



ASTM Compliance for Safety Footwear

Safety standards help protect the workforce from hazardous on-the-job conditions, keeping workers safer and reducing the company's risk and liabilities.

Ensuring proper foot protection is an important component of any company's overall safety strategy, especially in industrial sectors including manufacturing, food service, hospitality, healthcare, schools and supermarkets. According to the U.S. Bureau of Labor Statistics, the workforce suffered approximately 100,000 occupational foot injuries in 2016 that averaged 10 days away from work¹.

In the United States, all occupational safety footwear must adhere to ASTM standards and guidelines. ASTM standards are enforced by the Occupational Safety & Health Administration (OSHA), an agency of the US Department of Labor.

What is the ASTM?

Organized in 1898 and formerly known as the American Society for Testing and Materials, ASTM International is

a highly regarded international standards organization that develops and publishes consensus safety standards for a vast array of manufactured goods, systems and processes, and services.

With more than 30,000 members from 140 countries, almost 90% of the world's population is represented by the ASTM membership. Industries, institutions and governments worldwide trust and use ASTM standards—and the organization issues up to 12,000 new standards each year. The standards are periodically reviewed and updated as needed by a committee of experts in the field.

The standard for safety toe footwear

Safety toe boots and shoes used by workers in the United States—and that includes all steel toe, aluminum toe and composite toe styles—must conform to ASTM International Standard F2413 Standard Specification For Performance Requirements For Protective (Safety) Toe Cap Footwear.

ASTM-certified safety toe footwear must have built-in, non-removable toe caps, with adequate impact protection and resistance to compression. Though there are three levels of protection (30, 50 and 75), Class 75 is the level recommended for most safety footwear needs. ASTM F-2413 standards bearing a Class 75 rating must protect against an impact of up to 75 pounds or a compression load of up to 2,500 pounds. Test results, conducted by an independent third party laboratory, must meet the following performance criteria to be certified as meeting the F2413 Class 75 standard for that safety element:

Impact: Protection against falling or dropping objects onto the foot

To test the efficacy of safety toe footwear against impact, 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. The shoe must pass this test to receive the I/75 certification.

Compression: Protection from rolling objects

Only a shoe that passes a test in which it withstands up to 2,500 pounds of force on the toe receives the C/75 designation.

Other safety elements are also under the aegis of ASTM certification, including ratings for EH (capable of withstanding an electrical shock of up to 18,000 volts), ESD (electrostatic dissipative) and Mt (providing metatarsal protection).

Look for the certification label

True certified safety toe boots and safety shoes, tested and approved by an independent laboratory, will be marked with the certification label stitched onto the footwear itself (usually on the tongue).

In the example below, the work boot label identifies this footwear as complying with ASTM F2413, designed for use by a male (M), offering both impact (I) and compression (C) resistance, as well as electrical hazard protection (EH).



This information is for illustrative purposes only and is not meant to be a substitute for, or a legal interpretation of, occupational safety and health standards. Please refer to the appropriate state and federal codes of regulations for detailed and exact information, specifications, and exceptions.

Which workers need ASTM-compliant footwear?

Occupational footwear is a standard component of PPE (Personal Protective Equipment) required for many employees in the construction, industrial, government and service fields. Section 29 CFR 1910.136 (a) clearly states the parameters of the protective footwear regulation: "The employer shall ensure that each affected employee uses 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, or when the use of protective footwear will protect the affected employee from an electrical hazard, such as a static-discharge or electric-shock hazard, that remains after the employer takes other necessary protective measures."ⁱⁱ

To ascertain which workers require ASTM-certified footwear, a workplace hazard assessment must be conducted, either by staff or a safety consultant.

Penalties for non-compliance

As safety and risk managers well know, OSHA is famous for its surprise inspections that occur without notice, and failure to comply with regulations can carry a steep cost in fines and sanctions. As of 2019, maximum penalties are \$13,260 for serious violations and \$13,260 per day for "failure to abate" violations. Repeat violations could cost up to \$132,598ⁱⁱⁱ.

OSHA resources

Need to know more? Industrial safety and risk professionals can access a comprehensive array of resources for training and guidance, and even free consultations for small businesses, at www.osha.gov.

ⁱ <https://ohsonline.com/articles/2018/04/01/a-guide-to-safety-footwear-regulations.aspx>

ⁱⁱ <https://ohsonline.com/articles/2018/04/01/a-guide-to-safety-footwear-regulations.aspx>

ⁱⁱⁱ <https://www.ehstoday.com/standards/osha-raises-employer-penalties-2019>

<https://blog.ansi.org/2018/12/astm-f2413-18-protective-safety-footwear/#gref>

<https://ohsonline.com/articles/2018/04/01/a-guide-to-safety-footwear-regulations.aspx>

<https://www.astm.org/ABOUT/factsheet.html>

<https://www.sgs.com/en/news/2018/11/safeguards-14718-standard-specification-for-performance-requirements-for-protective-footwear>

<https://www.ehstoday.com/standards/osha-raises-employer-penalties-2019>

http://www.safetycorp.com/data/train_img_normal/Foot_Protection.pdf

<https://www.osha.gov>