



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/Glazed Vitrified Tile /SASO ISO/07/187/2018-19

Date :
Issue Date:- Jan.07.2019

Receive date of test sample :- 03.07.2019

Issued To
Issued To

M/s ROYAL EXPORTERS

1101/1102, Nakhtra Heights , 150 Feet Ring Road

Opp. Raiya Telpnon Exchange , Rajkot - 360005 , Gujarat, India

SAMPLE DECRPTION & NAME: Glazed Vitrified Tiles size 600x600mm as submitted by the party.
Sample not drawn by National Cera Lab

TEST DESIRED:

As SASO ISO 13006:2015 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

- (vi) CO EFFICIENT OF LINEAR THERMAL EXPANTION
- (vii) RESISTANCE TO SURFACE ABRASION
- (viii) SCRACH HARDNESS
- (x) BULK DENSITY
- xi) MOISTURE EXPANSION
- xi) IMPACT RESISTANCE

B) Physical Property

- (i) WATER ABSORPTION %
- (ii) MODULUS OF RUPTURE (MOR) N/mm²
- (iii) BREAKING STRENGTH
- iv) CRAZING RESISTANCE
- (v) THERMAL SHOCK RESISTANCE

C) (i) Resistance to house chemical

- (II) Resistance to swimming pool salt
- (III) Resistance To Low Concentration OF Acid & Aikali
- (IV) Resistance to Stain
- (V) LEAD AND CADIUM RELEASE in mg/dm²
- (VI) SMALL COLOUR DIFFERENCES

Chemical Property

TEST REPORT

A) DIMANTION AND SURFACE QUALITY

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

3.1) (a)	The deviation in percentage of the average size of each tile (2 or 4 sides) from the work size (W)	Require ±0.60%	Test Method ISO10545 - 2 SASO ISO10545 - 2	Result + 0.03% - 0.00%
(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)	±0.50%	SASO ISO10545 - 2	+ 0.02% - 0.00%
3.2) THICKNESS :-	8.75 mm The deviation in percent of the average thickness of each tile from the work size thickness	±5%	SASO ISO10545 - 2	+ 0.00% - 0.71%
3.3) STRAIGHTNESS OF SIDES :-	The maximum deviation from straightness, in percent related to the corresponding work size	±0.50%	SASO ISO10545 - 2	+ 0.04% - 0.05%
3.4) RECTANGULARITY :-	The maximum deviation from rectangularity in percent related to the corresponding work size.	±0.50%	SASO ISO10545 - 2	+ 0.05% - 0.04%

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TEST REPORT

	Require	Test Method	Jan.07.2019 Result
3.5) SURFACE FLATNESS :- The maximum deviation from flatness,in (percent)			+ 0.06%
(a) Centre Curvature Centre curvature related to diagonal calculated from the work size.	±0.50	SASO ISO10545 - 2	- 0.00%
(b) Edge curvature Edge curvature related to the corresponding work size.	±0.50		+ 0.05% - 0.00%
(c) Warpage Warpage related to diagonal calculated from the work size.	±0.50		+ 0.04% - 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% SASO ISO10545 - 2 95%

PHYSICAL PROPERTIES :-

		Test Method	
I) WATER ABSORPTION:-	%	SASO ISO 10545 - 3	
1	0.106 %	6	0.126 %
2	0.108 %	7	0.118 %
3	0.109 %	8	0.108 %
4	0.119 %	9	0.122 %
5	0.112 %	10	0.126 %
			%

Require As per SASO ISO 13006
< e 0.50%
Individual maximum 0.60%

Average 0.12 %

II) MODULUS OF RUPTUREE (M O R)

1	40.70 N/mm ²	6	44.52 N/mm ²	Require SASO ISO 10545 - 4 Minimum 35 Individual minimum 32
2	41.59 N/mm ²	7	43.65 N/mm ²	
3	44.70 N/mm ²	8	43.82 N/mm ²	
4	44.28 N/mm ²	9	42.81 N/mm ²	
5	42.45 N/mm ²	10	46.66 N/mm ²	

Average 43.52 N/mm²

III) BREAKING STRENGTH IN N

1	1719.21 N	6	1923.66 N	Test Method SASO ISO 10545 - 4 Require Thickness > e 7.5 mm Not less than 1300
2	1770.45 N	7	1881.13 N	
3	1945.90 N	8	1902.88 N	
4	1783.50 N	9	1872.91 N	
5	1801.38 N	10	2030.96 N	

Average:- 1863.20 N

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		SASO ISO 10545-13	Require	Jan.07.2019 Result
iii)	Potassium Hydroxide Soln 30gm/l	No visual changes observed after immersion for 4 days ; Pencil lines removed with wet wiping removed	Min Class-GLC	Class GLA
B High Concentration (H)				
i)	Hydrochloric Acid solution 18%(V/V)	No visual changes observed after immersion for 4 days ; Pencil lines removed with soft wet cloth.	Min Class GHC	Class GHA
ii)	Lactic Acid Soln. 5% (v/v)	No visual changes observed after immersion for 4 days ; Pencil lines removed with soft wet cloth.	Min Class GHC	Class GHA
iii)	Potassium Hydroxide Soln. 200gm/l	visual changes observed after immersion for 4 days ; Pencil lines removed with soft wet cloth.	Min Class GHC	Class GHA
IV) RESISTANCE TO STAIN				
	Red Past in Light Oil (Fe ₂ O ₃)	Stain put on tiles up to 24 hrs	Require	Result
	Iodine in Alcohol 13g/l	Stain remove by hot water	Min Class - 3	Class -5
	Olive Oil	Stain remove by weak cleaning agent	Min Class - 3	Class -4
		Stain remove by hot water	Min Class - 3	Class -5
V) LEAD AND CADMIUM RELEASE in mg/dm²				
		SASO ISO 10545 - 15		
LEAD RELEASES				
Test Solution			Limit	Result
	Acetic Acid Solution 4% (v/v), (in 960ml distilled water)	Digestion time- 24 hrs (20±2°) Detected by ED XRF	0.1mg/dm ²	0.00 mg/dm ²
CADMIUM RELEASE				
Test Solution				Result
	Acetic Acid Solution 4% (v/v), (in 960ml distilled water)	Digestion time- 24 hrs (20±2°) Detected by ED XRF	0.1mg/dm ²	0.00 mg/dm ²
VI) SMALL COLOUR DIFFERENCES				
		SASO ISO 10545 -	Δ E < 0.75	No Difference

CONCLUSION:

The sample drawn by party from the above lot complies with SASO ISO 13006 : 2015 Group BI a Test Procedure as per ISO 10545

Authorised signatory :- J.M. Kavar
(Dip in Ceramic Technology)

Name of signatory : J.M. Kavar

Designation of signatory :

NATIONAL CERA LAB

PROPRIETOR

For
National Cera Lab

J.M. Kavar
(Dip in Ceramic Technology)



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