



Standard Terminology Relating to Walkway Safety and Traction for Footwear¹

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1. Scope

1.1 ~~This~~The terminology standard covers terminology ~~used in safety and traction for footwear and related material related to walkway safety and footwear.~~

1.2 Words adequately defined in standard dictionaries are not included. Included are words that are particular to this ~~industry.~~ industry and those contained in standards under the jurisdiction of ASTM Committee F13 on Pedestrian/Walkway Safety and Footwear.

NOTE 1—The following standards are currently under the jurisdiction of ASTM Committee F13 on Safety and Traction for Footwear and are included in 2.1: Test Methods ~~F489, F609, and F694~~; Practices ~~F695 and F1637~~; and Guides ~~F802 and F1240~~.

2. Referenced Documents

2.1 ASTM Standards:²

~~D5859 Test Method for Determining the Traction of Footwear on Painted Surfaces Using the Variable Incidence Tester (Withdrawn 2005)³~~

~~F489 Test Method for Using a James Machine (Withdrawn 2005)³~~

~~F609 Test Method for Using a Horizontal Pull Slipmeter (HPS)~~

~~F694 Test Method for Heel-Attaching Strength of Women's Shoes (Withdrawn 2008)³~~

~~F695 Practice for Ranking of Test Data Obtained for Measurement of Slip Resistance of Footwear Sole, Heel, and Related Materials~~

~~F802 Guide for Selection of Certain Walkway Surfaces When Considering Footwear Traction (Withdrawn 2012)³~~

~~F1240 Guide for Ranking Footwear Bottom Materials on Contaminated Walkway Surfaces According to Slip Resistance Test Results~~

~~F1637 Practice for Safe Walking Surfaces~~

~~F1694 Guide for Composing Walkway Surface Investigation, Evaluation and Incident Report Forms for Slips, Stumbles, Trips, and Falls~~

~~F2232 Test Method for Determining the Longitudinal Load Required to Detach High Heels from Footwear~~

~~F2412 Test Methods for Foot Protection~~

~~F2413 Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear~~

~~F2508 Practice for Validation, Calibration, and Certification of Walkway Tribometers Using Reference Surfaces~~

~~F2892 Specification for Performance Requirements for Soft Toe Protective Footwear (Non-Safety / Non-Protective Toe)~~

~~F2913 Test Method for Measuring the Coefficient of Friction for Evaluation of Slip Performance of Footwear and Test Surfaces/Flooring Using a Whole Shoe Tester~~

~~F2948 Guide to Walkway Auditor Qualifications~~

~~F2965 Guide for Selection of Walkway Surfaces and Treatments When Considering Aggressive Contaminant Conditions in Commercial and Industrial (Not Including Construction) Environments~~

~~F2966 Guide for Snow and Ice Control for Walkway Surfaces~~

3. Terminology

adhesion, *n*—the tendency of one surface to adhere to another surface prior to movement due to dwell time, as well as other factors.

¹ This terminology is under the jurisdiction of ASTM Committee F13 on Pedestrian/Walkway Safety and Footwear and is the direct responsibility of Subcommittee F13.91 on Editorial and Terminology.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

aggressive contaminants, *n*—substances that create a gross separation between the footwear bottom and the walkway surface. **F2965**

anti-icing materials, *n*—dry or liquid snow and ice control materials applied before a snow and ice event intended to prevent precipitation from bonding (that is, freezing) with the pavement, or weaken bonds formed for easier removal. **F2966**

arch, *n*—the bony framework of the foot extending from the heel to the toes and sustained by the muscles and ligaments in the form of an arch. Also, the bottom curve of a shoe last from heel to ball.

barefoot, *adv or adj*—with the feet uncovered or unclothed; without shoes or stockings.

bollard, *n*—a thick, low, short, post, often of iron or steel and usually used in series, provided for the purpose of excluding or diverting motor vehicles from a road, lawn, or path. **F1637**

box toes, *n*—are semi-rigid materials which can be molded to the shape of the last during shoe making. This provides the reinforcement and shape retention on the critical area of the toe of the footwear. **F2892**

breast, *n*—the forward or front face of a shoe heel.

calibration, *n*—the set of operations that establishes, under specified conditions, the relationship between the values obtained by a walkway tribometer and the corresponding supplier reference values. **F2508**

carpet, *n*—permanently secured fibrous floor covering.

DISCUSSION—

Area rugs, mats, and runners are not considered to be carpet for the purpose of this practice. **F1637**

clean, *n*—free from visible or tactile contamination.

coating, *n*—a layer of any substance intentionally applied to a surface to modify its functional or decorative characteristics.

coefficient-of-friction (COF or μ), *n*—a dimensionless number: the ratio of two forces acting at the interface of two contacting solid bodies. The force used in the numerator is parallel to the surfaces and the force used in the denominator is perpendicular (normal) to the surfaces. See also *dynamic coefficient of friction*.

coefficient of friction (COF), *n*—the ratio of the horizontal component of force (parallel to the walkway surface and passing through the tester center of gravity) required to overcome the friction to the normal component of the vertical force (weight) of the object. **D5859**

coefficient of friction, *n*—the ratio of the frictional force to the force, usually gravitational, acting perpendicular to the two surfaces in contact. This coefficient is a measure of the relative difficulty with which the surface of one material will slide over an adjoining surface of itself, or of another material. The static or starting coefficient of friction (μ_s) is related to the force measured to begin movement of the surfaces relative to each other. The kinetic or sliding coefficient of friction (μ_k) is related to the force measured in sustaining this movement. **F489**

contaminant, *n*—any substance between and not a part of either of the two surfaces; *contaminant, contaminating, contamination*.

contamination, *n*—any undesirable solid or liquid material that rests upon a surface or exists between two mating surfaces; *contaminant, contaminating*.

contra lateral, *adj*—located, occurring, or acting on the opposite side of the body.

cross slope, *n*—the slope of a pedestrian walkway that is perpendicular to the direction of travel. **F1637**

de-icing materials, *n*—snow and ice melting products applied on top of a layer of snow or ice, or both, that is bonded to the pavement. **F2966**

dwelt time, *n*—the duration of time beginning at the instant a tribometer's test foot is placed upon the surface to be tested, and ending at the instant a shear force is applied to the sensor.

dynamic coefficient of friction (DCOF), *n*— a coefficient of friction, μ_d , obtained during relative translation between two contacting solid bodies; used interchangeably with *kinetic coefficient of friction*.

element, *n*—an identifiable part of an architectural component, for example, a stair handrail, tread, riser, or landing. **F1637**

fair, *adj*—a smooth transition between adjacent surfaces. **F1637**

fall, *n*—undesirable descent due to the force of gravity, usually from a standing posture or during ambulation, to a lower level, usually the ground or floor.

fit, *n*—the ability of the shoe or hosiery to conform to the size, width, shape, and proportion of the foot.

floor surface, *n*—See *walkway surface*.

footwear, *n*—wearing apparel for the feet (such as shoes, boots, slippers, or overshoes), excluding hosiery.

footwear, *n*—shoes, including boots, sandals, slippers, or foul weather gear such as overshoes and rubbers, or a combination thereof. **F1637**

forefoot, *n*—the portion of the shoe extending forward from the break of the joint to the toe, also called forepart. **F2232**

foreseeable pedestrian path, *n*—any place where a pedestrian could reasonably be expected to walk. **F1637**

foxing, *n*—a piece of material applied to the upper or extending around the outsole of a boot or shoe.

friction, *n*—resistance to the relative motion of one body sliding, rolling, or flowing over another with which it is in contact.

friction, *n*—the resistance developed between the physically contacting surfaces of two bodies when there is a movement or attempted movement of one body relative to the other parallel to the plane of contact. **D5859**

friction, *n*—the resisting force that arises when a surface of one substance slides, or tends to slide, over an adjoining surface of itself or another substance. Between surfaces of solids in contact there may be two kinds of friction: (1) the resistance opposing the force required to start to move one surface over another, and (2) the resistance opposing the force required to move one surface over another at a variable, fixed, or predetermined speed. **F489**

guiding document, *n*—a standard, regulation, law, code, directive, statute, ordinance, or similar document that nominally limits, requires, or otherwise guides certain activities or conditions; the specific relevance or applicability of the document may vary. **F2948**

heel, *n*—a solid part of a shoe or boot projecting downward and attached to or forming the back part of the sole under the heel of the foot.

heel attachment strength, *n*—the force in pounds measured under the testing conditions of Test Method **F2232** required to detach the heel from the sole/insole assembly. **F2232**

heel breast, *n*—the forward or front face of a shoe heel.

heel breast, *n*—the front face of the shoe heel. **F2232**

heel height, *n*—the vertical distance from the top back edge of the heel to the plane of the tread (wear) surface of the heel. **F2232**

heel seat, *n*—the part of a shoe to which the heel is attached.

hosiery, *n*—any covering of the foot not intended for ground contact during ambulation, such as socks, stockings, etc.

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. **F2412, F2413, F2892**

insole, *n*—the part of the shoe that is a structural anchor to which the upper and heel are fastened during manufacture. It may or may not be covered on the foot side by material referred to as a socklining. **F2232**

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. **F2412, F2413, F2892**

insole, *n*—that part of the shoe which is between the foot and the outsole, and to which the upper is fastened during manufacture. It may or may not be covered on the foot side by an aesthetic material referred to as a socklining. **F694**

ipsilateral, *adj*—located, occurring, or acting on the same side of the body.

last, *n*—solid hinged form, in the general shape of a foot, around which footwear is constructed. **F2412, F2413, F2892**

lasting, *v*—building of footwear around a specific foot form. **F2412, F2413, F2892**

lining, *n*—term used to describe all components that can be used to construct the interior of the upper portion of the footwear. **F2412, F2413, F2892**

mudguard, *n*—a strip of material applied to a shoe upper just above the sole intended as a protection against dampness or as an ornament.

outsole, *n*—the bottom sole of the shoe, the surface of which is exposed to wear. **F694**

outsole, *n*—the bottom (sole) of the shoe: including the surface which is exposed to wear. **F2232**