



Certificate No. : TC-6265

NATIONAL CERA LAB

CERAMIC LABORATORY

Shop No. 16, 17, Ground Floor, Dariyalal Plaza,
Nr. Argil Ceramic, 8-A, N/H, Morbi - 363 642 (Guj.) INDIA.

Ph. : 02822 244049, Mo. : 98252 62649, 96622 97005, 98257 99418
E-mail : nationalceralab@rediffmail.com

As per all Countries Export report of Wall, Floor, Vitrified Tiles & Sanitary Wares

Ref. No. NCL/Double Charge Vitrified Tile / BS EN/08/268/2018-19

Date :
Aug.13.2018

Receive date of test sample :- 09.08.2018

Issued To
M/s NIRO CERAMIC INDIA PRIVATE LIMITED
Survey No 240/p , Village - Dhuva
Tal - Wankaner , Dist - Morbi , Gujarat , India

SAMPLE DESCRIPTION & NAME: Visual Series (Unglazed Tiles)Size 600x600 mm as submitted by
the party. Sample not drawn by National Cera Lab.

TEST DESIRED: BS EN Standard specification EN : 14411 : 2016 (Group B I a)

A) Dimantion and surface quality

- (i) LENGTH & WIDTH
- (ii) THICKNESS
- (iii) STRAIGHTNESS OF SIDES (Facial sides)
- (iv) RECTANGULARITY
- (v) SURFACE FLATNESS
- (vi) SURFACE QUALITY

B) Physical Property

- (i) WATER ABSORPTION %
- (ii) MODULUS OF RUPTURE (MOR) N/mm²
- (iii) BREAKING STRENGTH

- (iv) THERMAL SHOCK RESISTANCE
- (v) CO EFFICIENT OF LINEAR THERMAL EXPANTION
- (vi) RESISTANCE TO DEEP ABRASION
- (vii) SCRACH HARDNESS
- (viii) BULK DENSITY
- (ix) MOISTURE EXPANSION
- (x) IMPACT RESISTANCE
- (xi) SMALL COLOUR DIFFERENCES
- (xii) Resistance to Stain
- (xiii) LEAD AND CADMIUM RELEASE in mg/dm²

TEST REPORT

A) DIMANTION AND SURFACE QUALITY

III) DEVIATION IN LENGTH (l) & WIDTH(w) :-

		Require	Test Method	Result
3.1) (a)	The deviation in percentage of the average size of each tile (2 or 4 sides) from the work size (W)	±0.6%	EN ISO 10545 Part - 2	+ 0.00% - 0.05%
(b)	The deviation in percentage of the average size of each tile (2 or 4 sides) from the average size of the 10 test specimen (20 or 40 sides)	±0.5%	EN ISO 10545 Part - 2	+ 0.00% - 0.04%
3.2) THICKNESS :-	9.00 mm			
	The deviation in percent of the average thickness of each tile from the work size thickness	±5%	EN ISO 10545 Part - 2	+ 0.00% - 1.56%
3.3) STRAIGHTNESS OF SIDES :-	The maximum deviation from straightness, in percent related to the corresponding work size	±0.5%	EN ISO 10545 Part - 2	+ 0.05% - 0.04%
3.4) RECTANGULARITY :-	The maximum deviation from rectangularity in percent related to the corresponding work size.	±0.5%	EN ISO 10545 Part - 2	+ 0.04% - 0.05%

(Page 1 - 4)



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Date :

TEST REPORT

3.5) SURFACE FLATNESS :-

The maximum deviation from flatness, in (percent)

(a) Centre Curvature

Centre curvature related to diagonal
calculated from the work size.

(b) Edge curvature

Edge curvature related to the corresponding
work size.

(c) Warpage

Warpage related to diagonal calculated
from the work size.

Require	Test Method	Aug.13.2018 Result
		+ 0.05%
±0.5%	EN ISO 10545 Part - 2	- 0.00%
		+ 0.04%
±0.5%		- 0.00%
		+ 0.03%
±0.5%		- 0.00%

II) SURFACE QUALITY

Tested by the visually

Minimum 95 percent of tile shall be free from visible defect that
would impair the appearance of the major area of tiles.

No any defect found in the tiles surface area and lot pass the test.

95%	EN ISO 10545 Part - 2	99%
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B PHYSICAL PROPERTIES :-

I) WATER ABSORPTION:- %

1	0.078 %
2	0.093 %
3	0.109 %
4	0.103 %
5	0.102 %

Average 0.0970 %

Require
< e 0.50%
Individual maximum 0.60%

Test Method

EN ISO 10545
Part - 3

II) MODULUS OF RUPTURE (MOR) :-

N/mm²

1	46.16 N/mm ²	6	45.30 N/mm ²
2	46.89 N/mm ²	7	46.22 N/mm ²
3	46.52 N/mm ²	8	47.36 N/mm ²
4	47.53 N/mm ²	9 n.d.	N/mm ²
5	46.11 N/mm ²	10 n.d.	N/mm ²

Average 46.51 N/mm²

Require
Minimum 35
Individual minimum 32

EN ISO 10545
Part - 4

III) BREAKING STRENGTH IN N

1	1717.28 N	6	1613.85 N
2	1702.78 N	7	1747.25 N
3	1721.15 N	8	1705.68 N
4	1787.36 N	9	n.d. N
5	1611.91 N	10	n.d. N

Average:-

1700.91 N

Require
Thickness ≥ 7.5 mm
Not less than 1300

Test Method
EN ISO 10545
Part - 4

(page 2 of 4)



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TEST REPORT

IV) THERMAL SHOCK RESISTANCE: 15/145°C 10cycle

Test Method
EN ISO 10545 - 9

Require
10 cycle/Min

Result
Confirm

V) COEFFICIENT OF LINEAR THERMAL EXPANTION:-
Expansion from ambient temperature to 100°C (K⁻¹)

EN ISO 10545 - 8

9x10⁻⁶ Max

4.86x10⁻⁶

VI) DEEP ABRASION RESISTANCE :-
Resistance to deep abrasion of unglazed,
tiles (Removed volume in mm³)

EN ISO 10545 - 6

Max175mm³

129mm³

VII) SRACH HARDNESS OF SURFACE (MOHS SCALE) :-

IS 13630 - 13

Min 5 Moh's

5 moh's scal

VIII) BULK DENSITY , INI (g/cc)

EN ISO 10545 - 3

2.2 min

2.2798g/cc

IX) MOISTURE EXPANSION mm/m

EN ISO 10545 - 10

0.02 mm/m max

no expansion

X) IMPACT RESISTANCE
Coefficient of restitution (cor)

EN ISO 10545 - 5

0.55 Min

0.57

XI) SMALL COLOUR DIFFERENCES

EN ISO 10545 - 16

No Difference

XII) RESISTANCE TO STAIN

Red Past in Light Oil (Fe2O3)

Iodine in Alcohol 13g/l

Stain put on tiles up to 24 hrs
Stain remove by weak cleaning agent
Stain remove by hot water
Stain remove by weak cleaning agent

Require
Min Class - 3
Min Class - 3
Min Class - 3

Result
Class - 4
Class - 5
Class - 4

XIII) LEAD AND CADMIUM RELEASE in mg/dm²

EN ISO 10545 - 15

LEAD RELEASES

Test Solution

Acetic Acid Solution 4% (v/v),
(in 960ml distilled water)

Digestion time- 24 hrs (20±2°)
Detected by ED XRF

Limit
0.1mg/dm²

Result
0.00 mg/dm²

CADMIUM RELEASE

Test Solution
Acetic Acid Solution 4% (v/v),
(in 960ml distilled water)

Digestion time- 24 hrs (20±2°)
Detected by ED XRF

0.1mg/dm²

Result
0.00 mg/dm²

CONCLUSION:

The sample drawn by party from the above export lot, complies with BS EN Standard specification
EN : 14411 : 2016 (Group B I a)
Test Procedure as per EN ISO 10545 As mention part in test procedure

Authorised signatory :
Name of signatory : J.M. Kavar (Diploma in Ceramic Technology)
Designation of signatory : NATIONAL CERA LAB

For
National Cera LAB

13/8/18



NOTE - Page no 4 Chemical Resistance result will come on 28th Aug. 2018.

(Page 3 - 4)