

TorTestSM Floor Friction Testing Service
SOTTER ENGINEERING CORPORATION
Consultants

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

*Approved by the City of Los Angeles
for testing slip resistance of flooring*

Flooring Slip Resistance Test Results

Client: Daryl Braun, President of DM Braun Co. Report date: 5/1/15
Flooring: Flooring & Decking: dasso.XTR Fused bamboo decking – 12" x 5.25"
Page 1 of 2 Test no.: 1411-1021 Date tested: 11/7/14

ANSI A137.1 Dynamic Coefficient of Friction Test

The American National Standards Institute (ANSI) published the A137.1-2012 American National Standard test for measuring dynamic coefficient of friction (DCOF) of common hard-surface indoor level floor materials in 2012. This ANSI standard has been incorporated as a requirement in "Section 2103.6 Ceramic Tile" of the 2012 International Building Code published by the International Code Council. That section states that "Ceramic tile shall be defined in, and shall conform to the requirements of, ANSI A137.1."

Average Dynamic Coefficient of Friction (DCOF), as received, and tested with BOT-3000E digital tribometer using SBR rubber slider and 0.05% SLS water solution:

Ridged side of samples:

Sample #1 Dry: 0.62, 0.63, 0.70, 0.60; **Avg. = 0.64; Wet:** 0.50, 0.42, 0.46, 0.47; **Avg. = 0.46**

Sample #2 Dry: 0.64, 0.62, 0.72, 0.63; **Avg. = 0.65; Wet:** 0.42, 0.39, 0.32, 0.31; **Avg. = 0.36**

Sample #3 Dry: 0.65, 0.64, 0.64, 0.62; **Avg. = 0.64; Wet:** 0.47, 0.41, 0.44, 0.44; **Avg. = 0.44**

Overall average: Dry: 0.64; Wet: 0.42

Smooth side of samples:

Sample #1 Dry: 0.66, 0.65, 0.62, 0.53; **Avg. = 0.62; Wet:** 0.47, 0.50, 0.47, 0.50; **Avg. = 0.49**

Sample #2 Dry: 0.69, 0.70, 0.61, 0.60; **Avg. = 0.65; Wet:** 0.46, 0.46, 0.46, 0.47; **Avg. = 0.46**

Sample #3 Dry: 0.69, 0.68, 0.63, 0.62; **Avg. = 0.66; Wet:** 0.46, 0.45, 0.46, 0.47; **Avg. = 0.46**

Overall average: Dry: 0.64; Wet: 0.47

T = 78 degrees F; Relative humidity = 19%; BOT recalibration due April 16, 2015
BOT-3000E strain gauge verified on day of test. Reference tile before/after results: passed/passed

High dynamic coefficient of friction values indicate potentially good traction. The ANSI A137.1 standard, Section 6.2.2.1.10, states that

"Unless otherwise specified, tiles suitable for level interior spaces expected to be walked upon wet shall have a wet DCOF of 0.42 or greater when tested using SLS solution as per the

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procedure in Section 9.6.1. However, tiles with a DCOF of 0.42 or greater are not necessarily suitable for all projects. The specifier shall determine tiles appropriate for specific project conditions, considering by way of example, but not in limitation,

“type of use,
traffic,
expected contaminants,
expected maintenance,
expected wear, and
manufacturers’ guidelines and recommendations.

“... The presence on installed tiles of water, oil, grease, and/or any other elements which reduce traction, creates slippery conditions ... Tile installations with exposure to such elements require extra caution in product selection, use, and maintenance. ... When tested using SLS solution as per the procedure in Section 9.6.1, tiles with a wet DCOF of less than 0.42 shall only be installed when the surface will be kept dry when walked upon and proper safety procedures will be followed when cleaning the tiles.”

This standard has no recommendations for outdoor floors or for ramps.

Respectfully submitted,
SOTTER ENGINEERING CORPORATION



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



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