



TECHNICAL SPECIFICATIONS

FOR FLOOR TILES OF ALL PLANTS

SIKANDRABAD

TECHNICAL SPECIFICATIONS

GVT Step & Riser Tiles

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. ft.)
300x1200 mm	4	1.44	15.5
200x1200 mm	4	0.96	10.33

Group B Ia as per ISO 13006:2012 and Group B Ib as per IS 15622:2017				
Characteristics	Test Methods	Requirement as per IS 15622:2017 0.08<E ≤ 3% Group B Ib		OBL Norms
Dimension & Surface Quality	IS 13630 (Part 1)	Unrectified	Rectified	
Deviation in size (Length & Width)		± 0.4 %	± 0.1 %	± 0.4 %
Deviation in Thickness		± 5.0 %		± 4.0 %
Straightness of Sides		± 0.3 %		± 0.1 %
Rectangularity		± 0.3 %		± 0.1 %
Surface Flatness (centre, edge, warpage)		± 0.5 %		± 0.2 % 😊😊
Surface Quality		Min. 95 % tiles shall be free from visible defects that would impair the appearance of a major area of the tile		Conforms
Physical Properties				
Water Absorption %	IS 13630 (Part 2)	Avg 0.08<E ≤ 3%, Individual 3.3 % Max		Avg < 0.5%
Modulus of Rupture in [N/mm ²]	IS 13630 (Part 6)	Min 30 N/mm ²		Min 40 N/mm ² 😊😊
Breaking Strength in N	IS 13630 (Part 6)	700 Min for thickness < 7.5 mm, 1100 Min for thickness ≥ 7.5 mm		Min 1500 N 😊😊
Moisture Expansion in mm/m	IS 13630 (Part 3)	0.02 Max		Max 0.02
Scratch Hardness of Surface (Moh's Scale)	IS 13630 (Part 13)	5 Min		Min 5
Resistance to Surface Abrasion of glazed tiles (Class I to V) (Applicable for floor applications only)	IS 13630 (Part 11)	Class II Min		Min Class III 😊
Linear Thermal expansion Co-efficient	IS 13630 (Part 4)	7×10 ⁻⁶ Max		Conforms
Thermal Shock Resistance	IS 13630 (Part 5)	10 cycles Min		Passed
Skid Resistance	DIN 51130	Manufacturer to declare value where required		>R9 😊
Crazing Resistance	IS 13630 (Part 9)	4 Cycles@7.5 bar, Min		4 Cycles@7.5 bar
Frost Resistance	IS 13630 (Part 10)	as per mfg.		Resistant
Impact resistance	IS 13630 (Part 14)	0.55, Min		Min 0.7
Bulk Density (g/cc)	IS 13630 (Part 2)	2.0, min		2.2, min
Chemical Properties	IS 13630 (Part 8)			
Resistance to staining of glazed tiles		Min. Class-1		Min. Class-1
Resistance to household chemicals		Class AA, Min		Min. Class-AA
Resistance to acid and alkalis (Except HF)		as per mfg.		Min. Class-AA

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Glazed Vitrified Tiles

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. ft.)
600X1200 (SKD / West Zone)	2	1.44	15.5
800X800 (West Zone)	3	1.92	20.67
600X600 (SKD / West Zone)	4	1.44	15.5
195X1200 (SKD)	4	0.94	10.11
145X600 (SKD)	8	0.70	7.50

Group B Ia as per ISO 13006:2012 and Group B Ib as per IS 15622:2017					
Characteristics	Test Methods	Requirement as per ISO 13006 ≤ 0.5 Group B Ia	Requirement as per IS 15622:2017 0.08<E ≤ 3% Group B Ib		OBL Norms
Dimension & Surface Quality	IS 13630 (Part 1):2006		Unrectified	Rectified	
Deviation in Length & Width		±0.6%	± 0.4%	± 0.1 %	± 0.1 %
Deviation in Thickness		±5%	± 5.0 %		± 4 %
Straightness of Sides		±0.5%	± 0.3 %	± 0.1 %	± 0.1 %
Rectangularity		±0.5%	± 0.3 %	± 0.1 %	± 0.1 %
Surface Flatness		±0.5%	± 0.5 %		± 0.2 % 😊😊
Surface Quality		Min. 95 % tiles should be free from visible defects	Min. 95 % tiles should be free from visible defects		Conforms
Physical Properties					
Water Absorption	IS 13630 (Part 2):2006	Avg ≤ 0.5, Individual max, 0.6	Avg 0.08<E ≤ 3, Individual 3.3, Max		Avg ≤ 0.5, Individual max, 0.6
Modulus of Rupture in [N/mm ²]	IS 13630 (Part 6):2006	Minimum 35, Individual 32, Min	Avg 30, Individual 27, Min		Avg 38 Min, Individual 35, Min 😊😊
Breaking Strength in N	IS 13630 (Part 6):2006	< 7.5 mm thickness: 700, Min ≥ 7.5 mm thickness: 1300, Min	< 7.5 mm thickness: 700, Min ≥ 7.5 mm thickness: 1100, Min		1500, Min 😊😊
Moisture Expansion in mm/m	IS 13630 (Part 3):2006	Declare Value	0.02, Max		< 0.02
Scratch Hardness of Surface (Moh's Scale)	IS 13630 (Part 13):2006	NA	5, Min		5 to 8 Depending on Design/Surface
Resistance to Surface Abrasion of Glazed Tiles (Class I to V)	IS 13630 (Part 11):2006	Test Method Available	Class II, Min		Class-III to Class-V Depending as per Design / Surface 😊
Co-efficient of Linear Thermal Expansion from Ambient Temperature to 100°C	IS 13630 (Part 4):2006	Test Method Available	7×10 ⁻⁶ K ⁻¹ , Max		Conforms
Thermal Shock Resistance	IS 13630 (Part 5):2006	Test Method Available	10 cycles, Min		Passed
Crazing Resistance	IS 13630 (Part 9):2006	Test Method Available	4 Cycles@7.5 bar, Min		4 Cycle @ 7.5 Bar Min 😊
Frost Resistance	IS 13630 (Part 10):2006	Required	Required		Resistance
Bulk Density, in (g/cc)	IS 13630 (Part 12):2006	NA	2.0, Min		> 2.1
Impact Resistance- Coefficient of Restitution	IS 13630 (Part 14):2006	Manufacturer to State	0.55, Min		0.7-0.85
Chemical Properties					
Resistance to Staining of Glazed Tiles	IS 13630 (Part 8):2006	Min, Class 3	Class I, Min		Conforms
Resistance to Household Chemicals		Min, GA	Class AA, Min		Conforms
Resistance to Acids and Alkalis (with exception of hydrofluoric acid and its compounds)		Test Method Available	Required, if agreed		Conforms

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Forever Tiles + **germfree** ♦ **tiles** (with 99% protection* from germ)

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. ft.)
600x600 (SKD/ DORA)	4	1.44	15.5
145x600 (SKD)	8	0.70	7.50

Characteristics	Standard as Per IS 15622:2017 Group B Ib	OBL Norms	Testing Methods
Dimension & Surface Quality			
Deviation in Length & Width	± 0.1 %	±0.05%	IS 13630 Part 1
Deviation in Thickness	± 5.0 %	±3.0%	
Straightness of Sides	± 0.1 %	±0.1%	
Rectangularity	± 0.1 %	±0.1%	
Surface Flatness	± 0.5 %	± 0.2 %	
Surface Quality	Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Conforms	
Physical Properties			
Water Absorption %	Avg 0.08 < E ≤ 3.0% , Individual 3.30% Max	Less than 3 %	IS 13630 Part 2
Modulus of Rupture in N/mm ²	Avg 30, Individual 27 Min	Min 33 N	IS 13630 Part 6
Breaking Strength N	700 Min for thickness < 7.5mm, 1100 Min for thickness ≥ 7.5 mm	1200 N Min	
Moisture Expansion	0.02, Max	0.02 Max	IS 13630 Part 3
Scratch Hardness (Moh's Scale)	5, Min	≧ 8*	IS 13630 Part 13
Resistance to Surface Abrasion of glazed tiles Class I to V (Applicable for floor applications only)	Class II, Min	Class V	IS 13630 Part 11
Linear thermal expansion Co-efficient	6x10 ⁻⁶ , Max	Conforms	IS 13630 Part 4
Thermal Shock Resistance	10 Cycles, Min	Passed	IS 13630 Part 5
Crazing Resistance	4 Cycles at 7.5 Bar, Min	Passed	IS 13630 Part 9
Impact Resistance	0.55, Min	0.6	IS 13630 Part 14
Frost Resistance	Required if agreed to between manufacturer and purchaser	Resistant	IS 13630 Part 10
Bulk density g/cc	2.0, Min	2.0, Min	IS 13630 Part 2
Chemical Properties			
Stain Resistance Glazed tiles	Class I, Min	Class -1	IS 13630 Part 8
Resistance to household chemicals	Class AA, Min	Class AA	
Resistance to acids and alkalis	Class AA, Min	Class AA	

* Independent Lab test shows that germ free tiles kill 99% germs

*GFT FT : Value based on internal tests conducted by Orient Bell following the MOHs scale of mineral hardness which characterizes scratch resistance on a scale of 1 to 10, the higher number being more scratch resistant. For Ceramic Floor (Non-FT) range : meets norms.

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Valencica Tiles

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. ft.)
600x600 (SKD/ DORA)	4	1.44	15.5

Characteristics	Standard as Per IS 15622:2017 Group B Ib	OBL Actual Value	Testing Methods
Dimension & Surface Quality			
Deviation in Size (Length & Width)	± 0.1 %	±0.1% ☺☺	IS 13630 Part 1
Deviation in Thickness	± 5.0 %	±3.0%	
Straightness of Sides	± 0.1 %	±0.1%	
Rectangularity	± 0.1 %	±0.1%	
Surface Flatness	± 0.5 %	± 0.2 % ☺☺	
Surface Quality	Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Conforms ☺	
Physical Properties			
Water Absorption %	Avg 0.08 < E ≤ 3.0% , Individual 3.30% Max	2% Max	IS 13630 Part 2
Modulus of Rupture in N/mm ²	Avg 30, Individual 27 Min	AV>31.0, Min 30 N/mm ² ☺	IS 13630 Part 6
Breaking Strength N	700 Min for thickness < 7.5mm, 1100 Min for thickness ≥ 7.5 mm	>1300 ☺	
Moisture Expansion	0.02, Max	0.02 Max	IS 13630 Part 3
Scratch Hardness (Moh's Scale)	5, Min	5-8 depends upon Design/Surface	IS 13630 Part 13
Resistance to Surface Abrasion of glazed tiles Class I to V (Applicable for floor applications only)	Class II, Min	Class III-V	IS 13630 Part 11
Linear thermal expansion Co-efficient	7x10 ⁻⁶ , Max	Conforms	IS 13630 Part 4
Thermal Shock Resistance	10 Cycles, Min	Passed	IS 13630 Part 5
Crazing Resistance	4 Cycles at 7.5 Bar, Min	Passed ☺☺	IS 13630 Part 9
Impact Resistance	0.55, Min	> 0.55	IS 13630 Part 14
Frost Resistance	Required if agreed to between manufacturer and purchaser	Conforms	IS 13630 Part 10
Bulk density g/cc	2.0, Min	> 2.1	IS 13630 Part 2
Chemical Properties			
Resistance to staining of Glazed tiles	Class I, Min	Conforms	IS 13630 Part 8
Resistance to Household Chemicals except (HF and its compounds)	Class AA, Min	Conforms	
Resistance to acids and alkalis except (HF and its compounds)	Required, if agreed	Conforms	

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Pavers/Parking Tiles

Packing Details			
Size (In mm.)	No. of Tiles Per Carton	Covered Area Per Carton	
		(In Sq. Mtr.)	(In Sq. ft.)
400X400 (SKD)	5	0.8	8.62
300x300- Digital /Non Digital (SKD)	10	0.9	9.69
300x300- Cool Tile (SKD)	10	0.9	9.69

Characteristics	Testing Methods	Required as per IS 15622:2017 0.08 < E ≤ 3 (Group B Ib)		OBL Norms	
				400x400 mm	300x300 mm
Dimension & Surface Quality					
Deviation in Length & Width	IS 13630 (Part 1)	± 0.4 %	± 0.1 %	± 0.1 % (Max)	± 0.1 %
Deviation in Thickness		± 5.0 %		±3.0% (Max)	±4.0%
Straightness of Sides		± 0.3 %	± 0.1 %	± 0.1 % (Max)	± 0.1 %
Rectangularity		± 0.3 %	± 0.1 %	± 0.1 % (Max)	± 0.1 %
Surface Flatness		± 0.5 %		± 0.2 % (Max)	± 0.2 % 😊😊
Surface Quality		Min. 95 % of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile		Conforms	Conforms
Physical Properties					
Water Absorption %	IS 13630 (Part 2)	Avg 0.08 < E ≤ 3%, Individual 3.3 % Max		Avg ≤2%	Max 2% 😊
Modulus of Rupture in [N/mm ²]	IS 13630 (Part 6)	Avg 30, Individual 27 Min		Min 38 N/mm ²	Min 36 N/mm ² 😊😊
Breaking Strength in N		700 Min for thickness < 7.5 mm, 1100 Min for thickness ≥ 7.5 mm		Min 2000 N	Min 1600 N 😊😊
Moisture Expansion	IS 13630 (Part 3)	0.02, Max		Conform	Conform
Scratch Hardness (Moh's Scale)	IS 13630 (Part 13)	5, Min		Conform	Min 6 😊
Resistance to Surface Abrasion of Glazed Tiles Class I to V (Applicable for floor applications only)	IS 13630 (Part 11)	Class II, Min		Conform	Class III to V (Depending on surface)
Linear thermal expansion Co-efficient	IS 13630 (Part 4)	7x10 ⁻⁶ ,Max		7x10 ⁻⁶ ,Max	Conform
Thermal Shock Resistance	IS 13630 (Part 5)	10 cycles, Min		Passed	Conform
Impact Resistance	IS 13630 (Part 14)	0.55, Min		0.75	Min 0.60 😊
Bulk density, in g/cc	IS 13630 (Part 2)	2.0, Min		2.2 Min	2.2 Min
Frost Resistance	IS 13630 (Part 10)	Required if agreed to between manufacturer and purchaser		50 Cycles Passed	Passes
Chemical Properties					
Resistance to staining of Glazed Tiles	IS 13630 (Part 8)	Class I, Min		Min Class I	Min Class I
Resistance to Household Chemicals		Class AA, Min		Min Class AA	Min Class AA
Resistance to acids and alkalis (Except HF)		Required, if agreed		Min Class AA	Min Class AA

TECHNICAL SPECIFICATIONS

Full Body Vitrified Tiles (Heavy Duty Range)

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. Ft.)
600X600 mm (SKD)	3	1.08	11.63

As per Indian Standard (IS 15622:2017) Group B Ia			
Characteristics	Standard Test Method	IS 15622 Requirements	OBL Norms
Dimension & Surface Quality			
Deviation in Size (length & Width)	IS 13630 Part 1	± 0.1 %	± 0.1 % (Max)
Deviation in thickness		± 5.0 %	± 3.0 % (Max)
Straightness of sides		± 0.1 %	± 0.1 % (Max)
Rectangularity		± 0.1 %	± 0.1 % (Max)
Surface Flatness		± 0.5 %	± 0.2 % (Max) 😊😊
Surface Quality		Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Min. 95%
Physical Properties			
Water absorption %	IS 13630 Part 2	Average ≤0.08%, individual 0.10% Max.	Average ≤0.08% 😊
Modulus of rupture N/mm²	IS 13630 Part 6	Average 35, individual 32 Min.	Min 45 N/mm2 😊😊
Breaking Strength N	IS 13630 Part 6	700 Min for thickness <7.5mm, 1300 Minimum for Thickness ≥7.5 mm	Min 6000 N 😊😊
Moisture Expansion	IS 13630 Part 3	0.02 Max	Conforms
Scratch hardness (Moh's Scale)	IS 13630 Part 13	5 Min	7 min 😊😊
Resistance to surface abrasion of glaze tiles Class I to V (Applicable for floor applications aonly)	IS 13630 Part 11	Min II	Class- V 😊
Linear thermal expansion Co-efficient	IS 13630 Part 4	6x10 ⁻⁴ max	6x10 ⁻⁴ max
Thermal Shock Resistance	IS 13630 Part 5	10 Cycle Min	Passed
Impact Resistance	IS 13630 Part 14	0.55, Min	>0.8
Coefficient of Friction	ISO 10545 Part 17	Manufacturer to declare value where required	PTV >40
Frost Resistance	IS 13630 Part 10	Required if agreed to between manufacturer and purchaser	50 cycle passed
Resistance to deep abrasion of unglazed tiles	IS 13630 Part 12	140, Max	Not Applicable
Bulk density g/cc	IS 13630 Part 2	2.2, Min	2.2, Min
Chemical Properties			
Stain resistant Glazed tiles	IS:13630 Part 8	Class 1 Min	Class 1
Resistance to Household chemicals, Resistance to acids & alkalis (Except HF)	IS: 4457:2007	Resistant	No Visual Change

TECHNICAL SPECIFICATIONS

Double Charge | Nano Tech | Polished Vitrified Tiles

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. ft.)
1000X1000 (West Zone)	2	2.00	21.53
800X1200 (West Zone)	2	1.92	20.67
600X1200 (West Zone)	2	1.44	15.5
800X800 (West Zone)	3	1.92	20.67
600X600 (West Zone)	4	1.44	15.50

As per Indian Standard (IS 15622:2017) Group B Ia				
Characteristics	Standard Test Method	IS 15622 Requirements	OBL Norms	
Dimension & Surface Quality	IS 13630 (Part 1):2006			
Deviation in Length & Width		±0.1%	± 0.1 %	
Deviation in Thickness		±5.0%	± 3.0 %	
Straightness of Sides		±0.1%	± 0.1 %	
Squareness		±0.1%	± 0.1 %	
Surface Flatness		±0.50%	± 0.2 %	😊😊
Surface Quality		Min. 95 % tiles should be free from visible defects	Conforms	
Physical Properties				
Water Absorption %	IS 13630 (Part 2):2006	E ≤ 0.08	E ≤ 0.05	😊
Modulus of Rupture in [N/mm ²]	IS 13630 (Part 6):2006	Avg≥35 N/mm ²	>35 N/mm ²	😊
Breaking Strength in N	IS 13630 (Part 6):2006	Min 1300	>1300	😊
Scratching Resistance	IS 13630 (Part 13):2006	Min 5	≥ 5	
Deep Abrasion	IS 13630 (Part 12):2006	140 Max	100 Max	😊
Chemical Properties				
Resistance to Staining	IS 13630 (Part 8):2006	Min, Class 2	Conforms	
Resistance to Household Chemicals		Min, Class AA	Conforms	
Thermal Specifications				
Thermal Shock Resistance	IS 13630 (Part 5):2006	Min 10 Cycles	Conforms	
Thermal Expansion	IS 13630 (Part 4):2006	Max 6X10 ⁻³ at 100° c (K ⁻¹)	Conforms	
Frost Resistance	IS 13630 (Part 10):2006	10 Cycles pass	Conforms	
Impact Resistance	IS 13630 (Part 14):2006	0.55 minimum	Conforms	
Bulk Density (gm/cc)	IS 13630 (Part 2):2006	Min 2.2	Conforms	

NOTE: Certain amount of Size and Shade Variation is inherent in all ceramic products. Within the limits of printed material, the colors and aesthetics of the products correspond closely to those of illustrated products. Prospective customers are advised to inspect a sample of the tile before ordering and laying. At all points of time, the company liability is restricted to the purchase value of tiles.

Every effort has been made to ensure the accuracy of the information given. However, the company reserves the right to delete & change, any of the items, colors, sizes & technical specifications without any prior notice.

TECHNICAL SPECIFICATIONS

Full Body Vitrified Tiles (Plain & Rock Finish)

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. Ft.)
600X600 mm (SKD)	4	1.44	15.50

As per Indian Standard (IS 15622:2017) Group B Ia			
Characteristics	Standard Test Method	IS 15622 Requirements	OBL Norms
Dimension & Surface Quality			
Deviation in Size (length & Width)	IS 13630 Part 1	± 0.1 %	± 0.1 % (Max)
Deviation in thickness		± 5.0 %	± 3.0 % (Max)
Straightness of sides		± 0.1 %	± 0.1 % (Max)
Rectangularity		± 0.1 %	± 0.1 % (Max)
Surface Flatness		± 0.5 %	± 0.2 % (Max) ☹️☹️
Surface Quality		Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Min. 95%
Physical Properties			
Water absorption %	IS 13630 Part 2	Average ≤0.08%, individual 0.10% Max.	Average ≤0.08% ☹️
Modulus of rupture N/mm²	IS 13630 Part 6	Average 35, individual 32 Min.	Min 43 N/mm² ☹️☹️
Breaking Strength N	IS 13630 Part 6	700 Min for thickness <7.5mm, 1300 Minimum for Thickness ≥7.5 mm	Min 1600 N ☹️☹️
Moisture Expansion	IS 13630 Part 3	0.02 Max	Conforms
Scratch hardness (Moh's Scale)	IS 13630 Part 13	5 Min	7 min ☹️☹️
Resistance to surface abration of glaze tiles Class I to V (Applicable for floor applications aonly)	IS 13630 Part 11	Min II	Class- V ☹️
Linear thermal expansion Co-efficient	IS 13630 Part 4	6x10 ⁻⁶ max	6x10 ⁻⁶ max
Thermal Shock Resistance	IS 13630 Part 5	10 Cycle Min	Passed
Impact Resistance	IS 13630 Part 14	0.55, Min	0.75
Coefficient of Friction (Regular Plain Finish)	ISO 10545 Part 17	Manufacturer to declare value where required	PTV >40
Coefficient of Friction (Rock Finish)	ISO 10545 Part 17	Manufacturer to declare value where required	PTV >60
Frost Resistance	IS 13630 Part 10	Required if agreed to between manufacturer and purchaser	50 cycle passed
Resistance to deep abration of unglazed tiles	IS 13630 Part 12	140, Max	Not Applicable
Bulk density g/cc	IS 13630 Part 2	2.2, Min	2.2, Min
Chemical Properties			
Stain resistant Glazed tiles	IS:13630 Part 8	Class 1 Min	Class 1
Resistance to Household chemicals, Resistance to acids & alkalis (Except HF)	IS: 4457:2007	Resistant	No Visual Change

TECHNICAL SPECIFICATIONS

Digital Ceramic Floor Tiles

Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. Ft.)
300X300 mm	10	0.90	9.69

(3<E≤6% Group B IIa) as per IS 15622:2017				
Characteristics	Standard Test Method	IS 15622:2017 3<E≤ 6% (Group B IIa)		OBL Norms
Dimension & Surface Quality		Unrectified	Rectified	
Deviation in Length & Width	IS 13630 Part 1	± 0.4%	± 0.1 %	± 0.1 %
Deviation in Thickness		± 5.0 %		± 4.00 %
Straightness of Sides		± 0.3 %	± 0.1 %	± 0.1 %
Rectangularity		± 0.3 %	± 0.1 %	± 0.1 %
Surface Flatness		± 0.5 %		± 0.2 % 😊 😊
Surface Quality		Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile		Conforms
Physical Properties				
Water Absorption (%)	IS 13630 Part 2	Average 3 < E ≤6 %, Individual 6.2% Max.		3-6% 😊
Modulus of Rupture in [N/mm ²]	IS 13630 Part 6	Average 22, individual 20, Min.		Min 30 N/mm ² 😊
Breaking Strength in N	IS 13630 Part 6	600 Min for thickness <7.5mm, 1000 Minimum for Thickness ≥7.5 mm		Min 700 N 😊
Moisture Expansion in mm/m	IS 13630 Part 3	0.03, Max		Conforms
Scratch hardness (Moh's Scale)	IS 13630 Part 13	4, Min		Min 4
Resistance to surface abrasion of glaze tiles Class I to V (Applicable for floor applications only)	IS 13630 Part 11	Class II, Min		Class II to IV (Depending on surface)
Linear thermal expansion Co-efficient	IS 13630 Part 4	9x10 ⁻⁶ max		Conforms
Thermal Shock Resistance	IS 13630 Part 5	10 cycles, Min		Passed
Crazing Resistance	IS 13630 Part 9	4 Cycles at 7.5 Bar, Min		Passed 😊 😊
Impact Resistance	IS 13630 Part 14	0.55, Min		Min 0.60
Frost Resistance	IS 13630 Part 10	Required if agreed to between manufacturer and purchaser		Passed
Chemical Properties				
Resistance to staining of glazed tiles	IS 13630 Part 8	Class I, Min		Min class I
Resistance to household chemicals		Class AA, Min		Min class AA
Resistance to acid and alkalis (Except HF)		Require If Agreed		Min class AA

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TECHNICAL SPECIFICATIONS

Ceramic Non Digital Tiles

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. ft.)
300X300-Non Digital (SKD)	12	1.08	11.62

As Per Indian Standards (IS 15622:2017) Group B IIa				
Characteristics	Testing Methods	Required as per IS 15622:2017 3 < E ≤ 6 % (Group B II a)		OBL Norms
Dimension & Surface Quality	IS 13630 Part 1/ ISO 10545-2	Unrectified	Rectified	
Deviation in Length & Width		± 0.4 %	± 0.1 %	Conforms
Deviation in Thickness		± 5.0 %		±4.0%
Straightness of Sides		± 0.3 %	± 0.1 %	Conforms
Rectangularity		± 0.3 %	± 0.1 %	Conforms
Surface Flatness		± 0.5 %		± 0.3 % 😊😊
Surface Quality		Min. 95 % tiles should be free from visible defects		Conforms
Physical Properties				
Water Absorption	IS 13630 Part 2/ ISO 10545-3	Avg 3 < E ≤ 6, Individual Max,6.2		5-6%
Modulus of Rupture in [N/mm ²]	IS 13630 Part 6/ ISO 10545-4	Avg 22, Individual 20, Min		>28 😊😊
Breaking Strength in N		< 7.5 mm thickness: 600, Min ≥ 7.5 mm thickness: 1000, Min		>1000 😊😊
Moisture Expansion in mm/m	IS 13630 Part 3	0.03, Max		< 0.03
Scratch Hardness of Surface (Moh's Scale)	IS 13630 Part 13	4, Min		Min 5
Resistance to Surface Abrasion of Glazed Tiles (Class I to V)	IS 13630 Part 11/ ISO 10545-7	Class II, Min		PEI Class 3-5 (depending on surface)
Co-efficient of Linear Thermal Expansion from Ambient Temperature to 100°C	IS 13630 Part 4/ ISO 10545-8	9x10 ⁻⁶ K ⁻¹ ,Max		Conforms
Thermal Shock Resistance	IS 13630 Part 5	10 cycles, Min		Passed
Crazing Resistance	IS 13630 Part 9/ ISO 10545-9	4 Cycles@7.5 bar, Min		Passed 😊
Frost Resistance	IS 13630 Part 10	Required, if agreed		NA
Impact Resistance- Coefficient of Restitution	IS 13630 Part 14	0.55, Min		Conforms
Chemical Properties				
Resistance to Staining of Glazed Tiles	IS 13630 Part 8/ ISO 10545-13 and ISO 10545-14	Class I, Min		Conforms
Resistance to Household Chemicals		Class AA, Min		Conforms
Resistance to Acids and Alkalies (with exception of hydrofluoric acid and its compounds)		Required, if agreed		Conforms

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HOSKOTE

TECHNICAL SPECIFICATIONS

Forever & Germfree Tiles



Packing Details

Size (In mm.)	No. of Tiles Per Carton	Covered Area Per Carton	
		(In Sq. Mtr.)	(In Sq. Ft.)
600x600	4	1.44	15.5

Characteristics	Standard as Per IS 15622:2017 Group BIIa	OBL Norms	Testing Methods
Dimension & Surface Quality			
Deviation in Length & Width	± 0.1 %	±0.05%	IS 13630 Part 1
Deviation in Thickness	± 5.0 %	±3.0%	
Straightness of Sides	± 0.1 %	±0.1%	
Rectangularity	± 0.1 %	±0.1%	
Surface Flatness	± 0.5 %	± 0.2 %	
Surface Quality	Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Conforms	
Physical Properties			
Water Absorption %	3-6%	3-6%	IS 13630 Part 2
Modulus of Rupture in N/mm ²	Avg 22, Individual 27 Min	Min 28 N	IS 13630 Part 6
Breaking Strength N	600 Min for thickness < 7.5mm, 1000 Min for thickness ≥ 7.5 mm	1000 N Min	
Moisture Expansion	0.02, Max	0.02 Max	IS 13630 Part 3
Scratch Hardness (Moh's Scale)	5, Min	8	IS 13630 Part 13
Resistance to Surface Abrasion of glazed tiles Class I to V (Applicable for floor applications only)	Class II, Min	Class IV	IS 13630 Part 11
Linear thermal expansion Co-efficient	9x10 ⁻⁶ , Max	Conforms	IS 13630 Part 4
Thermal Shock Resistance	10 Cycles, Min	Passed	IS 13630 Part 5
Crazing Resistance	4 Cycles at 7.5 Bar, Min	Passed	IS 13630 Part 9
Impact Resistance	0.55, Min	0.6	IS 13630 Part 14
Frost Resistance	Required if agreed to between manufacturer and purchaser	Resistant	IS 13630 Part 10
Bulk density g/cc	2.0, Min	2.0, Min	IS 13630 Part 2
Chemical Properties			
Stain Resistance Glazed tiles	Class I, Min	Class -I	IS 13630 Part 8
Resistance to household chemicals	Class AA, Min	Class AA	
Resistance to acids and alkalis	Class AA, Min	Class AA	

TECHNICAL SPECIFICATIONS

Semi-Vitreous Scratch Free Tiles



Packing Details

Size	No. of Tiles	Covered Area Per Box		Average Weight / Box	Box / Pallet
(In mm.)	Per Carton	(In Sq. Mtr.)	(In Sq. Ft.)	(In Kg. approx)	(Nos.)
600x1200	2	1.44	15.5	28.2	52

Characteristics	Standard as Per IS 15622:2017 Group BIIa	OBL Norms	Testing Methods
Dimension & Surface Quality			
Deviation in Length & Width	± 0.1 %	±0.05%	IS 13630 Part 1
Deviation in Thickness	± 5.0 %	±3.0%	
Straightness of Sides	± 0.1 %	±0.1%	
Rectangularity	± 0.1 %	±0.1%	
Surface Flatness	± 0.5 %	± 0.2 %	
Surface Quality	Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Conforms	
Physical Properties			
Water Absorption %	3-6%	3-6%	IS 13630 Part 2
Modulus of Rupture in N/mm²	Avg 22, Individual 27 Min	Min 32 N	IS 13630 Part 6
Breaking Strength N	600 Min for thickness < 7.5mm, 1000 Min for thickness ≥ 7.5 mm	1100 N Min	
Moisture Expansion	0.02, Max	0.02 Max	IS 13630 Part 3
Scratch Hardness (Moh's Scale)	5, Min	7-8	IS 13630 Part 13
Resistance to Surface Abrasion of glazed tiles Class I to V (Applicable for floor applications only)	Class II, Min	Class IV	IS 13630 Part 11
Linear thermal expansion Co-efficient	9x10 ⁻⁶ , Max	Conforms	IS 13630 Part 4
Thermal Shock Resistance	10 Cycles, Min	Passed	IS 13630 Part 5
Crazing Resistance	4 Cycles at 7.5 Bar, Min	Passed	IS 13630 Part 9
Impact Resistance	0.55, Min	0.6	IS 13630 Part 14
Frost Resistance	Required if agreed to between manufacturer and purchaser	Resistant	IS 13630 Part 10
Bulk density g/cc	2.0, Min	2.0, Min	IS 13630 Part 2
Chemical Properties			
Stain Resistance Glazed tiles	Class I, Min	Class -1	IS 13630 Part 8
Resistance to household chemicals	Class AA, Min	Class AA	
Resistance to acids and alkalis	Class AA, Min	Class AA	

TECHNICAL SPECIFICATIONS

Ceramic Tiles

Packing Details			
Size	No. of Tiles	Covered Area Per Carton	
(In mm.)	Per Carton	(In Sq. Mtr.)	(In Sq. Ft.)
395x395	6	0.94	10.08
300x300 Edge Cut	10	0.87	9.36
300x300 Edge Cut (Anti Skid)	10	0.87	9.36

As Per Indian Standards (IS 15622:2017) Group B IIa				
Characteristics	Testing Methods	Required as per IS 15622:2017 3 < E ≤ 6 % (Group B II a)		OBL Norms
Dimension & Surface Quality		Unrectified	Rectified	
Deviation in Length & Width	IS 13630 Part 1/ ISO 10545-2	± 0.4 %	± 0.1 %	Conforms
Deviation in Thickness		± 5.0 %		±4.0%
Straightness of Sides		± 0.3 %	± 0.1 %	Conforms
Rectangularity		± 0.3 %	± 0.1 %	Conforms
Surface Flatness		± 0.5 %		± 0.3 % 😊😊
Surface Quality		Min. 95 % tiles should be free from visible defects		Conforms
Physical Properties				
Water Absorption	IS 13630 Part 2/ ISO 10545-3	Avg 3 < E ≤ 6, Individual Max,6.2		5-6%
Modulus of Rupture in [N/mm ²]	IS 13630 Part 6/ ISO 10545-4	Avg 22, Individual 20, Min		>28 😊😊
Breaking Strength in N		< 7.5 mm thickness: 600, Min ≥ 7.5 mm thickness: 1000, Min		>1000/>600 😊😊
Moisture Expansion in mm/m	IS 13630 Part 3	0.03, Max		0.02
Scratch Hardness of Surface (Mohs)	IS 13630 Part 13	4, Min		Min 5
Resistance to Surface Abrasion of glazed tiles (Class I to V)	IS 13630 Part 11/ ISO 10545-7	Class II, Min		PEI Class 3-5 (depending on surface)
Co-efficient of Linear Thermal Expansion from ambient temperature to 100°C	IS 13630 Part 4/ ISO 10545-8	9x10 ⁻⁶ K ⁻¹ , Max		Conforms
Thermal Shock Resistance	IS 13630 Part 5	10 cycles, Min		Passed
Crazing Resistance	IS 13630 Part 9/ ISO 10545-9	4 Cycles@7.5 bar, Min		Passed 😊
Frost Resistance	IS 13630 Part 10	Required, if agreed		NA
Impact resistance- Coefficient of restitution	IS 13630 Part 14	0.55, Min		Conforms
Chemical Properties				
Stain Resistance	IS 13630 Part 8/ ISO 10545-13 and ISO 10545-14	Class I, Min		Conforms
Resistance to household chemicals		Class AA, Min		Conforms
Resistance to acids and alkalis (with exception of hydrofluoric acid and its compounds)		Required, if agreed		Min Class AA

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TECHNICAL SPECIFICATIONS

Rhino Pavers

Packing Details

Size (In mm.)	No. of Tiles Per Carton	Covered Area Per Carton	
		(In Sq. Mtr.)	(In Sq. Ft.)
400x400	5	0.8	8.61

Characteristics	Standard as Per IS 15622:2017 Group B Ib	OBL Actual Value	Testing Methods
Dimension & Surface Quality			
Deviation in Length & Width	± 0.1 %	±0.1%	IS 13630 Part 1
Deviation in Thickness	± 5.0 %	±4.0%	
Straightness of Sides	± 0.1 %	±0.1%	
Rectangularity	± 0.1 %	±0.1%	
Surface Flatness	± 0.5 %	± 0.4 %	
Surface Quality	Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Conforms	
Physical Properties			
Water Absorption %	Average $3.0 < E \leq 6.0\%$, individual 6.2% Max.	4.5% Max	IS 13630 Part 2
Modulus of Rupture in N/mm ²	Avg 22, Individual 20 Min	40.0 Max	IS 13630 Part 6
Breaking Strength N	600 Min for thickness < 7.5mm, 1000 Min for thickness ≥ 7.5 mm	Avg 2350	
Moisture Expansion	0.02 Max	0.02 Max	IS 13630 Part 3
Scratch Hardness (Moh's Scale)	5 Min	7 - 8 depends upon Design/surface	IS 13630 Part 13
Resistance to Surface Abrasion of glazed tiles Class I to V (Applicable for floor applications only)	Class II Min	Class IV to V	IS 13630 Part 11
Linear thermal expansion Co-efficient	7x10-6 max	Conforms	IS 13630 Part 4
Thermal Shock Resistance	10 Cycles, Min	Passed	IS 13630 Part 5
Crazing Resistance	4 Cycles at 7.5 Bar, Min	Passed	IS 13630 Part 9
Impact Resistance	0.55, Min	>0.55	IS 13630 Part 14
Coefficient of Friction	Manufacturer to declare value where required	R12	
Frost Resistance	Required if agreed to between manufacturer and purchaser	Conforms	IS 13630 Part 10
Bulk density g/cc	2.0, Min	>2.1	IS 13630 Part 2
Chemical Properties			
Stain Resistance Glazed tiles	Class I, Min	Class -1	IS 13630 Part 8
Resistance to household chemicals	Class AA, Min	Class AA	
Resistance to acids and alkalis	Class AA, Min	Class AA	

TECHNICAL SPECIFICATIONS

Vitreous Parking Tiles

Packing Details

Size	No. of Tiles	Covered Area Per Carton	
(In mm.)	Per Carton	(In Sq. Mtr.)	(In Sq. Ft.)
300x300 (Cool Tile Pavers/Pavers/ Step Pavers)	10	0.9	9.68

As per ISO 13006:2012 (Group B Ia) and as IS 15627:2017 (Group B Ib)

Characteristics	Testing Methods	Required as per IS 15622:2017 0.08 < E ≤ 3 % (Group B Ib)		OBL Values
Dimension & Surface Quality		Unrectified	Rectified	
Deviation in Length & Width	IS 13630 (Part 1):2006	± 0.4 %	± 0.1 %	± 0.10 %
Deviation in Thickness		± 5.0 %		± 4.0 %
Straightness of Sides		± 0.3 %	± 0.1 %	± 0.10 %
Rectangularity		± 0.3 %	± 0.1 %	± 0.10 %
Surface Flatness		± 0.5 %		± 0.2 %
Surface Quality		Min. 95 % tiles should be free from visible defects		Conforms
Physical Properties				
Water Absorption	IS 13630 (Part 2):2006	Avg 0.08<E ≤ 3, Individual 3.3, Max		Av < 3%
Modulus of Rupture in [N/mm ²]	IS 13630 (Part 6):2006	Avg 30, Individual 27, Min		> 35
Breaking Strength in N	IS 13630 (Part 6):2006	< 7.5 mm thickness: 700, Min ≥ 7.5 mm thickness: 1100, Min		1500 Min
Moisture Expansion in mm/m	IS 13630 (Part 3):2006	0.02, Max		Conforms
Scratch Hardness of Surface (Mohs)	IS 13630 (Part 13):2006	5, Min		5-8 depends on surface
Resistance to Surface Abrasion of glazed tiles (Class I to V)	IS 13630 (Part 11):2006	Class II, Min		3-5 as per design/surface
Co-efficient of Linear Thermal Expansion from ambient temperature to 100°C	IS 13630 (Part 4):2006	7x10 ⁻⁶ K ⁻¹ , Max		Conforms
Thermal Shock Resistance	IS 13630 (Part 5):2006	10 cycles, Min		Passed
Crazing Resistance	IS 13630 (Part 9):2006	4 Cycles@7.5 bar, Min		Passed
Frost Resistance	IS 13630 (Part 10):2006	Required		Resistance
Impact resistance- Coefficient of restitution	IS 13630 (Part 14):2006	0.55, Min		Conforms
Chemical Properties				
Stain Resistance	IS 13630 (Part 8):2006	Class I, Min		Min. Class-1
Resistance to household chemicals		Class AA, Min		Min. Class-AA
Resistance to acids and alkalis (with exception of hydrofluoric acid and its compounds)		Required, if agreed		Required, if agreed

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DORA

TECHNICAL SPECIFICATIONS

Glazed Vitrified Tiles

Packing Details			
Size	No. of Tiles Per Carton	Covered Area Per Carton	
(In mm.)		(In Sq. Mtr.)	(In Sq. ft.)
600X1200	2	1.44	15.5
600X600	4	1.44	15.5

Group B Ia as per ISO 13006:2012 and Group B Ib as per IS 15622:2017					
Characteristics	Test Methods	Requirement as per ISO 13006 ≤ 0.5 Group B Ia	Requirement as per IS 15622:2017 0.08<E ≤ 3% Group B Ib		OBL Norms
Dimension & Surface Quality	IS 13630 (Part 1):2006		Unrectified	Rectified	
Deviation in Length & Width		±0.6%	± 0.4%	± 0.1 %	± 0.1 %
Deviation in Thickness		±5%	± 5.0 %		± 4 %
Straightness of Sides		±0.5%	± 0.3 %	± 0.1 %	± 0.1 %
Rectangularity		±0.5%	± 0.3 %	± 0.1 %	± 0.1 %
Surface Flatness		±0.5%	± 0.5 %		± 0.2 % 😊😊
Surface Quality		Min. 95 % tiles should be free from visible defects	Min. 95 % tiles should be free from visible defects		Conforms
Physical Properties					
Water Absorption	IS 13630 (Part 2):2006	Avg ≤ 0.5, Individual max, 0.6	Avg 0.08<E ≤ 3, Individual 3.3, Max		Avg ≤ 0.5, Individual max, 0.6
Modulus of Rupture in [N/mm ²]	IS 13630 (Part 6):2006	Minimum 35, Individual 32, Min	Avg 30, Individual 27, Min		Avg 38 Min, Individual 35, Min 😊😊
Breaking Strength in N	IS 13630 (Part 6):2006	< 7.5 mm thickness: 700, Min ≥ 7.5 mm thickness: 1300, Min	< 7.5 mm thickness: 700, Min ≥ 7.5 mm thickness: 1100, Min		1500, Min 😊😊
Moisture Expansion in mm/m	IS 13630 (Part 3):2006	Declare Value	0.02, Max		< 0.02
Scratch Hardness of Surface (Moh's Scale)	IS 13630 (Part 13):2006	NA	5, Min		5 to 8 Depending on Design/Surface
Resistance to Surface Abrasion of Glazed Tiles (Class I to V)	IS 13630 (Part 11):2006	Test Method Available	Class II, Min		Class-III to Class-V Depending as per Design / Surface 😊
Co-efficient of Linear Thermal Expansion from Ambient Temperature to 100°C	IS 13630 (Part 4):2006	Test Method Available	7x10 ⁻⁶ K ⁻¹ , Max		Conforms
Thermal Shock Resistance	IS 13630 (Part 5):2006	Test Method Available	10 cycles, Min		Passed
Crazing Resistance	IS 13630 (Part 9):2006	Test Method Available	4 Cycles@7.5 bar, Min		4 Cycle @ 7.5 Bar Min 😊
Frost Resistance	IS 13630 (Part 10):2006	Required	Required		Resistance
Bulk Density, in (g/cc)	IS 13630 (Part 12):2006	NA	2.0, Min		> 2.1
Impact Resistance- Coefficient of Restitution	IS 13630 (Part 14):2006	Manufacturer to State	0.55, Min		0.7-0.85
Chemical Properties					
Resistance to Staining of Glazed Tiles	IS 13630 (Part 8):2006	Min, Class 3	Class I, Min		Conforms
Resistance to Household Chemicals		Min, GA	Class AA, Min		Conforms
Resistance to Acids and Alkalis (with exception of hydrofluoric acid and its compounds)		Test Method Available	Required, if agreed		Conforms

TECHNICAL SPECIFICATIONS

Forever + Germfree Tiles & Ceramic Tiles



Packing Details

Size (In mm.)	No. of Tiles Per Carton	Covered Area Per Carton	
		(In Sq. Mtr.)	(In Sq. Ft.)
600x600	4	1.44	15.5

Characteristics	Standard as Per IS 15622:2017 Group B Ib	OBL Norms	Testing Methods
Dimension & Surface Quality			
Deviation in Length & Width	± 0.1 %	±0.05%	IS 13630 Part 1
Deviation in Thickness	± 5.0 %	±3.0%	
Straightness of Sides	± 0.1 %	±0.1%	
Rectangularity	± 0.1 %	±0.1%	
Surface Flatness	± 0.5 %	± 0.2 %	
Surface Quality	Min 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of the tile	Conforms	
Physical Properties			
Water Absorption %	Avg 0.08 < E ≤ 3.0% , Individual 3.30% Max	Less than 3 %	IS 13630 Part 2
Modulus of Rupture in N/mm ²	Avg 30, Individual 27 Min	Min 33 N	IS 13630 Part 6
Breaking Strength N	700 Min for thickness < 7.5mm, 1100 Min for thickness ≥ 7.5 mm	1200 N Min	
Moisture Expansion	0.02, Max	0.02 Max	IS 13630 Part 3
Scratch Hardness (Moh's Scale)	5, Min	≧ 8*	IS 13630 Part 13
Resistance to Surface Abrasion of glazed tiles Class I to V (Applicable for floor applications only)	Class II, Min	Class V	IS 13630 Part 11
Linear thermal expansion Co-efficient	6x10 ⁻⁶ , Max	Conforms	IS 13630 Part 4
Thermal Shock Resistance	10 Cycles, Min	Passed	IS 13630 Part 5
Crazing Resistance	4 Cycles at 7.5 Bar, Min	Passed	IS 13630 Part 9
Impact Resistance	0.55, Min	0.6	IS 13630 Part 14
Frost Resistance	Required if agreed to between manufacturer and purchaser	Resistant	IS 13630 Part 10
Bulk density g/cc	2.0, Min	2.0, Min	IS 13630 Part 2
Chemical Properties			
Stain Resistance Glazed tiles	Class I, Min	Class -1	IS 13630 Part 8
Resistance to household chemicals	Class AA, Min	Class AA	
Resistance to acids and alkalis	Class AA, Min	Class AA	

* GFT FT : Value based on internal tests conducted by Orient Bell following the MOHs scale of mineral hardness which characterizes scratch resistance on a scale of 1 to 10, the higher number being more scratch resistant. For Ceramic Floor (Non-FT) range : meets norms.





TECHNICAL SPECIFICATIONS

Ceramic Tiles

Packing Details

Size (In mm.)	No. of Tiles Per Carton	Covered Area Per Carton	
		(In Sq. Mtr.)	(In Sq. Ft.)
395x395	6	0.94	10.08

As Per Indian Standards (IS 15622:2017) Group B IIa

Characteristics	Testing Methods	Required as per IS 15622:2017 3 < E ≤ 6 % (Group B II a)		OBL Norms
Dimension & Surface Quality		Unrectified	Rectified	
Deviation in Length & Width	IS 13630 Part 1 / ISO 10545-2	± 0.4 %	± 0.1 %	Conforms
Deviation in Thickness		± 5.0 %		±4.0%
Straightness of Sides		± 0.3 %	± 0.1 %	Conforms
Rectangularity		± 0.3 %	± 0.1 %	Conforms
Surface Flatness		± 0.5 %		± 0.3 % 
Surface Quality		Min. 95 % tiles should be free from visible defects		Conforms
Physical Properties				
Water Absorption	IS 13630 Part 2/ ISO 10545-3	Avg 3 < E ≤ 6, Individual Max,6.2		5-6%
Modulus of Rupture in [N/mm ²]	IS 13630 Part 6/ ISO 10545-4	Avg 22, Individual 20, Min		>28 
Breaking Strength in N		< 7.5 mm thickness: 600, Min ≥ 7.5 mm thickness: 1000, Min		>1000 
Moisture Expansion in mm/m	IS 13630 Part 3	0.03, Max		0.02
Scratch Hardness of Surface (Mohs)	IS 13630 Part 13	4, Min		Min 5
Resistance to Surface Abrasion of glazed tiles (Class I to V)	IS 13630 Part 11/ ISO 10545-7	Class II, Min		PEI Class 3-5 (depending on surface)
Co-efficient of Linear Thermal Expansion from ambient temperature to 100°C	IS 13630 Part 4/ ISO 10545-8	9x10 ⁻⁶ K ⁻¹ ,Max		Conforms
Thermal Shock Resistance	IS 13630 Part 5	10 cycles, Min		Passed
Crazing Resistance	IS 13630 Part 9/ ISO 10545-9	4 Cycles@7.5 bar, Min		Passed 
Frost Resistance	IS 13630 Part 10	Required, if agreed		NA
Impact resistance- Coefficient of restitution	IS 13630 Part 14	0.55, Min		Conforms
Chemical Properties				
Stain Resistance	IS 13630 Part 8/ ISO 10545-13 and ISO 10545-14	Class I, Min		Conforms
Resistance to household chemicals		Class AA, Min		Conforms
Resistance to acids and alkalis (with exception of hydrofluoric acid and its compounds)		Required, if agreed		Min Class AA

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WEST ZONE

TECHNICAL SPECIFICATIONS

Glazed Vitrified Tiles

Packing Details			
Size	No. of Tiles	Covered Area Per Carton	
(In mm.)	Per Carton	(In Sq. Mtr.)	(In Sq. Ft.)
800x1600 (West Zone)	2	2.56	27.55

Characteristics	Standard as Per ISO-13006 /EN 14411 Group BIA	Mean Value of PGVT	Mean Value of DGVt	Test Method
Regulatory Properties				
Deviation in Length & Width	± 0.5 %	± 0.1 %	± 0.1 %	ISO-10545-2
Deviation in Thickness	± 5.0 %	± 4.0 %	± 4.0 %	
Straightness in Side	± 0.5 %	± 0.1 %	± 0.1 %	
Rectangularity	± 0.6 %	± 0.1 %	± 0.1 %	
Surface Flatness	± 0.5 %	± 0.2 %	± 0.2 %	
Color difference	Unaltered	No change	No change	ISO-10545-16
Glossiness	As per mfg.	Min 90	Min 10	Glossometer
Surface Mechanical Properties				
Water Absorption	< 0.50 %	< 0.20 %		ISO-10545-3
Apparent Density ^{ec}	> 2.0 g/cc	> 2.10 g/cc		DIN 51082
Massive Mechanical Properties				
Modulus of Rupture	Min. 35 N/mm²	Min. 40 N/mm²		ISO-10545-4
Breaking Strength	Min. 1300 N	Min. 2000 N		
Impact Resistance	As per mfg.	Min. 0.55		ISO-10545-5
Surface Mechanical Properties				
Surface Abrasion of Resistance	As per mfg.	Min. Class-3	Min. Class-4	ISO-10545-7
MOH's Hardness	As per mfg.	Min. 4	Min. 5	EN 101
Thermo Hydrometric Properties				
Frost Resistance	No damage	No damage		ISO-10545-12
Thermal Shock Resistance	No damage	No damage		ISO-10545-9
Moisture Expansion	Nil	Nil		ISO-10545-10
Thermal Expansion (COE)	Max. 9.0x10 ⁻⁶	Max. 6.5x10 ⁻⁶		ISO-10545-8
Crazing Resistance	As per mfg.	Min. 10 Cycle		ISO-10545-11
Chemical Properties				
Chemical Resistance	No damage	No damage		ISO-10545-13
Stain Resistance	Resistant	Resistant		ISO-10545-14
Safety Properties				
Slip Resistance	As per mfg.	> 0.40		ISO-10545-17
Fire Resistance	As per mfg.	Fireproof		N. A.
Lead & Cadmium given off by glazed tiles	As per mfg.	Doesn't yield PB & CD		ISO-10545-15

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TECHNICAL SPECIFICATIONS Full Body & Glazed Vitrified Tiles

Packing Details			
Size	No. of Tiles	Covered Area Per Carton	
(In mm.)	Per Carton	(In Sq. Mtr.)	(In Sq. Ft.)
800x2400 (West zone)	1	1.92	20.67

Characteristics	Standard as Per ISO-13006 /EN 14411 Group	OBL Values	TEST METHOD
Regulatory Properties			
Deviation in Length & Width	0.50 %	0.20 %	ISO - 10545-2
Deviation in Thickness	0.50 %	0.50 %	ISO - 10545-2
Straightness in Side	0.50 %	0.20 %	ISO - 10545-2
Rectangularity	0.50 %	0.20 %	ISO - 10545-2
Surface Flatness	0.50 %	0.20 %	ISO - 10545-2
Color difference	Unaltered	No Change	ISO - 10545-16
Glossiness	As per mfg.	>90%	Glassmeter
Surface Mechanical Properties			
Water Absorption	< 0.50 %	< 0.50 %	ISO - 10545-3
Apparent Density ^{ec}	> 2.00 g/cc	> 2.10 g/cc	DIN 51082
Massive Mechanical Properties			
Modulus of Rupture	Min. 35 N/mm ²	Min. 42 N/mm ²	ISO - 10545-4
Breaking Strength	Min. 1300 N	Min. 2800 N	ISO - 10545-4
Impact Resistance	As per mfg.	Min. 0.75	ISO - 10545-5
Surface Mechanical Properties			
Surface Abrasion of Resistance	As per mfg.	Min. Class 3	ISO - 10545-7
MOH's Hardness	As per mfg.	Min. Class 4	EN 101
Thermo Hydrometric Properties			
Frost Resistance	No damage	No damage	ISO - 10545-12
Thermal Shock Resistance	No damage	No damage	ISO - 10545-09
Moisture Expansion	Nil	Nil	ISO - 10545-10
Thermal Expansion (COE)	Max. 9.0x10 ⁻⁶	Max. 6.5x10 ⁻⁶	ISO - 10545-08
Crazing Resistance	As per mfg.	Min 10 Cycle	ISO - 10545-11
Chemical Properties			
Chemical Resistance	No damage	No damage	ISO - 10545-13
Stain Resistance	Resistant	Resistant	ISO - 10545-14
Safety Properties			
Slip Resistance	As per mfg.	>0.40	ISO - 10545-17
Fire Resistance	As per mfg.	Fire Proof	N.A.

NOTE: Certain amount of Size and Shade Variation is inherent in all ceramic products. Within the limits of printed material, the colors and aesthetics of the products correspond closely to those of illustrated products. Prospective customers are advised to inspect a sample of the tile before ordering and laying. At all points of time, the company liability is restricted to the purchase value of tiles.

Every effort has been made to ensure the accuracy of the information given. However, the company reserves the right to delete & change, any of the items, colors, sizes & technical specifications without any prior notice.

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