



Elevating Devices Mechanic –  
Safety Training  
In-School Curriculum Standard

# **Elevating Devices Mechanic Safety Training**

## **In-School Curriculum Standard**

**April 2013**



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## PREFACE

This Elevating Devices Mechanic Curriculum Training Standard has been developed in keeping with the Common Format Guidelines prescribed by the Technical Standards and Safety Authority (TSSA) in conjunction with the Elevating Devices Training and Certification Advisory Board (TCAB). The Curriculum Standard reflects the content necessary for a new entrant to the Elevating Device Industry to successfully complete and obtain an Elevating Devices Mechanic-In-Training certificate of qualification.

For easy reference, a time allocation has been included for each respective reportable subject and units, along with a breakdown of theory and application in the delivery of the performance objectives.

The continual introduction of innovative techniques and more complex equipment is resulting in increasing demands for Elevating Devices Mechanics who are not only skilled in the practical aspects of the trade, but who also have a sound theoretical knowledge of the testing, diagnosing and servicing requirements. The Curriculum Standard has been developed to provide this theoretical knowledge and to offer some practical applications to complement the on-the-job work experience of the Elevating Devices Mechanic.

The Curriculum Standard has been designed to give the instructor every opportunity for flexibility and innovation without significant departures from content. Since the scope of the prescribed Curriculum Standard is quite extensive, the Mechanic-In-Training will be expected to reinforce the acquired knowledge through regular independent out-of-classroom assignments.

The Curriculum Standard includes specific references to on-the-job training. While on-the-job training has been linked to the respective in-school learning outcomes and learning content objectives, employers should not assume complete coverage in all aspects of the modules. The in-school delivery focuses primarily on the knowledge required and fundamental skills that support the respective objectives outlined in the workplace training. Employers are expected to complete the delivery of these objectives by ensuring the prescribed in-school knowledge is applied to the practical learning experiences in the work setting.

Regular evaluations of a Mechanic-In-Training's learning achievements must be performed in both theory and practical applications throughout the program.

### **Participation by Stakeholders**

TSSA, working in collaboration with the Elevating Devices TCAB and industry members participated in the development of this curriculum guideline.



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## Summary of Total Program In-School Training Hours

Reportable Subjects	Total	Theory	Application
1. Safety	24	24	0
<b>Total</b>	<b><u>24</u></b>	<b>0</b>	<b>0</b>



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Number:	1
Title:	Safety
Duration:	24 Total Hours
	Theory: 24 Hours    Application: 0 Hours

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### Evaluation & Testing:

- Assignments related to theory and appropriate application skills.
- Minimum of one mid-term test during the term.
- Final exam at end of term.
- Periodic quizzes.

### General Learning Outcome:

Upon successful completion of this reportable subject, the applicant will be eligible to apply for an EDM-T certificate of qualification made under Ontario Regulation 222/01. The EDM-T will be able to practice workplace safety in accordance with government safety regulations, manufacturer's recommendations and specifications and approved industry standards.

- 1.1 – Define the fundamentals of personal protective equipment.
- 1.2 – Describe the dangers of asbestos, synthetic mineral fibres and silica.
- 1.3 – Define the fundamentals of hand and power tool safety.
- 1.4 – Define the fundamentals of hazards in the hoistway, machine room and Pit.
- 1.5 – Define the fundamentals of electrical safety.
- 1.6 – Define the fundamentals of safety when babbitting.
- 1.7 – Define the fundamentals of safety when using oxy-acetylene equipment for heating and flame cutting.
- 1.8 – Define the fundamentals of environmental hazards.
- 1.9 – Define the fundamentals of Material Handling.
- 1.10 – Describe the safety issues relating to substance abuse.
- 1.11 – Describe the role of the Workplace Safety & Insurance Board (W.S.I.B.)
- 1.12 – Describe the workplace fire safety and prevention requirements.
- 1.13 – Define the essential workplace housekeeping procedures.
- 1.14 – Describe the types and applications of effective communication techniques.
- 1.15 – Identify the required Ministry of Labour and TSSA procedures for accidents and unsafe working conditions.



1.16 - Describe the public safety requirements for the workplace.

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Learning Content:

1.1 – Define the fundamentals of personal protective equipment.  
[1.5/0]

- personal protective equipment
  - head guarding
  - problems for hair and jewellery
  - guarding eyes, ears, hands and feet
  - use of respirators
  - protective clothing
  - use of fall arrest devices and travel restraint as per the requirements of the Occupational Health and Safety Act
  - use of back belts
  - code reference: applicable codes, standards and regulations

1.2 – Describe the dangers of asbestos, synthetic mineral fibres and silica.  
[1/0]

- dangers of asbestos, synthetic products and Silica
  - recognize the toxic effects
  - define the types of potential exposure
  - use of P.P.E. to minimize effects of exposure
  - responsibilities and action procedures

1.3 – Define the fundamentals of hand and power tool safety.  
[2/0]

- hand tool safety
  - safe use and application of hand tools
  - maintenance of hand tools
  - safe storage of hand tools
- power tool safety
  - inspection
  - operation
  - maintenance
  - storage
  - electrical safety
  - code reference: applicable codes, standards and regulations

1.4 – Define the fundamentals of hazards in the hoistway, machine room and pit.  
[5/0]

- identify hazards when removing elevating device from service and positioning in hoistway.
- identify hazards of placing the elevating device back into normal service.
- Identify hazards of stored mechanical energy
- Identify hazards of stored pneumatic energy
- identify hazards of using hoistway access switches and unlocking. devices



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- identify hazards of Gaining Access to and Egress from the elevating device car pit.
- identify hazards from overhead deflector sheaves, traction sheaves and deflector sheaves on car.
- identify hazards associated with moving counterweights when on car top and in the pit.
- identify hazards associated with vanes and other devices that present a shear hazard in the hoistway.
- code reference: applicable codes, standards and regulations
- identify hazards caused from falling objects
- identify hazards of falling and exposure to electric shock
- identify hazards of moving on uneven or unstable surfaces
- identify slippery conditions
  - dirt
  - oil grease
  - ice and water
- identify hazards of working around rotating or moving equipment
- code reference: applicable codes, standards and regulations

### 1.5 – Define the fundamentals of electrical safety. [3/0]

- define “tag and lockout procedures”
  - verify NO POWER
- describe the use of electrical meters and instruments
  - testing for presence of electricity
- define the hazards from stored electrical energy and other sources
  - capacitors
  - inductors
  - interconnections
- directors ruling 106/93 & 01/82
- define the safe use of jumpers
  - appropriate use
  - potential hazards
- code reference: applicable codes, standards and regulations

### 1.6 – Define the fundamentals of safety when babbitting. [1/0]

- identify the requirements for Personal Protective Equipment P.P.E.
- identify the requirements for clean clothing
- define the specified Babbitt composition
- identify the required babbitting equipment
- identify the hazards associated with heating babbitt
  - use of heating equipment
  - handling molten Babbitt
- identify the dangers of moisture in babbitting
- identify the dangers of fumes in babbitting

### 1.7 – Define the fundamentals of safety when using oxy-acetylene equipment for heating and flame cutting. [1/0]

- define the requirements of wearing Personal Protective Equipment (P.P.E.).
- identify the safe handling methods and storage requirements of oxy-acetylene equipment.
  - turning on and off equipment



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- hazards of using oxygen around lubricating oil or grease
- explosion hazards
- equipment storage and transportation
- regulator adjustment

1.8 – Define the fundamentals of environmental hazards.  
[1/0]

- chemical hazards
- physical hazards
- biological hazards
- toxic substances

1.9 – Define the fundamentals of material handling.  
[1/0]

- planning storage
- specified PPE
- warm up
- adequate lighting
- communication
- use of dollies
- lifting techniques

1.10 – Describe the safety issues relating to substance abuse.  
[1/0]

- describe alcohol, prescription and non-prescription drug abuse
- recognize symptoms
- awareness of programs and counseling

1.11 – Describe the role of the Workplace Safety and Insurance Board (W.S.I.B.)  
[1/0]

- define the role of the W.S.I.B
- define the role and responsibilities of the employer and employee

1.12 – Describe the workplace fire safety and prevention requirements.  
[1/0]

- interpret the Occupational Health and Safety Act (O.H.S.A.)
- identify potential fire hazards
- identify the class of fires and the application of the appropriate fire extinguisher
- develop an emergency action plan including evacuation procedures
- describe the use of extinguishers, respirators, stretchers and fire blankets
- describe the factors that determine when a fire should not be fought

1.13 – Define the essential workplace housekeeping procedures.  
[1/0]

- Identify hazardous areas in the workplace
  - wet floors and liquid spills
  - poor illumination





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- debris in walking area
- loose carpet and uneven surfaces
- storage of tools and equipment

1.14 – Describe the types and applications of effective communication techniques.  
[0.5/0]

- identify the four types of communication and situational applications
  - Verbal
  - Written
  - Visual
  - Body language

1.15 – Identify the required Ministry of Labour and TSSA procedures for accidents and unsafe working conditions.  
[2/0]

- define the procedures for identifying and reporting unsafe conditions
- describe how to attend to injured workers
- practice writing an accident and incident report that complies with the Ministry of Labour and TSSA Accident Reporting Procedures
- review the TSSA “Emergency Evacuation Training and Certification Policy”

1.16 - Describe the public safety requirements for the workplace.  
[1/0]

- define the method of notifying building personnel of elevating device shut-down or reinstatement to service.
- define the reasons for notifying building personnel that the elevating device has been shut down or returned to service
- define the requirement for and location of “maintenance in progress” signs
- define the equipment requirements and procedure for barricading entrances.
- define the requirements for barricading
- minimizing hazards associated with public contact with tools or materials in the work area

Reference material for this section includes the following:

The Act:  
TSS Act, 2000  
Ontario Regulation 222/01  
Ontario Regulation 209/01

Occupational Health and Safety Act, R.S.O. 1990

4 Sector Regulations:  
Regulations for Construction Projects, O. Reg. 213/91  
Industrial Establishments Regulations, O. Reg. 851  
Health Care and Residential Facilities Regulation, O. Reg. 67/93  
Mines and Mining Plants Regulation, O. Reg. 854

Elevator Industry Field Employees’ Safety Handbook