Safety Footwear: The heart and soul of foot protection

The workplace is full of many potential hazards, including those that pose a threat to an often overlooked body part, your feet. Protective footwear for the workplace is designed to protect the foot from physical hazards such as sharp objects, falling objects, heat and cold, wet or slippery surfaces, chemical exposures.

The Occupational Health and Safety Administration (OSHA) guidelines for foot protection fall under 1910.136 and are an often overlooked area of safety compliance. Violations related to personal protective equipment (PPE) such as boots are frequently in the Top 10 and even Top 5 most frequently cited inspection violations by OSHA.

OSHA standard 1910.136(a) states "each affected employee shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards." Appendix B in Subpart I lists several specific occupations for which foot protection should be considered. These include: shipping and receiving clerks, stock clerks, carpenters, mechanics, electricians, machinists, mechanics and repairers, plumbers, assemblers, drywall installers and lathers, packers, wrappers, crater, punch and stamping press operators, sawyers, welders, laborers, freight handlers, gardeners and grounds keepers, timer cutting and logging workers, stock handlers and warehouse laborers.

Knowing what footwear meets the acceptable standards can be a challenge, particularly when selecting boots as many different brands can look alike without a close inspection and some even market themselves as "safety shoes" without actually meeting the required safety standards.

All safety footwear should meet or exceed the American Society of Testing Material (ASTM) International Standards. Specifically standards F2412-05 and F2413-05. Prior to March 1, 2005 there was an American National Standards Institute (ANSI) protection standard Z41 used, however the ASTM standards have been widely used since 2005 and are what are commonly found on the market today.

The ASTM standards cover minimum requirements for the design, performance, testing and classification of protective footwear. One shoe from each pair must clearly and legibly be marked with the ASTM specifications either by a stitched in, pressure applied or stamped on label to the surface of the tongue, gusset, shaft or quarter lining of the shoe.

Reading these labels can be confusing until you understand the various items and what the codes relate to. For example a pair of steel toe boots may have the following on the tongue of one or both boots:

ASTM F2413-05
M A/75 C/75/Mt75
PR
CS

ASTM F2413-05 refers to the ASTM standard to which the shoes were manufactured too. In this case F2413 which was issued in 2005.

M I/75 C/75 Mt75 identifies the gender (M for Male and F for female) that the shoes were made for. The (I) indicates the amount of impact resistance protection the shoe is designed to withstand, either 50 or 75 pounds, the amount of compression resistance (C) is listed as either 50 pounds equal to 1750 pounds of compression or 75 pounds equal to 2500 pounds of compression. If the shoe has metatarsal protection then the (Mt) will be followed by the number of pounds it is rated for, usually either 50 or 75 pounds). The next two lines will list specific specialty protections for the shoe. There are multiple possible protections available such as: Conductive properties (Cd), Electrical insulation (EH), static protection (SD), puncture resistance (PR), chain saw cut resistance (AS) and dielectric insulation (DI).

Using the above codes as a guide, you can select the best available protection for the type of work you are performing. To ensure that all likely hazards are protected against a full job hazard analysis (JHA) should be performed by a qualified individual. A proper JHA will review both the job tasks to be performed and the work environment and note those hazards that are visible and identifiable and list the proper protection or other safety controls to be put in place prior to work beginning.

The Safety Consultants from Maine Oxy and Atlantic Safety and Supply are available to assist you with better understanding the hazards of your workplace and finding solutions to help minimize risk and protect workers. Your sales representative can help you connect to a variety of safety services available from the Maine Oxy Group.