

SANDBERG

REPORT 64729/G

**TESTING OF
KILKENNY BLUE LIMESTONE
ex. THREECASTLES QUARRY**

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KILKENNY BLUE LIMESTONE

ex. THREECASTLES QUARRY

McKeon Stone
Stradbally
Co. Laois
Ireland

This report comprises
3 pages of text
Table 1 of 1 sheet

For the attention of Mr Niall Kavanagh

22 March 2019

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Reference : Instructions from Mr Niall Kavanagh of McKeon Stone.

1. INTRODUCTION

We were instructed to undertake testing of natural stone, advised to be Kilkenny Blue limestones ex. Threecastles Quarry, in order to establish slip resistance characteristics.

2. SAMPLES

Test specimens prepared ready for test were received from McKeon Stone at Sandberg laboratories on 18 March 2019, as follows.

Sandberg Reference	Specimen Size	Test
G48534	Kilkenny Blue limestone ex. Threecastles Quarry 6 no. 200 x 200 x 20mm ; diamond honed	Slip resistance (55)

3. TEST METHOD AND RESULTS

3.1 Slip Resistance

Specimens with a diamond honed surface finish was tested for slip resistance in accordance with BS EN 14231 : 2003 using a portable skid resistance tester (pendulum tester).

Surface roughness measurements were also carried out using a Surtronic Duo roughness meter whilst the slip resistance measurements were being made.

Detailed results of the slip resistance test are given in Table 1 and are summarised below.

Sandberg Reference		Average Slip Resistance Value (SRV) (55 rubber)	
		Dry	Wet
G48534	- diamond honed	61	48

The TRL pendulum tester has a range of readings from 0 to 150, high values indicate good slip resistance. Guidance on the interpretation of results is suggested by the UK Slip Resistance Group¹. These are generally accepted limits and are given below.

<u>Pendulum Test Value</u>	<u>Slip Potential</u>
0 - 24	High
25 - 35	Moderate
36+	Low

The surface roughness measurements are a guide to slip resistance particularly in borderline regions. It is recognised that the roughness of the floor surface can give an improvement in slip resistance in wet conditions.

Surfaces contaminated with pure water generally require a surface roughness of at least 10µm R_z to provide a moderate level of slip resistance and at least 20µm R_z to indicate low slip potential. More viscous contaminants require higher surface roughness².

¹ The assessment of Floor Slip Resistance. The UK Slip Resistance Group, Issue 5, 2016.

² Roughness measurements should not be solely relied upon to evaluate the potential slip resistance of a floor.

The slip resistance results relate to the samples in their as-received condition. It should be noted that the slip resistance of surfaces in service can be altered by various factors such as abrasion, polishing and contamination. Overall assessment of the potential for slip should take into account conditions of use and the environment, in addition to test results.

4. REMARKS

These results conclude the requested programme of testing. Please do not hesitate to contact us if we can be of any further assistance in this matter.

McKeon Stone
Stradbally
Co. Laois
Ireland

for Sandberg LLP

For the attention of Mr Niall Kavanagh

D J Ellis
Partner

DJE/Geoman/pd

22 March 2019

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Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.

Tests reported on sheets not bearing the UKAS logo in this report/certificate are not included in the UKAS accreditation schedule for this laboratory.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Sandberg Reference	Material	Surface Finish	Orientation	Surface Roughness $R_z, \mu\text{m}$	Ambient Temperature °C		Slip Resistance Value (SRV)			
					Dry	Wet	Dry		Wet	
							Mean [5 readings]	Mean	Mean [5 readings]	Mean
G48534 a	Kilkenny Blue limestone	Diamond honed	A	22.1	21	20	63	62	38	40
			180° to A	-	-	-	60		41	
G48534 b	Kilkenny Blue limestone	Diamond honed	A	21.5	21	20	61	60	49	49
			180° to A	-	-	-	59		49	
G48534 c	Kilkenny Blue limestone	Diamond honed	A	19.6	21	20	58	59	51	52
			180° to A	-	-	-	60		52	
G48534 d	Kilkenny Blue limestone	Diamond honed	A	22.1	21	20	60	61	45	46
			180° to A	-	-	-	61		48	
G48534 e	Kilkenny Blue limestone	Diamond honed	A	22.5	21	20	61	62	49	52
			180° to A	-	-	-	62		53	
G48534 f	Kilkenny Blue limestone	Diamond honed	A	19.7	21	20	59	61	50	51
			180° to A	-	-	-	62		51	

SRV dry (6 no. specimens) : 61

SRV wet (6 no. specimens) : 48

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Where our involvement consists exclusively of testing samples, the results and our conclusions relate only to the samples tested.

