record in the OLM log the reason oil was added to or removed from the hydraulic system;
- (k) the requirement to record in the OLM log the mechanic’s printed and legible name, signature and certification number for every entry made;
- (l) the requirement to keep the OLM log in the elevator machine room, in a readily identifiable location;
- (m) the requirement that the OLM log be kept in the elevator machine room for a period of at least five years from the date of the last entry in the OLM log;
- (n) the requirement to never allow oil levels to exceed the fixed reference level for the oil level;
- (o) the requirement to record in the OLM log the frequency of oil monitoring activities;
- (p) the requirement that, despite (o), hydraulic elevating devices with buried single bottom cylinders be monitored on a monthly basis;
- (q) the requirement that installations registered by MCCR prior to September 4, 1978 with an installation number below 031909 shall be monitored monthly, unless a notification* (in the form provided by the TSSA) is sent to the Director, advising why the monthly requirements should not apply, and the registered notification is posted along with the OLM log;

* A notification form is available from www.tssa.org. The “Subject” entry should state, Non Single Bottom Cylinder and the “TSSA Reference No.” should state, 212/07-r1.

- (r) if there is any oil loss which cannot be accounted for, the requirement to immediately remove a hydraulic elevating device from service until the cause for the oil loss is determined and the cause and associated remedy noted in the OLM log;
 - (s) the requirement to report in writing any oil loss attributed to leaks in buried cylinders or buried piping to the TSSA Elevating Devices Director within 7 days;
 - (t) the requirement to provide maintenance personnel adequate training related to the contractor's oil loss monitoring program;
 - (u) the requirement to maintain up-to-date written records showing who provided and who received the training referred to in (t), the nature of the training and the date when it was provided. A record of training shall be available to the TSSA upon request.
 - (v) the requirement that the contractor's oil loss monitoring program be posted or otherwise available in the machine room, and
 - (w) the requirement that the collection containers shall not exceed 19-L (5 gal) per cylinder.
- 2.9.6 Oil that is returned to the hydraulic system from recovery containers, either by manual means or automatically via scavenger pumps, need not be recorded.

Note: if oil from recovery containers is not suitable for return to the tank, it must be measured and an equivalent amount must be added to the system when recovery containers are emptied. If additional oil is needed to reach the fixed reference level it must be recorded as new oil. [CAD Amendment 212-07-r1]

2.10 Proper Use of Jumpers *(Handbook and 01/82)*

- 2.10.1 Each contractor shall have written procedures for the use of jumpers when working on elevating device circuits. Each contractor is responsible for ensuring that their mechanics understand the procedure and are equipped to follow it. Each mechanic is responsible for ensuring that they adhere to the procedure. [CAD Amendment 246-11]

Part 3

3 ELEVATORS, DUMBWAITERS, ESCALATORS, MOVING WALKS, MATERIAL LIFTS AND FREIGHT PLATFORM LIFTS

3.1 Applied Code [CAD Amendment 225-07-r3]

Every elevator, dumbwaiter, escalator, moving walk, material lift, and freight platform lift shall conform to the requirements of:

- (a) ASME A17.1-2007/CSA B44-07 Safety Code for Elevators and Escalators, and
- (b) CSA Standard B44.2-07 Maintenance requirements and intervals for elevators, dumbwaiters, escalators, and moving walks, except
- (c) The requirements of (a) are adopted with the following modifications and clarifications:
 - (1) Requirements which are identified as applicable to "jurisdictions not enforcing NBCC" are not adopted, unless otherwise stated. *Note: NBCC means the National Building Code of Canada;*
 - (2) Requirements identified as applicable "in jurisdictions enforcing NBCC" are adopted;

- (3) Any reference to the “building code” or to the National Building Code of Canada or “NBCC” in this definition and throughout the Code shall be deemed to refer to the Ontario Regulation 350/06 made under the Building Code Act 1992, as amended, commonly known as Ontario Building Code or OBC;
- (4) Where there is inconsistency between the Regulations and this Code (e.g. Requirement 2.15.9.2 related to the car-platform guards or aprons) the Regulation prevails, unless otherwise specified in this Amendment;
- (5) Requirement 2.2.2.7 (restriction on sump pumps in pits) is not adopted;
- (6) Requirement 2.14.1.8.3 (3C film-reinforced mirror) is not adopted;

Note: Glass and mirror shall conform to the requirements of 2.14.1.8.1, 2.14.1.8.2, 2.14.1.8.4. Type 3C film reinforced silver mirror is not permitted for use in elevators. The standard CAN/CGSB-12.5 was revoked by Canadian General Standards Board in May 2004.

- (7) Requirement 2.14.2.1 is revoked and the following substituted;

CAD 2.14.2.1 Material for Car Enclosures, Enclosure Linings, and Floor Coverings. All materials exposed to the car interior and the hoistway shall be metal, glass, or shall conform to 2.14.2.1.1 through 2.14.2.1.4

2.14.2.1.1 in not adopted.

CAD 2.14.2.1.2 In jurisdictions enforcing the NBCC:

(a) materials in their end-use configuration, other than those covered by 2.14.2.1.2(b), 2.14.2.1.3 and 2.14.2.1.4 shall conform to the following requirements, based on the tests conducted in accordance with the requirements of ASTM E 84, ANSI/UL 723 or CAN/ULC-S102:

- (1) flame spread rating of 0 to 75
- (2) smoke development of 0 to 450

(b) floor surfaces shall have a flame spread rating of 0 to 300, based on the test conducted in accordance with the requirements of CAN/ULC-S102.2

(c) where the building is designated by the building code as a high building:

- (1) materials in their end-use configuration shall have a flame spread rating for walls and ceiling of 0 to 25 with smoke development of 0 to 100 based on the test conducted in accordance with the requirements of CAN/ULC-S102.
- (2) floor surfaces shall have a flame spread rating of 0 to 300 with smoke development of 0 to 300 based on the test conducted in accordance with the requirements of CAN/ULC-S102.2

CAD 2.14.2.1.3

Padded protective linings, for temporary use in passenger cars during the handling of freight, shall be of materials conforming to either 2.14.2.1.1(a). The protective lining shall clear the floor by not less than 100 mm (4 in.).

CAD 2.14.2.1.4 Handrails, operating devices, ventilating devices, signal fixtures, audio and visual communication devices, and their housings are not required to conform to 2.14.2.1.

- (8) Introduction to requirement 2.27.3 is revoked and the following substituted:

CAD 2.27.3 Firefighters' Emergency Operation: Automatic Elevators

3300 Bloor Street West, 14th Floor, Centre Tower, Toronto, Ontario M8X 2X4
 Telephone: 416-734-3300 Fax: 416-231-5435 Toll Free: 1-877-682-8772
 Putting Public Safety First

Firefighters' Emergency Operation shall apply to all automatic elevators except where the hoistway or a portion thereof is not required to be fire-resistive construction (see 2.1.1.1), the rise does not exceed 2000 mm (80 in.), and the hoistway does not penetrate a floor.
NOTE (2.27.3): When the structure (building, etc.) is located in a flood hazard area, the alternate and designated levels (see 8.12.1) should be above the base flood elevation.
Note: Independent of the requirements in NBCC, Phase I recall shall include the requirements of both 2.27.3.1 and 2.27.3.2.
Note: Requirements 2.27.3.1 through 2.27.3.5 are adopted or adopted as amended below.

- (9) Requirement **2.27.3.2.2** is revoked and the following substituted;

CAD 2.27.3.2.2

- (a) *Smoke detectors or fire detectors (fire alarm initiating devices)¹ shall be installed to provide a signal, either directly or through the fire alarm system, to the elevator controller(s) to automatically initiate Phase I Emergency Recall Operation, and shall be located*
(1) *at each floor served by the elevator*
(2) *in the associated elevator machine room, control space, or control room.*
- (b) *The installation of these detectors shall be in conformance with the requirements of the NBCC. Despite (a), fire detectors located outside the machine room, control space, or control room need not be provided within a floor area if the floor area is sprinklered and the sprinkler system is electrically supervised in conformance with NBCC.*
- (c) *Where the building fire alarm system is identified to activate Phase 1, pull stations shall not be used to initiate either the designated or alternate level recall².*

NOTE:

¹ *Fire alarm initiating devices are referred to as fire detectors (smoke or heat) in the NBCC*

² *To ensure initiation of recall by automatic means only.*

- (10) Requirement **2.27.3.2.4(a)** is revoked and the following substituted:

CAD 2.27.3.2.4(a) *the activation of a fire alarm initiating device specified in 2.27.3.2.1(a) or 2.27.3.2.2(a) that is located at the designated level, shall cause all elevators serving that level to be recalled to an alternate level, unless Phase I Emergency Recall is in effect.*

Note 2.27.3.2.2(a) was 2.27.3.2.2(b) in the code;

- (11) Requirement **5.2.1.16.5** - Maximum Rise limitation for LULA elevators is not adopted;
- (12) Sections **5.3** and **8.7.5.3** – Private Residence Elevators, are not adopted;
- (13) Sections **5.4** and **8.7.5.4** – Private Residence Inclined Elevators, are not adopted;
- (14) Sections **5.7** and **8.7.5.7** – Special Purpose Personnel Elevators, are not adopted;
- (15) Sections **5.8** and **8.7.5.8** – Shipboard Elevators, are not adopted;
- (16) Sections **5.9** and **8.7.5.9** – Mine Elevators, are not adopted;
- (17) “Elevators used for construction” shall have the same meaning as “temporary elevator” used in Ontario Regulation 209/01;
- (18) Requirement **5.10.1.9.5(a)** is revoked and the following substituted:

CAD 5.10.1.9.5(a) *For elevators with car speeds of up to 1.75 m/s (350 ft/min), hoistway doors or gates shall be provided with devices that comply with the requirements of 5.10.1.9.5(b);*

- (19) “Material lift – type B” shall mean the same as the term “freight platform lift – type B” used in Ontario Regulation 209/01;

- (20) Sections 7.8 to 7.11 – Dumbwaiters and Material Lifts with Automatic Transfer Devices, that meet the requirements as specified in item 2(3)(j) of the Elevating Device Regulation 209/01, are not adopted;
- (21) The requirements of 8.6.1 through 8.6.11 are not adopted, except:
- a) 8.6.1.6.3(d) “use of jumpers”
 - b) 8.6.3.2 Replacement of a Single Suspension Rope
 - c) 8.6.8.2 Step-to-Skirt Clearance
 - d) 8.6.8.4.1 & 8.6.9.2.1 Comb replacement requirements
 - e) 8.6.8.4.2 & 8.6.9.2.2 Comb teeth meshing requirements
 - f) 8.6.11.5 Escalator or Moving Walk Startup are adopted
 - g) 8.6.11.6 Operating Instructions for Means Specified in 2.7.5.1.1 or 2.7.5.2.1
 - h) 8.6.11.7 Egress and Reentry Procedure From Working Areas on 2.7.5.1.3 or 2.7.5.2.3
 - i) 8.6.11.8 Operating Instructions for Retractable Platforms;
- (22) Requirements of elevator maintenance are adopted in accordance with 8.6.12 of the B44-07 Code, and are supplemented with:
- a) the additional maintenance requirements identified in CSA Standard B44.2-07, which are adopted and,
 - b) The ‘Replacement of specific elevator components’ from CAN/CSA B44-04 Safety Code for Elevators, sections c8.6.12.5.4 to c8.6.12.5.7 are adopted;
- (23) Maintenance records shall be kept in the log book, in accordance with 8.6.12.2.5 of the Code and Section 34 of Ontario Elevating Device Regulation 209/01;
- (24) Section 8.7 – Alterations, is adopted, with modifications and enforcement procedures as specified below and in Director’s Order #226/07 including its latest revision;
- (25) Requirement 8.7.2.27.4(a) is revoked and the following substituted:

CAD 8.7.2.27.4 Controllers

(a) Where a controller is installed as part of an alteration, it shall conform to 2.25, 2.26.1.4, 2.26.1.5, 2.26.4 through 2.26.9, and where

- (1) required by NBCC at the time of the original installation to 2.27.2 through 2.27.8, **CAD 2.27.3** and the provisions of Director’s Order 226/07 as specified in subsection (24) above;
- (2) provided voluntarily shall conform to 2.27, **CAD 2.27.3** and the provisions of Director’s Order 226/07 as specified in subsection (24) above.

- (26) Requirement 8.7.2.27.5 is revoked and the following substituted:

CAD 8.7.2.27.5 Change in Type of Motion Control

Where there is a change in the type of motion control, the installation shall conform to the following:

- (a) The protection of the hoistway landing openings shall conform to
 - (1) 2.11.1 except;
 - (a) Existing entrance openings less than 2030mm in height or 800mm in width are permitted to be retained
 - (b) requirement 2.11.1.4
 - (2) 2.11.2 through 2.11.6, except 2.11.6.3
 - (3) 2.11.8, 2.11.9
 - (4) 2.11.11.8 for horizontally sliding center opening and single speed entrances
 - (5) 2.11.12.8,
 - (6) 2.12, except;

- (a) requirement 2.12.2.4.3 to allow a minimum engagement of 6mm
- (b) 2.12.4, 2.12.5 and
- (7) 2.13.

(b) Car enclosures and car doors or gates shall conform to 2.14, except that where existing car enclosures and/or car doors or gates are retained, conformance with the following requirements are not required:

- (1) requirements 2.14.1.3, 2.14.1.5.1,
- (2) car top enclosures are not required to meet the design requirements of 2.14.1.6, but shall meet the loading requirements specified
- (3) requirement 2.14.1.7.1 applies only to the extent the existing vertical clearances allow
- (4) requirement 2.14.1.8, 2.14.1.9 and 2.14.1.10
- (5) requirements 2.14.2.1, 2.14.2.3, through 2.14.2.6
- (6) requirement 2.14.3
- (7) requirements 2.14.4.2.5, 2.14.4.3, 2.14.4.5.1(c) and 2.14.4.6
- (8) requirements 2.14.5.1, 2.14.5.6 through 2.14.5.8
- (9) requirement 2.14.6.2.2 except 2.14.5 shall be as amended above
- (10) requirements 2.14.7.1.3, 2.14.7.1.4 and 2.14.7.2 through 2.14.7.4

(c) The car safety, the counterweight safety (where provided), and the governor shall conform to 2.17 and 2.18, except that

- (1) where the safety factors required by 2.17.12.1 cannot be ascertained, performance testing shall be accepted, and
- (2) the pitch diameter of speed governor sheaves and tension sheaves are not required to conform to 2.18-7.

(d) The capacity and loading shall conform to 2.16.8(e), (f), (g) and (h).

(e) The terminal stopping devices shall conform to 2.25

(f) The operating devices and control equipment shall conform to 2.26. The requirements of 2.26.4.2, 2.26.4.3, and 2.26.4.4 shall not apply to electrical equipment unchanged by the alteration.

(g) Emergency operation and signaling devices where

- (1) required by NBCC at the time of the original installation shall be provided and shall conform to 2.27, **CAD 2.27.3** and the provisions of Director's Order 226/07 as specified in subsection (24) above;
- (2) provided voluntarily shall conform to 2.27, **CAD 2.27.3** and the provisions of Director's Order 226/07 as specified in subsection (24) above.

(h) Car overspeed protection and unintended movement protection shall conform to 2.19.

(27) Requirement 8.7.2.27.6(g) is revoked and the following substituted:

CAD 8.7.2.27.6 Change in Type of Operation Control

(g) Emergency operation and signaling devices where

- (1) required by NBCC at the time of the original installation shall be provided and shall conform to 2.27, **CAD 2.27.3** and the provisions of Director's Order 226/07 as specified in subsection (24) above;
- (2) provided voluntarily shall conform to 2.27, **CAD 2.27.3** and the provisions of Director's Order 226/07 as specified in subsection (24) above.

(28) Requirement 8.7.2.28 is adopted with the following modifications and clarifications:

CAD 8.7.2.28 Emergency Operation and Signaling Devices

Where an alteration consists of the addition of an elevator to a group, all elevators in that group shall conform to 2.27.1, 2.27.2 and the FEO operation (or equivalent) of any car shall not be diminished and shall match or exceed the highest level of FEO features (or equivalent) that existed on any car in the group prior to the alteration.

- (29) Section 8.7.7.3 Material Lifts and Dumbwaiters with Automatic Transfer Devices, is not adopted, except 8.7.7.3.2 is adopted;
- (30) Section 8.8 – Welding, is not adopted. The requirements in Part 2 of the Elevating Devices Code Adoption Document apply;
- (31) Section 8.9 – Code Data Plate, is adopted except that the requirements shall not apply to the existing devices installed or altered to versions of the B44 Code earlier than B44-00;
- (32) Section 8.11 - Periodic Inspection and Test Requirements are not adopted, and; [CAD Amendment 239-10]
- (33) Firefighters' Emergency Operation [CAD Amendment 239-10]
 - (a) *Elevators that incorporate any form of Firefighters' Emergency Operation are required to have this operating mode tested on an annual basis to verify that the firefighters' feature is operational and ready for use by firefighters or emergency personnel if required during a fire or other emergency.*
 - (b) *The required inspection checks of this operating mode shall either be recorded on the "Maintenance Checklist for Firefighters' Emergency Operation - Record of Inspection Checks" form provided by the designated administrative authority or on a form containing not less than the tests prescribed on this form.*
 - (c) *The owner or the owner's authorized agent may perform the necessary annual testing provided they are trained and instructed in the use of Firefighters' Emergency Operation.*
 - (d) *A record of findings shall be made and recorded and shall be available to elevator personnel and to the authority having jurisdiction. Any deficiencies identified during the testing shall be rectified. Note: It is the responsibility of the elevating devices owner to ensure firefighters' emergency operation testing is performed annually. [CAD Amendment 239-10]*

3.2 Performance Based Safety Code [CAD Amendment 225-07-r3]

- 3.2.1 Where conformance with the prescriptive requirements in 3.1 are not strictly met, conformance may be demonstrated through compliance to the requirements in ASME A17.7-2007/CSA B44.7-07 Performance-based safety code for elevators and escalators.

3.3 Maintenance Frequency (99/92-r4) [CAD Amendment 225-07-r3]

- 3.3.1 The requirements of 3.1(b) are adopted with the following modifications and clarifications:
 - (a) The requirements of B44.2-07 are applicable to all elevating devices covered in B44-07 as amended in 3.1(c) above, and includes limited use/limited application elevators, material lifts and freight platform lifts.
 - (b) B44.2-07 requirement 4.7 Plunger Return Test applies, except that testing with full-load shall not be required.

- (c) Where frequencies of maintenance, examinations or inspections identified in B44.2-07 are extended,
- (1) the altered maintenance, examination and/or inspection frequencies must take into account the age and inherent quality of the equipment, the frequency and method of usage, and the recommendation(s) by either the original manufacturer, or manufacturer's agent, or the maintaining contractor;
 - (2) the owner and maintenance contractor shall agree in writing to the altered maintenance, examination and/or inspection frequencies;
 - (3) the log book shall either capture this agreement or make reference to another document where such an agreement is made;
 - (4) a copy of the altered maintenance, examination and/or inspection frequency agreement shall be made available to TSSA upon request;
 - (5) the interval between maintenance visits shall not exceed three (3) months;
 - (6) the frequency of tests** identified in B44.2 shall not be altered; and
 - (7) despite the allowance to adjust maintenance, examination or inspection frequencies as stated above, the frequency of activities listed in B44.2-07 section 5.2.1 shall not be altered.

** where the terms:

'operate'- (or equivalent thereof), such as "*governors shall be operated by hand*" or 'check'- (or equivalent thereof), such as "*skirt switches shall be checked*" are used, the frequency of these tests shall not be altered. [CAD Amendment 225-07-r3]

3.4 Maintenance Log Book (99/92) & (8.6.12)

3.4.1 The log book shall, as a minimum, contain the following information:

- (a) Building name and/or address,
- (b) TSSA or MCCR installation number,
- (c) Contractor's and Owner's name,
- (d) Year and month when a specific task is performed,
- (e) The code section, reference or clause number associated with a maintenance task, a description of the task performed and the prescribed maintenance frequency of the task,
- (f) The printed name and signature of the persons who completed the required maintenance task. [CAD Amendment 246-11]

3.4.2 Where a part directly affecting the safety of the operation is found to be defective, the record of the maintenance task shall not be signed off until the defect is adjusted repaired or replaced. [CAD Amendment 246-11]

3.5 Location of the Log Book (99/92-r4)

3.5.1 The log book will be retained in the machine room or at the device location. If it is kept in another location in the building, a notice will be posted in the machine room indicating the alternate location. [CAD Amendment 246-11]

3.6 Rated Load

3.6.1 For the purpose of this Document and subsection 31.(3) of the Regulation, “rated load” in the code adopted in subsection 3.1, means “maximum capacity”.

3.7 Alterations (226/07)

3.7.1 Notwithstanding section 2.6, alterations of an elevator, dumbwaiter, escalator, moving walk, and material lifts shall conform to the requirements of the code adopted in subsection 3.1 and as specified by the director. [CAD Amendment 246-11]

3.7.2 Alterations to freight platform lifts type –B shall conform to the requirements for Material Lifts Type –B as required by the code adopted in subsection 3.1 and as specified by the director. [CAD Amendment 246-11]

3.7.3 Alterations to freight platform lifts type –A shall conform to the requirements for Material Lifts Type –B as required by the code adopted in subsection 3.1 and as specified by the director, except that ‘in-car’ controls are prohibited and no persons shall be permitted to ride. [CAD Amendment 246-11]

3.8 Rope Clips

3.8.1 Rope clip fastenings shall not be used when suspension ropes are changed on an existing elevator.

3.9 Access to Machine Rooms and Spaces

3.9.1 Every elevator shall have a safe and convenient access to its machine room and machinery space. [CAD Amendment 246-11]

3.10 Requirements for Existing Passenger and Freight Elevators

3.10.1 Notwithstanding section 4 of the Regulation, every existing passenger and freight elevator that was installed before the 1st day of May, 1981 and that does not have car safeties, a speed governor, a braking system and hoistway-door interlocks or hoistway-door locks and contacts conforming to the requirements of CSA B44, Safety Code for Elevators – edition 1975 as amended in 1977 and 1980, or any subsequent edition, shall conform to the applicable requirements of CSA B44, Safety Code for Elevators – edition 1975 as amended in 1977 and 1980, or any subsequent edition. [CAD Amendment 246-11]

3.11 Requirements for Existing Dumbwaiters or Freight Platform Lifts

3.11.1 Every existing power dumbwaiter or freight platform lift that was installed before the 1st day of May, 1981 and that does not have hoistway-door interlocks or hoistway-door locks and contacts shall be provided with a locking device that shall prevent the device from moving until the door or gate is closed and that shall prevent the door or gate from being opened unless the device is at the corresponding landing. [CAD Amendment 246-11]

3.12 Platform Apron Requirements (166/01)

- 3.12.1 Every passenger elevator installed before the 1st day of May, 1981 and currently operated in an apartment building, condominium apartment building or educational institution and every passenger elevator installed after that date in any building, shall be provided at the entrance side with a smooth apron made of metal not less than 1.5 millimetres thick, or made of material of equivalent strength and stiffness, reinforced and braced to the car platform such that,
- (a) it does not extend less than the full width of the widest hoistway door opening;
 - (b) it has a straight vertical face, extending below the floor surface of the car-platform, of not less than 1,200 millimetres, except that for an existing elevator this may be reduced where the hoistway pit is not deep enough to accommodate a larger vertical face;
 - (c) its lower portion is bent back at an angle not less than 60 degrees and not more than 75 degrees from the horizontal; and
 - (d) it is securely braced and fastened in place to withstand a constant force of 500 newtons applied at right angles to and,
 - (1) at 450 millimetres from the top without deflecting more than six millimetres, or
 - (2) at 1,150 millimetres from the top without deflecting more than 50 millimetres,and without permanent deformation.
- 3.12.2 Every passenger elevator referred to in subsection 3.12.1 shall have a pit deep enough to accommodate the apron required in subsection 3.12.1, and to provide a minimum twenty-five millimetres clearance between the bottom edge of the apron and the pit floor when the car is on fully compressed buffers.
- 3.12.3 Traction drive Limited-Use/Limited-Application (LULA) elevators serving 3 or more floors shall conform to 3.12.1 and 3.12.2, otherwise 2 stop traction, hydraulic or roped hydraulic drive Lulas' are exempt from these requirements provided that;
- (a) a supplementary owners report for Lula elevators has been filed with the Director and;
 - (b) a permanent and readily visible sign viewable from the hall landing has been provided on the apron in lettering not less than 16mm in height, that advises;
 - (1) of a potential fall hazard below the car,
 - (2) to lower the car prior to rescue and,
 - (3) that lower and rescue shall be undertaken by trained personnel only. [CAD Amendment 246-11]

3.13 Door Safety Retainers for Single Slide Doors (61/88 & 109/93)

- 3.13.1 Every existing passenger elevator with single slide landing doors shall be equipped with safety retainers and shall ensure that;
- (a) the retainer shall withstand without detachment or permanent deformation, a force of 1000 Newtons applied upward at any point along the width of the door panel and, while this force is maintained, an additional force of 1000 Newtons applied perpendicular to the door at its centre over an area of 300 x 300mm
 - (b) the installation of retainers was done in accordance with instructions supplied by the manufacturer of the door safety retainers. [CAD Amendment 246-11]

3.14 Low Pressure Switch (160/01)

- 3.14.1 Every hydraulic elevator where the top of the cylinder when at its highest elevation is above the storage tank, shall be equipped with a low pressure switch to prevent operation of the lowering valve(s) and other requirements specified by the code at time of installation or alteration. [CAD Amendment 246-11]

3.15 Hoarding Between Hoistways Required

- 3.15.1 No elevator shall be operated where it is located adjacent to a hoistway of another elevating device in which installation or alteration work is being performed and where the operation of the elevator may be hazardous to the persons performing the work, unless the hoistways are separated from the bottom to a level a minimum of 2,000 millimetres above the point where the work is being performed by a separating structure so supported and braced that when subjected to a force of 450 newtons applied horizontally at any point the deflection does not exceed twenty-five millimetres.
- 3.15.2 Where the separating structure referred to in subsection 3.15.1 is made of perforated material, it shall reject a ball 50 millimetres in diameter.

3.16 Installation Number

- 3.16.1 Every elevator shall have its installation number engraved or painted on the car crosshead or other conspicuous location on the top of the car, visible from the point of access.

3.17 Attendant Operation

- 3.17.1 Where an elevator is controlled from one location only, an attendant shall be stationed at the controls while the elevator is available for operation.

3.18 Persons Permitted to Ride

- 3.18.1 Except for a freight elevator-P, no person other than an attendant(s) or freight handler(s) shall ride or be permitted to ride in a freight elevator.
- 3.18.2 No person other than an attendant(s) or a designated freight handler(s) shall ride or be permitted to ride in a freight platform lift-Type B or a material lift Type-B. [CAD Amendment 246-11]
- 3.18.3 No person shall ride or be permitted to ride on a freight platform lift-Type A or a material lift Type-A. [CAD Amendment 246-11]
- 3.18.4 Despite 3.18.1 and 3.18.2, a person(s) may remain inside a motor vehicle that is on an elevating device if the device is designated as a Class B- motor vehicle loading, and the device is operated by a trained attendant or operator. [CAD Amendment 246-11]

3.19 Escalator Caution Signs

- 3.19.1 Every escalator installed prior to March 23, 2002 shall be fitted with a caution sign that meets the requirements of clause 8.10 of CSA B44-94; Safety Code for Elevators, as amended by Supplements B44S1-97 and B44S2-98. [CAD Amendment 246-11]

3.20 Repositioning of an Escalator

3.20.1 Despite subsection 2.5 of this Document repositioning of an escalator within the same building or premises shall not constitute a new installation.

3.21 Escalator Brake Setting Data (85/91)

3.21.1 Escalators installed under B44-M90 or later editions of the code shall have a data tag as required by the code at the time of the installation. Escalators installed under a prior code edition shall have a data tag in conformance with 3.21.2.

3.21.2 Every escalator shall have a permanent and readily visible data plate affixed to the brake or machine, indicating:

(a) the method of checking the brake setting and as a minimum shall include,

- (1) the minimum torque, or
- (2) the maximum spring length, or
- (3) other checking method; and

(b) the maximum no-load stopping distance as related to the torque, spring length, or other method, and;

(c) the testing procedure and interval. [CAD Amendment 246-11]

Part 4

4 MANLIFTS

4.1 Applied Code (174/02)

4.1.1 Every newly installed or altered manlift shall conform to the requirements of CSA Standard B311-02, Safety Code for Manlifts and any applicable changes set out in this document.

4.1.2 Conformance to Appendix A, B, & C is mandatory.

4.1.3 Section 7.32.9 of B311 applies to all Power-Type Manlifts. Top-of-car operating stations are not limited to lifts with wireless control and shall be provided on each power-type manlift.

4.1.4 Section 7.32 of B311: Note that requirements of section 7.36, Control and Operating Circuits, apply to "Wireless Control" as well. [CAD Amendment 246-11]

4.2 Top of Car Requirements for Power Type Manlift

4.2.1 Every power type manlift shall be provided with,

- (a) a top-of-car operating device; and
- (b) a protective guard railing on the top of the car.

4.3 Inspection and Testing of Safety Brake

4.3.1 The inspection and testing of a safety brake on an endless belt type manlift required in subsection 33.(2) of the Regulation shall ensure compliance with clause 5.2.2.3 of CSA Standard B311-M1979, Safety Code for Manlifts and Supplement No. 1 1984.

4.3.2 The inspection and testing of a safety device and overspeed governor on a counter-balanced or power type manlift required in subsection 33.(3) of the Regulation shall ensure compliance with clause 6.11.8 or 7.6.8.2, as the case may be, of CSA Standard B311-M1979, Safety Code for Manlifts and Supplement No. 1 1984.

4.4 Authorized Persons

4.4.1 No person shall use a manlift except those persons designated by the owner of the manlift as being properly trained in its operation and use.

4.5 Maintenance Log Book

4.5.1 The log book shall, as a minimum, contain the following information:

- (a) Building name and/or address,
- (b) TSSA or MCCR installation number,
- (c) Contractor's and Owner's name,
- (d) Year and month when a specific task is performed,
- (e) The code section, reference or clause number associated with a maintenance task, a description of the task performed and the prescribed maintenance frequency of the task,
- (f) The printed name and signature of the persons who completed the required maintenance task. [CAD Amendment 246-11]

4.5.2 Where a part directly affecting the safety of the operation is found to be defective, the record of the maintenance task shall not be signed off until the defect is adjusted repaired or replaced. [CAD Amendment 246-11]

4.6 Location of the Log Book

4.6.1 The log book will be retained in the machine room or at the device location. If it is kept in another location in the building, a notice will be posted in the machine room indicating the alternate location. [CAD Amendment 246-11]

Part 5

5 PASSENGER ROPEWAYS AND PASSENGER CONVEYOR [CAD Amendment 246-11]

5.1 Applied Code

- 5.1.1 Every passenger ropeway and passenger conveyor shall conform to the requirements of CSA-Z98-07, Passenger ropeways and passenger conveyors, including Update No. 1 Z98-07 February 2010, and any additional applicable changes set out in this document.
- 5.1.2 Annexes “A, B, C, D, E, F, G, H, I, J and K” referenced in the Z98 standard are also adopted and apply to “post-2011” installations (as defined in 5.3).

5.2 General Technical Requirements for Passenger Ropeways and Passenger Conveyors

- 5.2.1 The general technical requirements in Part II of the Code Adoption Document do not apply to passenger ropeways and passenger conveyors.
- 5.2.2 Passenger Ropeways and Passenger Conveyors shall conform to the following general technical requirements,
- (a) Electrical equipment shall conform to the Ontario Electrical Safety Code as amended from time to time;
 - (b) In addition to CSA-Z98-07 requirements, welding on a passenger ropeway or passenger conveyor shall conform to the requirements of CSA W59-03 (R2008) Welded Steel Construction (Metal Arc Welding);
 - (c) Where a passenger ropeway or passenger conveyor is relocated it shall meet the requirements of 5.5 for post-2011 installations;
 - (d) Where an alteration is made to a passenger ropeway or passenger conveyor the altered components and functions and those components and functions that are affected by the alterations shall conform to the requirements of 5.5.

5.3 Definitions

- 5.3.1 In Part 5 of this document,
- (a) “safety circuits” means E/E/PES of a passenger ropeway or passenger conveyor having an ability to carry out the functions necessary for mitigation of unacceptable failures by preventing movement or limiting speed of passenger ropeway or conveyor.
 - (b) NOTE:
 - 1) Preventing movement may require a passenger ropeway or conveyor to stop or to prevent unwanted start-up
 - 2) Limiting speed may require appropriate acceleration, deceleration or speed.
 - (c) “electrical/electronic/programmable electronic system” or “(E/E/PES)” means a system for control, protection, or monitoring based on one or more electrical/electronic/programmable electronic (E/E/PE) devices, including all elements of the system such as power supplies, sensors and other input devices, data highways and other communication paths, and actuators and other output devices.
 - (d) “electrical/electronic/programmable electronic” or “(E/E/PE)” means that based on electrical (E), and/or electronic (E), and/or programmable electronic (PE) technology.
 - (e) “programmable electronic” or “(PE)” means that based on computer technology which may be comprised of hardware, software, and of input and/or output units
 - (f) “pre-2011” means a passenger ropeway or passenger conveyor for which a design submission (initial or alteration) was registered before October 1, 2011.
 - (g) “post-2011” means a passenger ropeway or passenger conveyor for which a design submission (initial or alteration) was registered on or after October 1, 2011.

5.4 Requirements for PRE-2011 Passenger Ropeways and Passenger Conveyors

5.4.1 In the case of pre-2011 passenger ropeways or passenger conveyors the application of the code adopted in 5.1 is restricted to:

- (a) Clause 11 “Ropes and chains” as further detailed in 5.4.2;
- (b) Clause 12 “Inspection, testing, and maintenance” as further detailed in 5.4.3;
- (c) Clause 13 “Operation of passenger ropeways and passenger conveyors” as further detailed in 5.4.4;
- (d) Annex’s “B, C, D, E, F, G, H, I, J and K”, and any changes set out in part 5 of this document, and
- (e) any applicable requirements in 5.16 through 5.31.

5.4.2 The following requirements within Clause 11 “Ropes and chains” apply to “pre-2011” installations:

- (a) Clause 11.8.2 “Wire rope tows”,
- (b) Clause 11.9.5 “Wire rope clips and thimbles”
- (c) Clause 11.10 “Non-destructive testing of ropes, sleeves, and sockets”,
- (d) Clause 11.11 “Wire rope maintenance”,
- (e) Clause 11.12 “Protruding broken wires”,
- (f) Clause 11.13 “Replacement of repair of wire rope”,
- (g) Clause 11.14 “Locked coil track rope broken wires”,
- (h) Clause 11.15 “Wire rope log”,
- (i) Clause 11.16 “Splice Certificate”,
- (j) Clause 11.18 “Maintenance” for chains used in tensioning systems.

5.4.3 The requirements of Clause 12 “Inspection, testing, and maintenance” shall be complemented and supplemented with a maintenance manual produced in accordance with clause 4.38.4 “Maintenance manual”.

5.4.4 The requirements of Clause 13 “Operation of passenger ropeways and passenger conveyors” shall be complemented and supplemented with the following:

- (a) an operations manual produced in accordance with clause 4.38.3 “Operations manual”
- (b) loading and unloading areas shall be maintained during the operation of passenger ropeways and passenger conveyors in accordance with clause 4.26 “Loading and unloading areas”

5.5 Requirements for POST-2011 and Altered Passenger Ropeways and Passenger Conveyors

5.5.1 Post-2011 and altered passenger ropeways or passenger conveyors, shall conform to the code adopted in 5.1, except as modified by 5.6 to 5.31 excluding 5.17.

5.6 Protection Against Overspeed for Surface Ropeways & Conveyors

5.6.1 Surface ropeways and conveyors shall incorporate protection against the possibility of the device speed exceeding more than 10% of the maximum design speed.

5.7 Z98 clause 4.23.2.4 “Evacuation drive”

5.7.1 Clause 4.23.2.4 of Z98 is revoked and replaced with the following;

CAD 4.23.2.4

The emergency brake, antirollback device, deropement switches required in clauses 4.30.6.1 through 4.30.6.4 inclusive, and emergency stops required in clause 4.30.5 shall be capable of operation while the evacuation drive is in operation.

5.8 Z98 clause 4.24.3.2(c) “Emergency Brake”

5.8.1 Clause 4.24.3.2(c) of Z98 is revoked and replaced with the following;

CAD 4.24.3.2(c)

(c) 15% overspeed, as detected from the speed of the drive sheave or haul rope; and

5.9 Z98 clauses 4.30.1.8 “Safety levels” and 4.30.1.9 “Safety Considerations” (General Applicability)

5.9.1 The general applicability of clauses 4.30.1.8 “Safety levels” and 4.30.1.9 “Safety Considerations” shall not apply if all applicable prescriptive requirements of the code are met.

5.9.2 Any variance to or deviation from the prescriptive requirements related to the design of safety circuits (see definitions) shall comply with clauses 4.30.1.8 “Safety levels” and 4.30.1.9 “Safety Considerations”.

5.9.3 New configurations or novel designs which cannot be precisely classified in CSA Z98-07, shall ensure that their safety circuit designs comply with 4.30.1.8 “Safety levels” and 4.30.1.9 “Safety Considerations”.

5.9.4 Where feature(s) of safety circuits for a passenger ropeway or conveyor is not specified in CSA Z98-07, safety circuits shall comply with 4.30.1.8 “Safety levels” and 4.30.1.9 “Safety Considerations”.

5.10 Z98 clauses 4.30.1.8 “Safety levels” and 4.30.1.9 “Safety Considerations” (Compliance to)

5.10.1 Where conformance to clauses 4.30.1.8 “Safety levels” and 4.30.1.9 “Safety Considerations” is required as specified in 5.9, compliance shall be demonstrated as required in 5.10.2 or 5.10.3.

5.10.2 Safety circuits function shall conform to highest requirement class (RC/AK) specific to hazard situation/safety function tabulated in Annex C of EN 13243:2004 or,

5.10.3 Safety circuits function shall conform to EN 12929:2004, EN 13243:2004 and EN 13223:2004 or equivalent.

5.11 Z98 clause 4.30.1.11 “Safety circuits”

5.11.1 Clause 4.30.1.11 of Z98 is revoked and replaced with the following;

CAD 4.30.1.11 “Safety circuits”

Safety circuits shall incorporate redundancy and monitoring mechanisms. Monitoring of redundancy incorporated in safety circuits shall be done as a minimum, once per day. Relays and contactors used in safety circuits shall have force guided, mirrored, or mechanically linked contacts for monitoring purposes. Redundancy in safety circuits using software systems shall use diversification to avoid common mode failure.

5.12 Z98 clause 4.30.1.13 “Contactors, relays or magnetically operated switches”

5.12.1 An acceptable deviation from clause 4.30.1.12 “Redundancy” as allowed by Z98 shall comply with 5.10.3.

5.13 Z98 clause 4.30.8.3 “Photoelectric safety switches”

5.13.1 An acceptable use of photoelectric safety switches as allowed by Z98 shall comply with 5.10.2 or 5.10.3.

5.14 Z98 clause 4.32.3 “Two-Way Communication”

5.14.1 Clause 4.32.3 “Two-Way Communication” of Z98 is revoked and replaced with the following;

CAD 4.32.3

An audible two-way voice communication system shall be provided for machine rooms when the ropeway can be operated from those areas.

5.15 Z98 clause 5.10.2(c) “Service Brake”

5.15.1 Clause 5.10.2(c) of Z98 is revoked and replaced with the following;

CAD 5.10.2(c)

(c) when a service stop in a cabin is actuated;

5.16 Z98 clauses 13.15.1 and 13.15.2 “Evacuation with evacuation drive”

5.16.1 Clause 13.15.1 and 13.15.2 of Z98 is revoked and replaced with the following;

CAD 13.15.1

The deropement switches and emergency stops required in clause 4.30.5 shall be operable while operating with the evacuation drive.

CAD 13.15.1

If deropement switches and/or emergency stops are not operational due to a malfunction, the ropeway may be evacuated with the evacuation drive if the;

- (a) full length of the ropeway is kept under surveillance; and
- (b) observers are in communication with the operator throughout the evacuation.

5.17 Single Failure Protection

5.17.1 Every passenger ropeway installed before June 1, 2001 shall be so constructed and installed that the failure of any single, magnetically operated switch, contactor containing metal-to-metal contacts or relay to release does not prevent the passenger ropeway from stopping in response to an emergency stopping device nor permit the passenger ropeway to start or run if any emergency stopping device is activated.

5.17.2 Every passenger ropeway installed on or after June 1, 2001 that is considered a “pre-2011” device shall be so constructed and installed that none of the following events prevents the passenger ropeway from stopping in response to an emergency stopping device nor permits the passenger ropeway to start or run if any emergency stopping device is activated;

- (a) the occurrence of a single ground;
- (b) the failure of a single magnetically operated switch, contactor or relay;
- (c) the failure of a single solid-state device; or
- (d) a software system failure.

5.17.3 The devices used to satisfy the requirements of 5.17.2 shall be checked prior to starting of the passenger ropeway, as a minimum, once per day.

5.17.4 Where a single ground is detected as set out in clause 5.17.2(a) or an event referred to in 5.17.2(b) to 5.17.2 (d) is detected, the passenger ropeway shall not restart.

5.17.5 Implementation of redundancy in a passenger ropeway by a software system is permitted provided that there is diversification to avoid common mode failure.

5.18 Log Books

5.18.1 In addition to data specified in section 34 of the Regulation, the log book of a passenger ropeway or passenger conveyor shall contain,

- (a) all data required in the code adopted in section 5.1 of this document;
- (b) all data on any increases or decreases to the mass of the carriers;
- (c) a record of all pre-season inspections carried out in accordance with section 5.19 of this document;
- (d) a record of all major and minor alterations; and
- (e) a record of all five-year periodic tests referred to in section 5.30 of this document.

5.18.2 In addition to the requirements of subsection 34.(2) of the Regulation,

- (a) non-destructive testing (NDT) records shall be kept from a historical reference date of October 1, 2001 or from the date any passenger ropeway or passenger conveyor was commissioned if after October 1, 2001, until the passenger ropeway or passenger conveyor is dismantled.
- (b) major and minor alteration records shall be kept until the passenger ropeway or passenger conveyor is dismantled.
- (c) a record of all engineering and assessment reports referred to in 5.20 of this document shall be kept until the above-surface passenger ropeway is dismantled.

5.19 Preseason Inspection (168/02)

5.19.1 The holder of a licence for a passenger ropeway shall perform a preseason inspection prior to the start of each ski season to ensure that the lift is in compliance with requirements as set out in part 5 of this document.

5.19.2 The results of the inspection shall be recorded in a form acceptable to the director.

5.20 Aging Ski Lift Assessment

5.20.1 Every above-surface passenger ropeway shall be subjected periodically to a complete engineering review and assessment to ensure its continued operational safety in accordance with guidelines set by the director. Note: see Director's guideline 224/07.

5.21 Requirements to Limit Tube Tow Detachment (178/03 & 182/03)

5.21.1 The word "tube(s)" has the same meaning as "secondary carrier(s)" used in Z98.

5.21.2 In addition to Parts 5.4 and 5.5, tube tows shall comply with the requirements of 5.21.3 through 5.21.7

5.21.3 The designer shall specify the method to verify the haul rope tension.

5.21.4 Connection of Tubes to Towing Attachments

- (a) Manufacturers/designers of tube tows shall verify that the type of tube attachment connection is compatible for their towing attachment design.
- (b) Manufacturers/designers of tube tows must allow for a safety margin that will ensure that the tubes will not detach as a result of changes in the tension force on the tether connecting the towing attachment to the tube. Changes of tension force on tether due to uneven tow path, foreseeable movement of passengers in tubes, passengers feet dragging on snow while seated in an acceptable position in tubes and acceleration/deceleration feature of tube tows shall be considered.
- (c) For tube tows with automatic detachment at a predetermined unloading point, manufacturers/designers of tube tows shall specify minimum and maximum weight restrictions of tube users.

5.21.5 Tubes

- (a) Tube sizes shall match tow path design so that a detached tube will slide clear of the uphill path of any of the following tubes.
- (b) Tubes shall be designed to accommodate the passenger size.

5.21.6 Towing attachments

- (a) The length of tube towing attachment shall be designed to maintain a minimum operational clearance from the snow along the tube tow-path and hauling rope while the tube is being hauled along the tow path.
- (b) Factor of safety of all attachments to the haul rope and components for pulling tubes shall be based upon their impact strength at low temperatures.
- (c) The designer/manufacture shall specify the maximum tension force on all attachments to the haul rope and components for pulling tubes along their tow path.
- (d) The designer/manufacture shall specify procedures for inspection of all attachments to the haul rope and components for pulling tubes to verify their safety. Inspection procedures shall include criteria to evaluate the necessity of their replacement.

5.21.7 Tow Path, Crossfall and Containment Barriers

- (a) Means to protect passenger in a tube against contacting any part of tube tow including grips shall be provided along the entire length of the tow path.
- (b) Means shall be provided to keep tubes on the pre-defined tow path.

5.22 Alterations

5.22.1 Where an alteration is made to a passenger ropeway or passenger conveyor the altered components and functions and those components and functions that are affected by the alterations shall conform to the requirements of [5.5](#).

5.22.2 One or more of the following actions on a passenger ropeway or passenger conveyor shall constitute a major alteration:

- (a) an increase or decrease in,
 - (1) the rated speed of the carriers,
 - (2) the maximum capacity of the ropeway;

- (b) an increase or decrease by more than ten per cent, or an accumulated increase or decrease by more than ten per cent, of the dead weight of the carriers or counter-weight system;
- (c) an increase or decrease in the length or rise of the travel of the passenger ropeway;
- (d) a change,
 - (1) in the carrier design or manufacturer,
 - (2) in the line sheaves and sheave assemblies design,
 - (3) in the type of power supply to the machine,
 - (4) in the type of driving machine,
 - (5) in the location of a machine or tensioning system,
 - (6) in the type of tensioning system,
 - (7) that would result in a reclassification of the passenger ropeway,
 - (8) in tower length or an addition of a new tower.
- (e) a change in,
 - (1) the method or type of operation,
 - (2) the method or type of motion control
 - (3) location of the controller
- (f) a replacement of the controller,
- (g) an alteration to the controller, other than an alteration to the motor starters.

5.22.3 Any action or work performed on a passenger ropeway that results in a change to the original design or the operational characteristics of the passenger ropeway or affects the inherent safety of the passenger ropeway and not listed in subsection 5.22.2 shall constitute a minor alteration.

5.22.4 Minor alterations shall be reported and inspected as required by section 19 of the Regulation.

5.23 Bar Lift Requirements

5.23.1 Every bar lift shall,

- (a) be equipped with an anti-rollback device in accordance with 7.8 of Z98;
- (b) have a tow path designed and maintained in accordance with 7.2.4 of Z98;
- (c) be so constructed that maximum stopping shall be maintained in accordance with 7.7.1.2 of Z98 ; and
- (d) be so constructed that, where a brake is used in order to obtain conformance with the requirement of subsection 5.23.1(c) the brake shall conform to code adopted in part 5.

5.24 Rope Tow Requirements

- 5.24.1 Every rope tow shall,
- (a) be equipped with an anti-rollback device in accordance with 8.13 of Z98;
 - (b) have a tow path designed and maintained in accordance with 8.2.5 of Z98;
 - (c) be so constructed that maximum stopping shall be maintained in accordance with 8.12.1.2 of Z98 ; and
 - (d) be so constructed that, where a brake is used in order to obtain conformance with the requirement of subsection 5.24.1(c) the brake shall conform to code adopted in part 5.

5.25 Fibre Rope Tow Requirements

- 5.25.1 The return rope on a fibre rope tow shall have vertical clearances in accordance with 8.4.1 of Z98.

5.26 Chair Lift or Gondola Lift Requirements

- 5.26.1 Every chair lift or gondola lift shall,
- (a) have a service brake that is located in accordance with 4.24.2.1 of Z98;
 - (b) be so equipped that the evacuation drive that drives the circulating rope is rendered inoperative in accordance with section 5.7 (CAD 4.23.2.4)
 - (c) be equipped with a readily available work carrier in accordance with 4.27.10 and Annex B of Z98.

5.27 Carrier Grip Requirements

- 5.27.1 Where a work carrier is affixed to a lift line by means of rope grips that use friction as a gripping method, rope grips shall be installed in accordance with the code adopted in part 5.
- 5.27.2 A grip referred to in subsection 5.27.1 shall be so designed so as not to cause any damage to the hauling rope sheave, bullwheel or the liners of the sheave or bullwheel in accordance with the code adopted in part 5.

5.28 Restraining Bar Requirements

- 5.28.1 Each chair of a chair lift shall be equipped with a restraining device in accordance with 6.13.2 of Z98.

5.29 Haul Rope Retention on Chairlifts

- 5.29.1 Support, hold-down, and combination sheave assemblies on all chair lifts shall meet the requirements of the code adopted in part 5.

5.30 Load Test Requirements (111/93)

- 5.30.1 All above-surface passenger ropeways shall be load-tested periodically at intervals not exceeding five (5) years. The periodic load testing of the ropeway shall be carried out under the direction and supervision of the designer/manufacturer of the ropeway or a qualified professional engineer.
- 5.30.2 The results of five-year periodic tests shall be performed in accordance with the code adopted in part 5 and recorded on the form provided in Annex H of Z98.

5.30.3 Original copies of the test shall be signed by either the designer/manufacturer of the ropeway or a qualified professional engineer and shall be kept on site in the log book.

5.31 Manufacturers/Designers Bulletins

5.31.1 Manufacturer(s) of passenger ropeway(s) or conveyor(s) shall inform owners about the requirements associated with their safety bulletins or alerts in addition to the requirement of Section 35 of the Regulation.

5.31.2 In addition to the requirement of Section 35 of the Regulation, owner(s) of passenger ropeway(s) or conveyor(s) shall inform manufacturer(s) about findings which may require the issuing of a safety bulletin or alerts.

5.31.3 Owners are responsible to carry out the requirements of manufacturer's safety bulletin or alerts.

Part 6

6 CONSTRUCTION HOISTS

6.1 Applied Code [CAD Amendment 216-07]

6.1.1 Every construction hoist shall conform to the following:

- (a) workers' rail guided construction hoists shall conform to CAN/CSA Standard Z185-M87(R2001), Safety Code for Personnel Hoists; [CAD Amendment 216-07]
- (b) workers' rope-guided construction hoist shall conform to, American National Standard ANSI/ASSE A10.22 – 2007 Safety Requirements for Rope-guided and Non-guided Workers' Hoist; and [CAD Amendment 216-07]
- (c) material construction hoist, CSA Standard Z 256-M87(R2006), Safety Code for Material Hoists, [CAD Amendment 216-07]

and any applicable changes set out in this document. [CAD Amendment 246-11]

6.2 Rated Load

6.2.1 For the purpose of this Document and subsection 31.(3) of the Regulation, "rated load" or "rated loading" in the codes referred to in section 6.1 means "maximum capacity".

6.3 Continuously Controlled by Power

6.3.1 Every construction hoist shall be so designed that the car movement in both the up and down direction is continuously controlled by power.

6.4 Broken Rope Safety

6.4.1 A material construction hoist that is equipped with a broken rope type safety shall not be registered unless a type test indicates that the safety is capable of stopping the car when it is free falling with its rated load.

6.5 Limitation on Speed

- 6.5.1 Where the load-carrying unit of a workers' rope-guided construction hoist passes through a restricted area at a platform or floor, a control device that positively and automatically lowers the speed of the load-carrying unit to that specified in the related design submission while the load-carrying unit passes through the restricted area shall be installed on the hoist, except where the design submission indicates that no speed limitation is required.
- 6.5.2 In lieu of the control device referred to in subsection 6.5.1, an operator utilising a system of signals may be used to manually control the speed of the hoist.

6.6 Attendant Operation

- 6.6.1 Every workers' rail-guided construction hoist, shall while in operation, be attended by an attendant who shall be stationed in the load-carrying unit, and who shall operate the construction hoist and also supervise the loading, passage and unloading of persons and freight.
- 6.6.2 Every material construction hoist shall while in operation be,
- (a) attended by one or more attendants stationed at each location where freight is being loaded or unloaded; and
 - (b) operated by,
 - (1) an attendant stationed at the location of the operating devices, provided that the operating devices can be automatically rendered inoperative should an unsafe condition for operation of the construction hoist exist, or
 - (2) an operator stationed at the driving unit where the driving unit and its operating devices cannot automatically be rendered inoperative should an unsafe condition for operation of the construction hoist exist.
- 6.6.3 Subsections 6.6.1 and 6.6.2 apply with necessary modifications to the providing of attendants and operators for workers' rope-guided construction hoists.

6.7 Up Overspeed Protection

- 6.7.1 Every workman's construction hoist that is equipped with a counterweight having a mass greater than the mass of the empty car shall be provided with a means for protecting against uncontrolled car speed in the up direction and such means shall conform to the following:
- (a) It shall detect any uncontrolled movement of the car prior to or at least when the car reaches a predetermined overspeed and shall cause the car to stop prior to the time when the counterweight strikes its buffers, or at least reduce car speed to the speed for which the buffers are designed.
 - (b) It shall be capable of performing as required in paragraph (a) without assistance from any hoist component which solely without built in redundancy, controls the speed, or deceleration, or stops the car during normal operation.
 - (c) It shall not develop an average retardation of the car in excess of 9.81 m/sec² during the stopping phase.
 - (d) It shall prevent uncontrolled movement of the car through control of the speed of, and acting upon the,
 - (1) car;

- (2) counterweight;
 - (3) suspension or compensating rope system; and
 - (4) drive sheave, provided that the traction between the suspension ropes and the drive sheave are continuously monitored and the construction hoist is automatically removed from service when the rope slippage exceeds a predetermined amount.
- (e) When it is activated or during the stopping phase, it or another hoist component shall cause the power supply of the driving machine to be interrupted.
 - (f) It shall be capable of performing at least ten operations without any adjustments.
 - (g) All components that require periodic examination and maintenance for the purpose of maintaining their operational reliability, shall be readily accessible.
 - (h) Its performance shall be checked during the initial and periodic inspections unless its performance reliability is substantiated otherwise.
 - (i) It shall be provided with a making plate indicating maximum capacity for which it may be used and the speed at which it is set to operate.

6.8 Additional Requirements for Workers' Rail Guided Construction Hoists [CAD Amendment 216-07]

6.8.1 In addition to the requirements of 6.1.1(a), workers' rail-guided construction hoists shall conform to the following:

(a) Clause 14.4.2 of CAN/CSA-Z185-M87 (R2001) shall be replaced with the following;

- (1) The occurrence of a single ground or a software system failure or the failure of
 - a) a switch which does not have contacts that are positively separated;
 - b) a contactor;
 - c) a relay; or
 - d) a solid state device;

shall not render any electrical protective device ineffective.

(b) Redundant software systems used to satisfy the requirements of (a) shall have a level of diversification sufficient to avoid common mode failures.

(c) Clause 18.1.1(c) of CAN/CSA-Z185-M87 (R2001) shall be replaced with:

Control equipment incorporating solid state devices and/or software systems in operating and control circuits shall be tested in accordance with the testing requirements of EN 12016:2004 by exposing it to interference levels at the test values specified for "safety circuits." The interference shall not render any electrical protective device ineffective and shall not cause the car to move. If enclosure doors or suppression equipment must remain installed to meet the above requirements, warning signs to that effect shall be posted on the control equipment.

(d) The normal terminal stopping device and final terminal stopping devices shall not control the same controller devices unless two or more separate and independent controller devices are provided, two of which shall complete both the driving-machine motor and the driving machine brake circuits in either direction of travel.

- (e) Workers' construction hoists employing a two- or three-phase alternating-current driving machine motor, which is not driven from a direct current source through a static inverter, shall be provided with a means to inhibit the flow of alternating-current in each phase. [CAD Amendment 216-07]

6.9 Additional Requirements for Workers' Rope-Guided Construction Hoists [CAD Amendment 216-07]

6.9.1 In addition to the requirements of **6.1.1(b)**, workers' rope-guided construction hoists shall conform to the following:

(a) The occurrence of a single ground or a software system failure or the failure of

- (1) a switch which does not have contacts that are positively separated;
- (2) a contactor;
- (3) a relay; or
- (4) a solid state device;

shall not render the, deadman control switch, the limit switches which prevent overtravel, or the automatic friction brake ineffective.

Note: Requirements only apply to the circuits in which the deadman control switch, the limit switches which prevent overtravel, or the automatic friction brake are used and not to the devices themselves.

- (b) Redundant software systems used to satisfy the requirements of (a) shall have a level of diversification sufficient to avoid common mode failures.
- (c) Control equipment incorporating solid state devices and/or software systems in operating and control circuits shall be tested in accordance with the testing requirements of EN 12016:2004 by exposing it to interference levels at the test values specified for "safety circuits." The interference shall not render the Deadman Control Switch, Limit Switches, or the Automatic Friction Brake ineffective and shall not cause the cage to move. If enclosure doors or suppression equipment must remain installed to meet the above requirements, warning signs to that effect shall be posted on the control equipment.
- (d) All references to NFPA 70 (Clause **2.1**, Clause **3.24**, and Clause **4.13** of ANSI A10.22-2007) shall be replaced with Ontario Electrical Safety Code as referenced in **2.2.1(b)** of this document. [CAD Amendment 216-07], [CAD Amendment 246-11]

6.10 Additional Requirements for Material Construction Hoist [CAD Amendment 216-07]

6.10.1 In addition to the requirements of **6.1.1(c)**, material construction hoists shall conform to the following:

(a) Clause **15.3.2** of CAN/CSA-Z256-M87 (R2006) shall be replaced with the following;

- (1) The occurrence of a single ground or a software system failure or the failure of
 - a) a switch which does not have contacts that are positively separated;
 - b) a contactor;
 - c) a relay; or

d) a solid state device;

shall not render any electrical protective device ineffective.

(b) Redundant software systems used to satisfy the requirements of (a) shall have a level of diversification sufficient to avoid common mode failures.

(c) Clause 19.1.3 of CAN/CSA-Z256-M87 (R2006) shall be replaced with:

Control equipment incorporating solid state devices and/or software systems in operating and control circuits shall be tested in accordance with the testing requirements of EN 12016:2004 by exposing it to interference levels at the test values specified for "safety circuits." The interference shall not render any electrical protective device ineffective and shall not cause the car to move. If enclosure doors or suppression equipment must remain installed to meet the above requirements, warning signs to that effect shall be posted on the control equipment.

(d) The normal terminal stopping device and final terminal stopping devices shall not control the same controller devices unless two or more separate and independent controller devices are provided, two of which shall complete both the driving-machine motor and the driving machine brake circuits in either direction of travel.

(e) Material construction hoists employing a two- or three-phase alternating-current driving machine motor, which is not driven from a direct current source through a static inverter, shall be provided with a means to inhibit the flow of alternating-current in each phase. [CAD Amendment 216-07]

Part 7

7 ELEVATING DEVICES FOR PERSONS WITH PHYSICAL DISABILITIES

7.1 Applied Code [CAD Amendment 238-09]

7.1.1 Each newly installed elevating device for persons with physical disabilities shall conform to the requirements of CSA Standard B355-09, Lifts for persons with physical disabilities including and any applicable changes set out in the CAD. [CAD Amendment 238-09]

7.2 Maintenance [CAD Amendment 238-09]

7.2.1 All lifts for persons with physical disabilities shall conform to the maintenance requirements of CSA-B355-09 Lifts for persons with physical disabilities including Annex B and any applicable changes set out in the CAD. [CAD Amendment 238-09]

7.3 Maintenance Log Book [CAD Amendment 238-09]

7.3.1 The log book shall, as a minimum, contain the following information:

- (a) Building name and/or address,
- (b) TSSA or MCCR installation number,
- (c) Contractor's and Owner's name,
- (d) Year and month when a specific task is performed,

- (e) The code section, reference or clause number associated with a maintenance task, a description of the task performed and the prescribed maintenance frequency of the task,
- (f) The printed name and signature of the persons who completed the required maintenance task. [CAD Amendment 238-09]

7.3.2 Where a part directly affecting the safety of the operation is found to be defective, the record of the maintenance task shall not be signed off until the defect is adjusted repaired or replaced. [CAD Amendment 238-09]

7.4 Location of the Log Book [CAD Amendment 238-09]

7.4.1 The log book will be retained in the machine room or at the device location. If it is kept in another location in the building, a notice will be posted in the machine room indicating the alternate location. [CAD Amendment 238-09]

7.5 Access to Lift

7.5.1 Every owner of an unenclosed vertical platform lift and every owner of an unenclosed stair platform lift or stairchair lift shall ensure that the public does not have access to the area where the lift is installed while the lift is in operation.

7.5.2 Subsection 7.5.1 does not apply in the case of an unenclosed stair platform lift or stairchair lift where,

- (a) the owner of the lift is able to control and identify persons who will be using the lift or the area where the lift is installed and the owner familiarizes those persons in advance of using the area or lift with the safety rules and procedures concerning the use of the area and the lift; and
- (b) and the lift meets the requirements of subsection 7.6.

7.6 Lift Operation with Persons Nearby

7.6.1 Where an unenclosed stair platform lift or stairchair lift is being operated at the same time that other persons are using the area in which the lift is installed,

- (a) audio-visual signals shall be emitted that warn persons using the lift and persons in the area where the lift is installed at all times when the platform is unfolded and until the lift is parked in a safe position at a terminal; and
- (b) every leading edge or surface of that portion of the lift and its carriage that carries the passengers in both directions of travel shall be equipped with sensitive devices that meet the requirements of clause 7.2.4. and 8.5.4. of the standard adopted in section 7.1 of this Document and that are operational whenever the carriage is in motion.

7.7 Usage of Device

7.7.1 The owner of a lift for persons with physical disabilities shall ensure that,

- (a) the device is used primarily for the transportation of persons with physical disabilities;
- (b) detailed operating instructions are posted at every operating station;

- (c) the operation of the device is restricted to attendants designated by the owner or those persons who in the opinion of the owner are able to use the device without an attendant; and
- (d) the persons using the device receive instruction and training that emphasizes the hazards associated with improper use of the device.

7.8 Requirements for Restricted Operation

- 7.8.1 The operation of a lift for persons with physical disabilities shall be restricted by means of a key-control for the operating device as set out in subsection 7.8.2 and 7.8.3 or by a method acceptable to the director that provides the same degree of safety.
- 7.8.2 A key-control for an operating device may be by means of an on/off lockable switch located near and controlling one or more operating devices or each operating device may be directly key-controlled.
- 7.8.3 The key for a key-control for an operating device shall be removable only when the switch is in an "off" position.
- 7.8.4 Folding down of a platform on a stair platform lift shall be restricted to persons authorised to use the lift, by the following means:
 - (a) in the case of a platform that is folded down by power – by means of a key-controlled switch or by a method acceptable to the director; and
 - (b) in the case of a platform that is folded down manually – by means of a keyed lock or by a method acceptable to the director.
- 7.8.5 Lowering of a barrier arm, if provided, shall be restricted to persons authorised to use the lift by means of a keyed switch or lock or by a method acceptable to the director.

7.9 Instructions for Use and Owner Requirements

- 7.9.1 Every owner of an elevating device for persons with physical disabilities shall,
 - (a) ensure that the instructions for the device are posted at the location of each operating device that will inform a person with physical disabilities of the established procedure to gain access to and to use the device and, in the case of unenclosed devices, that such instructions include, but are not limited to, cautioning the user to observe the lift runway for possible obstructions;
 - (b) ensure that an attendant is available to operate the device when a person with physical disabilities requires assistance;
 - (c) where an attendant is required and is not permanently stationed at the location of the operating device ensure that a notice is posted at the entrance to the elevating device that indicates the procedure to be followed to obtain assistance; and
 - (d) provide instruction that an unoccupied platform of an unenclosed stair platform lift should not be called or sent from a landing station unless it is in the raised and folded position. [CAD Amendment 238-09]
- 7.9.2 A person shall only operate an unenclosed vertical platform lift, an unenclosed stair platform lift or a stairchair lift, if the person is satisfied that only persons using the lift have access to the area where the lift is installed.
- 7.9.3 Subsection 7.9.2 does not apply to a person operating an unenclosed stair platform lift or a stairchair lift while other persons are using the area in which the lift is installed where,

- (a) the conditions set out in subsection 7.5.2 exist;
- (b) the person operating the lift is an attendant and has, while operating the lift in the folded down position, a clear view of the lift runway in the direction of its movement by walking along with the carriage while it is in motion or has by being stationed at a point, a clear view of the runway;
- (c) the person using the lift has, while using the lift, a clear view of the lift runway in the direction of travel; and
- (d) the audio-visual signals required under subsection 7.6.1(a) are operational.

7.10 Notice Required Regarding Restricted Use

7.10.1 A notice that the use of a lift for persons with physical disabilities is restricted to persons with physical disabilities shall be posted at each location of a device, at landing or runway entrances of the device and at the load-carrying unit of the device.

7.11 Supplementary Owners Report

7.11.1 In addition to those requirements set out in sections 15 and 16 of the Regulation, the design submission for a lift for persons with physical disabilities shall include a detailed report, completed on a form provided by the director, from the owner of the elevating device, in which the proposed methods of compliance with sections 7.5 to 7.8 and 7.9.1 of this Document shall be described.

7.12 Change of Ownership & Supplementary Owners Report

7.12.1 In addition to the requirements of section 29 of the Regulation, where there is change in the ownership of a lift for persons with physical disabilities or a substantive change in the type of occupancy of a building in which a lift for persons with physical disabilities is installed, the new owner of the lift shall submit to the director, a detailed report on a form provided by the director in which the proposed methods of compliance with sections 7.5 to 7.8 and 7.9.1 of this Document shall be described.

C. Explanatory Notes:

1 General

- 1.1 This Code adoption amendment provides the following regulatory function;
- a) Consolidates requirements from existing Code Adoption Document Amendments,
 - b) corrects date references of externally referenced documents to latest edition where appropriate
 - c) Implements a new numbering format for ease of use and future amendments,
 - d) adopts the latest edition of Z98, modifies sections of Z98 to provide clarity or revises technical requirements where issues present, and supplements Z98 requirements with specific CAD requirements, and
 - e) incorporates the requirements of specific Directors Orders or similarly issued documents whose content is suitable for inclusion in a CAD document.

2 Safety Levels and Safety Considerations Referenced in 5.9 and 5.10 of this document

- 2.1 To bring some specific requirements as to how conformance to 4.30.1.8 & 4.30.1.9 should be demonstrated, the CAD amendment references specific EN standards which are suitable for this purpose.
- 2.2 The following EN standards have been referenced;

Standard No.	Title of Standard
--------------	-------------------

EN 12929: 2004	Safety requirements for cableways installations designed to carry persons. General requirements. Additional requirements for reversible bi-cable aerial ropeways without carrier truck brakes
EN 13243: 2004	Safety requirements for cableways installation designed to carry persons. Electrical equipment other than for drive systems
EN 13223: 2004	Safety requirements for cableways installations designed to carry persons. Drive systems and other mechanical equipment

2.2.1 EN standards can be purchased from

IHS Energy (Canada) Ltd
Stampede Station, Suite 200
1331 Macleod Trail SE
Calgary, AB T2G 0K3 Canada
Tel: (613) 237-4250 Toll Free: 1-800-267-8220
Fax: (613) 237-4251
Email: global@ihs.com

2.3 A reference to (RC/AK) in section 5.10.2 of this document means requirement class as described in EN 13243.

3 Reference Symbols Used in this CAD

- 7.5** is a reference to a section in the CAD
- 7.2.4.** is a reference to a section in an external document or code
- (197/06)** is a reference to a predecessor document related to this CAD requirement

Roland Hadaller, P.Eng.,

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*.

This Code Adoption Document amendment has been developed in consultation with; the Elevating Devices Advisory Council, the Ski Lift Advisory Council, the Field Advisory Committee, and the Task Group for the adoption of Z98.



Elevating and Amusement Devices Safety Division	Ref. No.: 247 / 11	Rev. No.:
DIRECTOR'S ORDER	Date: July 7, 2011	Date:

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT*, 2000, S.O. 2000, c. 16 (the "Act")

- and -

**ONTARIO REGULATION 209/01(Elevating Devices)
made under the Act**

Subject: New Requirements For Maintenance and Testing of Escalator Brakes
Applicable to: Escalator Owners / Licensees, Contractors, and Consultants

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under section 31 of the *Technical Standards & Safety Act* hereby orders the following:

1 ORDER TO ESCALATOR OWNERS

By August 1, 2012,

- 1.1 All escalator owners shall ensure that their maintenance contractor has completed the requirements of section 2 of this order.
- 1.2 All escalators shall have a "Daily Stopping Distance Check" sign posted as per section 3 of this order providing instructions for checking the stopping distance.
- 1.3 The person(s) authorized by the owner to carry out the daily prestart checks shall also perform the daily stopping distance check.

2 ORDER TO ESCALATOR MAINTAINING CONTRACTORS

By August 1, 2012,

- 2.1 Contractors maintaining an escalator shall post a device-specific "Brake Adjustment Procedure / Instruction Sheet" that provides instruction for the maintenance mechanics on how to correctly adjust and check the escalator brake(s).
- 2.2 The Brake Adjustment Procedure / Instruction Sheet shall conform to the requirements of section 4 of this order.
- 2.3 The escalator stopping distance shall be tested during each scheduled maintenance visit and the results of the test shall be recorded in a maintenance log book.

3 DAILY STOPPING DISTANCE CHECK SIGN – Requirement For Owners

3.1 A Daily Stopping Distance Check sign shall be posted at each end of the escalator near the stop button or start switch and shall state the following:

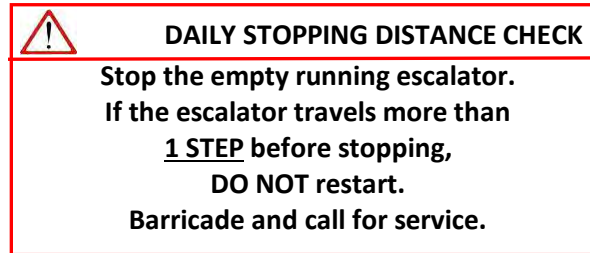


Figure 1*

*Notes:

1. The reference to '**1 STEP**' in Figure 1 should be applicable to most escalator installations. With a properly adjusted brake, observe the actual stopping distance and round the observed stopping distance, measured in steps, UP to the nearest whole number. (e.g.: If the escalator takes less than 1 step to stop, mark the Daily Stopping Distance Check sign with **1 STEP**.)
 2. If the maintenance contractor can substantiate the reason for a longer stopping distance (e.g.: no-load stopping distance indicated by manufacturer on brake tag is more than one step length or very close to being one step length), the Daily Stopping Distance Check sign can read "If the escalator travels more than **2 STEPS** before stopping, DO NOT restart, Barricade and call for service."
 3. Sample Procedure for Daily Stopping Distance Check: Authorized persons can press the escalator stop button and simultaneously observe the distance (in steps) that the escalator steps travel toward or away from the escalator comb plates before coming to a complete stop. If stopping distance exceeds 1 step (or 2 steps as per note 2 above), do not restart the escalator. Barricade and call for service.
- 3.2 The Daily Stopping Distance Check sign shall be of durable material and construction such that letters etched, stamped, cast or otherwise applied to the face will remain permanently legible. The lettering shall be at least 3 mm (.125 inches) in height.
- 3.3 The stopping distance displayed on the Daily Stopping Distance Check sign shall be determined by the manufacturer or the maintaining contractor and is determined by rounding the required no-load stopping distance up to the nearest full step increment. The stopping distance shall serve as a guide to authorized persons whom are performing the Daily Stopping Distance Check.
- 3.4 The results of the stopping distance test can be recorded in the "Escalator / Moving Walk Daily Start-Up Log". Copies can be obtained from www.issa.org.

4 BRAKE ADJUSTMENT PROCEDURE / INSTRUCTION SHEET - Requirement For Contractors

- 4.1 The "Brake Adjustment Procedure / Instruction Sheet" shall;
- (a) be posted or made otherwise available in the upper escalator pit;
 - (b) include detailed instructions for setting the escalator brake;
 - (c) include all information provided on the existing brake data tag;

- (d) be of durable material such that the information contained therein will remain legible;
- (e) as a minimum include the maximum no-load stopping distance as related to the manufacturer's specified brake torque, spring length etc. Where this information is missing and cannot be obtained from the original manufacturer, it is acceptable for a professional engineer in the province of Ontario to determine the no-load stopping distance.
- (f) include the method of checking the brake setting such as the 'minimum torque', or the 'maximum spring length', or other method.

Roland Hadaller, P.Eng.
Director, Ontario Regulation 209/01 (Elevating Devices)
Appointed under the *Technical Standards and Safety Act*, 2000

This order has been developed in consultation with the Elevating Devices Advisory Council,
the Field Advisory Council and the Escalator Brake Task Group.

Archive
Compliance Past Due
Superseded by CAD 261 (3.21)



Elevating and Amusement Devices Safety Division	Ref. No.: 248 / 11	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: April 27, 2011	Date:

**IN THE MATTER OF:
THE *TECHNICAL STANDARDS AND SAFETY ACT, 2000*
S.O. 2000, c. 16, as amended (the "Act")**

- and -

**ONTARIO REGULATION 209/01 (Elevating Devices)
made under the Act**

Subject: Pressure Sensor requirements for (B355) Vertical Platform Lifts
Applicable to: Owners & Licensees of B355 Vertical Platform Lifts, Maintenance Contractors,
Consultants, Mechanics

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under section 14 of the *Technical Standards & Safety Act 2000* hereby orders the following:

1 SAFETY ORDER

- 1.1 All B355 vertical platforms, where any part of the hydraulic cylinder is above the top of the hydraulic oil storage tank, shall be equipped with a pressure sensor that when activated shall prevent the operation of the lowering valve or valves in conformance with clause 6.6.8 of CSA B355-09 Lifts for Persons with Physical Disabilities.
- 1.2 **By January 31, 2012,**
Owners and licensees shall ensure their B355 vertical platform lifts are compliant with clause 6.6.8 of B355-09.
- 1.3 Owners and licensees shall engage the services of a registered elevating devices contractor (whose scope of work includes Lifts for Persons with Physical Disabilities) or their registered maintenance contractor to determine if their vertical platform lift is compliant with clause 6.6.8 of B355-09 or if their device requires upgrading.
- 1.4 Contractors who undertake upgrades to facilitate compliance with clause 6.6.8 of B355-09 shall forward to TSSA a Minor 'A' alteration design submission on the owner's behalf. If electrical means are incorporated then a revised electrical schematic shall be included in the submission. A copy of the revised electrical schematic shall be left on site.
- 1.5 When the installation is determined to be in compliance with this safety order a letter from the contractor (on company letterhead) shall be included in the log book indicating that the installation has been reviewed or upgraded and is in compliance with the requirements of this safety order (ED-248-11).

2 BACKGROUND

The 1994 edition of CSA-B355 Lifts for Persons with Physical Disabilities introduced the requirement for a pressure switch (to detect low system pressure and prevent operation of the lowering valve) if the top of the hydraulic cylinder was above the top of the hydraulic oil storage tank. This requirement was applicable to B355 devices whose designs were submitted to TSSA on or after September 1, 1994. The 2000 edition of CSA-B355 Lifts for Persons with Physical Disabilities revised the term “pressure switch” to “pressure sensor”.

For reference, a similar requirement for a lower pressure switch was added to the Safety Code for Elevators in the 1985 code.

The pressure sensor is intended to ensure elevators or vertical platform lifts are continuously supported on a column of oil. When low pressure is detected the sensor shall prevent operation of the lowering valve which in turn will prevent the drain back of oil to the tank (i.e. the loss of the oil support column) if for some reason the lift gets hung-up during descent.

Roland Hadaller P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*

This Order has been developed in consultation with the Elevating Devices Advisory Council.



Elevating and Amusement Devices Safety Division	Ref. No.: 249/11	Rev. No.:
DIRECTOR'S SAFETY ORDER	Date: October 14, 2011	Date:

IN THE MATTER OF:

THE *TECHNICAL STANDARDS AND SAFETY ACT*, 2000, S.O. 2000, c. 16 (the "Act")

- and -

ONTARIO REGULATION 209/01 (Elevating Devices) made under the Act

Subject: Hydraulic Cylinder Collar Welding on Lifts for Persons with Physical Disabilities
Sent to: All Elevator Contractors
All Owners of hydraulic vertical platform lifts, designed per CAN/CSA B355

The Director, Elevating Devices Regulation (O.Reg. 209/01) pursuant to his authority under section 14 of the *Technical Standards & Safety Act*, 2000 hereby orders the following:

1. ORDER to Contractors

- 1.1. **No later than the next maintenance visit**, in addition to your normal maintenance functions, all maintaining contractors of hydraulic vertical platform lifts, designed per CAN/CSA B355, shall identify if the hydraulic vertical platform lift has the following design features:
- 1) an inverted cylinder
 - 2) uses a collar around the hydraulic cylinder to transmit loads from the carriage to the hydraulic cylinder, and
 - 3) has set screws securing the collar to the hydraulic cylinder. (see Figure 1)
- 1.2. If the hydraulic vertical platform lift has the design features identified in subsection 1.1 of this order, the maintaining contractor shall immediately notify the owner of the owner's obligations under this order.
- 1.3. Elevator Contractors who carry out the examinations required by subsection 2.1 of this order shall notify the director or the owner of their findings as described below.
- 1) If the welds are present and are of the appropriate size and number, the contractor shall notify the director using a Notification form obtained from the TSSA web site at www.tssa.org.
<http://www.tssa.org/regulated/elevating/elevatingForms.asp>

The "Subject" entry (box 5.0) should state: *Cylinder Collar Weld*

The "TSSA Reference No." entry (box 7.0) should state: *249/11*

The "Scope of Notification" entry (box 189.00) should state:

Cylinder collar welds are present. The number of welds and the size of the welds correspond to the manufacturer's recommendations or the recommendations of a Professional Engineer.

The completed form can be faxed to (416) 231-5435 or emailed to edminorb@tssa.org.

Note: There are NO FEES associated with this Notification process.

- 2) If the welds are missing or are of the incorrect number or size, the mechanic shall immediately remove the device from service and notify the owner as required by section 36.(4) of Ontario Regulation 209/01 (Elevating Devices)

36. (4) Where a mechanic finds that an elevating device is in a condition that constitutes an immediate hazard to the safety of a person or property, he or she shall immediately remove the device from service and notify the owner or contractor maintaining the device.

- 1.4. Elevator Contractors who perform any necessary repairs as a result of this order shall obtain permission to return the device to service from an inspector as required by Section 36.(8) of Ontario Regulation 209/01 (Elevating Devices) and shall notify the director as described in subsection 1.3 1 of this order).

36. (8) No person shall return an elevating device referred to in subsection (1), (3), (4) or (5) to service until the cause of the incident or condition is identified, the safety of the device restored and an inspector gives permission to return the device to service.

2. ORDER to Owners

- 2.1. If your elevating device has the design features identified in subsection 1.1 of this order you shall, within 30 days of becoming aware, arrange to have a registered elevator contractor perform the following examinations:

- 1) observe the collar to verify that the required welds between the collar and the hydraulic cylinder are present, and
- 2) observe the welds between the collar and the hydraulic cylinder to ensure the size and numbers of welds correspond to the manufacturer's installation requirements or the recommendations of a Professional Engineer.

- 2.2. If the elevator contractor observes missing welds or welds of the incorrect size or number, the owner, or the elevator contractor on behalf of the owner, shall notify the directory within 24 hours and submit an incident report within 7 days as required by section 36. (5) of Ontario Regulation 209/01 (Elevating Devices)

36. (5) Where a licence holder for an elevating device finds or becomes aware that the device is in a condition that constitutes an immediate hazard to the safety of a person or property, the licence holder shall,

- (a) immediately remove the device from service;*
- (b) notify the director by telephone or other means within 24 hours of making the finding; and*
- (c) within seven days of making the finding, submit to the director in the form provided by the designated administrative authority a written report giving full particulars.*

Notification by telephone can be made by calling 877-682-8772. Forms for incident reporting can be found on TSSA's website at www.tssa.org by clicking "Report an Incident" near the upper right hand side of the home page.

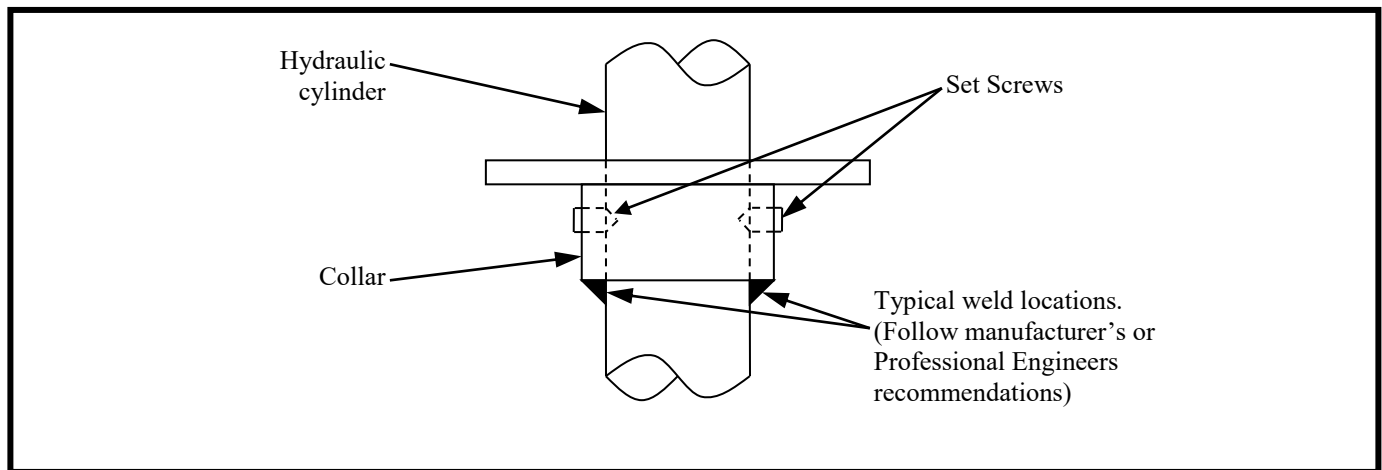


Figure 1 - Typical Collar and Hydraulic cylinder Connection

3. Background

- 3.1. TSSA has become aware of several incidents involving hydraulic lifts for persons with physical disabilities.
- 3.2. The lifts involved in these incidents used an inverted hydraulic cylinder design. The investigation into these incidents has revealed that a contributing factor was the incorrect installation or repair of the lifting collar.
- 3.3. The design of the lifting collar requires that the collar be welded to the hydraulic cylinder in accordance with the manufacturer's requirements. (See Figure 1)
- 3.4. The collar set screws are provided for positioning purposes only during installation. These screws are not meant as a means of transmitting the load in the carriage to the hydraulic cylinder.
- 3.5. In the subject incidents, the required welds have been found to be either missing or removed from the initial installation or to have failed during operation of the device.
- 3.6. FOR REFERENCE PURPOSES: The following are selected extracts of information regarding welding of the cylinder collars from two different manufacturers:
 - It is imperative that the collar be welded to the cylinder once it is in its final position. At least a ¼-inch fillet weld, 2 inches in length is required. Do not over weld. Too much heat can distort the cylinder. The weld should be two 1-inch beads on opposite sides of the collar.
 - When finally in position, the collar must have two ½-inch beads of weld on the collar. Do not weld all around.
- 4.0 This order is effective immediately.

Roland Hadaller P.Eng.

Director, Ontario Regulation 209/01 (Elevating Devices), appointed under the *Technical Standards and Safety Act, 2000*

This Bulletin has been developed in consultation with the Elevating Devices Advisory Council and the Field Advisory Committee.