

# FOOT PROTECTION GUIDELINE

## 1.0 WHEN TO USE

Whenever there is a risk of injury to the foot, appropriate foot protection must be worn. Foot protection takes various forms.

- Tight-fitting shoes with slip-resistant soles must be used when there is a risk of slipping.
- Shoes with approved toe caps must be worn if there is a risk of a crushing injury to the toes.
- Puncture resistant soles must be used if there is a risk of puncture through the sole.
- Closed-toe shoes made of impermeable material must be used when working with corrosive or cryogenic liquids.

The risk assessment should address the type of footwear needed in the circumstances.

## 2.0 SELECTION

### 2.1 PROTECTIVE TOE CAPS

In order to be classified protective footwear, shoes and boots must contain a protective steel cap. There are three different grades referring to the shoes ability to withstand impact.

- Grade 1 (green label) shoes can withstand an impact of 125 joules (the equivalent of a 50 lb object dropped at a height of 22 inches).
- Grade 2 (yellow label) shoes can withstand an impact of 90 joules (the equivalent of a 50 lb object dropped at a height of 16 inches).
- Grade 3 (red label) shoes can withstand an impact of 60 joules (the equivalent of a 50 lb. object dropped at a height to 10.5 inches).

### 2.2 CUTS AND PUNCTURES

Some protective footwear is considered puncture resistant if it contains a built-in insole made of stainless steel. By CSA standards, these plates must be able to withstand 135 kg of pressure without being penetrated by a 5cm nail. A shoe is puncture resistant when its label is triangle shaped. Slip-in steel insoles are also available for those who occasionally enter areas with a risk of punctures or cuts. However, these are not recommended for workers who are regularly exposed to this type of environment.

## **2.3 SLIP AND SKID HAZARDS**

Slips and skids can be avoided by wearing footwear with polyurethane, non-slip rubber or neoprene soles.

## **2.4 CHEMICALS AND SOLVENTS**

When corrosive substances are present in the workplace, workers should wear footwear with rubber (neoprene), vinyl or plastic (polyurethane) uppers, synthetic stitching and synthetic rubber, neoprene or cork soles.

## **2.5 ELECTRIC SHOCK RESISTANCE**

Workers who may be exposed to live electrical conductors must wear safety footwear that protects against electrical shock. The soles of such footwear have specific electrical insulating properties that provide electrical shock resistance to at least 18 kilovolts. It should be noted that such foot protection is provided under dry conditions and the insulating properties of such footwear will deteriorate in wet environments and with wear. These shoes are designated with an omega shaped label.

## **2.6 STATIC DISSIPATIVE FOOTWEAR**

Static dissipative footwear may be required in workplaces where flammable or explosive materials are present, or where the buildup of static electricity must be minimized to prevent volatile substances from igniting. Static dissipative footwear has conductive soles which are designed to reduce the accumulation of static electricity, yet maintain a level of electrical resistance range between 10<sup>6</sup> ohms and 10<sup>9</sup>ohms.

## **3.0 CARE AND MAINTENANCE**

- Footwear should be kept clean and in dedicated storage spots away from conditions that can degrade the footwear, and vermin.
- Soles should be regularly inspected for conditions of treadwear that affect traction.
- Laces and fasteners should be replaced when worn or frayed.

## **4.0 LIMITATIONS**

- Many hazardous materials can degrade the uppers and lowers of the footwear so footwear should not be exposed to these materials.
- Footwear should also be selected according to ambient temperature of the working environment.
- Footwear can also increase heat stress in workers.

## **5.0 TRAINING**

Workers must wear footwear according to the training they receive and as indicated in relevant standard operating procedures.