

Hard Surface Flooring Standard Aims to Reduce Slip and Fall Incidents

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BREAKING NEWS

- For the first time ever, hard surface flooring manufacturers have standardized criteria to communicate “product use” based on slip resistance
- ANSI A326.3, initially published in 2017, was recently revised to include a five-category “product use classification” system
 - *American National Standard for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring*
 - Widely used in the ceramic tile and other hard surface industries

BREAKING NEWS

- To meet the hard surface flooring standard, manufacturers shall classify products into one or more of five categories:
 - Interior, Dry
 - Interior, Wet
 - Interior, Wet Plus
 - Exterior, Wet
 - Oils/Greases



The Problem of Slips and Falls in the United States

Statistics: Slips and Falls in the U.S.

- *Slip and fall incidents occur frequently in the US*
- Per CDC's "WISQARS" database, in 2019:
 - 39,443 of 173,040 injury-related deaths were caused by unintentional falls
 - Leading cause of unintentional injury death for ages 65+, 3rd leading cause for ages 35-64
 - 8,049,882 of 24,823,156 nonfatal injuries were caused by unintentional falls

Statistics: Slips and Falls in the U.S.

34,000+ Deaths

Falls among adults 65 and older caused over 34,000 deaths in 2019, making it the leading cause of injury death for that group.

3 Million ER Visits

In 2019, the emergency department recorded 3 million visits for older adult falls.

\$50 Billion

Older adult falls cost \$50 billion in medical costs annually, with 3/4 paid by Medicare and Medicaid.

Source: United States Centers for Disease Control and Prevention

Statistics: Slips and Falls in the U.S.

- In the workplace, per Bureau of Labor Statistics:
 - 127,680 of 211,640 (60%) nonfatal occupational fall injuries leading to days away from work in private industry (2020) were caused by same-level falls

How will the updated A326.3 standard help?

***Manufacturer communication of
ANSI A326.3 product use
information in the marketplace will
ultimately lead to a reduction in
slip events***

What We'll Cover

- Critical updates to the ANSI A326.3 standard
 - Changes, benefits, and guidance
 - Role of the specifier
 - Applicability
 - What's next for manufacturers, distributors, and consumers?
- Foundational Background Information
 - Major slip-causing factors/what is DCOF/Challenges
- How can code and regulatory bodies benefit from communication of product use?

Updates to ANSI A326.3

- “Product Use Classification” system
 - *Standardized framework for manufacturers to declare hard surface flooring “area of use” based on slip resistance-based factors*
- Revisions are the result of years of testing, research, and consensus building

Overview – Published Updates to ANSI A326.3

- Products shall be classified into one or more of the provided product use classifications (Table 1 of A326.3)

Classification	Reference Category	Criteria
Interior, Dry	ID	≥ 0.42 dry DCOF* (per Section 10.1)
Interior, Wet	IW	≥ 0.42 wet DCOF* (per Section 9.1) or Manufacturer-Declared
Interior, Wet Plus	IW+	Manufacturer-Declared
Exterior, Wet	EW	Manufacturer-Declared
Oils/Greases	O/G	Manufacturer-Declared

What Does “Manufacturer-Declared” Mean?

- Manufacturer to determine the basis for their Product Use Classifications, potentially using:
 - Manufacturer experience
 - DCOF measurement
 - Other test methods
 - Roughness
 - Other slip resistance characteristics

Guidance on Classifications

- A326.3 provides descriptions and informative “possible areas of use” for each classification
 - Gives further guidance and perspective to users



A326.3 Guidance on Classifications

- Example – Possible areas of use for *Interior, Wet Plus*:

Public showers, interior pool decks, locker rooms, covered exterior areas, steam rooms, “front of the house” applications in restaurants with an open kitchen, and in “front of the house” applications in quick service, fast-casual, and self-service restaurants, food areas in gas stations, ...

What Role Does the Specifier Have?

- Ultimately, it is the responsibility of the specifier to make the project-specific selection
- Numerous factors shall be considered:
 - E.g., type of use, traffic, expected contaminants, expected maintenance, expected wear, and manufacturers' guidelines and recommendations

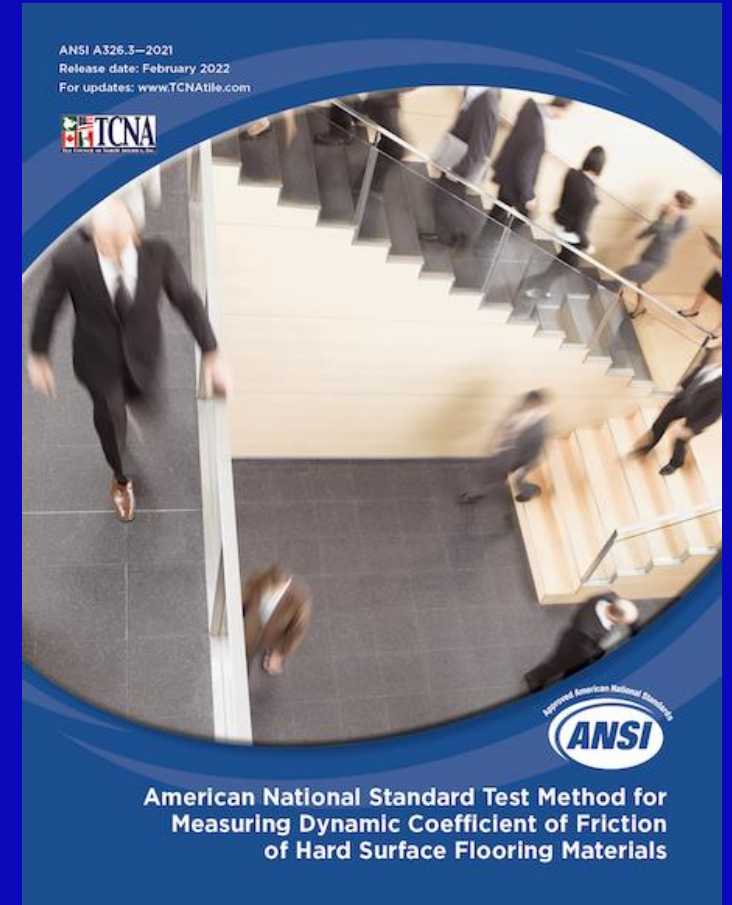
Product Use Classification is Expected to ...

- Provide clarity and a heightened level of communication from manufacturers
 - Information on where products may be used based on slip resistance characteristics
 - Provides transparency – eliminates confusion - on where products should be/should not be considered
 - Specifiers, builders, consumers can be better informed
 - Useful for model building code requirements

But Most Importantly, Product Use Classification is Expected to ...

- Result in better specification of ceramic tile and other hard surface flooring products in the U.S.
- Directly impacts specifiers, design professionals, architects, etc.
- Ultimately impacts pedestrians, consumers, and end-users of flooring

*Better specification →
Less slip and fall events*



ANSI A326.3 is not just for ceramic tile ...

- It applies to all hard surface flooring
 - Ceramic tile
 - Stone
 - Terrazzo
 - Polished concrete flooring
 - Plastic-based materials
 - Wood finishes

What's Next?

- Manufacturers:
 - Assign product use classification(s)
 - Communicate assigned classifications
 - e.g., product literature, technical data sheets
- Distributors & Importers
 - Communicate with manufacturers
 - Request and understand product use classifications
 - Make information available to design community and customers

What's Next for Consumers?

- Ask your sales representative for products classified per ANSI A326.3
- Choose a product that has been classified for its intended application
- Look for further guidance from manufacturers

Recognizing its importance as an industry specification and building code reference, ANSI A326.3 is available for FREE on TCNA's website

TCNAtile.com

Contact TCNA for further assistance



Background: Major Slip-Causing Factors, the Role of Friction, & Challenges

Slip-Causing Factors

- “Slip resistance” deals with many factors that affect the possibility of a slip occurring:
 - Shoe sole material and degree of its wear
 - Presence and nature of surface contaminants
 - Human factors, such as stride length and speed at the time of a slip, physical and mental condition at the time of a slip
 - Whether the floor is flat or inclined
 - How the floor has been used and maintained
 - Flooring surface structure
 - How drainage takes place if liquids are involved
 - Many more ...

The Role of Friction

- Dynamic Coefficient of Friction (DCOF)
 - Ratio of force necessary to keep a surface in motion sliding over another surface, divided by the weight of the sliding object
 - Not the only factor in determining appropriateness of a product for a particular application given that ...

DCOF \neq SLIP RESISTANCE

- DCOF is helpful in comparing surfaces but it does not predict the likelihood a person will or will not slip

Challenges – Slip Resistance & Friction

- Conflicting, confusing information
 - Terminology – slip resistance, traction, slipperiness, friction, DCOF, etc.
 - DCOF is not enough ...
 - Guidance needed from flooring manufacturer
- Different testing devices
 - Many available, but all measure differently (results are device specific)
 - Confusion negatively impacts anyone looking for reliable resources

Testing Devices

- Drag sled-type tribometer
 - Typically measures DCOF
- Pendulum tester
 - “British Pendulum”
 - Measures energy loss on contact
- Variable-angle ramp
 - “German Ramp”
 - Based on human ambulation
- Many others ...



This Table Eliminates those Challenges

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How Can Code and Regulatory Bodies Benefit from Product Use Classifications?

Slip Resistance: Current IAPMO Code Criteria

- 2021 Uniform Swimming Pool Spa and Hot Tub Code (USPSHTC)
- References ANSI A326.3 – 2017 now
- New A326.3 – 2021 product use categories provide clarity and communication on where products may be used based on slip resistance characteristics

Slip Resistance: ICC Code Criteria

- International Swimming Pool and Spa Code (ISPSC)
 - Requires that decks, ramps, coping, and similar shall have a minimum wet Dynamic Coefficient of Friction (DCOF) of 0.42 if tested in accordance with ANSI A326.3 - 2017
- Will be included in the next code revision (2024)
- ANSI A326.3 – 2021 product use classification will provide additional insights to designers and code officials beyond minimum 0.42 criteria

In Summary ...

- Slips and falls occur frequently in the US
- The new A326.3 product use criteria, based on slip resistance characteristics, provide clarity on where products may be used
 - Ceramic tile and other hard surface flooring manufacturers will begin making classifications available for their products
- As A326.3 is already widely used in industry and referenced in key building codes relevant to slip resistance; manufacturer conformance to this standard will result in better specifications
- *Most importantly, better specification of flooring will positively impact pedestrians and end-users of flooring, resulting in less slip/fall incidents*

And Again...

Recognizing its importance as an industry specification and building code reference, ANSI A326.3 is available for FREE on TCNA's website

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Thank You

Any Questions?



A326.3 Press Kit

