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Laboratorio Tecnologico e Sperimentale per le Industrie Ceramiche e dei Laterizi

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LAB N° 1505

TEST REPORT

N° 158/16eng

Place and Date of Issue : Monte San Pietro, 27/06/2016

Customer : SERENISSIMA C.I.R.
INDUSTRIE CERAMICHE S.p.A.
Address : Via A. Volta, 9-23/25
42013 CASALGRANDE RE

Type material examinated : Industrial Tiles

8,6x35 cm NGT TULIP NAT 10mm

Standards applied :

UNI EN ISO 10545/2 : 2000 (*)
UNI EN ISO 10545/3 : 2000 (*)
UNI EN ISO 10545/4 : 2014
UNI EN ISO 10545/9 : 2000 (*)
UNI EN ISO 10545/11 : 2000 (*)
UNI EN ISO 10545/12 : 2000 (*)
UNI EN ISO 10545/15 : 2000 (*)
DIN 51130 : 2014 (*)
DIN 51097 : 2006 (*)
B.C.R.A. : 1981 (*)
ASTM C 1028 : 2007 (*)
BOT 3000 (*)
EN/101 : 1982 (*)

(*) not accredited test

Sampling date : 14/06/2016

Sampling by : Client [X] Geoceramic R. [ ]

Storage time of samples : 3 months from the end of tests.

This document may not be reproduced in part, without the approval of the Laboratory.
The data reported in the test report refer only to the sample tested as received in the Laboratory

Laboratory with Quality Management System ISO 9001: 2008

Laboratory Head
P.I. Riccardo Frabetti

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TEST REPORT

TS N°: 158/16eng

DATE 27/06/2016

Spett.le
SERENISSIMA C.I.R.
INDUSTRIE CERAMICHE S.p.A.
Via A. Volta, 9-23/25
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UNI EN ISO 10545-2 : 2000

CERAMIC TILES
DETERMINATION OF DIMENSIONS AND SURFACE QUALITY

Principle: This international standard defines method for determining the dimensional characteristics (length, width, thickness, straightness of sides, rectangularity, surface flatness) and the surface quality of ceramic tiles.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

Instrumentation used : Apparatus for determining flatness – Cod. GR AS/008
Digital caliper - Cod. GR AC/004

Summary table of the data collected

Average measure of short side (mm)	85,2		Acceptability limits
Average measure of long side (mm)	347,2		EN 14411 app. G
Average measure of thickness (mm)	10,0		±5% / ±0,5 mm
Deviation from rectangularity	max	min	
Sample (%)	0,1	0,0	±0,5%
Sample (mm)	0,3	-0,1	±1,5 mm
Deviation from straightness of sides	max	min	
Sample (%)	-0,4	-0,2	±0,5%
Sample (mm)	-1,3	+0,3	±2,0 mm
Deviation from centre curvature	max	min	
Sample (%)	0,1	0,0	±0,5%
Sample (mm)	0,4	-0,2	±2,0 mm
Deviation from edge curvature	max	min	
Sample (%)	0,3	0,1	±0,5%
Sample (mm)	0,4	-0,1	±2,0 mm
Warpage	max	min	
Sample (%)	-0,1	0,0	±0,5%
Sample (mm)	-0,5	0,1	±2,0 mm

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TS 158/16eng of 27/06/2016

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Length of the sides :

SAMPLE	Length of the sides mm			
	Short Side 1	Long Side 2	Short Side 3	Long Side 4
01	85.2	347.3	85.3	347.3
02	85.2	347.4	85.2	347.2
03	85.2	346.9	85.0	347.1
04	85.2	346.9	85.2	347.1
05	85.2	346.6	85.2	347.2
06	84.9	347.0	85.3	347.0
07	85.4	347.9	85.4	347.9
08	85.3	347.1	85.1	347.1
09	85.4	347.8	85.3	347.8
10	85.1	347.1	85.2	347.0

Average size of each tile (mm) :

SAMPLE	Short Side	Long Side	SAMPLE	Short Side	Long Side
01	85.3	347.3	06	85.1	347.0
02	85.2	347.3	07	85.4	347.9
03	85.1	347.0	08	85.2	347.1
04	85.2	347.0	09	85.3	347.8
05	85.2	346.9	10	85.2	347.0

Average size of all tiles measured (mm) :

Short Side	Long Side
85.2	347.2

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Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

THICKNESS

Thickness measures:

SAMPLE	Thickness mm			
	Short Side 1	Long Side 2	Short Side 3	Long Side 4
01	10.0	10.0	9.8	10.0
02	10.1	10.1	9.9	10.1
03	10.0	10.1	9.8	10.1
04	10.0	9.8	9.9	9.8
05	9.8	9.9	10.0	9.8
06	9.8	10.0	9.8	9.9
07	10.1	10.1	9.9	10.0
08	10.1	10.0	10.0	10.2
09	10.1	10.0	10.1	9.9
10	10.1	10.1	9.8	10.1

Average thickness of each tile (mm) :

SAMPLE	Value
01	9.9
02	10.1
03	10.0
04	9.9
05	9.9

SAMPLE	Value
06	9.9
07	10.0
08	10.1
09	10.0
10	10.0

Average thickness of all tiles measured :

10.0

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Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

RECTANGULARITY

Rectangularity measures:

SAMPLE	Reliefs on the edges mm			
	Short Side 1	Long Side 2	Short Side 3	Long Side 4
01	+0.1	+0.1	+0.1	+0.1
02	+0.1	+0.2	+0.0	+0.0
03	+0.1	+0.1	+0.0	+0.1
04	+0.1	-0.0	+0.1	+0.2
05	+0.1	-0.1	+0.1	+0.3
06	+0.1	+0.2	+0.1	+0.1
07	+0.1	+0.1	+0.1	+0.1
08	+0.1	+0.1	+0.1	+0.1
09	+0.1	+0.1	+0.1	+0.1
10	+0.1	+0.2	+0.1	+0.0

Maximum deviation of rectangularity, in percent, relative to the size of manufacturing:

		MAX	MIN
Sample	%	0.1	0.0
	mm	0.3	-0.1

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DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

STRAIGHTNESS OF SIDES

SAMPLE	Straightness of sides mm			
	Short Side 1	Long Side 2	Short Side 3	Long Side 4
01	+0.1	-0.5	-0.0	-0.2
02	+0.0	-0.7	-0.1	+0.1
03	-0.1	-0.3	+0.0	-0.2
04	-0.0	-0.2	+0.2	-1.0
05	-0.2	+0.7	+0.2	-1.3
06	+0.1	-0.2	-0.0	-0.7
07	+0.0	-0.5	+0.0	-0.5
08	-0.0	-0.4	-0.0	+0.3
09	+0.0	-0.4	+0.0	-0.3
10	+0.1	-0.9	-0.0	-0.2

Maximum deviation of straightness of sides, in percent, relative to the size of manufacturing:

		MAX	MIN
Sample	%	-0.4	-0.2
	mm	-1.3	+0.3

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DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

FLATNESS (curvatue and warpage)

CENTRE CURVATURE

SAMPLE	Curvature mm			
	Side 1-2	Side 2-3	Side 3-4	Side 4-1
01	-0.1	+0.2	-0.1	+0.1
02	+0.1	+0.4	+0.1	+0.3
03	-0.2	+0.1	-0.1	+0.1
04	+0.1	+0.2	+0.1	+0.2
05	-0.1	-0.0	-0.1	+0.0
06	+0.1	+0.3	+0.1	+0.3
07	+0.3	+0.4	+0.3	+0.4
08	-0.1	+0.0	-0.1	+0.1
09	+0.1	+0.2	+0.1	+0.2
10	-0.2	+0.1	-0.2	-0.0

Maximum curvature of the center, in percent, relative to the diagonal refers to the size of manufacturing:

		MAX	MIN
Sample	%	0.1	0.0
	mm	0.4	-0.2

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DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

EDGE CURVATURE

Measure of edge curvature:

SAMPLE	Curvature mm			
	Short Side 1	Long Side 2	Short Side 3	Long Side 4
01	+0.2	-0.0	+0.1	+0.2
02	+0.2	+0.2	+0.1	+0.4
03	+0.1	+0.2	+0.2	+0.0
04	+0.2	+0.1	+0.0	+0.0
05	+0.1	-0.0	-0.0	-0.1
06	-0.0	+0.1	+0.1	-0.0
07	+0.1	+0.2	+0.1	+0.1
08	+0.1	+0.2	+0.2	-0.0
09	+0.1	+0.1	+0.1	-0.0
10	+0.2	-0.1	+0.2	+0.1

Maximum curvature of the edge, in percent, relative to the corresponding work size:

		MAX	MIN
Sample	%	0.3	0.1
	mm	0.4	-0.1

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DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

WARPAGE

Warpage measures:

SAMPLE	Curvature mm			
	Side 1-2	Side 2-3	Side 3-4	Side 4-1
01	+0.0	-0.1	+0.0	-0.2
02	-0.0	-0.0	-0.1	-0.1
03	-0.1	-0.2	-0.0	-0.1
04	-0.4	+0.0	-0.4	+0.1
05	-0.1	+0.1	-0.4	+0.1
06	+0.0	-0.3	-0.0	-0.5
07	-0.2	+0.0	-0.3	+0.0
08	-0.2	-0.1	-0.1	-0.0
09	-0.3	+0.1	-0.4	+0.1
10	+0.0	+0.0	-0.0	-0.0

Maximum warpage, in percent, relative to the diagonal relative to the size of manufacture:

		MAX	MIN
Campione	%	-0.1	0.0
	mm	-0.5	0.1

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TEST REPORT

TS N°: 158/16eng

DATE 27/06/2016

Spett.le
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42013 CASALGRANDE RE

UNI EN ISO 10545-3 : 2000

CERAMIC TILES
DETERMINATION OF WATER ABSORPTION

Principle: dry tiles are impregnated with water and then suspended in water. The relationships of the dry, saturated, and suspended weights allow the calculation of the listed properties.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 17/06/2016
Test finished 17/06/2016

Instrumentation used : Boiling tank– Cod. GR AS/021
±0,2 grams balance – Cod. GR B/001

Sample n°	Water absorption %
1	0,13%
2	0,06%
3	0,07%
4	0,03%
5	0,06%
Average water absorption	**0,07%**

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LAB N° 1505

TEST REPORT

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SERENISSIMA C.I.R.
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UNI EN ISO 10545-4 : 2014

CERAMIC TILES
DETERMINATION OF MODULUS OF RUPTURE AND BREAKING STRENGTH

The present norm establishes a test method in order to determine the modulus of rupture (R) and the breaking strength (S) of all the floor tiles of ceramics for means of a cargo applied on three points, with the point centers them of cargo in contact with the surface of exercise of the floor tile.

The modulus of rupture, expressed in Newton to the square millimetre, is given gives: $R = 3 \cdot F \cdot L / 2 \cdot b \cdot h^2$
The breaking strength, expressed in Newton, is given gives: $S = F.L/b$

where: F is the necessary cargo to the breach (in Newton); L is the distance between the seams of support (in millimeters); b it is the width of the floor tile (in millimetres); h it is the minimal thickness of the champion of test (in millimeters) measured after the long test the edge of the breach.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 22/06/2016
Test finished 22/06/2016

Description equipment

- Crometro - Cod. GR AS/004
- vernier caliper up to 500 mm - Cod. GR AC/012
- feeler 0÷20 mm - Cod. AC/011
- diameter of the seam (d) : mm 20
- thickness of the rubber (t): 5
- distance between support and extremity camp. (l): 10

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UNI EN ISO 10545-4 : 2014

CERAMIC TILES
DETERMINATION OF MODULUS OF RUPTURE AND BREAKING STRENGTH

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 22/06/2016
Test finished 22/06/2016

- number of tile for the test..... 7
- distance between support and extremity sample (l): mm..... 10
- distance between the seams of support (l_2) ..... mm..... 330

	mm	mm	mm	N	N	N/mm²
Tile n°	l_2	b	h	F	S	R
1	330	86,1	8,4	629	2411	51,3
2	330	86,2	8,5	654	2504	52,0
3	330	86,1	8,5	678	2599	54,0
4	330	86,3	8,6	645	2466	50,0
5	330	86,2	8,5	662	2534	52,6
6	330	86,1	8,5	659	2526	52,4
7	330	86,1	8,5	647	2480	51,5
media	330	86,2	8,5	**653**	**2503**	**52,0**

Average breaking load F..... 653 .....N
Breaking strength S ..... 2503 .....N

Average modulus of rupture R..... ..... 52,0 .....N/mm²

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UNI EN ISO 10545-9 : 2014

DETERMINATION OF RESISTANCE TO THERMAL SHOCK

The present norm establishes a test method in order to determine the resistance to the thermal shock of all the floor tiles of ceramics in normal conditions of use.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

Instrumentation used : Forced air dryer – Cod. GR E/002 and metal bath

Number of tiles 5

Executed type of test: with immersion

Number of test samples with visible defects: 0

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UNI EN ISO 10545-11 : 2000

DETERMINATION OF CRAZING RESISTANCE
GLAZED TILES

At least five whole tiles are tested; exceptionally large tiles may be cut into pieces; all test specimens shall be free from crazes at the commencement of the test. The test specimens are placed in a steam autoclave, the pressure is raised gradually to 5 atm and maintained for two hours. Then the pressure is allowed to fall as rapidly as possible to atmospheric and the test specimens are allowed to cool. An aqueous solution of methylene blue is brushed onto the glazed surfaces of the test specimens; after 1 min the stain is wiped off. The test specimens are examined visually for crazes, taking care to avoid confusing crazes with scratches ad ignoring cracks.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 24/06/2016
Test finished 24/06/2016

TEST RESULTS : **nothing craze.**

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UNI EN ISO 10545-12 : 2000

DETERMINATION OF FROST RESISTANCE

After impregnation with water the tiles are cycled between +5°C and –5°C. All sides of the tiles are exposed to freezing during a minimum of 100 freeze-thaw cycle.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 17/06/2016
Test finished 27/06/2016

Instrumentation used:
Apparatus for frost resistance – Cod. GR AS/016
Apparatus for determining porosity vacuum – Cod. GR AS/009
Scales ± 0.2 grams – Cod. GR B/006
Forced air dryer – Cod. GR E/002

Number of tiles tested: 10
Used method of immersion:.....water absorption with vacuum
Number of tiles damaged after 100 cycles:.....3
Description of the defects damaged before the test:...nobody
Type of damage:.....damage glaze
Water absorption before test: 0,13%
Water absorption after test:.....0,21%

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UNI EN ISO 10545-15 :2000

CERAMIC TILES
DETERMINATION OF LEAD AND CADMIUM SOLD BY THE GLAZED TILES

Principle: exposure of the glazed surface of ceramic tile to a solution of acetic acid. Determination, by an appropriate method, the amount of lead and cadmium released into the solution.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

Tile n°	Lead released mg/dm^2	Cadmium released mg/dm^2
1	0,002	<0,001
2	0,002	<0,001
3	0,002	<0,001

The amount of lead released is equal to 0,002 mg/dm^2

The amount of cadmium released is <0,001 mg/dm^2

For this test, there is a threshold level of lead and cadmium in the samples tested must fall.
A limit of the amount of lead extracted is however in Decree 4 April 1985 which concerns the regulation of ceramic objects intended to come into contact with foodstuffs, according to which the permissible limit of lead released is 0.8 mg / dm^2, while for cadmium is a limit of 0.07 mg / dm^2.

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TEST REPORT

TS N°: 158/16eng

DATE 27/06/2016

Spett.le
SERENISSIMA C.I.R.
INDUSTRIE CERAMICHE S.p.A.
Via A. Volta, 9-23/25
42013 CASALGRANDE RE

NORM DIN 51130 : 2014

Determination of anti-slippery characteristic
Work's zone with high risk of slippery
Procedure of test walking – inclined platform.

The test regard work's zone with high risk of slippery; the procedure it previews a slanted plan that it comes covered from the subject participants to the test. whose surface is paved with the material in object, preventively greased with having oil 10 viscosity SAE W 30. During the execution one determines if the material in examination can be suitable for puts down it in specific atmospheres of job. The medium degree of inclination correspondent to the feeling of insecurity of the operator who walks on the plan, defines the classification of the material in one of the five groups that serve like parameter in order to establish the effectiveness degree anti-slippery.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

Slide angle : **13,1°**

Classification : **R10**

LEGEND:

Total of the medium values	Group classification
from 6° to 10°	R 9
over 10° until 19°	R 10
over 19° until 27°	R 11
over 27° until 35°	R 12
over 35°	R 13

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NORM DIN 51097 : 1992

Determination of the property antislide of bathed zones on which it walks knots on foot

A person is left over and on foot withdraws knots on the covering to try whose inclination is increased of approximately 1° to the second; the rake in correspondence of which the person is not more in conditions than emergency, comes defined like sliding angle. The surface is bathed in continuous with one solution (1 g/l of bathing agent + water).

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

Slide angle : 19,9°

Classification : B

LEGEND:

Total of the medium values	Group classification
<12°	0
from 12° until 17,9°	A
from 18° until 23,9°	B
over 23,9°	C

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B.C.R.A. METHOD
SLIPPERY

The test has been carried out using measuring instrument TORTUS® of the coefficient of dynamic friction between a sliding element and the surface of test.

Operating conditions:
- Speedo f advance (mm/s): 17 - Loaded junior clerk to sliding element (g): 200

Samples arrived 14/06/2016 (sampling executed by Costumer)
DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

Covering material of sliding element	Superficial test of condition	Coefficient of friction (μ)
Leather	Dry	**0,68**
Hard rubber standard	Wet (water + bathing agent)	**0,58**

Singles test of coefficient of friction					
with leather:	0,68	0,69	0,67	0,67	0,67
with hard rubber standard	0,55	0,55	0,58	0,61	0,59

REFERENCE VALUE **(B.C.R.A. REP. CEC. 6/81)**

μ <0.20	Danger slippery
0.20 < μ >0.40	Excessive slippery
0.40 < μ >0.74	Satisfaction friction
μ > 0.74	Excellent friction

Requirement (" Regulations of performance dell' art.1 of the law 9 January 1989, n.13" - Decree Ministerial 14/06/89, n° 236 Art. 8.2.2)
μ (coefficient of friction) :
- for leather sliding element to dry paving : > 0.40
- for hard rubber sliding element to wet paving : > 0.40

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ASTM C 1028 : 2007

DETERMINATION OF STATIC COEFFICIENT OF FRICTION

(test method for evaluating the static friction's coefficient of ceramic tile and other like surfaces by the horizontal dynamometer pull meter method, ASTM C 1028)

A book of wood with a 3"x3"x1,8" section of standard neolite cement liner attached was placed on the surface to be test. A weight was placed on the block of wood. Using a dynamometer, the force in pounds required to cause the test assembly to slip parallel to the test surface was measured. Four measurements were taken on each of three test surfaces, each measurements perpendicular to the previous one. The twelve measurements thus obtained were averaged to obtain the static coefficient of friction for each test conditions.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm

TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

Test conditions	Sample N°	Position N	Position E	Position S	Position W	Average (Kg)	C.O.F. (*)
Dry neolite	1	17,0	16,5	17,4	17,6		
Dry neolite	2	16,6	16,8	17,2	16,9		
Dry neolite	3	17,1	16,8	17,5	17,0	17,0	0,70
Wet neolite	1	14,4	14,0	14,7	14,5		
Wet neolite	2	14,1	14,2	14,4	14,8		
Wet neolite	3	14,2	14,0	14,5	14,9	14,4	0,65

(*) Coefficient of friction; neolite correction factor applied

Dry Neolite **average** **C.O.F.** (*) **0,70**
Wet Neolite **average** **C.O.F.** (*) **0,65**

REFERENCE VALUES (The Ceramic Tile Institute identities tile in the following 3 categories):
1. Anti-slip (≥ 0,60)
2. Conditionally Slip resistant (0,50÷0,60)
3 Questionable (≤ 0,50)

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BOT 3000

CERAMIC TILES
DETERMINATION OF DINAMIC COEFFICIENT OF FRICTION (DCOF)

All samples to be tested should be thoroughly cleaned prior to testing. Three samples should be placed in a row on an area not subject to fluctuations. Necessary to wet the path of the sensor with an aqueous solution of 0.05% SLS (Sodium-Lauryl Sulfate). Necessary to make a total of 4 dynamic measurements on the tiles. After scoring the first measurement rotate the BOT 3000 180 ° and run the second measurement. Subsequently rotate tiles of 90 ° and perform the following two measures according to the same methodology. Record all four measures and calculate the average. Repeat the procedure on two other pieces. For structured tiles, the three pieces tested shall be representative of the different structures. If there are more than three different structures, test each structure.

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

DCOF – test conditions	value 1	value 2	value 3	value 4	Average value
Wet – sample n° 1	0,65	0,65	0,66	0,65	**0,65**
Wet – sample n° 2	0,66	0,65	0,66	0,66	**0,66**
Wet – sample n° 1	0,65	0,65	0,66	0,66	**0,66**

REFERENCE VALUES

The ANSI A137.1: 2012.Version 1 indicates as a limit value of 0.42 for indoor environments where conceivably there is the possibility of wear in wet conditions..

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EN 101 : 1982

DETERMINATION OF SCRATCH HARDNESS MOHS SCALE

This norm defines a method of test for determining the scratch hardness with Mohs scale.

Mineral's test

Mineral	Scratch Hardness Mohs	Mineral	Scratch Hardness Mohs
Talc	1	Feldspar	6
Gypsum	2	Quartz	7
Calcite	3	Topaz	8
Fluorite	4	Corundum	9
Apatite	5	Diamond	10

Samples arrived 14/06/2016 (sampling executed by Costumer)

DESCRIPTION TILES : 8,6x35 cm
TYPE : NGT TULIP NAT 10mm

Test start 27/06/2016
Test finished 27/06/2016

		Scratch Hardness Mohs
Test tile n°:	1	8
	2	8
	3	8

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TYPE : NGT TULIP NAT 10mm

Test start 23/06/2016
Test finished 23/06/2016

DCOF – test conditions	value 1	value 2	value 3	value 4	Average value
Wet – sample n° 1	0,65	0,65	0,66	0,65	**0,65**
Wet – sample n° 2	0,66	0,65	0,66	0,66	**0,66**
Wet – sample n° 1	0,65	0,65	0,66	0,66	**0,66**

REFERENCE VALUES

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