

ANSI/ASSP A1264.2-2022

Reducing Slip Missteps on Walking-Working Surfaces



AMERICAN SOCIETY OF
SAFETY PROFESSIONALS



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American National Standard

**Reducing Slip Missteps
on Walking-Working Surfaces**

Secretariat

American Society of Safety Professionals
520 N. Northwest Highway
Park Ridge, IL 60068

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American National Standard

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Foreword (This Foreword is not a part of American National Standard A1264.2 – 2022)

This standard was developed by a standards committee, national in scope, functioning under the procedures of the American National Standards Institute with the American Society of Safety Professionals (ASSP) as Secretariat.

History: The 2012 version of this standard mentioned in the Foreword that “American National Standard A1264.1-1995: *Safety Requirements for Workplace Floor and Wall Openings, Stairs and Railing Systems*, as well as many regional model-building codes, OSHA regulations and other ANSI standards use the term slip resistance. The perceived need for this standard was to further define the term slip resistance, and to set forth common and accepted practices for providing reasonably safe walking-working surfaces.” As a point of clarification, however, codes and regulations call for walkways to be slip resistant, not that they have some particular amount of slip resistance. A walkway that is slip resistant has achieved some level of performance, while slip resistance is a more subjective continuum. Common interpretations of slip resistance, for example in ASTM F1646, state that pedestrian characteristics contribute to this continuum. Accommodating the variabilities of pedestrian intrinsic factors would be beyond the scope of a practicable standard; as such, a term from the literature for referring to the inherent walkway property of interest is “available friction.”

The scientific investigation of pedestrian safety, by measuring the frictional resistances of walkway surfaces/materials to obtain data and aid in the formulation of a walkway safety code in the U.S., began in the 1920’s by R.B. Hunter under project A-22 of the American Standards Association (now ANSI), with subsequent research study fellowships at the National Bureau of Standards (now the National Institute for Standards and Technology - NIST). Subsequently, there have been numerous scientific studies of pedestrian safety, and many friction testing devices have been developed. Additional standards and related research initiatives have also been undertaken by universities, consensus writing bodies, testing and research facilities, and independent researchers.

Falls are a leading cause of deaths in the United States. Workplace falls are significant because falls can: 1) result in serious injuries; and 2) cause other secondary incidents. For example, a fall from elevation may be initiated by a slip incident. In a 2018 International Ergonomics Association paper (see Pauls J., *Identifying Ambulation-Related Missteps and Falls with Ergonomically Descriptive Terminology, Not as “Slips, Trips and Falls”*, in S. Bagnara et al. (Eds.): IEA 2018, AISC 819, pp. 634–638, 2019. https://doi.org/10.1007/978-3-319-96089-0_69) eight types of missteps were identified and defined: air step, heel scuff, overstep, slip, stumble, trip, understep and unstable footing missteps. It is the intent of this standard to focus specifically on the slip misstep, and how these types of incidents relate to the concept of available friction, in consideration of increased safety and reduced injury incidents. The most common event leading to a slip misstep is the unexpected loss of friction between the footwear bottom and floor material. The available friction of an underfoot surface is a key consideration in safety and the prevention of slip missteps. Certain missteps can be so disruptive and jarring that a person can be injured from the misstep alone, even in the absence of a complete fall or before other injuries are sustained from an ensuing fall.

Environments requiring more physically intensive tasks generally require a higher level of available friction. Slip missteps can be associated with several major factors or conditions such as:

- Floor surface characteristics affecting available friction;
- Footwear sole frictional performance characteristics;

- Environmental factors (e.g., contaminants such as water, oil);
- Human factors (e.g., gait, activities, psychological and physiological conditions of the walker).

This standard addresses the first three factors, which are more readily controlled by management.

There are three basic areas addressed in the standard: 1) proactive practices for facilitating adequate walking-working surface friction and general pedestrian safety in a facility; 2) discussion of test procedures and equipment; and 3) guidance on investigation and analysis of incidents. The committee is aware of ongoing standards activities in other organizations, with regard to test procedures and equipment, and opted to reference those standards in keeping with the advancements in this area.

Normative Requirements: This standard uses the single column format common to many international standards. The normative requirements appear aligned to the left margin. To meet the requirements of this standard, users must conform to these normative requirements. These requirements typically use the verb “shall.”

NOTE: The informative or explanatory notes in this standard appear indented, in italics, in a reduced font size, which is an effort to provide a visual signal to the reader that this is informative note, not normative text, and is not to be considered part of the requirements of this standard; this text is advisory in nature only. The suppliers and users are not required to conform to the informative note. The informative note is presented in this manner in an attempt to enhance readability and to provide explanation or guidance to the sections they follow.

Revisions: The A1264 Committee welcomes proposals for revisions to this standard. Revisions are made to the standard periodically (usually five years from the date of the standard) to incorporate changes that appear necessary or desirable, as demonstrated by experience gained from the application of the standard. Proposals should be as specific as possible, citing the relevant section number(s), the proposed wording and the reason for the proposal. Pertinent documentation would enable the A1264 Committee to process the changes in a more-timely manner.

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No one but the A1264 Committee (through the A1264 Secretariat) is authorized to provide any interpretation of this standard.

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Checklists: Checklists included in A1264 standards may be copied and used in non-commercial settings only.

Committee Meetings: The A1264 Committee meets periodically, persons wishing to attend a meeting should contact the Secretariat for information.

Standard Approval: This standard was processed and approved for submittal to ANSI by the Standards Committee A1264. Approval of the standard does not necessarily imply (nor is it required) that all Committee members voted for its approval. At the time ANSI approved this standard, the A1264 Committee had the following members:

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AMERICAN NATIONAL STANDARD A1264.2 REDUCING SLIP MISSTEPS ON WALKING-WORKING SURFACES

1. Scope, Purpose and Application

NOTE: For additional information about safety requirements for walking-working surfaces and their access, refer to ANSI/ASSP A1264.1.

1.1 Scope

This standard sets forth provisions for reducing the risk of slip missteps in workplace situations. These incidents may occur as a result of surface characteristics or conditions. This standard is intended for use by safety, design, and facility professionals, and related practitioners, who seek guidance on reducing risk for same-level missteps and misstep-related falls, and prioritizing solutions for prevention.

NOTE: The provisions set forth do not address the effect of pedestrian intrinsic factors on slip missteps.

1.1.1 Excluded from this standard are active construction worksites (see 29 CFR 1926 or other state OSHA regulations as applicable), floating roof tanks, marine dock facilities, ladders, and mobile elevating work platforms.

NOTE: The scope of this document has application to more than just industrial and commercial settings. It also applies to workplace settings used and occupied mainly by workers e.g., certain healthcare, retail and hospitality environments. Some provisions may be helpful in creating survey forms targeting misstep risk in work-at-home environments (see Robertson MM, Maynard WS. (2017) Managing the Safety and the Performance of Home-Based Teleworkers; A Macroergonomics Perspective. Alan Hedge ed., Ergonomic Workplace Design for Health, Wellness, and Productivity, CRC Press, Chapter 15, 299-320).

1.2 Purpose

The purpose of this standard is to establish minimum provisions for reasonably safe underfoot surfaces for persons pursuing foreseeable activities.

1.3 Application

The provisions in this standard are intended to apply primarily to reducing risks associated with underfoot slipperiness in workplace situations, with topics including:

- walkway surface characteristics
- wet and contaminated conditions
- underfoot slopes
- illumination
- footwear characteristics and selection

In the event of a conflict between this standard and codes, laws, regulations, ordinances, statutes, or standards adopted in the jurisdiction at issue, those authoritative references shall take precedence.

NOTE: The specifications of this standard contemplate the ability of employers to exercise a higher degree of control over workers than members of the public (e.g., controls such as footwear specification). The general public can realize benefits from application of this standard. However, because less control can be exercised, standards needed for the protection of the public may exceed the specifications contained herein.