

## Safety Footwear

When you are out shopping for work boots, the vast selection of styles and features can be very overwhelming. Finding the right safety footwear can be one of the more difficult chores you ever have to endure. We all know that work can be difficult enough without the addition of having sore, tired feet. This makes selecting the right work boot a very important decision.

### How Do You Know Which Style is *Right* for You?

You must consider all the boot features available to you when making your choice and never settle for an “almost good fit.” Your footwear needs to fit from the moment you purchase them. Don’t buy boots or shoes hoping they will “break in” later. Depending on what job you are doing and in what environment you are doing it in, your safety footwear must have the features and benefits that allow you to do your job safely, efficiently and comfortably.

### Consider All of These Features when Selecting Your Safety Footwear...

- **Level of Protection Required** – What are the minimum safety standards and requirements required by your employer with regard to your safety footwear?  
(See the *Safety Symbols Document* in the Document Centre)
- **Metatarsal Protection** - Metatarsal Protection is intended to safeguard the upper foot (metatarsal bones) and toe areas. To meet the CSA design requirements the footwear must provide sufficient width and height to cover the top of the foot. Note that there is NO CSA certification for metatarsal protection as the standard does not currently contain performance requirements.
  - **Note** – Footwear with *external* met guard protection generally allows more boot flexibility than boots with *internal* met support but can be more problematic when climbing ladders.

- **Boot Height** – Safety footwear comes in a variety of styles and heights. You can choose between a casual shoe, running shoe, dress shoe, mid-cut hiker, 6 inch boot, 8 inch boot or 11 inch boot. In general, the higher up the leg the footwear goes the more support and protection it provides. Many will choose footwear that is of a lower cut as it provides more free movement and is generally lighter and cooler. Your employer or the job site you are working on may pre-determine a specified height of boot required.
- **Closure** – Some safety footwear is available in “pull-on” styles though the vast majority is secured to your foot by a variety of closure methods. The most common, and still the most secure, adjustable and supportive method is by **lacing**. Keep in mind, boots that lace down closer to the toes allow for easier access and better accommodate a wider foot and those with a high arch/instep. More eyelets also means increased support around your foot. **Velcro** and **zippers** are also used which allow quicker entry into the footwear but sacrifice the level of support and adjustability the footwear provides.
- **Eyelets** – Most, better quality safety footwear will have durable nylon or rust-proof metal eyelets. The more eyelets you have means the more adjustability and support you will get from your footwear. Some footwear will use “**speed hooks**” near the top of the boots to aid in lacing. These will allow you to tie up your boots more quickly. *Keep in mind that with some speed hooks there is the potential for your pant legs to get caught up on them or cause potential interference when ladder climbing.*
- **Tongues and Collars**– Consider footwear that provides padded tongues and collars. The extra padding will enhance the comfort of your footwear around your leg and ankle as well as aid in the prevention of “**lace bite**” which is an agitation to the top of your foot from the laces after an extended period of wear. A “**Gusset tongue**” is stitched into the footwear to help keep out rocks and debris. This is a particularly valuable feature if you work in an area of loose rock and gravel.

- **Footwear Construction** – Each manufacturer will use different methods to construct their footwear. Many use what is called a “**Goodyear Welt**” construction. This is an old but proven method by which the outsole is stitched to the upper. The stitching firmly secures the sole to the boot but allows for the boot to be resoled if required. Another popular method of construction is “**Injection Molding.**” This method uses metal moulds that are filled up with molten rubber and plastics, forming the outsole/midsole which are directly adhered to the upper to make one solid unit. These are widely considered to be a more waterproof design.
  
- **Sole Materials** – There are many common materials used in sole construction. “**Lightweight boots**” are a very common request by those required to wear safety footwear. The soles are the biggest single factor that contributes to the overall weight of safety footwear. **Slip resistant** soles and soles **resistant to chemicals** are other big concerns for workers. Most soles that are slip/oil/acid resistant will have markings on the soles that clearly indicate they possess that feature. *Generally, if it doesn't say that they are oil/acid and slip resistant, they are not.*

*Here are some materials most commonly used on outsoles and midsoles:*

- **TPU – Thermoplastic Polyurethane** – is extremely abrasion resistant, lightweight and flexible.
  
- **PU – Polyurethane** – Polyurethane is a lightweight material that can be injected in a liquid form directly onto a leather upper. This creates a waterproof bond between the upper and the sole. The material is extremely abrasion resistant, slip resistant, flexible and chemical resistant. Different densities of PU can be achieved by varying the amount of air bubbles in the compound. PU is a very durable material that offers great shock absorption. **Dual density PU** can also be achieved by combining two different densities of PU. (the toughest layer on the outside with the more shock absorbent layer on the inside)

## Sole Materials (continued)

- **Rubber** – Very slip resistant and flexible in cold conditions. Less durable in oil and chemicals.
  - **TPR – Thermo Plastic Rubber** – Produced by compounding and moulding granules of raw rubber material. TPR is very slip resistant and flexible in cold temperatures
  - **EVA – Ethyl Vinyl Acetate** - A very lightweight shock absorbing material used as cushioning in the midsole area.
  - **Crepe** – Very soft rubber soles that provide maximum traction. Commonly seen on roofing boots. Wears out quicker than other sole materials.
- **Sole Design** - The general design of the sole can have an impact on the performance of your footwear depending on what job you are doing. For example... if you walk a lot on your job you may want to consider wearing footwear with **“rockered”** soles. Rockered soles are curved at the toe and heel, helping propel the body more smoothly reducing stress on your body's joints. **Flat soles** in contrast provide a more stable base of support while standing but are more difficult to walk in. You need to choose the sole design that is right for you.
- **NOTE** - Many jobsites require the use of safety footwear with **“defined heels.”** Defined, 90° heels provide more secure footing in some work environments and aid in ladder climbing.
- **Sole Tread Pattern** – The depth, direction, placement and quantity of lugs on the bottom of your footwear all play a role in the amount of traction your footwear will provide. Keep in mind that for smooth indoor surfaces, you will want to choose footwear with numerous, small flat lugs that provide maximum surface contact.

(Softer materials like rubber always provide the best traction.)

- **Toe Bumpers and External Heel Guards** – Many boots feature toe bumpers and heel guards made of durable, abrasion resistant materials such as **Kevlar®** that prolong the life of the boot and prevent pre-mature wearing of the leather. These features are particularly important to those who bend and kneel a lot on their job.
- **Linings**- Most quality work footwear will feature moisture wicking linings made of materials like **Cambrelle®** that keep your feet dry and comfortable all day long. High quality materials like **Gore-tex®** and **Sympatex®** offer waterproof breathability. Breathable lining is important to ensure your feet stay cool in summer and warm in winter.
- **Insulation**- Many of the footwear styles we carry have some form of insulation. **Thermolite®** and **Thinsulate™** are two of the more popular insulating materials and are usually added in the standard amount of 200g. This is amount of insulation is widely considered adequate for year round wear. (...sort of like house insulation that keeps your home cool in summer and warm in winter) However, for those requiring non-insulated or more heavily insulated footwear, we have those for you as well.
- **Water Resistance** – Many work boots receive treatments to the leather that make them waterproof. This is usually clearly stamped on the upper. Waterproof leathers need to be **regularly treated after purchase** to maintain the water resistance of the leather. The more you get them wet, the more regular the treatment is required. For the most part, uppers that are stamped “waterproof” are best treated as “water resistant” as they are not meant to be totally submerged in water for any period of time. Waterproof linings like **Gore-tex®** and **Sympatex®** provide true waterproof protection. A Gore-tex® or Sympatex® bootie that is inside the boot, surrounds the foot to provide a waterproof, breathable barrier. Even though the leather upper may get wet, the moisture does not pass through the bootie.

**Note\*** *upper materials such as **ballistic nylon** absorb less water and dry much more quickly than leather which means a lighter boot.*

- **Removeable Insoles** – Always purchase safety footwear with removeable insoles. This allows you to replace worn insoles regularly as well as allow for adjustments to the fit of the footwear. Most importantly, it allows a trained professional to increase and customize support. Canadian Footwear staff are trained on how to adjust the support in footwear and increase your comfort.

*Removeable insoles also accommodate the use of custom made orthotics.*

## **Fitting Tips**

- Make sure your footwear allows for ample toe room. As you can't feel your toe with your finger through the steel toe, remove the insoles and ***stand on them***. There should be approximately ½" of empty space on the insole beyond the longest toe. This gives you a good picture of how your foot is resting inside the footwear.
- Safety footwear usually fits big. In general, you will require a smaller "size" in safety footwear than you take in an everyday shoe. Usually it's about 1 to 1 ½ sizes.
- Allow for the use of multiple pairs of socks, as you may want to adjust for colder weather. Buy good quality socks, as they are as important as the footwear when it comes to determining the overall comfort of your feet. Look for socks made of quality wool, polypropylene and acrylics which wick moisture and keep your feet dry and comfortable.

*\* Damp cotton socks are the main cause of blisters.*

- Purchase footwear that fits NOW! Don't buy footwear that is uncomfortable hoping they will break in later, even if they are ON SALE.
- You get what you pay for... Many brands and styles of footwear available at department type stores may be cheaper, but they are also usually short on quality, comfort and durability and use inferior materials.

