



# Standard Test Methods for Foot Protection<sup>1</sup>

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## INTRODUCTION

For more than sixty years, the predecessor to these test methods, ANSI Z41, established the performance criteria for a wide range of footwear to protect from the hazards that affect the personal safety of workers. The value of these standards was recognized early in the history of the Occupational Safety and Health Administration (OSHA) and incorporated as a reference standard in the Code of Federal Regulation (CFR) Section 1910.

These test methods contains test protocols developed in conjunction with ANSI Z41 as well as other ASTM standards that are used to evaluate the performance of footwear when exposed to a variety of hazards: (1) impact resistance (I) for the toe area of footwear; (2) compression resistance (C) for the toe area of footwear; (3) metatarsal impact protection (Mt) that reduces the chance of injury to the metatarsal bones at the top of the foot; (4) conductive properties (Cd) that reduce hazards that may result from static electricity buildup and reduce the possibility of ignition of explosives and volatile chemicals; (5) electric hazard resistant (EH) non-conductive; (6) static dissipative (SD) properties to reduce hazards due to excessively low footwear electrical resistance that may exist where SD footwear is required; and (7) puncture resistance (PR) of foot devices.

## 1. Scope

1.1 These test methods measure the resistance of footwear to a variety of hazards that can potentially result in injury.

1.2 These test methods may be used to test for compliance to minimum performance requirements in established safety standards.

1.2.1 By agreement between the purchaser and the supplier, or as required by established safety standards, these test methods can be used to determine any one, or all of the following: (1) impact resistance (I), (2) compression resistance (C), (3) metatarsal impact resistance (Mt), (4) resistance to electrical conductivity (Cd), (5) resistance to electric hazard (EH), (6) static dissipative performance (SD), and (7) puncture resistance (PR).

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the*

*responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

**B117 Practice for Operating Salt Spray (Fog) Apparatus**

2.2 *CSA Standard*:<sup>3</sup>

**CAN/CSA Z195 Protective Footwear**

## 3. Terminology

3.1 *Definitions*:

3.1.1 *insert/footbed/sockliner (all removable)*, *n*—footbed normally made of a foam product with leather or fabric cover shaped to cover the entire insole which can be inserted between the foot and insole board.

3.1.2 *insole*, *n*—foundation of the shoe; the inner sole of the shoe which is next to the foot, under the sock liner or insert, onto which the upper is lasted.

<sup>1</sup> These test methods are under the jurisdiction of ASTM Committee F13 on Pedestrian/Walkway Safety and Footwear and are the direct responsibility of Subcommittee F13.30 on Footwear.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Available from Canadian Standards Association (CSA), 178 Rexdale Blvd., Toronto, ON Canada M9W1R3.