

PREVENT SLIPS, TRIPS & FALLS

SILFLEX[®] PREMIUM SLIP RESISTANT FLOORING

Independent testing done by Sotter Engineering Corporation



"This is a very odd sample indeed! I've never seen this high of a number for the dry reading. The dry reading is pretty much useless as the results are always good in the clean and dry condition, but it's still higher than I've seen. The sample felt slippery to my fingers with water on the sample, and I consider my fingers to be highly sensitive slip resistance test devices after all these years of testing floors for slip resistance all day long and feeling all the samples with my fingers after testing. This sample surprised me. My fingers said it was slippery, but the pendulum didn't agree. I think perhaps people with certain soft shoe soles, such as running shoes, MIGHT find this flooring slippery when wet, but it seems the hard pendulum rubber is pretty happy with the slip resistance, especially for a sample that lacks any grit, which is where we usually find high slip resistance. I ran a few swings with the soft rubber slider as well, which we use for barefoot areas or soft shoe soled areas, and that result looked like it was going to be similar to this result. So this sample's results are really odd to me, but I confirmed they're correct for the pendulum. I'm not sure how this sample did so well, but it did". John C Sotter, Senior Technician (Sotter Engineering Corp.)

SOTTER ENGINEERING CORPORATION Floor Slip Resistance Consultants

26705 Loma Verde, Mission Viejo, CA 92691
Telephone: 949-582-0888 FAX: 949-616-2193
Email: info@SafetyDirectAmerica.com
www.SafetyDirectAmerica.com

Licensed by the State of California
Board of Professional Engineers
And Land Surveyors

Certified by the City of Los Angeles
as an official slip resistance testing
laboratory for flooring

CERTIFIED

ASTM E303-22 Pendulum Slip Resistance Test Method

Client: American Ceramic Technology Report date: 10/14/22
Flooring: Silflex Shielding – Premium Slip Resistant Surface
Page 1 of 3 Test no.: 2210-1422 Date tested: 10/14/22
How and when sample obtained: Supplied by client 10/11/22 Sample size: 8"x12"
Location of test: Sotter Engineering Test Laboratory in Mission Viejo, CA

Figure 1 shows the sample. Red, green, blue, and white color references are included, with a U.S. penny (1/16 inch thick) for scale. The back of the sample is included to aid in positive identification.



Figure 1: (clockwise from top left) front, back and close-up of sample tested

This test report shall not be reproduced, except in full,
without the written approval of Sotter Engineering Corporation
Page 1 of 3

Flooring: Silflex Shielding – Premium Slip Resistant Surface

American Society for Testing and Materials Method E303-22 (2022), "Standard Test Method for Measuring Surface Frictional Properties: Using the British Pendulum Tester" (<https://www.astm.org/e0303-22.html>)

The trailing edge of a three-inch-wide spring-loaded rubber slider, which is attached to the end of a 20-inch pendulum arm, contacts the tested surface when the pendulum arm is released from a horizontal position. The slider contact path length is pre-set to five inches (or 124-127 mm). The pendulum arm pushes a pointer that stops and stays at the high point of the pendulum arm's swing. For testing flooring where pedestrians are likely to be wearing shoes, the typical rubber used is Four S rubber (Standard Shoe Sole Simulating), which has an International Rubber Hardness Degree (IRHD) of 96. For predominantly barefoot areas, and for road testing, the slider used is usually the TRL (Transport & Road Laboratory) soft rubber, which has an IRHD of 55. TRL rubber readings can be affected by temperature outside the range of 64-73 degrees Fahrenheit. Results for the TRL rubber below will have been adjusted for temperature using the adjustments table provided in the Australian pendulum standard – AS/NZS 4586. The ASTM standard does not yet acknowledge the fact that this rubber is temperature sensitive. The next revision of E303 will. Senior Technician John C. Sotter conducted the testing and drafted this report.

Pendulum Test Value (PTV), as received, with Four S (96) hard rubber slider:
Dry: 101 Wet: 44
Corresponding DCOF value = Wet: 0.47; Individual wet PTV values: 43, 45, 44, 44, 45
T = 72 degrees F; Relative humidity = 72%; Pendulum recalibration due September 30, 2023
Results apply only to sample(s) tested.

High Pendulum Test Values indicate potentially good traction. The ASTM E303 test method does not give recommendations on how to interpret the results, as ASTM test methods never do, but similar pendulum test methods from other nations do give safety criteria and guidance. Australia's AS HB 198: 2014 recommends a range of situation-specific minimum Pendulum Test Values; as shown in the attached table below. The Ceramic Tile Institute of America (CTIOA) and United Kingdom Slip Resistance Group (UKSRG), with help from the United Kingdom's Health and Safety Executive (HSE), make a more general recommendation and say that a minimum pendulum test value of 36 for level floors is considered "low slip potential". According to CTIOA and UKSRG, values of 25-35 are classed as "moderate slip potential", and values of 0-24 have "high slip potential". For flooring that has a slope, a mathematical calculation is made to adjust the safety criterion based on the degree of slope. For instance, a floor with a slope of 2° would need a minimum PTV of 39 to fall into the "low slip potential" category, a 4° slope would need a PTV of 42, and a 6° slope would need a PTV of 45. Slip resistance can be affected by factors such as floor coatings, abrasives, detergents, contamination, chemical treatments, and wear.

Respectfully submitted,
SOTTER ENGINEERING CORPORATION

George Sotter
J. George Sotter, P.E., Ph.D.
President



This test report shall not be reproduced, except in full,
without the written approval of Sotter Engineering Corporation
Page 2 of 3