CSA Standard Z195.1-02
Guideline on Selection, Care and Use of Protective Footwear

Scope and Application:

This standard assists users and employers in the proper selection of protective footwear available for their particular work environment and job function; assists employers and committees to identify potential hazards requiring protective footwear; and assists employers and committees to establish and maintain safety footwear programs to ensure due diligence and continuous improvement in injury prevention. The standard is complimentary to CSA Z195-02.

This standard refers the reader to CSA Z195 for protection factors involving compression, cutting, abrasion and electrical discharge. Factors not addressed in this standard include resistance to heat and cold, slipping, water, outsole properties, upper material properties and ankle protection (except for chainsaw).

Footwear Types are separated into 7 protective categories, including:

1) **toe cap** - protecting against impact to the toes
2) **sole** - against penetration of sharp objects through the sole
3) **metatarsal** - against impact to the metatarsal area of the foot
4) **electric shock-resistant** - constructed of electrically insulating materials that protect the bottom of the foot against electric shock
5) **static dissipative** - that incorporates a sole that allows small charges of electricity to be dissipated into the walking surface.
6) **conductive** - constructed of a conductive material designed to electrically ground the foot
7) **chainsaw** - designed to protect the foot from a chainsaw cutting through it.

Hazard Assessment risk factors are listed to enable users in the selection of the appropriate level and combination of protection. The risk factors include: falling objects, rolling objects, sharp objects, exposure to corrosive materials, explosive atmospheres, sensitive electronic components, from static electricity, contact with low to moderate voltage, ankle stability, temperatures, slippery surfaces, liquids that could penetrate footwear, rotating or abrasive equipment. A worksheet is provided to conduct the hazard assessment.

Selection Guide recommends footwear based on the hazard. Hazards outlined in the guide (chart) include falling objects, rolling objects, sharp objects, hot objects, electric objects, static-discharge micro-circuits, static ignition, saw cutting. Recommendations range between highly recommended - recommended – and do not use. Static dissipative or conductive soles are “do not use” (i.e. not recommended) for electric shock hazard. Electrical insulation is “do not use” for hazards of static discharge and static ignition. The standard references the manufacturer for hazards not listed in the chart.

Markings are shown on a chart identifying footwear types and corresponding labels:

- Green triangle for Grade 1 (impact up to 125 joules toe protection)
- Yellow triangle for Grade 2 (impact up to 90 joules toe protection)
- White rectangle and ohm symbol for shock-resistant
- Red rectangle for static-dissipative
- White rectangle with a tree symbol for chainsaw protective.
The label must identify the certifying agency. A five-place alpha-numeric code shall be in place permanently inside the footwear to identify the protection class by number and letter:

- 1 or 2 (for grade 1 or 2)
- P or 0 (puncture resistant)
- M or 0 (metatarsal resistant)
- E, S or C (shock resistant, static-dissipative or conductive)
- X or 0 (chain saw) (for example 1 P M E X).

**Selection, Maintenance and Disposal** recommendations are provided for general selection in terms of proper fit and compatibility with job requirements and any kind of insert (arch support, orthodic, insole). Footwear should be replaced if worn to a point that there are breaks in the leather, cracks in the soles, exposed toecaps, anything that will reduce the protective qualities of the footwear. Sole design factors that can affect slippage include:

- shape of the sole,
- thread design,
- shape of the heel, and
- softness or hardness of the sole.

Work environment factors to be considered include:

- type of surface material,
- smoothness of walking surface,
- wet or dry surface,
- type of liquid involved on a wet surface,
- temperature of the surface, and
- temperature of the air.

Generally smooth and wet surfaces are more slippery. Cold weather can contribute to a harder less slip-resistant surface.

**Ongoing Monitoring** is essential. An incident investigation form is included to assist workplaces in monitoring the effectiveness of their safety footwear programs.

---

This bulletin contains a summary of excerpts taken from the Standard, for general information purposes only. This bulletin is not reflective of the complete requirements that the Standard prescribes.

**Note:** *Manitoba Regulation M.R. 217/2006 Section 1.4 inconsistency:*

If there is an inconsistency between this regulation and a requirement contained in a publication, code or standard referenced in this regulation, the provisions in this regulation prevail.