



# Home Innovation

RESEARCH LABS

Report of Test Results  
on a  
Solid Surface Panel

Tested In Accordance With  
ASTM F462 Slip Resistance

Prepared For:  
Griffirm Innovations  
P.O. Box 258  
Glide, OR 97443

Prepared By:  
Home Innovation Research Labs  
400 Prince George's Blvd.  
Upper Marlboro, MD 20774

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## **I. PURPOSE**

The finished surfaces of bathing fixtures may be exceedingly slippery when wet. Therefore, many manufacturers have devised textured surfaces in order to prevent slipping. The purpose of this test is to measure the static coefficient of friction (resistance to slipping) of a given "slip resistant" surface to determine if it meets a minimum performance requirement.

The standard procedure for evaluating the slip resistance of slip resistant bath fixture is defined in the ASTM F462 Standard Consumer Safety Specification for Slip Resistant Bathing Facilities. The slip resistance test involves the use of a device known as a Brungraber Slip Resistance Tester. Measurements are taken in nine different "measurement zones" (different locations on the slip resistant surface) with the Brungraber tester. Two measurements are taken in each measurement zone, and the resulting data is used to calculate  $\mu_s$  values. The two values  $\mu_s$  obtained from each measurement zone are averaged, resulting in nine  $\mu_s$  values for the entire surface.

After completion of the calculations, the resulting coefficients are compared to the performance requirement of the ASTM F462 standard. Conformance to the standard requires that each of the nine tested locations yield an average  $\mu_s$  value of no less than 0.04.

## **II. BACKGROUND**

Griffom Innovations contacted the Home Innovation Research Labs to request testing in accordance with the ASTM F462 standard.

The solid surface panel of plastic shower submitted was received February 29, 2016 and testing was conducted on March 04, 2016.

## **III. TEST METHODOLOGY**

### **ASTM F462**

#### **Test Preparation:**

Prior to testing, the surface of the sample is thoroughly cleaned with a non-abrasive compound. The sample is placed in a rectangular pan and is then leveled. The pan containing the sample is subsequently filled with a soap solution, as described in Section 8.3 of the ASTM F462 standard, to a minimum depth of 1/2".

#### **Test Method:**

Nine different locations on the slip resistant surface are tested. These locations are defined as "measurement zones" in the ASTM F462 standard. The Brungraber Slip Resistance Tester is then applied to the surface. Two measurements are taken in each measurement zone.

The Brungraber Slip Resistance Tester is designed to measure the static coefficient of friction between a representative foot surface and a surface for walking or standing. This is accomplished when the operator applies a predetermined vertical force through vertical shafts and an articulated shaft to the

sensor shoe.

At the start of the test, the carriage is brought forward to a stop position such that the articulated shaft is not vertical but set at a slight angle towards the back of the tester. This is accomplished by either introducing an initial position stop at the front of the carriage or by using the tester in an "uphill" mode on a surface inclined to an angle of at least 1 degree. This establishes an unbalanced lateral force against the carriage. At the instant that the handle is released and the vertical load is applied, the carriage begins to move back along the travel bars, inducing an increasing lateral load on the shoe as the angle between the articulated shaft and the vertical shaft increases. The tangent of this angle at the instant that slip occurs is directly related to the static coefficient of friction. This angle is measured by the recording shaft, which is magnetized and drawn along by the attachment of the attraction plate as the carriage moves backwards. When slip occurs, the sensor shoe hits the trigger so that the recorder clamp grips the recording shaft, retaining the shaft in the position at the time of slip. The measurement of slip resistance is read opposite a notch in the indicator tube at the front of the recorder clamp from a linear-graduated scale imprinted along the length of the recorder shaft. This value is directly translated to the static coefficient of friction by use of the calibration chart or table supplied with the tester.

After all measurements have been completed, the two measurements for each measurement zone are averaged. These average static coefficients of friction are the reported values for each measurement zone.

**Performance Requirement:**

Section 9.2 of the ASTM F462 standard states that the average static coefficient of friction for all measurement zones shall be no less than 0.04.

**IV. TEST RESULTS - ASTM F462**

Measurement Zone	Average Static Coefficient of Friction	Test Result
1	0.05	Pass
2	0.04	Pass
3	0.05	Pass
4	0.09	Pass
5	0.06	Pass
6	0.09	Pass
7	0.10	Pass
8	0.10	Pass
9	0.11	Pass

## V. DISCUSSION OF RESULTS

For the ASTM F462 testing, the measured average static coefficient of friction passed the minimum performance requirement of 0.04.

The sample was not damaged during shipping and it did not appear that it was tampered with prior to arrival. These tests were performed under the direct and continuous supervision of laboratory personnel.



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Sam Yuan, Ph.D, P.E.  
Director of Laboratory Services  
Home Innovation Research Labs

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