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THE WORLD'S BEST WOOD

TECHNICAL BULLETIN

Slip-Resistence

Slip Resistance Standards for Decking

It's essential to understand that there isn't a specific standard for decking slip resistance; instead, all surfaces are assessed under the tile flooring standard.

Historical Standards: OSHA and ADA

OSHA Standard 29 CFR 1910 Subpart D / ADA (Americans with Disabilities Act)

"Slip-resistance: A reasonable measure of slip-resistance is the static coefficient of friction (COF). A COF of 0.5, based on University of Michigan studies reported in 'Work Surface Friction: Definitions, Laboratory and Field Measurements, and a Comprehensive Bibliography,' is recommended as a guide for achieving appropriate slip resistance. This COF of 0.5 is not an absolute standard. Higher COFs might be necessary for specific tasks, such as carrying, pushing, or pulling objects, or navigating ramps."

The ADA Standards for Accessible Design incorporate the OSHA Standard in "Section 4.5 Ground and Floor Surfaces:"

General Requirements:

- Ground and floor surfaces along accessible routes and in accessible areas, including floors, walks, ramps, stairs, and curb ramps, must be stable, firm, slip-resistant, and comply with section 4.5.

Coefficient of Friction Requirements: (Appendix A4.5.1)

- The Occupational Safety and Health Administration recommends a static coefficient of friction of 0.5 for walking surfaces.

Testing Methods:

- The standard methods for determining the Static Coefficient of Friction, ASTM 1678 and ASTM 1679, were withdrawn in 2005 and 2006, respectively. They were replaced by ASTM C1028, which was also withdrawn in 2014 without replacement. None of these methods addressed the Dynamic Coefficient of Friction (walking slip-resistance

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- Static Friction measures the resistance between stationary surfaces (friction when standing).
- Dynamic Friction measures the resistance between surfaces in motion relative to each other (friction while walking).

Static Friction Ratings:

- High Traction: SCOF of 0.6 or above
- Moderate Traction: SCOF between 0.4 and 0.6
- Low Traction: SCOF below 0.4

Dynamic Friction Ratings:

- High Traction: DCOF of 0.42 or above
- Low Traction: DCOF below 0.3

Compliance of Black Label™ Decking with IBC Standards
Black Label™ Ipe Decking Products have been evaluated according to ANSI B101.1 for Wet Static Coefficient of Friction (SCOF) and ANSI A137.1 section 9.6 for Dynamic Coefficient of Friction (DCOF) to ensure compliance with current IBC standards.

Test Results for Black Label™ Decking:
Testing conducted on Black Label™ decking products in wet conditions yielded the following:

- Average Static Coefficient of Friction (Wet): 0.73 (High Traction)
- Average Dynamic Coefficient of Friction (Wet): 0.45 (High Traction)

Comparing Smooth and Grooved Decking Surfaces

A frequently asked question is whether grooved decking surfaces are more slip-resistant than smooth ones. While grooved surfaces might appear to offer better traction, they actually provide less grip than smooth surfaces. This is because the grooves reduce the amount of contact between the decking and the sole of a shoe.

This was recently confirmed by testing conducted by a well-known theme park, which compared the slip resistance of smooth and grooved decking for their bridge decks.

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Grooved Surfaces and Slip Resistance

Grooved surfaces often accumulate dirt, food particles, and other organic materials. When these substances mix with water and heat, they can promote fungal growth, which further diminishes the surface's slip resistance. Therefore, maintaining cleanliness on walking surfaces is crucial.

Anti-slip granular surfaces, such as those found in anti-slip strips, enhance friction by gripping into the shoe's sole, offering increased traction. Applying such products can improve slip resistance.

Important Note: Meeting the minimum coefficient of friction requirements does not guarantee slip prevention. Factors such as the area of shoe contact, the shoe sole material and its wear, the individual's condition at the time of slipping, surface incline, and drainage conditions all affect slip resistance. Designers must assess the suitability of the surface material based on the specific application and conditions.

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