

**SOTTER ENGINEERING CORPORATION**  
Floor Slip Resistance Consultants

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Board of Professional Engineers  
And Land Surveyors*

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

**CERTIFIED**

**Modified ANSI B101.3 Flooring Slip Resistance Test Results**

Client: **Allied Industries**

Report date: 10/21/19

Flooring: **three areas behind the counter at Starbucks, pier 55, Seattle, WA**

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Test no.: 1910-2121

Date tested: 10/17/19

Figure 1 shows the three areas tested. The BOT-3000E digital tribometer used in the testing is included in the photos showing where the tests were done.



Figure 1: (clockwise from top left) areas tested, labeled as #1, #2, and #3

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**Flooring: three areas behind the counter at Starbucks, pier 55, Seattle, WA**

**Modified ANSI B101.3 Dynamic Coefficient of Friction Test**

The American National Standards Institute (ANSI) published the B101.3 American National Standard test for measuring dynamic coefficient of friction (DCOF) of common hard-surface floor materials in 2012. The B101.3 test method we used to test these surfaces was modified only to use soft TRL rubber, which is more representative of the types of shoes worn by the employees in this “behind the counter” area.

**Average Dynamic Coefficient of Friction, as found, with TRL rubber slider:**

**Area #1 Wet: 0.72;** Individual test values wet: 0.71, 0.68, 0.68, 0.75, 0.75, 0.73

**Area #2 Wet: 0.93;** Individual test values wet: 0.89, 0.94, 0.98, 0.89, 0.94, 0.93

**Area #3 Wet: 0.95;** Individual test values wet: 0.94, 0.97, 0.99, 0.90, 0.93, 0.95

**Average Dynamic Coefficient of Friction, after cleaning, with TRL rubber slider:**

**Area #1 Wet: 0.78;** Individual test values wet: 0.82, 0.78, 0.74, 0.80, 0.76, 0.77

**Area #2 Wet: 0.99;** Individual test values wet: 1.00, 1.00, 1.00, 0.98, 0.97, 0.97

**Area #3 Wet: 0.95;** Individual test values wet: 0.96, 0.94, 0.97, 0.94, 0.93, 0.94

Reference tile test value: 0.52 (expected range 0.49-0.57)

High dynamic coefficient of friction values indicate potentially good traction. The ANSI B101.3 standard recommends a **minimum** average DCOF of **0.43** for level floors (and **0.46 for ramps** up to 4.76 degrees) for high slip resistance and a “lower probability of slipping”. Average DCOF between 0.30-0.42 is defined as “Acceptable” and an “Increased probability of slipping”. Flooring with values in this range should “Monitor DCOF regularly and maintain cleanliness. Consider traction enhancing products and practices where applicable for intended use”. Values of less than 0.30 have “low slip resistance” and a “higher probability of slipping.” Slip resistance can be affected by factors such as floor coatings, abrasives, detergents, contamination, chemical treatments, and wear.

Respectfully submitted,  
SOTTER ENGINEERING CORPORATION



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

