



Foot Wear

To abide by federal regulations adopted and enforced by the Occupational Safety & Health Administration (OSHA), protective footwear is required for workers in industrial settings. OSHA has an abundance of rules and regulations regarding workplace safety, including section 29 CFR 1910.136 on occupational foot protection.

Footwear is included in the Personal Protective Equipment section of the Occupational Safety and Health Standards. The section on foot protection points to issues relevant to employees in the construction, industrial, government and service fields.

Although there are multi-purpose safety shoes and boots you may select, in order to reduce exposure to foot injury it's important to know what risks you will encounter.

There are specific protection options for particular risks such as:

1. Electric Shock
2. Sharp objects that could penetrate any part of the foot
3. Objects that might fall from above the foot
4. Explosive or electrostatic discharge
5. Exposure to water, heat or cold
6. Exposure to welding spray, molten metal or corrosive liquids

Protective footwear must comply with the ASTM International standard F2413 (current version: F2413-17). This is the Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear. ASTM International standard F2412 (current version: F2412-18) is the Standard Test Methods for Foot Protection. Both standards are under the jurisdiction of ASTM Committee F13 on Pedestrian/Walkway Safety and Footwear.

ASTM International standards set forth minimum requirements for the performance of footwear to provide protection against a variety of workplace hazards. One such hazard is "impact," indicative of falling or dropping objects onto the foot. A weight of 50 pounds is dropped from an approximate height of 18 inches, delivering 75 ft-lbs of

force onto the toe of the shoe. Test results meeting the performance criteria allow the shoe to be labeled as I/75.

Resistance to "compression" provides protection from rolling objects. A shoe that withstands 2,500 pounds of force onto the toe can be labeled as C/75.

ASTM F2413 requires compression- and impact-resistant shoes to have built-in toe caps (i.e., the safety toe caps are not removable). These shoes must be labeled as I/75/C/75. Beyond compression and impact resistance, shoes required for different types of jobs will reflect their own specific list of standards. For example, a shoe buyer might find an ASTM-certified product with the following designation:

ASTM F2413-17

M/I/75/C/75

Mt/75

Safety and health experts recommend employers require employees to wear ASTM-compliant shoes because add-on protective devices, such as strap-on toe caps, often fit awkwardly over street shoes and can make walking difficult, even hazardous in certain conditions. Employees also can forget to put them on. When toe protection is needed, a safer approach for everyone in an industrial setting is to wear ASTM F2413-17 conforming shoes.

Employers must conduct a job hazard assessment (JHA) and direct workers to find and wear work boots that meet relevant ASTM standards and are suitable for their jobs.

We all want to get the most wear we can from our footwear. Worn footwear increase our risk to injury and should be replaced:

- **Wear and Tear:** As soon as you notice a protective component beginning to show through, be it a reinforced toe, steel midsole, steel shank or metatarsal guard, you should replace your boots right away. Safety first!
- **Dented Toe:** Your steel toe will dent and fail to spring back, while composite is less likely to show physical damage, so try to make mental notes as your boots are tested by major impact or punctures. Again, think safety!

- **Separation of Parts or Seams:** If your boots are made with rubber or PVC materials, any visible separation should tell you it's time to buy new shoes. Falling apart pairs don't look professional, right?
- **Worn Outside:** The same attention should be paid to the shoe's tread as well, since once it has been worn smooth, they'll no longer be slip-resistant. You wouldn't drive a truck with bald tires, right?
- **Leakage:** If your work involves damp environments or exposure to hazardous chemicals or other corrosive materials, any sign of leakage should prompt you to look for a new pair. It's not just about comfort – it's your health!