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1. Introduction

The Environmental Health and Safety Standard Operating Procedure for foot protection was developed by the Department of Environmental Health and Safety in accordance with the University’s Policy Statement on Health and Safety and to ensure compliance with all applicable legislation.

In workplaces where there are hazards that pose a risk for foot injury, whenever practical, these hazards should be eliminated or reduced through the use of engineering and administrative controls. To protect against the hazards which continue to exist after the implementation of these controls protective footwear that is compliant with CSA Z195 must be worn.

2. Scope

This SOP applies throughout the University and all off campus sites. This SOP also applies to all faculty, staff, and students who are undertaking studies, doing research, or carrying out any other work that takes place off-campus and is under the purview of the University.

3. Applicable Legislation

Occupational Health and Safety Act (R.S.O. 1990)
 Canadian Standards Association (CSA) Z195:14 (R2025) Protective Footwear
 Canadian Standards Association (CSA) Z195.1-16 Guideline on Selection, Care and Use of Protective Footwear

4. Responsibilities

4.1 Responsibilities of Directors, Department Heads, Managers and Supervisors

Each has the following responsibilities under this standard operating procedure:

- Identify situations where foot protection is required, determine the type of protective footwear required for the hazards present using this SOP or in consultation with Environmental Health and Safety, and communicate this information to staff and students.
- Ensure that this SOP is implemented in all facilities under his/her authority.



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- Provide appropriate protective footwear to individuals exposed to foot hazards, or when applicable, provide reimbursement for the purchase of appropriate proactive footwear.
- 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.
- Ensure that appropriate protective footwear is always worn where foot hazards exist.

4.2 Responsibilities of Staff and Students

Staff and Students must:

- Always wear protective footwear in areas where foot hazards exist.
- Inspect protective footwear prior to and after each use to ensure it is in good condition as per manufacturer's instructions.
- Notify their PI/Supervisor when their protective footwear becomes damaged and requires replacement, or if they encounter a hazardous situation that requires the purchase of different protective footwear.
- Do not alter or modify protective footwear.
- Maintain protective footwear in good condition.

5. Types of Footwear Protection

The use of appropriate protective footwear may help prevent foot injuries if they provide protection against the specific hazards present, provide a comfortable and secure fit, and comply with CSA Standards Z195:14 and Z195.1-16. CSA approved protective footwear will have a mark or marks on the outside upper or tongue of the right shoe/boot to indicate the type(s) of protection provided. Labels may combine different protection classes. Appendix 1 provides a description of the different classes of protection and their labelling requirements. In addition to the markings in Appendix 1, each pair of boots should have the following information permanently marked in a conspicuous location:

- a) Either
 - i) The manufacturer's or listee's name or trademark; or
 - ii) The certification body's identification number (if certified).
- b) The month and year of manufacture (a date code may be used); and
- c) If certified, the certification body's registered identifying logo or mark on the outside of the footwear.

If any of the above information is missing, this can indicate that the footwear does not comply with all the standards, and caution is warranted.



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The following describes the types of footwear protection available:

- **Protective Toe Cap** – footwear with an incorporated toe cap that is a permanent, integral, non-removable part of the footwear and provides protection against impact to the toes. Grade 1 protection is tested to higher impact levels compared to the impact levels used to test Grade 2.
- **Protective Sole** – footwear with a protective non-removable plate incorporated into the sole of a boot or shoe that provides protection against penetration of sharp objects into the bottom of the foot.
- **Metatarsal Protector** – footwear with a shield over the top of the foot, permanently attached to the shoe or boot, that provides impact protection to the top of the foot.
- **Electric Shock-resistant Sole** – footwear that has electric insulating properties and provides protection against electric shock. **NOTE:** Electric shock resistance deteriorates overtime with use and in a wet environment.
- **Static-Dissipative (SD) Footwear** – footwear that allows a small charge of electricity to be dissipated into the walking surface (Static-dissipative footwear Is not intended for use in environments where explosive hazards exist).
- **Super-Static-Dissipative (SD+) Footwear** – footwear that allows small charges or electricity to be dissipated into the walking surface, intended to serve the needs of those working with electronics and sensitive instruments (Super-static-dissipative footwear is not intended for use in environments where explosive hazards exist).
- **Conductive Footwear** – footwear constructed of a conductive material designed to electrically ground the foot (Intended for use in explosive hazard areas, e.g., where munitions, fireworks, high dust, or gunpowder exists).
- **Chainsaw Protective Footwear** – footwear designed to prevent a chainsaw from cutting into the shin, ankle, foot, and toes.
- **Slip-resistant footwear** – footwear designed to maximize traction and reduce slippage.
- **Over-the-shoe toe protectors** – over-the-shoe toe protectors are designed to only provide basic protection from impacts to the toes of the users on a temporary basis. Over-the-toe protectors are not intended to be used by individuals performing work where there is a foot hazard and are not a substitute for traditional protective footwear.



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Products compliant with CSA Z334 might not provide adequate protection for visitors under all conditions. For situations where hazardous conditions necessitate full foot protection, protective footwear compliant with CSA Z195 is strongly recommended.

6. Other Protection

Shoe materials, including soles and uppers, must be compatible with the work environment and the tasks conducted. Depending on the potential hazards encountered in the workplace, workers may be required to wear footwear which provides additional protection. This may include footwear made with soles that are resistant to heat/cold, water, flame, chemicals, arc flash, abrasion, ankle protection, and compression. Manufacturers of individual footwear can provide data on the performance of their specific products against these hazards and should be consulted when selecting appropriate protective footwear.

7. Protective Footwear in Chemical, Radioactive and Biohazard Laboratories

Appropriate protective footwear must always be worn in laboratories where chemicals, radioisotopes or biohazardous materials are used and stored. Open-toed shoes, perforated shoes, sandals etc. must not be worn in these laboratories. Appropriate shoes must cover and protect the entire foot and the shoe materials, including soles and uppers, must be compatible with the laboratory environments, the materials handled, and the tasks conducted.

Depending on the hazards present in the laboratory, footwear which provides additional protection may be required. Shoes with soles that are resistant to slipping, abrasions, oils or heat may need to be considered. Where the potential for foot injury due to impact, puncture, electrical shock, or static electricity, appropriate CSA-approved footwear must be worn.

8. Protective Footwear in Designated Areas

Appropriate CSA certified protective footwear that covers and protects the entire foot must always be worn in Facilities trade shops, the Central Heating Plant, Mechanical/Electrical rooms, 355 King St. Stores, and Facilities construction work sites where designated as per Facilities Safety Boot SOP AD6100-31-SOP-M0021. Protective footwear must be compatible with the environment, the materials handled, and the tasks conducted.

Any other areas designated by Departments requiring foot protection must be clearly signed to identify the requirements to all staff, students, and visitors.



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9. 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. Hazard assessments should be periodically completed to ensure that risks are constantly re-evaluated and that the level of protection is maintained. The following potential hazards should be considered:

- Materials handled by the employee during the normal course of his/her job:
- The risk of objects falling onto or striking employees' feet.
- Any material or equipment that might roll over employees' feet.
- 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 supplies 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 (e.g. 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, and/or 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.
- Risk of exposure to rotating or abrasive machinery (e.g. Chainsaws or grinders).

10. Selection Guide

After completing the hazard assessment, refer to Appendix 2 which identifies the recommended footwear protections for various workplace hazard categories. It also indicates types of footwear that



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are not recommended for certain hazardous situations. Never assume that a certain type of job always requires the same footwear, different working environments can present different hazards.

When selecting protective footwear, the following should be considered:

- Footwear must provide protection against the hazard(s) presented by the work environment and work activity. Assess the workplace and work activities for:
 - Materials handled or used during the normal course of their job.
 - The risk of objects falling onto or striking the feet.
 - Material or equipment that might roll over the feet.
 - Sharp or pointed objects that might cut the top of the feet.
 - Objects that might penetrate the bottom or side of the foot.
 - Exposure to corrosive/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 discharge of static electricity.
 - Risk of contact with energized conductors of low to moderate voltage.
 - Risk to ankles from uneven walking surfaces or rough terrain.
 - Risk of injury due to exposure to hot or cold environments, substances, and/or surfaces.
 - Risk of slips and falls due to slippery surfaces.
 - Exposure to water and other liquids that could penetrate the footwear,
 - Exposure to rotating, cutting or abrasive machinery.
- Where the environment presents multiple foot hazards, footwear that provides protection in more than one category should be selected.
- Footwear sole and upper material should appropriate for the type of walking or floor surface (e.g., loose ground, smooth surfaces, temperature, wet/oil, chemicals, etc.).

For hazards not specifically covered, consult the footwear supplier for advice on appropriate protection.

11. Fit and Care of Safety Footwear

Only the wearer of protective shoes or boots can confirm a proper fit when selecting protective footwear. The following are general guidelines for users in the proper selection and fit of protective footwear:

- Feet normally swell during the day. The best time for fitting shoes is midday.
- Do not expect footwear to stretch to fit your foot with wear. If it doesn't fit initially, it will not fit later. Protective toe caps do not stretch.
- Walk in and flex the new footwear to ensure it is comfortable and a proper fit.



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- Consider the sole of the footwear. Depending on the walking surface and the environmental conditions, some soling materials and tread designs can offer more durability and be easier to maintain.
- Make sure that the socks you wear when trying on your footwear are the same that will be worn with the footwear.
- If you use arch supports, orthotics, and/or insoles, it is important to wear them while trying on new footwear.
- Check to ensure that your heel fits with minimum slippage and that the ball of your foot and toes fit well and are comfortable.
- Footwear should fit snugly around the heel and ankle when laced.
- Lace up footwear fully to give yourself the full protective benefits that the footwear is designed for (e.g., support for the foot, protection from harmful objects entering the footwear).
- Select footwear by how they fit, not on the size marked inside. Sizes can vary among brands and styles.

Protective footwear must be maintained to ensure that the protective qualities remain effective:

- Use a protective coating to make footwear water-resistant.
- Inspect footwear before and after each use. If you discover cracks in the soles, breaks in the leather, exposed toe caps, or similar damage that reduces the protective qualities of the footwear, the footwear should be replaced.
- Replace worn or defective footwear. Footwear that is deemed unsafe should be destroyed and not recycled for personal use.
- Treads should be kept clean to maximize slip resistance.
- If footwear has exposed to sole penetration or severe impact, it can be compromised without showing any outward signs of damage and should be replaced.
- Refer to the manufacturer's instructions for proper storage, cleaning, and care of the footwear.

12. Revision History

October 2007 - 1.0 Initial Release
 April 2026 – 1.1 Minor Updates



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Appendix 1 - Protective Footwear Markings

Hazard												
The values indicated are the tests, consult your safety footwear supplier, or the standard for more information.	Grade 1 protective toe 125J impact + protective plate 1200N	Grade 2 protective toe 90J impact + protective plate 1200N	Grade 1 protective toe 125J impact	Grade 2 protective toe 90J impact	Metatarsal guard 101.7 J impact	Electric shock resistant 18Kv 60Hz 60 s. leakage less than 1 mA	Static dissipative 10 ⁵ Ω-10 ⁶ Ω 500V 5s **	Super static dissipative 10 ⁵ Ω-3.5 × 10 ⁷ **	Conductive 0-500000 Ω 5 s.	Chainsaw protective	Slip resistant ***	Over the shoe toe protectors Z334
Toe impact	HR	R	HR	R								T
Sole puncture	HR	R										
Metatarsal impact					HR							
Electric shock						HR						
Static discharge							R	R				
Static ignition									HR			
Chainsaw cut										HR		
Slip											R	

Footwear may have multiple labels for different types of protection. Do not assume any protection is offered beyond the protection indicated by the specific markings. For more design and performance requirements refer to CSA Z195 and/or your safety footwear supplier. A hazard assessment and full analysis of protection available is strongly recommended.

Legend:

- HR** Highly recommended
- R** Recommended (depending on environment and degree of hazard)
- Do not use
- T** Recommended for temporary use (consult CSA Z334 for more information)

** — Tests for static dissipative and super static dissipative footwear are performed using different methods. Consult your safety footwear supplier or CSA Z195-14 for more detailed information.

*** — User should seek appropriate slip-resistant footwear for the particular application and work environment by consulting with the manufacturer and/or distributor.



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Appendix 2 – 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	- Construction sites - Handling heavy materials, equipment or machinery - Handling large heavy animals - Machine shops - Woodworking shops	✓✓		✓✓					Metatarsal guards are recommended where heavy objects may fall on foot
Rolling Objects	- Construction sites - Handling heavy materials, equipment or machinery - Handling large heavy animals - Machine shops - Woodworking shops	✓✓		✓✓	✓				Select Grade 1 toe protection
Sharp Objects	- Construction sites - Presence of sharp objects on ground - Machine shops	✓✓	✓✓	✓✓					Protect against sharp objects penetrating sole and top of foot
Hot Objects		✓	✓	✓					Select thermal-insulating footwear in high-heat conditions
Electrical Shock	- Presence of live electrical conductors - Construction sites				✓✓	✗	✗		SD and conductive footwear offer no protection
Static Discharge Micro-circuits	- Handling of sensitive electronic equipment				✗	✓✓			Insulating footwear is hazardous to circuits
Static Ignition	- Presence of flammable or explosive materials - Handling of sensitive electronic equipment				✗		✓✓		In addition, ground all containers and equipment
Saw Cutting	- Construction sites - Cutting of timber	✓✓	✓	✓				✓✓	Select footwear for environmental conditions

✓✓ Highly Recommended ✓ Recommended (depending on degree of hazard) ✗ DO NOT USE