

SAMPLE DESCRIPTION AS PER: Glaze Vitrified (porcelain) tiles (20 mm thickness), 600mm x 600mm as
CUSTOMER'S LETTER submitted by the party.

VISUAL OBSERVATION : Glazed Floor tiles

TEST DESIRED:

S. No.	TEST	STANDARD
1	Water absorption (%)	IS 15622 : 2006
2	Modulus of Rupture (MOR) N/mm ²	
3	Breaking Strength (N)	
4	Scratch Hardness surface (Mohs' Scale)	
5	Thermal Shock resistance	
6	Bulk Density (gm/cc)	
7	Co-efficient of the Thermal Expansion	
8	Straightness of Sides	
9	Rectangularity	
10	Surface Flatness	
11	Chemical resistance	
12	Skid resistance / Slipperiness	Lab. Std. Method
13	Moisture Expansion	

RESULTS

S.No.	Test Conducted	Test Results	Remarks
1	Water absorption (% by mass)	1. 0.16 2. 0.17 3. 0.18 4. 0.16 5. 0.18 Average 0.17	Based on the results of water absorption the tested tiles conformed to Gr. B I b (0.08% < 3%) of IS 15622 : 2006. Further test results were derived as per requirements of Gr. B I b

S.No.	Test Conducted	Test Results	Test Requirements As per IS 15622: 2006 (Gr. B I b)	Remarks
2	Modulus of Rupture (MOR) N/mm ² span length = 580 mm Average thickness of the tiles measured = 19.81 mm	1. 38.9 2. 39.2 3. 38.3 4. 39.5 5. 39.1 6. 39.4 7. 38.7 Average : 39.0 N/mm²	Average 38 N/mm² Individual 35 N/mm ² , minimum	Passed the test

S. No.	Test Conducted	Test Results	Test Requirements As per IS 15622: 2006 (Gr. B lb)	Remarks
3	Breaking Strength (N) Span length = 580 mm Average thickness of the tiles measured = 19.81 mm	1. 8513.9 2. 8275.9 3. 8097.4 4. 8021.8 5. 7710.7 6. 8153.4 7. 7857.4 Average : 8090.0 N	For thickness > 7.5 mm 1200 N, minimum	Passed the test
4	Thermal Shock resistance	No. 7	(Gr. B lb) For Commercial application 6 minimum Home application 5, minimum	
5	Thermal shock resistance	None of the tiles as tested showed any defects on surface at the end of the 10th cycle.	(Gr. B lb) Tiles specimens should not show any visible defect when subjected to thermal shock resistance test as per test method IS 13630 : 2006 (Part 5) with immersion	Passed the test
6	Bulk Density (gm/cc)	1. 2.306 2. 2.303 3. 2.298 4. 2.308 5. 2.293 Average 2.302	IS 13630 (Part - 2) : 2006	
7	Co-efficient of linear Thermal Expansion from ambient Temperature to 100oC	L = 4.4956 (10-6 K-1) B = 4.6883 (10-6 K-1)	Passed the test
8	Straightness of Sides (facial sides) The maximum deviation from Straightness in percent related to the corresponding work sizes.	(+ 0.05 % (max)) (- 0.08 % (max))	(Gr. B lb) S > 410 cm2 -0.001	Passed the test
9	Rectangularity The maximum deviation from Rectangularity in percent related to the corresponding work sizes	(+ 0.10 % (max)) (- 0.10 % (max))	-0.001	Passed the test
10	Surface Flatness The maximum deviation from flatness in percent (a) Centre of the curvature related to diagonal calculated from work size. (b) Edge of curvature related to The corresponding work size (c) Warpage related to the diagonal calculated from the work size	(+ 0.17 % (max)) (+ 0.10 % (max)) (- 0.14 % (max)) (+ 0.09 % (max)) (- 0.06 % (max))	(+ - 0.2 %) (+ - 0.2 %) (+ - 0.2 %)	Passed the test Passed the test Passed the test

11	Chemical resistance			
	Five test specimens were treated with following solns.			
	1. Household Chemicals			
	(a) Ammonium Chloride soln., (100gm / 1)	No visual changes observed after immersion for 6 hrs, pencil line removed with soft dry cloth.	"Classm - AA" min.	Conformed to "Class - AA"
	(b) Standard Cleaning Agent soln., (as per procedure)	No visual changes observed after immersion for 6 hrs., pencil lines removed with soft dry cloth.	"Class - AA" min.	Conformed to "Class - AA"
	2. Swimming Pool Salts			
(a) Sodium Hypochlorite soln., (20 mg / 1)	No visual changes observed after immersion for 6 hrs., pencil lines removed with soft dry cloth.	"Class - AA" min.	Conformed to "Class - AA"	
(b) Copper Sulphate soln., (20 mg / 1)	No visual changes observed after immersion for 6 hrs., pencil lines removed with soft dry cloth.	"Class - AA" min.	Conformed to "Class - AA"	
3. Acids				
(a) Hydrochloric acid soln., (3 % (v/v))	No visual changes observed after immersion for 7 days, pencil lines removed with soft dry cloth.	Conformed to "Class - AA"	
(b) Citric acid soln., (100 gm / 1)	No visual changes observed after immersion for 6 hrs., pencil lines removed with soft dry cloth.	Conformed to "Class - AA"	
4. Alkali				
Potassium hydroxide soln., (200 gm / 1)	No visual changes observed after immersion for 7 days, pencil lines removed with soft dry cloth.	Conformed to "Class - AA"	

S. NO.	Test Conducted	Test Results	Test Method
12	Skid Resistance / Surface Slip Resistance		
	(a) Condition of Test Surface : Tile surface was cleaned thoroughly by wet cloth followed by dry cloth and ensured that the surface is completely clean and dry at the time of testing.		
	<u>(b) Direction of Test</u>	<u>Coefficient of Friction</u>	
	1) Parallel to sides (4 measurements)	1) 0.83 2) 0.78 3) 0.77 4) 0.79	As per ISO 10545 Part - 17
	2) Diagonal to sides (4 measurements)	5) 0.76 6) 0.75 7) 0.76 8) 0.76	

S.No.	Test Conducted	Test Results	Remarks
13	Moisture expansion in (mm / mtr.)	1) 0.0 2) 0.0 3) 0.0 4) 0.0 5) 0.0 6) 0.0 7) 0.0	Passed the test

Verified by :
Signature :
Name :
Designation : Sr. Tech Officer (3)

Authorized Signatory
Signature :
Name :
Designation : Scientist-in-Charge