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21 April 2024

Office of the Secretary
Docket No. CPSC-2024-0003
Consumer Product Safety Commission, Room 820
4330 East West Highway, Bethesda, MD 20814

Re: Public Comments of the Tile Council of North America regarding Petition to Mandate the Testing and Labeling of the Slip Resistance (Traction) of Commercial and Residential Grade Floor Coverings, Floor Coatings, Treatments, Residential and Commercial Floor Cleaning Agents, and Consumer Footwear (89 FR 3914; Docket No. CPSC-2024-0003)

Tile Council of North America (TCNA[1]) strongly opposes the petition by the National Floor Safety Institute (NFSI or petitioner) for the Consumer Product Safety Commission (CPSC) to require flooring, footwear, and floor cleaner manufacturers and retailers to label their products with inapplicable and misleading testing information. Petitioner submitted essentially the same requests in 2015 (CP 16-1[2]) and 2018 (CP 18-2[3]), albeit without the requests concerning footwear and floor cleaners in the current petition. TCNA strongly opposed the prior petitions for many reasons, detailed in our public comments submitted in response to each petition[4,5]; many of those comments remain equally applicable to the 2023 submission.

CP 16-1 and CP 18-2 were properly denied by CPSC for many reasons.[6,7] CPSC staff explained in their 2019 briefing package[8] on CP 18-2 that "staff nonetheless concludes that slip and fall injuries are unlikely to be reduced by the action requested in the petition," "that the literature does not establish the degree to which hard surface flooring COF, or any other factors (such as lighting, footwear, and or contamination), contribute to slips and falls," and it is "unlikely that a

[1] TCNA is a trade association of 240 members representing manufacturers of ceramic floor and wall tiles, decorative tiles, installation materials, tile manufacturing equipment, raw materials for the tile industry, and other tile-related products. For more information about TCNA, see pp. 31-32.
[2] Petition CP 16-1 (October 4, 2015). See 80 FR 75639 for docketing notice.
[3] Petition CP 18-2 (April 19, 2018). See 82 FR 26228 for docketing notice.
[4] Comments from Eric Astrachan (ID CPSC-2015-0033-0039) (Posted February 2, 2016).
[5] Comments from Grant Davidson (ID CPSC-2018-0014-0068) (Posted August 10, 2018).
[6] Letter to Petitioner from Todd Stevenson (January 19, 2017) ("Stevenson Letter").
[7] Letter to Petitioner from Alberta Mills (August 14, 2019) ("Mills Letter").
[8] Staff Briefing Package, Petition CP 18-2 (July 17, 2019), at 4.

standardized label containing COF values will improve the safety of floor coverings for consumers." Such findings were similarly expressed in the 2016 CPSC staff briefing package on CP 16-1.[9] In addition, page four of CPSC staff's briefing package on CP 18-2 notes "the resubmitted petition is substantially the same as the previous petition with some changes intended to address the issues raised by the Commission regarding the 2016 petition." The "Ballot Vote Sheet" (17 July 2019) at the beginning of the CP 18-2 briefing package stated:

> "*CPSC staff concludes that the 2018 petition does not resolve the Commission's concerns in denying the 2016 petition, and therefore recommends that the Commission deny the 2018 petition. As with the 2016 petition, staff concludes that it is unlikely that the action requested by the petitioner will reduce injuries from slips and falls.*"

The 2023 submission follows the same pattern as the petitioner's 2018 resubmission and original 2015 petition. The petitioner fails to address the Commission's concerns, yet again seeks to institute requirements for flooring. The new request for additional unsubstantiated requirements regarding floor cleaners and consumer footwear products does not cure the defects in the petition.

CPSC staff acknowledged in their 2019 briefing package that the studies provided in CP 18-2 "did not report a correlation between specific COF values (or range of COF values) and the risks of slips and falls."[10] The vague research and accident statistics provided in CP 24-1 are no different, as they do not show that the requested actions would reduce slip/fall injuries for consumers or end users. Petitioner also admits on page four of CP 24-1 that most of the statistical "evidence" they cite is recycled from previous petitions. The newer information provided by the petitioner is more of the same, citing statistics not related to the role of COF, flooring, floor cleaners, or footwear in relation to slip and fall incidents.

Regarding the legal standard, Section 27(e) of the Consumer Product Safety Act (CPSA) is the most applicable in the context of CP 24-1 (as it was in the context of CP 16-1 and CP 18-2). CPSA authorizes that certain "performance and technical data" be provided to consumers if it is "related to performance and safety as may be required to carry out the purposes of this Act." The Commission provided several reasons why the 2015 petition and the 2018 resubmission failed to meet this standard. The third submission of the petition again fails to meet this legal standard—it relies on misleading and inaccurate information and does not address the factors that must be considered in deciding whether to grant or deny a petition (per 16 CFR 1051.9, copied below).

> *(1) Whether the product presents an unreasonable risk of injury, (2) whether a rule is reasonably necessary to eliminate or reduce the risk of injury, and (3) whether failure of*

[9] Staff Briefing Package, Petition CP 16-1 (December 7, 2016), at 4.
[10] Staff Briefing Package, Petition CP 18-2 (July 17, 2019), at p. 4.

the Commission to initiate the rulemaking proceeding requested would unreasonably expose the petitioner or other consumers to the risk of injury which the petitioner alleges is presented by the product.

TCNA and its members strongly believe that implementing the petitioner's proposals would result in the use of highly deceptive and inaccurate data, distract consumers from accurate and extensive information already being provided by tile manufacturers, and result in more accidents as opposed to fewer. The risks posed by this petition to consumers were the basis of our opposition in 2015 and 2018 and remain the primary basis for our continued opposition. Additionally, the petition fails to meet the required legal standard and fails to address the Commission's concerns regarding prior petitions.

Key Reasons for TCNA's Continued Opposition:

As stated above, the genuine risks posed by this petition to consumers are the primary basis for our continued opposition. NFSI makes numerous broad and false statements to convince the reader of their self-described "simple and modest" proposal, but it is built on false premises, fabricated conclusions, and "research" it has self-promulgated but refused to circulate despite numerous requests as detailed below. Many of the following concerns are also repeated from TCNA's comments submitted in response to the 2015 and 2018 petitions. For ease of navigation, a dynamic table of contents is provided, below.

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a. The vague, broad accident statistics cited by the petitioner do not support the relief they are seeking for any of the three product groupings. 28

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1) DCOF labeling as suggested by the petitioner would be misleading and potentially dangerous and therefore should not be required by CPSC as an indicator of slip resistance nor traction.

a. DCOF cannot be used as a predictor of "slip resistance" nor "traction," and it does not capture the myriad of elements that factor into a slip/fall incident.

The petitioner suggests that Dynamic Coefficient of Friction (DCOF) can be used to indicate traction or slip resistance. This is wholly inaccurate. While DCOF is used for quality control purposes and as a relative measure of friction, the proposed B101 methods, and all known tribometry methods, entirely fail to measure many of the most important aspects affecting slip resistance. As detailed in the introduction to ANSI A326.3, *American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials*,

> "*There are many factors that affect the possibility of a slip occurring on a surface, including, by way of example, but not in limitation, the following: the material of the shoe sole and the degree of its wear; the presence and nature of surface contaminants; the speed and length of stride at the time of a slip; the physical and mental condition of the individual at the time of a slip; whether the floor is flat or inclined; how the hard surface flooring material is used and maintained; and the DCOF of the material, how the flooring surface is structured, and how drainage takes place if liquids are involved. Because many variables affect the risk of a slip occurring, the measured DCOF value shall not be the only factor in determining the appropriateness of a hard surface flooring material for a particular application*."[11]

DCOF is a property of materials coming into contact with each other; in a lab test for flooring, those materials are a standardized rubber test sensor and a flooring surface. It is an important material property used by industry professionals to assess products in a defined, controlled environment.

While important for manufacturer quality control purposes, consumer usage of DCOF to compare and select products, perhaps in a fashion akin to that of EPA fuel ratings for automobile selection, or per the petitioner's comparison to a nutrition label, is a misleading and potentially dangerous approach. As noted above, DCOF is only one of many factors which must be considered, and a high DCOF value of an as-manufactured material does not necessarily equate to slip resistance or traction after flooring installation. Similarly, a low value may not reflect aspects of flooring that provide traction but are not measured by the

[11] Excerpted from ANSI A326.3, Introduction. A free copy of ANSI A326.3 can be obtained at TCNATile.com/DCOF, along with other supporting information.

proposed method or tribometry in general. There are many more considerations which lead to “safe” usage than can be expressed by a single value or label.

Petitioner’s proposed “gas gauge” type label fails to take into account the beneficial effect of “structure” (including various textures) in the flooring surface; such structure, which positively affects traction, may not increase DCOF – in fact many structural features result in lower DCOF values but provide considerably better drainage and traction. These structural features can be, for example, the macroscopic texture of stone-look tiles, or microscopic features that greatly increase the surface area for air/water contact and prevent hydroplaning. Many of the most important advancements in glaze and porcelain tile technology utilize these effects to increase traction, and they are not measured by the B101.3 method. Further, such features will change over time with wear and can vary greatly between various types of flooring materials. Ceramic, granite, marble, vinyl, etc. all wear at different rates and an as-manufactured measurement entirely fails to predict how the surface will change.

It also should be noted that the concept of a single DCOF value representing a tile product misrepresents the reality of ceramic tile manufacturing; rather the value changes with the surface (except for the most homogenous and least textured products) and changes from batch to batch – it is for this reason that tile manufacturers report a DCOF range in addition to significant additional information, examples of which are provided later on (Section 1b) in this document.

Similar to the above points for flooring, measured COF of footwear is only one of many factors that must be considered for consumer footwear; there are many physical components that can positively increase under shoe/outsole traction yet cannot be captured by measurement of COF. For example, macroscopic features such as patterning and profiling offer increased interlock between flooring surfaces and considerably enhanced drainage when liquids are present. In addition, outsole wear plays a factor and can vary significantly depending on material and use. It is impossible for an as-manufactured COF measurement to capture these critical considerations.

For the reasons provided, the petitioner’s proposed test method and label is a dangerous proposition which would misguide consumers towards applications that they believe to be safe from the proposed label without taking into account many other factors that must be considered when choosing flooring, footwear, and floor cleaner products.

b. Manufacturers already provide information on where products can be used based on slip resistance characteristics that are not limited to DCOF.

The petitioner claims that slip resistance information is not being provided by manufacturers. At least in the tile industry, petitioner's claim is immediately demonstrably false. Any consumer that conducts even a cursory search of tile manufacturer websites will readily find considerable information. Not only do manufacturers already provide DCOF data, but they communicate information on where products can be used based on slip resistance-related characteristics. Tile manufacturers communicate this information by using the "product use classification" categories contained in ANSI A326.3, where products are classified into one or more of five categories based on their slip resistance properties: Interior, Dry; Interior, Wet; Interior, Wet Plus; Exterior, Wet; and Oils/Greases. The classification system provides architects, specifiers, interior designers, and consumers in general with information from the manufacturer to help choose where flooring products can be used based on slip resistance characteristics.[12]

Example #1: Daltile, the largest ceramic tile manufacturer in the United States, provides valuable information on the DCOF and product use categories of their products per ANSI A326.3 (not any of the B101 documents).[13]

(example continues on next page)

[12] For more information on the ANSI A326.3 product use classification categories, refer to ANSI A326.3, Section 4.0. Additionally, an FAQ on ANSI A326.3 can be found at: https://tcnatile.com/wp-content/uploads/2023/01/ANSI_A3263_FAQ.pdf.

[13] The figures in Example #1 were obtained from: https://www.daltile.com/why-daltile/industry-standards/dcof-slip-resistance-testing-reading-test-results.

DCOF RECOMMENDED APPLICATIONS

Daltile recommends that the following guidelines shall be utilized together with a regular cleaning / maintenance program.
Information in *italics* correspond to relevant ANSI A326.3 Section 4 - "Product Use Categories"

Product Use Classification	Example Area	DCOF *per* ANSI A326.3
Dry & Level Interior *Interior Dry (ID)*	Level public areas that are DRY and contaminant free. Some examples are (but not limited to): hotel lobbies, apartments, public buildings, shopping centers (excluding food areas), hospitals, elevator lobbies, interior hallways, cafeterias, retail stores, theatre lobbies and other dry health service areas.	*≥ 0.42 Dry*
Wet & Level Interior *Interior Wet (IW)*	Level public areas that are likely to be walked on when WET. Some examples are (but not limited to): Entry foyers of hotels, offices and other public buildings, supermarkets (entry areas, food preparation, produce, or any area where water may occasionally be present), shopping center food courts, and toilet facilities, and production areas not involving oil or fats.	≥ 0.42 Wet
Exterior Applications *Exterior Wet (EW)*	Level Pedestrian areas that could be exposed to water (excluding ice), but are otherwise reasonably maintained, where footwear is typically used. Some examples are (but not limited to): walkways, gazebos, or patio areas.	≥ 0.60 Wet
Pool Decking (and other wet areas with minimal footwear) *Interior Wet+ (IW+)*	Level Service or recreation areas involving constant water where light or no footwear is used. Some examples are (but not limited to): public showers, steam rooms, swimming pool decks, and locker rooms.	≥ 0.60 Wet
Oils *Oils / Greases (O/G)*	Level Service or production areas involving oils, greases, and/or fats. Some examples are (but not limited to): automotive fluids, catering areas, areas involving deep-fry and grill equipment, other food preparation areas involving grease or oil. BOH (Back of the house) quick service or family style restaurants or delicatessens. Any area where combined grease and water accumulation may be present. Daltile recommends Quarry tile and treaded paver products for this application.	≥ 0.60 Wet

ADDITIONAL CONSIDERATIONS RELATING TO PRODUCT SELECTION:

1. Absent exceptions listed on this page indicating otherwise, ceramic and porcelain tiles should not be used in floor applications where there is a consistent surface presence of water, oil, or grease. This includes outdoor areas.

2. Proper maintenance is critical. Improper maintenance and improper maintenance products can result in a build-up on the surface of the tile causing the tile to be slippery. See maintenance recommendations.

3. Test Methods - there are many different test methods related to slip resistance. Daltile recommends that customers have tile independently tested to determine if the Daltile product meets the requirements of the customer's preferred test method. Daltile and the tile industry recognize ANSI A326.3 - American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials. Daltile does not warrant that any of its products will meet any testing parameter other than that measured per ANSI A326.3.

4. ANSI A137.1 requires that tiles suitable for interior level spaces expected to be walked upon when wet have a minimum, wet DCOF of 0.42.

5. No floor tile is "slip proof."

6. Slippery conditions can be reduced by limiting foot traffic in contaminated conditions, use of appropriate footwear, prompt removal of contaminants, effective drainage, and proper maintenance. Installations and end use conditions can vary. The end user must evaluate the tile to be used with their specific end use conditions, maintenance program(s), and footwear selection to determine compatibility.

7. Tile size can be a factor for slip resistance in wet areas. Smaller sizes allow for more drainage through an increased number of grout joints and easier sloping. Planar variations on larger formats could result in a higher probability of standing water and increase the risk for hydroplaning.

8. Polished and semi polished surfaces create a very smooth surface. Daltile does not recommend polished surfaces in any areas that may be subjected to water, oil, or grease exposures.

9. Internal manufacturer selection criteria can for example, but not in limitation, be based on factors such as: DCOF limit values established using the ANSI A326.3 test method, limit values based on other test methods, internal reference standards and practices, presence of abrasive grain, presence of surface structure and/or experience with similar surfaces.

Example #2: Crossville, a well-known manufacturer of tiles with a sizeable presence in the US marketplace, provides valuable information on the DCOF and product use categories of their products per ANSI A326.3 (not any of the B101 documents).[14,15,16]

Application Areas

Porcelain Stone	Finish	Interior Floors (dry)	Interior Walls (wet/dry)	Exterior Walls	Interior Floors (Standing water/ shower floors)	Exterior/ Paving	Pool/Fountain Full Lining**	Water Line Pool/ Fountains	ANSI A326.3 Reference Category (Field Tile)	ANSI A326.3 Reference Category (Mosaic*)
Access Point	UPS	✔	✔	✔	Mosaic Only*		✔	✔	IW	IW+
Alaska	UPS	✔	✔	✔	Mosaic Only*		✔	✔	IW	IW+
Altered State	UPS	✔	✔	✔			✔	✔	IW	
Argent	UPS	✔	✔	✔			✔	✔	IW	
	HON	✔	✔	✔			✔	✔	IW	
Basalt	UPS	✔	✔	✔			✔	✔	IW	
Beljn	UPS	✔	✔	✔			✔	✔	IW	
	EXT	✔	✔	✔	✔	✔	✔	✔	EW	
Bluestone	UPS	✔	✔	✔	Mosaic Only*		✔	✔	IW	IW+
	HON	✔	✔	✔			✔	✔	IW	

Wet DCOF/Safety Considerations

DCOF - ANSI A326.3

ANSI A326.3 is the standard for accurately determining the dynamic coefficient of friction (DCOF) on a tile surface. Developed by the Tile Council of North America (TCNA), ANSI A326.3 is a repeatable, reproducible method of measuring DCOF. This method uses a specifically engineered device to perform the required testing, ensuring the most precise results. The ANSI A326.3 is included in the latest version of ANSI A137.1 Specifications for Ceramic Tile.

SAFETY CONSIDERATIONS FOR TILE

- In areas where standing water may occur, selected tile should have an elevated DCOF rating. Please refer to the "Tile Performance Data" page for additional information.
- Polished tile should not be used in areas where standing water, oil, or grease may be present due to the tile's low coefficient of friction.
- Pool deck tiles, whether interior or exterior, should have a surface texture that provides an elevated DCOF rating. Please refer to the "Tile Performance Data" page for additional information.
- Ramps or inclines should have an increased DCOF.
- There are no tiles that are slip proof, only slip resistant.

Product	Finish	Wet DCOF Range
Cross-Colors® Mingles	PO	0.31 – 0.41
Retro Active 2.0	PO	0.31 – 0.41
State of Grace	SAT	0.31 – 0.41
Stones at Large	PO	<0.42
Access Point	UPS	0.42 – 0.52
Alaska	UPS	0.42 – 0.52
Altered State	UPS	0.42 – 0.52
Argent	HON	0.42 – 0.52
Bluestone	HON	0.42 – 0.52
Beljn	UPS	0.50 – 0.60
Civilization	SPO	0.42 – 0.52
Classic Grooves	UPS	0.42 – 0.52
Java Joint	UPS	0.42 – 0.52
Moonstruck	HON	0.42 – 0.52
Native Metal	UPS	0.42 – 0.52
Nest®	UPS	0.42 – 0.52
Notorious®	HON	0.42 – 0.52
Owen Stone	LTR	0.42 – 0.52
Retro Active 2.0	PTN	0.42 – 0.52
Shades 2.0	SPO	0.42 – 0.52
State of Grace	UPS	0.42 – 0.52
Stone Fiction	UPS	0.42 – 0.52
Stones at Large	UPS	0.42 – 0.52
Argent	UPS	0.50 – 0.60
Basalt	UPS	0.50 – 0.60
Bluestone	UPS	0.50 – 0.60

[14] Crossville has a webpage dedicated to information on DCOF and slip resistance: https://www.crossvilleinc.com/Resources/Tile-101/DCOF.

[15] The first chart in Example #2 was obtained from: https://www.crossvilleinc.com/getmedia/2d234bf5-11a4-462e-a8de-150d6c18c1fc/DCOF_Application_Area_Chart_A362-3_RefenceCat.pdf.

[16] The second chart in Example #2 was obtained from: https://www.crossvilleinc.com/getmedia/39e47bd3-141c-42f6-848b-6ee466417760/Traditional-Tile-Wet-DCOF-5-9-22.pdf.

Example #3: Ironrock, a well-known manufacturer of quarry tiles with a sizeable presence in the US marketplace, provides valuable information on the DCOF and product use categories of their products per ANSI A326.3 (not any of the B101 documents).[17]

Areas of Use

We have included an additional category beyond the scope of A326.3 which we are calling "Enhanced Grip". All products are routinely used in the five categories listed but products that include our Quarry Basics® XA-Abrasive and our Metro Tread® can be used in even more demanding applications such as ramps. We encourage you to contact us with your specific application to find out which Metropolitan Ceramics product is suitable for your needs.

	Quarry Basics®	Metro® Pavers	Down to Earth®	XA-Abrasive	Metro Tread®
Interior Dry	✓	✓	✓	✓	✓
Interior Wet	✓	✓	✓	✓	✓
Interior Wet Plus	✓	✓	✓	✓	✓
Exterior Wet	✓	✓	✓	✓	✓
Oils/Greases	✔	✔	✔	✔	✔
Enhanced Grip*				✔	✔

*Contact Metropolitan Ceramics about your specific application.

DCOF ACU Test Results

All Metropolitan Ceramics Products well exceed the DCOF ACU TEST (wet) Benchmark.

Specification	Test	Standard	Result
DCOF Acu Test (wet)	ANSI A326.3-2017 BOT 3000	ANSI A326.3	At time of manufacture, Metropolitan QUARRYBASICS XA Abrasive tests at ≥0.70. All other Metropolitan products exceed 0.60.

The above are just a few examples of manufacturers providing complex slip resistance information based on more than DCOF, which cannot be captured by a label based on a single value like the petitioner is proposing. To the best of our knowledge, all ceramic tile manufacturers provide guidance regarding their products' flooring safety on their websites.

[17] The figures in Example #3 were obtained from: https://metroceramics.com/slip-resistance-designations/.

c. The proposed label would promote a false sense of security among consumers and lead to potentially unsafe product applications.

Petitioner's proposed mandated label grossly oversimplifies the issue of walkway safety, provides a false comparative, and would be dangerous to consumers as it would provide misleading characterizations of flooring, footwear, and floor cleaner products. Not only do the proposed test methods fail to assess actual traction or change in traction (as already discussed and as further discussed in Sections 1d and 1e), but the coloring system utilized for the label suggested by the petitioner can steer the consumer to believe that if they select a product (or products) rated in the "green" zone, that they will be less likely to fall regardless of how the product is installed and regardless of the conditions in which it is used and maintained. On the contrary, in the absence of other information as it relates to flooring, some high DCOF surfaces can lead to *more falls* due to slippery conditions because they can be harder to clean and build up more contaminants. Also, higher traction floors with lower measured DCOF values due to structure may be overlooked when considering DCOF values only (see Section 1e for more detail on how structure can impact measurements).

Petitioner's inaccurate oversimplification would also negatively impact those who need to slide their footwear or walking aids over a flooring surface, such as the elderly or disabled. In such scenarios, very smooth, clean, and dry flooring (which would have a low wet DCOF) is typically the most suitable.[18] Petitioner's proposed label completely ignores these realities and oversimplifies DCOF in a misleading way. DCOF may have a role, but it cannot be used as a shortcut to suggest that it is the only factor anyone should ever consider when selecting flooring products.

d. The proposed labeling method is unreliable, as DCOF will change over time due to wear, maintenance, and contamination.

A crucial consideration for all products is that DCOF can change over time due to wear, maintenance, and contamination, thus resulting in DCOF values different from those measured at the time of manufacture. How a product changes over time is also very much a factor of the product composition in addition to cleaning regimen, possible use of treatments to enhance slip resistance, and all manner of environmental contaminants, none of which would be reflected in the petitioner's proposed label, but which would very much change the actual slip resistance. It is no doubt partly for this reason that "staff found little data to demonstrate that measured COF values correlate to a risk of slips and falls" in 2016 and in

[18] This critical consideration, among many others, is specifically addressed in ANSI A326.3, Introduction.

2019 said "Staff concluded that research to support the assertion that COF can be used to predict the risk of slips and falls is limited."[19,20]

e. The proposed label discriminates against flooring products that are suitable for use in wet environments despite having low wet DCOF values due to certain surface characteristics.

The criteria put forth by the petitioner only represent the as-manufactured DCOF of products tested in a laboratory under wet conditions. Such conditions are not applicable to all scenarios and limit consumer options by misleading them exclusively toward flooring products with higher DCOF. In fact, this type of misguidance could result in unintended consequences, such as needing more intensive cleaning and maintenance to maintain a clean floor. There are a variety of flooring products that have low DCOF values when wet yet are still perfectly suitable for applications where liquid contaminants are present. Dragsled-style tribometers, which are popular in the United States, measure friction by running a rubber test piece over a sample. A limitation to this testing approach is that the devices typically measure along the peaks of surface structure, failing to measure a sample's entire profile and sometimes resulting in low measured DCOF values. On the contrary, that same profiled surface could be measured using a different technique, e.g., the "German Ramp" method specified in DIN/EN 16165 Annex B,[21] with results showing the product is perfectly suitable for certain wet applications.

f. The proposed label discriminates against flooring products that are safe for use in dry applications, which are needed by the population of elderly and disabled who ambulate by shuffling their feet on the floor or by using walkers.

As noted in Section 1e, the criteria put forth by the petitioner only represent the as-manufactured DCOF of a flooring product tested in a laboratory under wet conditions. This consideration is not applicable to all scenarios and would misguide consumers as it does not describe a dry condition—which is the safest condition for flooring to be walked upon. There is a variety of flooring products with low DCOF values when wet, but which are only intended to be walked upon when dry. For instance, some polished porcelains, polished stones, and terrazzo products may have low DCOF values in wet conditions but are still highly desirable to consumers. And, as noted in Section 1c, many consumers, especially those who may shuffle

[19] Staff Briefing Package, Petition CP 16-1 (December 7, 2016), at 8.
[20] Staff Briefing Package, Petition CP 18-2 (July 17, 2019), at 20.
[21] DIN/EN 16165 (latest version published 2023) is a European standard with the title "Determination of slip resistance of pedestrian surfaces—Methods of Evaluation." The method in Annex B is the "shod ramp test" method. It requires that human subjects, wearing standardized footwear and a safety harness, walk on an increasingly inclined and oil-slicked flooring material until a slip occurs.

or drag their feet or use walking equipment, benefit from surfaces with lower wet DCOF values when these floors are kept dry. Labeling would improperly and negatively discriminate against these safe and widely used flooring products.

The negative yet likely impact that the petitioner's request would have on the elderly is in stark contrast to their claim on page four that "the primary focus of our petition is aimed at protecting those most vulnerable from the risk of a slip and fall event, mainly our countries [sic] elderly population."

g. Other government agencies have previously deemed the use of COF-only criteria to be inappropriate.

In 2004, COF criteria were withdrawn from standards previously developed under the Architectural Barriers Act (ABA) and under the American with Disabilities Act (ADA). According to the 2014 edition of the US Access Board Technical Guide [for] Floor and Ground Surfaces,

> "*… the standards do not specify a minimum level of slip resistance (coefficient of friction) because a consensus method for rating slip resistance remains elusive. While different measurement devices and protocols have been developed over the years for use in the laboratory or the field, a widely accepted method has not emerged*."[22]

Further, the International Code Council, developer of framework building code criteria which are regularly adopted by governing municipalities, has on multiple occasions rejected the idea of tying slip resistance solely to COF (whether static or dynamic) in the International Building Code Chapter 10 *Means of Egress*. Regarding concerns over use of COF to assess slip resistance, there is clear precedent that standalone COF criteria is not a useful indicator of slip resistance, which should not go unnoticed by CPSC.

2) The proposed label relies on standards that are inappropriate for labeling of floor coverings, floor cleaners, and footwear, and should not be utilized.

a. The B101 methodologies are unrealistic and lack specificity.

The B101.3 method calls for a level of surfactant in the solution used to wet the surface being tested which exceeds the in-use (also referred to as end use) concentration of detergent in a washing machine or dishwasher. As such, the method is calling for testing under unrealistic conditions never encountered by a consumer in normal flooring use. There is no

[22] US Access Board Guide to ADA Accessibility Standards; available online at https://www.access-board.gov/ada/guides/chapter-3-floor-and-ground-surfaces/.

scientific basis for simulating flooring contamination with this level of surfactant.[23] Simply stated, this level of surfactant does not replicate real world conditions during a slip; further it can obscure the beneficial effect of micro-structure in the surface.

The B101.2 and B101.3 methods also do not specify key factors for reliable tribometer testing, such as a specific sensor preparation for the tribometer or specific validation steps using a reference tile which are critical for achieving reliable and repeatable results. They instead recommend following the testing device manufacturer's procedure which varies from company to company.

Another key issue with the B101.2 methodology is that cleaners are required to be evaluated in a manner inconsistent with their real-world use. Specifically, Step 10 of Section 4.3 of B101.2 requires the cleaning agent to be applied to the test surface "four times allowing the agent to air dry between applications." No one treats their surfaces by spraying them with a cleaner at such frequency and simply allowing them to air dry without any further agitation and rinsing of the surface.

Also, the B101.7 method fails to identify which combination of contaminants and which flooring specimens to use when testing footwear. Section 5 of B101.7 indicates that users can select different flooring types and contaminants when testing footwear, and the petition does not specify that controlled surfaces nor specific contaminants need be used; this lack of standardized criteria means that one footwear type could be measured under one set of conditions (e.g., oil and polished flooring) and be labeled as "low traction," but then be measured under different conditions (e.g., distilled water and rough, patterned flooring) and be labeled as "high traction." This aspect of B101.7 could easily result in the misuse of the B101.5 labeling scheme.

With regards to the ceramic tile industry, the B101 standards are not used by any tile manufacturer to measure their products. It would be inappropriate for the CPSC to begin rulemaking using the petitioner's proposed requirements, when the tile industry does not utilize any of the B101 standards because there is no scientific basis underlying the methods and, as detailed in Section 2d, the ranges proposed in the methods are known to be dangerous.

[23] Petitioner has regularly stated in public forums that the tile industry intentionally chose a level of surfactant less than used in B101.3 to achieve higher DCOF values. This allegation is entirely unsubstantiated and false; the level of surfactant used in ANSI A326.3 (and previously in ANSI A137.1) was determined independently of B101.3 and is based on achieving an uninterrupted contaminant film on a hydrophobic surface. For more information on research supporting the DCOF method in A326.3, refer to:
https://tcnatile.com/wp-content/uploads/2023/01/Rsch_suptng_ANSI_std_slip_resist_TCNA_TI_Mar-2016.pdf.

b. The B101 methodologies do not contain precision statements, rendering them useless as test methods.

Given the lack of specificity in each method, it is not surprising (but entirely unacceptable as test methods) that B101.2, B101.3, and B101.7 do not include precision statements. A precision statement provides repeatability and reproducibility statistics that typically establish the 95% confidence range of the test method. Failure to include basic statistical information in the B101 methods renders them useless.

c. The B101.5 graphic on which the petition is based is misleading.

As detailed in Section 1c, the graphic the petitioner suggests utilizes a green/yellow/red coloring scheme. The use of color correlating to certain measured DCOF ranges is a misleading characterization for the consumer. The graphic misleads the consumer to believe that a product with a low, wet DCOF value is somehow inherently dangerous. In reality, a properly maintained material with a low, wet DCOF is perfectly safe when kept dry and is often easier to maintain and clean than surfaces with a higher DCOF. Also, it may be perfectly appropriate in certain settings and even beneficial, such as in scenarios where elderly pedestrians shuffle their feet across flooring. And, as detailed throughout this document but primarily in Section 1a, DCOF measurements do not equal traction and its measurement does not capture some of the most important product features that improve traction.

d. The traction ranges provided for flooring, footwear, and floor cleaners have no scientific basis and are dangerous.

It is very well known and easily provable that certain surfaces with a wet DCOF value of 0.30 can be highly slippery and should not be considered “acceptable” for areas intended to be walked on when wet as suggested by the proposed B101.5 graphic. Also, 0.45 can be dangerously low for wet inclined floors, depending on the degree of incline, which is not considered in the values presented in B101.3 and ignored entirely in the label in B101.5. It is our opinion, backed by decades of laboratory testing, and widely shared by others in the field of floor safety that should the low values detailed above be adopted by any entity as acceptable (or representing “moderate” traction), serious injuries could result. Fortunately, virtually no one takes these standards seriously and CPSC should not as well.

The scale provided in the petition for footwear is similarly meaningless. Section 2a detailed how the B101.7 methodology allows users to select any contaminant and flooring specimen for footwear testing; use of the scale provided by the petitioner is futile if there are no standardized requirements.

e. The B101.5 standard allows for intentional misrepresentation to the consumer.

Section 5.2 in B101.5 allows for misrepresentation to the consumer by specifying that a product can be labeled with the following:

> "*This product has been tested and is in compliance with the requirements as established within the most current version of the NFSI B101.5 Standard*."

This is entirely misleading because B101.5 is a labeling standard, not a product standard. This statement conveys the imprimatur of a product meeting a standard when the relevant criteria have only to do with the label. That this persists is egregious.

f. The B101.5 graphic is not representative of the "percentage change in wet DCOF" scale provided in the petition for floor cleaners.

The exemplars of graphics in B101.5 and in the petition use the terms "low," "moderate," and "high." However, B101.2 and the scale on page 24 of the petition show definitions for "percentage change in wet DCOF" as "traction enhancing," "traction neutral," and "traction reducing." The petition and the B101 documents do not provide any information as to the correspondence of these terms. Further, the scale inappropriately implies that DCOF and traction are the same thing, when they are in fact not, as detailed throughout this document.

g. The petitioner's request to reference the "most current version" for CPSC rulemaking gives the petitioner's organization an unfettered amount of control over the process they seek to implement.

In multiple instances throughout the petition, notably on page one, the petitioner notes that the "most current version" of each B101 document should be mandated. If such a request were to be implemented, it would give the NFSI an unchecked amount of control over the process they are seeking to implement, especially considering the B101 documents are not developed per ANSI nor ASTM consensus processes but rather are controlled by NFSI. Such a precedent could result in unscientific and unsubstantiated changes at any time.

3) Like the petitioner's failed 2018 resubmission, CP 24-1 fails to sufficiently address the concerns expressed previously by the Commission.

a. The concern regarding a lack of consistency among methods and test instruments has not been adequately addressed.

With the B101.2 and B101.3 methodologies recommending only tribometers approved by NFSI, the list of "approved" tribometers could change at any time. [24] As such, requiring use of the B101.2 and B101.3 methodologies would put manufacturers and other entities testing DCOF in the position of having to use or invest in testing equipment that is always subject to change. In fact, no US tile manufacturer tests nor reports DCOF values using any of the tribometers listed by NFSI, rather they use the BOT 3000E as specified in ANSI A326.3.

In addition, NFSI criteria for "approving" tribometers are faulty. For example, the BOT 3000E—the very device which is most widely used and accepted by the major hard surface flooring industries—is not listed as an approved NFSI tribometer. This is despite the fact that there is broad adoption of the BOT 3000E and well-documented research confirming its repeatability and reproducibility.[25]

Given that there are no precision statements for the B101 methods and that the list of "approved tribometers" are subject to opaque and unverifiable criteria, the petitioner's insistence that such methodologies be used (notwithstanding the many other reasons detailed throughout this document) entirely fails to address the "lack of consistency" concern expressed by CPSC.[26,27]

b. The petitioner fails to demonstrate sufficient evidence to support the assertion that higher COF values leads to a decreased hazard of slips and falls.

One key reason CPSC denied the petitioner's first petition and its second petition was a lack of evidence tying slips and falls to any particular flooring. In a 2017-dated letter, Stephenson explained:

> "*the Commission cannot associate incident data involving slips and falls with any particular flooring type … the majority of incident reports did not provide information on the specific location of the fall or the type of flooring involved in the incident*."[28]

Two years later, Mills similarly noted:

> "*staff is unable to associate falls with any particular flooring product, and many other variables make isolation of the incidents and associated products difficult. Because the*

[24] See NFSI "Approved Tribometers" at https://nfsi.org/nfsi-standards/nfsi-approved-tribometers/.
[25] In past years this device was approved by NFSI, but according to its manufacturer is no longer listed when they refused to pay fees for its approval that they considered exorbitant. TCNA's comments in response to the petitioner's 2018 petition included a letter from Walkway Management Group (formerly Regan Scientific Instruments) concerning such information. See Comments from Grant Davidson (ID CPSC-2018-0014-0068) (Posted August 10, 2018).
[26] Stevenson Letter, at 2-3.
[27] Mills Letter, at 2.
[28] Stevenson Letter, at 2.

action requested in the 2018 petition cannot be correlated to the risk of injury from slips and falls, consumers are unlikely to experience increased exposure to slips and falls based on denial of the petition."[29]

Despite this obvious problem with petitioner's prior efforts, the newest petition does not offer any response to the above statements. CPSC must assume, therefore, that such data does not exist or that the data does not support the petitioner's proposal.

Pursuant to Commission Regulations, regarding the prior petitions, CPSC reviewed whether or not failure to initiate rulemaking would unreasonably cause exposure to the risk of injury. As stated in both denial letters, "consumers are unlikely to experience increased exposure to slips and falls based on denial of the petition."[30,31] The petitioner has once again failed to rebut/address the Commission's findings and has offered no tangible evidence showing that lack of product labeling would result in increased risk to consumers.

The petitioner also cited a 2023 floor cleaner study (referred to on pp. 3, 25 of the petition) and a March 2022 footwear study (referred to on pp. 3, 26 of the petition) as part of the basis for its newest recasting of the petition. Although repeatedly asked for access to the specific research data/papers behind the studies, the petitioner failed or declined to provide those documents and further stated they were "internal laboratory studies." Further, the petitioner stated the footwear study was "confidential" and offered only the selected test result data on pp. 27-29 of the petition.[32] Given that the petitioner references these alleged studies as support for their petition, it is entirely unacceptable that the data/paper(s) behind the studies have not been made even temporarily available while the public comment period is open.

c. The Petitioner has not addressed CPSC's concern that the proposed labeling scheme would have limited effectiveness because COF is only one of many factors involved in slip/fall incidents.

A main concern expressed by CPSC staff regarding the proposed label was that it would provide limited effectiveness, as documented on pages 52-53 in Tab C of the CPSC Staff Briefing Package on the 2015 petition and on page 35 of the CPSC Staff Briefing Package on the 2018 petition. Page 10 of the latter notes the following:

"*ESHF staff is concerned about consumers potentially being misled regarding flooring selection and use, because they are unlikely to understand the limitations and implications of the proposed point-of-sale flooring slip-resistance labeling. Staff*

[29] Mills Letter, at 4.
[30] Stephenson Letter, at 3.
[31] Mills Letter, at 4.
[32] Email correspondence available on request.

> *concludes that underfoot friction and the likelihood of falling and fall-related injuries are affected by a multitude of factors beyond the slip resistance of flooring at the point of sale. The proposed labeling standard is based on methods and devices that are not consistent and accurate for across-the-board measurement of the slip resistance of hard flooring materials. Staff is concerned that the proposed label will not be effective, and staff asserts that the proposed label does not incorporate many of the recommendations from the study the Petitioner claims supports the proposed label. Furthermore, ESHF staff cautions against assigning point-of-sale DCOF values to the risk of falling without a better understanding of the magnitude of the measurement's impact in relation to risk*."

The petitioner has not addressed this concern whatsoever in its current nor previous submissions, despite many notable issues regarding the limited effectiveness of the proposed label.

Furthermore, most likely consumers will not see the label that has been proposed. In the instance of flooring, products are typically decided upon by consumers in a showroom without product packaging being present. The vast majority of tiles are displayed in vignettes and by the piece, none of which are labeled in the fashion suggested by the petitioner. Further, most flooring products are used for several years or decades. Some products, such as ceramic tile, are able to last the lifetime of the building in which they are installed. It would be nearly impossible for those intended to benefit from a label, i.e., those who actually use the product throughout the many years in which it is installed, to see any product label or packaging.

The petitioner attempts to defeat this concern regarding consumers not seeing the label by also requiring the retail establishment to post labels near the product. As already discussed, given how tiles are displayed today in showrooms, this proposal is impractical and with the volume of products displayed, confusion would result. Petitioner has also noted on page 24 of the petition that "NFSI will support such effort via an informational page on its website which includes detailed information, education on fall prevention, and a short-animated video." Requiring such, besides misinforming the consumer as already explained, would discourage useful information that is already available directly from manufacturers on their websites. Additionally, we are concerned that the petitioner is misusing potential CPSC action in an attempt to drive eyeballs and clicks to their website where NFSI's services are offered.

We additionally note that the proposed label, initially proposed by the petitioner in 2015, has been revised in each subsequent petition. In its 2018 petition, the petitioner provided a 2008 "labeling study," which consisted of a comprehension test per ANSI Z535.3, *Criteria for*

Symbol Comprehension.[33] The study found that 8% of tested participants critically confused the meaning of the 2015-version of the graphic. The petitioner has since updated the label in their 2018 and 2023 petitions, yet no additional research has been provided to assure that the percentage of those who confuse or reverse the label's meaning is below 5%, the maximum set forth by ANSI Z535.3.

4) The renewed petition contains numerous unsubstantiated and/or false claims, following suit from previous petitions.

a. The petitioner misrepresents the B101 standards as "nationally recognized industry consensus standards." See pp. 2, 23 of the petition.

The petitioner's use of the phrase "nationally recognized industry consensus standards" in the petition is misleading. The B101 standards are not recognized nor utilized by tile industry manufacturers, who refer to ANSI A137.1 *American National Standard Specification for Ceramic Tiles* which in turn references ANSI A326.3. The A326.3 procedure is not like any of the B101 procedures, as it includes a significantly detailed test method, a precision statement, and area of use information. It would be inappropriate for the CPSC to begin rulemaking using the petitioner's proposed requirements, when industry does not utilize any of the B101 standards, which are lacking in scientific basis and contain ranges that are known to be dangerous (as already described in Sections 2a, 2b, and 2d).

b. Claim: "Currently manufacturers of floor coverings are not compelled to provide consumers any information as to the slip resistance of their products. In fact, with the exception of the ceramic tile industry, no other floor covering manufacturers test their products [sic] slip resistance (Coefficient of Friction) or even have adopted a test method for testing the slip resistance of their products. This is not by accident but by design. Floorcovering [sic] manufacturers intentionally do not want consumers to have such information because they are consciously aware that many of their products possess a low level of slip resistance which would negatively impact the sale of their products." See p. 2 of the petition.

Not only does the petitioner fail to provide evidence to support the claims in the above paragraph, but each component of the above is demonstrably false. The tile industry has continually provided COF and slip resistance information which has been far more in-depth than any label could ever express. Any cursory search of tile manufacturer websites will readily find considerable information regarding COF and slip resistance, as already explained

[33] Petition CP 18-2 (April 19, 2018), attachment dated August 22, 2008 titled "Re: Summary of user testing for traction/slip symbols."

in Section 1b of this document. Further, other industries such as polished concrete, stone, and terrazzo, all utilize and contributed to the development of ANSI A326.3.

The statement that "Floorcovering [sic] manufacturers intentionally do not want consumers to have such information because they are consciously aware that many of their products possess a low level of slip resistance which would negatively impact the sale of their products" is egregious, without merit, and false. The petitioner provides zero evidence that purchasers would have chosen different products were the NFSI proposed label in use, nor that such information would affect sales, nor that different choices would have resulted in fewer slips.

c. Claim: "And although the ceramic tile industry does have a test method, ANSI A326.3, which outlines the method for testing the wet Dynamic Coefficient of Friction (DCOF) of ceramic tile, the A326.3 standard specifically states via its 'Notice of Disclaimer' that: 'This information does not purport to address safety issues or applicable regulatory requirements associated with its use. It is the responsibility of the user of this information to review any applicable codes and other regulations and any site specific conditions in connection with the use of this information. Publisher expressly makes no representations or warranties regarding use of this information and compliance with any applicable statute, rule or regulation' [capitalization removed for ease of reading]." See p. 3 of the petition.

ANSI A326.3 is titled *American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials*. It is misleading for the petitioner to suggest that it is only for ceramic tile when it in fact applies to all hard surface flooring.

Regarding the "Notice of Disclaimer" in ANSI A326.3, that language is from the front matter of the publication, refers to and limits the publisher's liability, and is not an official part of the standard, as clearly indicated by the Roman numeral page numbering and its location before the Foreword stating it is not part of ANSI A326.3. It is also located before the list of ASC A108 Committee Members.[34] The standard itself starts on page "1" and is numbered with Arabic numerals. This information has been pointed out to the petitioner previously on multiple occasions in public forums.

Additionally, we are confused as to why the petitioner is even drawing attention to A326.3's "Notice of Disclaimer" considering there are similar statements in B101.2, B101.3, B101.7, and the NFSI ILS. Specifically, in Section 1 of each respective B101 document, the following statement can be found:

[34] ANSI A326.3 was developed and approved by the Accredited Standards Committee (ASC) A108.

"*Note: This test method does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. No express or implied representation or warranty is made regarding the accuracy or significance of any test results in terms of slip resistance.*"

A similar statement is also contained in the NFSI ILS document:

"*Note: The ILS for evaluating test methods used to evaluate walkway traction does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the Operator to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. No express or implied representation or warranty is made regarding the accuracy or significance of any test results, for which instrument performance is evaluated by this ILS methodology set forth herein, in terms of slip resistance.*"

d. Claim: "Given that the A326.3 standard is not a safety standard but rather a quality control test method the only nationally recognized consensus testing standard for measuring the wet DCOF of hard surface flooring is the NFSI B101.3 standard. Furthermore, none of the manufacturers of floor coverings label the level slip resistance (Traction) of their products as to provide the consumer with relevant information about the products [sic] level of safety." See p. 3 of the petition.

The claim that "the only nationally recognized consensus testing standard for measuring the wet DCOF of hard surface flooring is the NFSI B101.3 standard" is demonstrably false, as already noted multiple times throughout this document. Tile manufacturers do *not* utilize B101.3. Additionally, given the industry's use of ANSI A326.3, the petitioner's claim that "none of the manufacturers of floor coverings label the level slip resistance (Traction) of their products as to provide the consumer with relevant information about the products [sic] level of safety" is clearly false. As introduced in Section 1b of this document, manufacturers communicate this information by using the "product use classification" categories contained in ANSI A326.3, where products are classified into one or more of five categories based on their slip resistance properties.

e. Claim: "In the absence of slip resistance data via a uniform product label the consumer is on their own when it comes to selecting an appropriately safe floor for their individual use and often times [sic] assume that all floors are safe." See p. 3 of the petition.

The claims that consumers are "on their own" and "often times [sic] assume that all floors are safe" are nonsensical and presented without evidence. As already mentioned heavily

throughout previous sections of this document (primarily Section 1b), there is an abundance of information that can be easily and readily obtained from tile and other hard surface flooring manufacturers. Further, the five-category ANSI A326.3 product use classification system, which is used by tile manufacturers and can be utilized by any hard surface flooring manufacturer, provides an effective tool for manufacturers to communicate where their products can be used based on a multitude of slip resistance characteristics (not just DCOF).

f. Claim: "The failure by the floor covering industry to consciously not inform the consumer as to their products [sic] safety (ie: [sic] slip resistance) is one of the leading factors as to why so many elderly Americans slip and fall." See p. 3 of the petition.

This claim is offensive, is without any merit, and is completely false. Not only has petitioner failed to provide any evidence to support their above claim, but industry clearly provides COF and slip resistance information which, as stated many times already, has been far more in-depth than any label could ever express.

g. Claim: "NFSI research has shown that when used per the manufacturer's instructions, many commercial and residential floor cleaners will leave a slippery film which decreases the COF of the underlying floor and in-turn increases the risk of a slip and fall event. Without a uniform testing and labeling procedure consumers are unaware of the safety risks associated with the cleaning agents they use to clean their floors which directly contributes to slip and fall events. Currently the only nationally recognized consensus test method of for [sic] measuring the slip resistance (Traction) performance of floor cleaners is the NFSI B101.2 standard." See p. 3 of the petition.

Although repeatedly asking the petitioner for access to the specific research data/papers behind the floor cleaner study, the petitioner failed or declined to provide those documents and further stated it was an "internal laboratory study" and offered only the "test result data" on p. 25 of the petition.[35] Given that the petitioner references this alleged study, it is entirely unacceptable that the underlying data/paper(s) have not been made even temporarily available while the public comment period is open. In addition, the alleged study is based on the problematic and unclear NFSI B101.2 methodology, which is inconsistent with the real-world use of floor cleaners; refer to Section 2a for more details.

h. Claim: "NFSI research has revealed that many types of footwear, including those labeled as Slip Resistant, often possess a low level of slip resistance (Traction) which increases the risk of a slip and fall event. Without a uniform testing and labeling

[35] Email correspondence available on request.

procedure consumers are unaware of the safety risks associated with the shoes they purchase and often are the victim of an otherwise preventable injury." See pp. 3-4.

Similar to our request for data from the floor cleaner study NFSI alleges to have performed (see Claim "g" above), although repeatedly asking the petitioner for access to the specific research data/papers behind the footwear study, the petitioner failed or declined to provide those documents and further stated it was an "internal laboratory study." Further, the petitioner stated the study was "confidential" and offered only the selected test result data on pp. 27-29 of the petition. Given that the petitioner references this alleged study, it is entirely unacceptable that the underlying data/paper(s) have not been made even temporarily available while the public comment period is open.

i. Claim: "Currently the only nationally recognized consensus test method of for [sic] measuring the slip resistance (Traction) performance of footwear outsoles is the NFSI B101.7 standard." See p. 4 of the petition.

This claim is demonstrably false. ASTM Committee F13 on Pedestrian/Walkway Safety and Footwear, which was established in 1973, develops standards that have and continue to play a preeminent role in all aspects important to the footwear industry.[36] Specifically, F2913 *Standard Test Method for Measuring the Coefficient of Friction for Evaluation of Slip Performance of Footwear and Test Surfaces/Flooring Using a Whole Shoe Tester* was first published in 2011, was developed following ASTM consensus procedures, and is widely used in the footwear industry.

j. Claim: "In January 2023 the NFSI tested 17 of the most popular household floor cleaning products commonly available at retailers nationwide and found that when used in accordance with the manufacturer's instructions, 12 of the 17 products reduced the slip resistance of the floor after application." See p. 25 of the petition.

This document has already detailed the petitioner's unwillingness to share the data/paper(s) behind the study referred to in the above. In addition, the petition does not indicate any of the relevant testing parameters. As an example, on what surface type or types were the products applied and were they removed before testing? These issues, coupled with the numerous problems with the B101.2 methodology (detailed in Section 2a), make it impossible to rely on the petitioner's study.

k. Claim: "Based on analysis we found that conventional street shoes such as NIKE or Converse products provided a low level of slip resistance, however, these styles of

[36] For more information on ASTM Committee F13, refer to: https://mcsdocs.astm.org/committee-documents/F13_Fact_Sheet_2019.pdf.

shoes are often worn by workers in the workplace where oil and or water is commonly found on the floor. When worn as a 'street shoe' these styles increase the risk of a slip and fall when the walkway is wet." See p. 26 of the petition.

What analysis is the above claim based on? If it is based on testing per NFSI B101.7, the claim is misleading. As already detailed numerous times throughout this document, slip resistance and a measurement of DCOF are not the same thing. In addition, there is no evidence to suggest the claim that "When worn as a 'street shoe' these styles increase the risk of a slip and fall when the walkway is wet." It is nonsensical for the petitioner to continually claim measured COF and slip and fall outcomes are directly linked, especially considering CPSC staff's previous comments that "the likelihood of falling and fall-related injuries are affected by a multitude of factors" (see Section 3c of this document).

l. Claim: "The proposed requests are similar to that of the federal governments [sic] mandatory labeling of food products whereby important nutritional information is provided via a uniformly standardized label, which the consumer can use to make food-purchasing decisions. Certain food contents may present a health risk to certain individuals therefore requiring labeling. Our petition follows the same line of reasoning. Flooring materials, floor treatments, floor cleaning agents and certain types of footwear may increase the slip and fall risk for many people which we believe the consumer has a right to know exactly what the inherent slip risk is for each of these product types. Product manufacturers have a responsibility to communicate such vital safety information to their customers as to prevent injury and through a simple informative product label." See p. 30 of the petition.

There is an extremely large difference between nutrition information, which can be directly measured, and slip resistance, which cannot be indicated via a single measurement. While sodium content, fat content, and more can all be tested in an unambiguous manner, slip resistance and prediction of slip risk cannot due to the myriad of things that can factor into a slip and fall incident. Further, it is well-known that a measurement of DCOF is *not* an indicator of slip risk, contrary to what the petitioner frequently implies. This concept has been discussed throughout this document, and CPSC staff has acknowledged in previous briefing packages that "literature does not establish the degree to which hard surface flooring COF, or any other factors (such as lighting, footwear, and or contamination), contribute to slips and falls."[37] Further, unlike food measurements, the petitioner's approach allows for the use of different testing devices; however, it is well-known that different tribometers can produce variable test results on the same test specimen. CPSC staff noted in 2019 that "The variability

[37] Staff Briefing Package, Petition CP 18-2 (July 17, 2019), at 4.

among testing methods, as such, makes it unlikely that a standardized label containing COF values will improve the safety of floor coverings for consumers."[38]

It is nonsensical to suggest that a "simple informative product label" would prevent injury. Also, to again emphasize a point that has been made numerous times already throughout this document, manufacturers are already communicating the information that the petitioner claims is not being provided.

m. Claim: "The economic impact to the manufacturing industry will be minimal. Currently most flooring, floor care, and footwear manufactures [sic] test their products performance for quality control purposes either in their own in-house laboratory or via a third-party contracted technical facility making the cost to industry to perform COF testing for their products relatively inexpensive." See p. 30 of the petition.

Contrary to the petitioner's claims, the B101 documents are not used by manufacturers due to their many deficiencies, as have been detailed throughout this response. Further, understanding the limits of tribometry testing, they report DCOF per A326.3 in a range (commonly above or below 0.42) and use additional methods and slip resistance-related factors to develop product use classifications per A326.3. In other words, understanding that DCOF can oftentimes be a poor predictor of what floor should be used in a specific application, manufacturers do not base product use classification on DCOF alone. Thus, the cost of requiring labeling among manufacturers by suggesting the use of a test method and test devices not currently used by industry, or product labeling that would misdirect the consumer, would not be "minimal" but rather significant and unwarranted. In addition, any requirement to test per the NFSI B101 documents would necessitate significant additional costs outside of the testing requirements alone, some examples of which are provided later in Section 5c.

In their 2019 briefing package, CPSC staff made a statement in direct contrast to the petitioner's claim: "staff considers it likely that if the requirements proposed in the petition were mandated, the cost to manufacturers would be higher than suggested by the petition."[39] The same can be said about the current petition, albeit on a significantly larger economic scale considering the expanded requests regarding footwear and floor cleaners.

n. Claim: "The NFSI B101 wet DCOF standards date back to 2012 and were originally developed in partnership with the ceramic tile industry which shortly after publication began an aggressive campaign to undermine the NFSI's safety standards with total disregard for public safety. This is also true for the men and women in industry whose safety is directly jeopardized by the lack of reasonable product testing and labeling.

[38] Staff Briefing Package, Petition CP 18-2 (July 17, 2019), at 4.
[39] Staff Briefing Package, Petition CP 18-2 (July 17, 2019), at 11.

> Same level slips and falls are the leading cause of workplace injury in most industries costing billions of dollars annually and countless amount [sic] of pain, suffering, and even death. The safety of todays [sic] labor force is and has been marginalized in the name of corporate profit." See p. 30 of the petition.

The petitioner's above claims are unabashedly false, offensive, misleading, and without merit (to say the least). As noted elsewhere, TCNA and its members strongly believe that implementing the petitioner's proposals would result in the use of highly deceptive and inaccurate data, distract consumers from accurate and extensive information already being provided by tile manufacturers, and result in more accidents as opposed to fewer.

o. Claim: "Today's residential consumer of floor covering, floor cleaners, and footwear have virtually no information as it relates to the slip resistance and therefore the slip related risk of these various products each of which plays a critical role in preventing accidental slips. In short, consumers are left in the dark and are led to believe that all floor coverings, floor cleaners, and footwear are safe only to realize after a serious and debilitating fall that the products they chose were inherently dangerous." See p. 30 of the petition.

To again emphasize a point that has been made numerous times already throughout this document: tile manufacturers are already communicating the information that the petitioner claims is not being provided; a few clear examples of such information are shown in Section 1b. And, contrary to the above, petitioner presents no evidence to suggest that a consumer believes all floor coverings, cleaners, or footwear are inherently safe. There is also no evidence presented or to our knowledge available suggesting that consumers cannot make their own evaluation without the availability of a confusing and deceptive label. The petitioner's continual use of these types of claims is egregious and unnecessary.

5) The petition should be denied for the following additional reasons.

a. The vague, broad accident statistics cited by the petitioner do not support the relief they are seeking for any of the three product groupings.

Throughout the petition, numbers of injuries, costs, age demographics, etc. are presented, none of which pertain to the proposed label's role in the prevention of falls.[40] Not once does the petitioner specify key factors such as the type of surface on which the fall occurred nor any hazards nor environmental factors affecting the surface where the fall occurred. A fall could include falling off a ladder or tripping down a set of stairs and does not just pertain to

[40] Most of the presented data are recycled from a previous NFSI petition, as acknowledged by the petitioner on page four of CP 24-1.

slipping on a floor covering. None of the data supports that the proposed label or proposed method would reduce falls at all.

b. Mandating the petitioner's requests would cause significant expense to industry without any corresponding improvement to the consumer, which is in direct contrast to the petitioner's claims.

As thoroughly detailed in Section 4m and later in Section 5c, and contrary to the petitioner's claims, there are various reasons why implementing the petition proposals would not be "minimal" but rather, significant.

c. Petitioner misrepresents itself as a charitable safety institute while seeking to benefit financially from CPSC rulemaking. As such, the petitioner is inherently and improperly biased.

According to the NFSI website,[41] NFSI charges up to $3,995 for product certification testing and lists hundreds of products as certified. These are products as varied as a "Press-On Disposable Urinal Mat," mop buckets, automatic floor scrubbers, floor cleaners, floor mats, concrete polishing systems, and abrasive tape, along with other items. Such certification activity directly benefits the certification recipient and as such is commonly excluded from charitable purposes, though NFSI claims on its website to be a 501(c)(3) charitable organization.[42] In the case of NFSI's "research," rather than making such studies available, their website contains a paywalled page that can only be accessed by NFSI members.[43]

The amount of control NFSI seeks to give itself based on their petition would not only be dangerous, but self-serving. NFSI exerts unchecked control over all ILS requirements for "approved tribometers,"[44] requires "Qualified Observers" for their ILS process to be "approved by the NFSI,"[45] requires reference surfaces to be "tested and verified by the National Floor Safety Institute (NFSI) or equivalent testing authority,"[46] and maintains complete control over all data created through their ILS process.[47] Also, each of the NFSI B101

[41] See NFSI "Product Testing" at https://nfsi.org/certifications/product-certification/.
[42] See NFSI "About Us" at https://nfsi.org/about-us/.
[43] See NFSI "Research Library" at https://nfsi.org/nfsi-research/research-library/.
[44] While we are unable to locate the current price through a search of the NFSI website, TCNA's comments in response to the petitioner's 2018 petition included a letter from Walkway Management Group (formerly Regan Scientific Instruments) detailing the exorbitant fees NFSI required for the "NFSI Approved" tribometer designation.
[45] NFSI ILS document, Section 4.2.1.
[46] NFSI B101.2, Section 3.10.
[47] The NFSI "certification of ILS validation" is only valid for a period of five years, after which any instrument must be recertified to the "then current methodology set forth by the NFSI." See NFSI ILS document, Section 7.1. Such a requirement would result in significant, recurring costs and time to maintain the "certification of ILS validation."

documents, which the petitioner seeks to implement, contain advertisements for NFSI services such as certifications.

As this response makes clear, the NFSI petition contains numerous false or misleading statements, lacks scientific foundation, and relies on the same premises the Commission found unsupported in their previous denial. Further, there has been no attempt by the petitioner to address issues raised on multiple occasions by CPSC staff. What is the real purpose of their petition? We are concerned that NFSI is improperly biased by its financial interests and seeking a Federal testing and labeling mandate in an attempt to enrich itself from CPSC action.

Closing Comments:

As our response details at length, we believe the mandates requested by the petition are entirely without merit, misrepresent the subject of walkway safety and slip resistance, would distract from information tile manufacturers already provide, and would result in increased accidents. Despite numerous flaws being pointed out in the 2015 and 2018 petitions and the referenced B101 documents, the petition in its resubmitted form fails to address a large number of concerns expressed by the CPSC. Moreover, the petition does not meet the requirement of 16 CFR 1051.9(a)(1) (whether the product involved presents an unreasonable risk of injury), nor does the petition meet the requirements of 16 CFR 1051.9(a)(2) (whether a rule is reasonably necessary to eliminate or reduce the risk of injury). It remains clear that no evidence is produced to suggest that the proposed COF labeling will result in a reduction of slip and fall incidents.

In its current and previous forms, the petition does not detail a way for useful comparisons to be made between flooring products, floor cleaners, and footwear, all of which are not well-characterized through COF measurement alone. The mandate it proposes would not provide information to help consumers select appropriate products but rather mislead with faulty information and additionally direct consumers away from useful information on slip resistance that is currently being provided by tile manufacturers.

Petitioner has not provided anything meaningfully new or persuasive since its last petition, or the one before it. As such, CPSC staff's comments in 2019 confirm why this latest attempt should fail again:

> "*Staff concludes that it is unlikely that injuries from slips and falls can be reduced through the action requested by the petition. Although staff agrees that accurate, relevant point-of-sale information for consumers could result in more appropriate flooring choices, staff has observed in the literature a lack of consistency and accuracy regarding the various test methods, standard reference materials, and measurement instruments available for determining walkway COF, including the methods specified in the 2018 petition. As*

mentioned in the CP 16-1 Staff Briefing Package, and found again in developing the Staff Briefing Package for CP 18-2, staff's review of scientific studies found COF values varied greatly among the test methods, depending on the environmental conditions, footwear used, and other factors. The literature does not establish the degree of influence hard surface flooring COF, or any of the other factors, has on slips and falls. Testing variability makes it unlikely that a standardized label containing COF values from testing to any one method will improve floor safety for consumers.

Additionally, staff found little evidence to support the 2018 petition's assertion that a high COF value leads to a decreased hazard of slips and falls. Staff reviewed several studies that examine the relationship among various COF test methods and the risk of slips and falls. Most or all of the studies conclude that the majority of test methods do not demonstrate a reliable correlation between COF values and the risk of falling. In fact, the test methods specified in the 2018 petition showed lower correlation between COF and the risk of falling than the other studies. Thus, staff concludes that providing a COF value to consumers on the label proposed in the 2018 petition is unlikely to assist consumers in evaluating the comparative safety of flooring products."[48]

TCNA applauds any effort directed towards consumer safety, including those efforts aimed at providing easy-to-understand information to consumers, but this petition does not lead to increased safety for consumers. Rather, this petition appears to be an effort to promote one organization, regardless of the increased risk to the elderly and public. The petition will result in inaccurate and misleading information and more accidents as opposed to fewer. We respectfully request that the CPSC deny the petition because it will not only fail to address, but it will make worse, the problem it claims to be fixing.

Thank you for the opportunity to comment and your consideration of our concerns.

Background Concerning TCNA:

TCNA is a trade association of 240 members representing manufacturers of ceramic floor and wall tile, decorative tile, installation materials, tile manufacturing equipment, raw materials for the tile industry, and other tile-related products. TCNA membership is estimated to exceed 99% of the ceramic tile manufacturing capacity in the United States. In recent years, those facilities have annually produced nearly 1 billion square feet of ceramic tile. As such, we and our member companies are significant stakeholders in the issue under consideration.

Through our staff, we are the Secretary or Chairperson of the ANSI, ASTM, and ISO Committees responsible for ceramic tile and related industry standards, and through these

[48] Staff Briefing Package, Petition CP 18-2 (July 17, 2019), at 12-13.

Committees have a broad awareness of industry stakeholder interests and concerns. We additionally serve or participate in numerous national and international discussions relating to floor safety and slip resistance, and we operate a ceramic tile product testing and research facility at our center in the Clemson Research Advanced Materials Research Park.

TCNA and its members are dedicated to the safe use and specification of ceramic tile, especially with regard to slip/fall issues relating to flooring. Members and the staff of TCNA have decades of experience on these issues, and the industry has developed coefficient of friction standards and criteria for the protection of consumers through the ANSI Accredited Standards Committee A108. This Committee has been in operation since the 1950s, originally as part of ASA and USASI, which predated ANSI, and criteria for tile has been provided in the standard A137.1 throughout this time frame. TCNA, its members, and many stakeholders throughout the flooring industry developed testing criteria for many flooring materials per the ANSI A326.3 standard. Moreover, TCNA and many of its members and industry supporters have advocated for consumer safety through building code improvements on numerous occasions before the ICC over numerous code development cycles.

Sincerely,

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