

Tile Samples Test Report



By Floor Testing Services Limited

Date: 14th July 2020

Marnie Dobson

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1. TESTING PROCEDURE

The following samples were received from Natural Stone Imports.

Travertine - Tumbled finish - 2 x pcs of 600x400x20mm

Grey Granite - Flamed finish - 2 x pcs of 600x600x20mm

Black Granite - Flamed & Brushed finish - 2 x pcs of 600x600x20mm

Tests were carried out in an enclosed room at a temperature of 20 °C . The samples were placed on an even level surface and tested under both dry and wet conditions. The testing equipment was fitted with a rubber slider 96 which replicates average slip resistance characteristics of standard footwear and also TRL slider which replicates barefoot slip resistance characteristics. Testing was carried out with regards to the method described under NZS 4663:2004 Slip resistance measurements of pedestrian surfaces.

2. PHOTOGRAPHS

Samples

		
Sample 1 Travertine - Tumbled finish	Sample 2 Grey Granite - Flamed finish	Sample 3 Black Granite - Flamed & Brushed finish

3.0 TEST RESULTS

As a guide, New Zealand Building Code D1.3.3 (d) requires that public surfaces with a level surface have a coefficient in excess of 0.4. The following Coefficients of Friction (CoF) were calculated for the samples as follows:

Table 1. Test Results

		Travertine	Grey Granite	Black Granite
Dry	Slider 96 (Footwear)	0.49	0.64	0.67
Wet	Slider 96 (Footwear)	0.23	0.54	0.52
Dry	TRL (Barefoot)	0.69	0.82	0.87
Wet	TRL (Barefoot)	0.35	0.58	0.56

Table 2. Results Reference

CoF	Risk of Slip
1	Low
0.9	Low
0.8	Low
0.7	Low
0.6	Low
0.5	Low
0.4	Low
0.3	Medium
0.2	Medium
0.1	High
0	High

4.0 SUMMARY & RECOMMENDATION

The testing demonstrates that all samples have a low risk of slip under dry conditions. Under wet conditions, both Granite samples (samples 2& 3) exceed the minimum 0.4 CoF of New Zealand Code requirements. However the Travertine (sample 1) is below the 0.4 minimum and falls within the medium risk of slip category

Please note the following:

1. The manufacturing process must be consistent with the test samples in order to achieve a comparable level of performance.
2. Any wear and tear to the pitted surface will reduce the coefficient of friction over time. Future insitu testing may be required to assess any reduction in performance.
3. Testing has been carried out in controlled conditions to the product samples provided. The use of the product, and the environmental conditions in which it is placed or exposed may alter the product's properties. The testing provided within this report relates only to this test and does guarantee or confirm the future performance of this product to the test results obtained.

APPENDIX A- PREVIOUS TEST REPORT

Pool Paving Slab & Coping Stone Test Report

By Floor Testing Services Limited

Date: 29 September 2017

CONTENTS

- [1. Testing Procedure](#)
- [2. Photographs and Diagrams](#)
- [3. Test Results](#)
- [4. Summary & Recommendations](#)

1. TESTING PROCEDURE

Three types of pool surround paving samples were received from NZ Bluestone and tested off site under controlled conditions to determine the coefficient of friction for each sample.

Tests were carried out in an enclosed room at a temperature of 20 °C . Each sample was placed on an even level surface and tested under both dry and wet conditions . The testing equipment was fitted with a rubber slider 96 which replicates average slip resistance characteristics/ standard footwear.

Testing was carried out with regards to the method described under NZS 4663:2004 Slip resistance measurements of existing pedestrian surfaces.

We then repeated the wet test with a TRL slider to represent bare foot slip resistance.

As per the testing procedure, the first test result was discarded and the average of the 3 further tests then calculated and assessed.

2. PHOTOGRAPHS

Sample 1- Flamed White Quartzite



Sample 2- Sandblasted Dark Bluestone



Sample 3- Honed Dark Bluestone



Sample 4- Sawn Dark Bluestone



3.0 TEST RESULTS

New Zealand Building Code D1.3.3 (d) requires that public surfaces with a level surface have a coefficient in excess of 0.4. The following Coefficients of Friction (CoF) were calculated for the three samples as follows:

Table 1. Sample Testing Results Slider 96

	Sample 1 Flamed White Quartzite	Sample 2 Sandblasted Dark Bluestone	Sample 3 Honed Dark Bluestone	Sample 4 Sawn Dark Bluestone
Dry	0.64	0.69	0.42	0.72
Wet	0.58	0.64	0.18	0.67

Table 2. Sample Testing Results TRL Slider

	Sample 1 Flamed White Quartzite	Sample 2 Sandblasted Dark Bluestone	Sample 3 Honed Dark Bluestone	Sample 4 Sawn Dark Bluestone
Wet	0.67	0.81	0.2	0.82

Table 2. Results Reference

CoF	Risk of Slip
1	Low
0.9	Low
0.8	Low
0.7	Low
0.6	Low
0.5	Low
0.4	Low
0.3	Medium
0.2	Medium
0.1	High
0	High

4.0 SUMMARY & RECOMMENDATION

The sample tests demonstrate a high level of slip resistance for samples 1, 2 and 4 under dry and wet conditions for both footwear and barefoot. These samples exceed the minimum 0.4 CoF and meet the New Zealand Code requirements, falling within the low risk category.

Sample 3 wet test did not achieve the minimum code requirement of 0.4 in both tests and is noted as a medium to high risk when wet. The Honed Dark Bluestone is unsuitable for use in wet areas.

We note the following:

1. The manufacturing process must be consistent with the test samples in order to achieve a comparable level of performance.
2. Any wear and tear to the pitted surface will reduce the coefficient of friction over time. Future insitu testing may be required to assess any reduction in performance to high traffic locations.
3. Testing has been carried out in controlled conditions to the product samples provided. The use of the product, and the environmental conditions in which it is placed or exposed may alter the product's properties. The testing provided within this report relates only to this test and does not guarantee or confirm the future performance of this product to the test results obtained.

Report End