





Queen's University Environmental Health and Safety

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4. Responsibilities

4.1 Responsibilities of Directors, Department Heads and Managers

Each has the following responsibilities under this standard operating procedure

- Identify situations where foot protection is required and in conjunction with Environmental Health and Safety determine the type of protective footwear required for the hazards present.
- Ensure that this SOP is implemented in all facilities under his/her authority.
- Ensure that all pertinent supervisors, employees and students are aware of this SOP and have been informed of the proper use care and maintenance of protective footwear.

4.2 Responsibilities of Supervisors

Supervisors must be knowledgeable about the hazards in their area. They must:

- Ensure that all staff and students are aware of the hazards present and have been informed of the proper use care and maintenance of protective footwear
- Ensure that workers wear protective footwear at all times in areas where foot hazards exist.

4.3 Responsibilities of Staff and Students

Staff and Students must

- wear protective footwear at all times in areas where foot hazards exist
- Maintain protective footwear in good condition.

5. Types of Footwear Protection

Injuries to the foot may be prevented by the use of appropriate protective footwear. Appropriate protective footwear must protect against the specific hazards presented, provide a comfortable and secure fit, and comply with CSA Standards Z195-02 and Z195.1-02. CSA approved Protective footwear will have markings at ankle height outside right upper or tongue of the boot/shoe (Appendix 1).

- **Protective Toe Cap** - a shield incorporated into a boot or shoe that provides protection against impact to the toes. Protective toe caps must be worn by those exposed to potential impact injury to the toes.



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There are two grades of protective toe caps.





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8. Hazard Assessment

Prior to the selection of protective footwear, a hazard assessment and analysis should be conducted. This assessment is based upon the workplace environment and specific work activities. The following potential hazard areas should be considered:

- Materials handled by the employee during the normal course of his/her job:
 - (i) Evaluate the risk of objects falling onto or striking employees' feet.
 - (ii) Consider any material or equipment that might roll over employees' feet.
 - (iii) Consider any sharp or pointed objects that might cut the top of employees' feet
- Foreign objects that may penetrate the bottom or side of the foot;
- Exposure to corrosive or irritating substances;
- Exposure to explosive atmospheres: evaluate the risk of static electrical discharges igniting an explosion or fire;
- Risk of damage to sensitive electronic components or equipment due to the discharge of static electricity;
Note: Check with protective footwear suppliers or manufacturers regarding the level of electrical resistance provided by the footwear.
- Risk of coming into contact with energized conductors of low to moderate voltage (eg, 220 V or less);
- Risk to ankles from uneven walking surfaces or, rough terrain (in which case ankle support is required);
- Risk of foot injury due to exposure to extreme hot or cold environments/substances/surfaces;
- Risk of slips and falls on slippery walking surfaces;
- Exposure to water or other liquids that may penetrate the footwear causing damage to the foot and the footwear; and
- Risk of exposure to rotating or abrasive machinery (eg, chainsaws or grinders).



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9. Selection Guide

After completing the hazard assessment, refer to Appendix 2 which identifies the recommended footwear selections for various workplace hazard categories. It also indicates types of footwear that are not recommended for certain hazardous situations.

For example: if your workplace assessment indicates the following hazards:

- uneven work surface
- falling objects
- sharp objects on the ground
- live electrical conductors

you would select a boot which gives ankle support, with both a green triangle and a white rectangle label. The inside protection code on the boot would be **1PME0** which indicates Grade 1 toe protection, puncture resistant sole metatarsal protection, and electrical protection.

For hazards not specifically covered, contact the Department of Environmental Health and Safety for advice on appropriate protection.

10. Fit and Care of Safety Footwear

Fit

- Walk in new footwear to ensure it is comfortable.
- Boots should have ample toe room (toes should be about 12.5 mm from the front)
- Make allowances for extra socks or special arch supports when buying boots.
- Boots should fit snugly around the heel and ankle when laced.
- Lace up boots fully. High-cut boots provide support against ankle injury.

Care:

- Use a protective coating to make footwear water-resistant.
- Inspect footwear regularly for damage.
- Repair or replace worn or defective footwear.
- Electric shock resistance of footwear is greatly reduced by wet conditions and with wear.



Footwear Protection Guide

Hazard Types	Protection								Comments
	Hazardous Activity Examples	Protective Toe	Protective Sole	Metatarsal Protection	Electrical Insulation	Static Dissipation	Conductive Sole	Chainsaw Protection	
Falling Objects	<ul style="list-style-type: none"> - Construction sites - Handling heavy materials, equipment or machinery - Handling large heavy animals - Machine shops - Woodworking shops 	DD		DD					Metatarsal guards are recommended where heavy objects may fall on foot
Rolling Objects	<ul style="list-style-type: none"> - Construction sites - Handling heavy materials, equipment or machinery - Handling large heavy animals - Machine shops - Woodworking shops 	DD		DD	D				Select Grade 1 toe protection
Sharp Objects	<ul style="list-style-type: none"> - Construction sites - Presence of sharp objects on ground - Machine shops 	DD	DD	DD					Protect against sharp objects penetrating sole and top of foot
Hot Objects		D	D	D					Select thermal-insulating footwear in high-heat conditions
Electrical Shock	<ul style="list-style-type: none"> - Presence of live electrical conductors - Construction sites 				DD	C	C		SD and conductive footwear offer no protection
Static Discharge Micro-circuits	<ul style="list-style-type: none"> - Handling of sensitive electronic equipment 				C	DD			Insulating footwear is hazardous to circuits
Static Ignition	<ul style="list-style-type: none"> - Presence of flammable or explosive materials - Handling of sensitive electronic equipment 				C		DD		In addition, ground all containers and equipment
Saw Cutting	<ul style="list-style-type: none"> - Construction sites - Cutting of timber 	DD	D	D				DD	Select footwear for environmental conditions

DD Highly Recommended **D** Recommended (depending on degree of hazard) **C** DO NOT USE

