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CSPA Supports ASTM D-2047 Standard Cautions Against Unproven Alternatives

Editor's Note: CSPA's Polishes and Floor Maintenance Division is concerned that recent claims made by the National Floor Safety Institute (NFSI) regarding slip resistance testing for floor care products are misleading and could result in an increased risk of slip-and-fall accidents. In the article below, the Division explains the history of the long-standing ASTM D-2047 slip resistance standard and questions the validity of NFSI's wet coefficient-of-friction testing program.

Washington DC -- The Polishes and Floor Maintenance Division of the Consumer Specialty Products Association (CSPA) adopted the ASTM D-2047 slip-resistance standard in 1970. This was one year after the American Society for Testing and Materials (ASTM) created the method, known as "The Static Coefficient of Friction of Polish-Coated Surfaces as Measured by the James Machine." To this day, CSPA-member formulators pledge to meet this standard with their products. As a result, walkways which prior to 1969 had no criterion by which to be classified as "slip-resistant" or "slip-retardant," now had one. It is also clear that, while flooring materials and shoe materials can have a large bearing on pedestrian safety, the manufacturers of those materials, unlike the floor-coating industry, have chosen not to adopt a standard for their respective materials.

It is understandable that such a reliable standard as ASTM D-2047 would now be a beacon in the turmoil and propagation of litigation that surround slip-and-fall accidents. It is also understandable that misinformed attempts to confound such a long-standing, clearly worded and specific standard as ASTM D-2047 would serve those who stand to gain from the occurrence of slip-and-fall accidents, ensuing litigation, and fear on the part of property owners. Lack of understanding produces fear in many, but creates business opportunities for others. This phenomenon and by-product of our free enterprise system has logically spawned new businesses. These opportunistic businesses purport to offer alternative methods of measurement along with alternative coefficient-of-friction standards for floors as solutions to dry "slippery floors" which are constantly and mistakenly accused of being the root cause of slip-and-fall accidents.

The customers of floor-care product manufacturers as well as pedestrians have benefited for decades from the walkway standard originally promulgated by CSPA: ASTM D-2047. All floor-coating customers freely receive the assurance of this self-imposed standard with every ounce of product they purchase or on which they walk. In spite of this long history of an industry that has voluntarily supplied a meaningful standard for floor safety, there are some that would foment concern within the industry's customer base that somehow *their* newer standard is needed to make floors less hazardous.

This message is a false one that takes needless advantage of the valid concerns the floor-coating customer base has about slip-and-fall accidents, regardless of their inherent cause. The aim is to encourage floor-coating companies or their customers to pay for assurance of slip resistance that they already have had for several decades at no cost beyond that of the products they already use with confidence. This additional and unnecessary assurance comes at a price that does not just involve money. It is knowingly based on the flawed notion that no matter how a slip-resistance measurement is made, its results can be judged using the current ASTM D-2047 James Machine-based criterion of 0.5 or alternatively by some contrived, inappropriate translation of this standard.

A prime example of false assurance comes from the National Floor Safety Institute (NFSI). This organization promotes a wet coefficient-of-friction testing program, in marked contrast to ASTM D-2047 which is a dry-floor standard. The machine used for this program is the Universal Walkway Tester (UWT). The object is to test manufacturer's floor coatings for slip resistance in a lab and field setting for a fee. If the manufacturer's products pass, they get certified by the NFSI as "high traction." Since the NFSI accurately claims that most slip-and-fall accidents occur on wet or contaminated surfaces, the test they offer is a wet test using a 0.6 coefficient of friction. The origins and validity of this numerical standard are unknown. Furthermore, no meaningful slip-resistance standards exist for wet walking surfaces. All wet surfaces are deemed to be slippery unless circumstances exist to make them not slippery. Such circumstances would involve a surface with sufficient roughness or texture for retardation of slipping under wet conditions. Undaunted by the knowledge that smooth, indoor walking surfaces that are wet, coated or not, must always be approached by pedestrians with great caution, the NFSI employs the UWT to test wet walkway surfaces for slip resistance and consequently possible certification.

Motivated in part by recent publications from the NFSI criticizing floor-care companies for having an "old and outdated" standard for slip resistance, CSPA embarked on an evaluation of the UWT and its accompanying wet slip-resistance standard. Various surface types, both coated and uncoated, were evaluated. Water and a variety of cleaners and dilutions were used as surface contaminants. The results from the many trials conducted in this test demonstrated that virtually all the scenarios tested which would have to be classified as hazardous to pedestrians passed the NFSI test. Under certain circumstances, the UWT rated a hazardous wet surface more slip-resistant than the corresponding dry surface.

This affront to common sense is a malady of "static" friction testers such as the UWT when attempting to use them to measure wet surfaces, a situation for which they are not suited. It is important for organizations and individuals concerned about floor safety to understand the message that is being sent by the NFSI with this type of testing program. That is, floors which are obviously hazardous when wet will pass the NFSI test and can be certified by NFSI as "high traction." Complete test results will be published in a journal in the near future.

None of these extraneous "standards" or measurement methods, including the one offered by the NFSI, has any scientific basis for its qualification or any empirical data supporting its use. ASTM-D 2047, with more than five decades of experiential data accumulated from the time Sidney James began his work developing the 0.5 criterion for his machine, includes subsequent scientific justification for this standard.

It is clear to CSPA and others familiar with ASTM D-2047 and knowledgeable about floor safety that pedestrians have been safer over the past decades for having this walkway safety standard. CSPA-member companies saw the importance of pledging their collective efforts to help make walkways less hazardous for pedestrians, and they have supported this position for more than three decades. The net effect of the NFSI Certification Program is reduced pedestrian safety by providing false assurance through flawed testing that wet walking surfaces which should be considered hazardous by pedestrians may no longer be so.

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