

DIGITAL GLAZED VITRIFIED TILES

Sr No.	CHARACTRASTICS	TEST METHOD	VITRIFIED TILES 15622 / 2013 GROUP B 1	VARMORA VALUE
A	Dimension & Surface Quality			
1	Deviation in Length & Witdh	IS - 13630 - 1	+/- 0.1%	0.10%
2	Deviation in Thichness	IS - 13630 - 1	+/- 5.0%	3.50%
3	Straightness of Side	IS - 13630 - 1	+/- 0.1%	0.10%
4	Rectengularity	IS - 13630 - 1	+/- 0.1%	0.10%
5	Surface Flateness	IS - 13630 - 1	+/- 0.5%	0.20%
6	Surface Quality	IS - 13630 - 1	95% of The Tiles Free From Visible Defect	95%
B	Physical Properties			
1	Water Absorption	IS - 13630 - 2	< 0.08%	0.06%
2	Moduls Of Rapture	IS - 13630 - 6	>35 N / MM ²	>40 N/MM ²
3	Flexure Breaking Strength	IS - 13630 - 6	>1300 N	1700 N
4	Moisture Expansion	IS - 13630 - 3	0.02%	Nil
5	Scratch Hardness (Moh's)	IS - 13630 - 13	Min - 5	5*
6	Resistance of Surface Abrasion	IS - 13630 - 11	Class II Min.	Class - IV
7	Thermal Expansion	IS - 13630 - 4	$6 \times 10^{-6} K^{-1}$	$6 \times 10^{-6} K^{-1}$
8	Thermal Sock Resistance	IS - 13630 - 5	Min 10 Cycle	10 Cycle Passed
9	Frost Resistance	IS - 13630 - 10	No Damage	No Damage
10	Bulk Density	IS - 13630 - 2	> 2.2 gm/cc	> 2.3 gm/cc
11	Glosiness	Glossmeter	As Per Mfg. Norms.	>85%
C	Chemical Properties			
1	Resistance of Staining	IS - 13630 - 8	Class I Min.	Class II
2	Household Chemicals	IS - 13630 - 8	Class AA Min.	Class AA
3	Acid Resistance	IS - 13630 - 8	Resistance	Resistance

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*In Matt Surface Scratch Hardness is 5

DOUBLE CHARGE & SOLUBLE SALT TILES

Sr No.	CHARACTERISTICS	TEST METHODS	VITRIFIED TILES 15622/2013 Group B 1 a	VARMORA VALUE
A	Dimension & Surface Quality			
1	Deviation in Length & Width	IS-13630-1	+/- 0.1%	0.10%
2	Deviation in Thickness	IS-13630-1	+/- 5.0%	3.50%
3	Straightness of Side	IS-13630-1	+/- 0.1%	0.10%
4	Rectangularity	IS-13630-1	+/- 0.1%	0.10%
5	Surface Flatness	IS-13630-1	+/- 0.5%	0.20%
6	Surface Quality	IS-13630-1	95% of the Tiles Free From Visible Defect	95%
B	Physical Properties			
1	Water Absorption	IS-13630-2	<0.08%	0.06%
2	Modulus of Rapture	IS-13630-6	>35 N/MM ²	>40 N/MM ²
3	Flexure Braking Strength	IS-13630-6	>1300 N	>1700 N
4	Moisture Expansion	IS-13630-3	0.02%	Nil
5	Scratch Hardness (Moh's)	IS-13630-13	Min-5	3.-4*
6	Resistance of Surface Abrasion	IS-13630-11	Max.140MM ³	120MM ³
7	Thermal Expansion	IS-13630-4	$6 \times 10^{-6} K^{-1}$	$6 \times 10^{-6} K^{-1}$
8	Thermal Shock Resistance	IS-13630-5	Min 10 Cycle	10 Cycle Passed
9	Frost Resistance	IS-13630-10	No Damage	No Damage
10	Bulk Density	IS-13630-2	>2.2 gm/cc	2.3 gm/cc
11	Glossiness	Glossmeter	As Per Mfg. Norms.	>85%
12	Impact Resistance	IS-13630-14	0.55 min	0.30 min
C	Chemical Properties			
1	Resistance of Staining	IS-13630-8	Class I Min.	Class II
2	Household Chemicals	IS-13630-8	Class AA Min.	Class AA
3	Acid Resistance	IS-13630-8	Resistance	Resistance

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PORCELAIN TILES

Sr No.	CHARACTERISTICS	Test Method	Tiles 15622/2013 Group B II a	VARMORA VALUE
A	Dimension & Surface Quality			
1	Deviation in Length & Width	IS-13630-1	+/- 0.1%	0.10%
2	Deviation in Thickness	IS-13630-1	+/- 5.0%	3.50%
3	Straightness of sides	IS-13630-1	+/- 0.1%	0.10%
4	Rectangularity	IS-13630-1	+/- 0.1%	0.10%
5	Surface Flatness	IS-13630-1	+/- 0.5%	0.20%
6	Surface Quality	IS-13630-1	95% of The Tiles Free From Visible Defect	95%
B	Physical Properties			
1	Water Absorption	IS-13630-2	3 - 6%	5%
2	Moduls of Rapture	IS-13630-6	Avg. 22N/MM ²	30 N/MM ²
3	Flexure Breaking Strength	IS-13630-6	Min. 1000 N	1300 N
4	Moisture Expansion	IS-13630-3	0.03%	0.01% Max.
5	Scratch Hardness (Moh's)	IS-13630-13	Min-4	4
6	Resistance of Surface Abrasion	IS-13630-11	Class II Minn	Class III
7	Thermal Expansion	IS-13630-4	7x10 ⁻⁶ K ⁻¹	7x10 ⁻⁶ K ⁻¹
8	Thermal Sock Resistance	IS-13630-5	Min. 10 Cycle	10 Cycle Passed
9	Crazing Resistance	IS-13630-9	Min. 4 Cycle	4 Cycle Passed
10	Frost Resistance	IS-13630-10	As per mfg. norms	No Damage
C	Chemical Propeties			
1	Resistance of Staining	IS-13630-8	Class I Min	Class III
2	Household Chemicals	IS-13630-8	Class AA Min.	Class AA
3	Acid Resistance	IS-13630-8	Resistance	Resistance

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OUTDOOR PARKING TILES

Sr No.	CHARACTERISTICS	TEST METHODS	VITRIFIED TILES 15622/2013 Group B 1 a	VARMORA VALUE
A	Dimantion & Surface Quality			
1	Deviation in Length & Withd	IS-13630-1	+/- 0.1%	0.10%
2	Deviation in Thikness	IS-13630-1	+/- 5.0%	3.50%
3	Straightness of Side	IS-13630-1	+/- 0.1%	0.10%
4	Rectangularity	IS-13630-1	+/- 0.1%	0.10%
5	Surface Flatness	IS-13630-1	+/- 0.5%	0.20%
6	Surface Quality	IS-13630-1	95% of the Tiles Free From Visible Defect	95%
B	Physical Proprties			
1	Water Absorption	IS-13630-2	<0.08%	0.5-1.5%
2	Moduls of Rapture	IS-13630-6	35 N/MM ²	40 N/MM ²
3	Flexure Braking Strength	IS-13630-6	> 1300 N	> 1800 N
4	Moisture Expansion	IS-13630-3	0.02%	Nil
5	Scratch Hardness (Moh's)	IS-13630-13	Min-5	5
6	Resistance of Surface Abrasion	IS-13630-11	Class II Min	Class -IV
7	Thermal Expansion	IS-13630-4	$6 \times 10^{-6} K^{-1}$	$6 \times 10^{-6} K^{-1}$
8	Thermal Sock Resistance	IS-13630-5	Min 10 Cycle	10 Cycle Passed
9	Frost Resistance	IS-13630-10	No Damage	No Damage
10	Bulk Density	IS-13630-2	>2.2 gm/cc	2.3 gm/cc
C	Chemical Properties			
1	Resistance of Staining	IS-13630-8	Class I Min.	Class II
2	Household Chemicals	IS-13630-8	Class AA Min.	Class AA
3	Acid Resistance	IS-13630-8	Resistance	Resistance

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COLOUR BODY & FULL BODY OUTDOOR TILES

Sr No.	CHARACTRASTICS	TEST METHOD	VITRIFIED TILES 15622 / 2013 GROUP B 1	VARMORA VALUE
A	Dimension & Surface Quality			
1	Deviation in Length & Witdh	IS - 13630 - 1	+/- 0.1%	0.10%
2	Deviation in Thickness	IS - 13630 - 1	+/- 5.0%	3.50%
3	Straightness of Side	IS - 13630 - 1	+/- 0.1%	0.08%
4	Rectengularity	IS - 13630 - 1	+/- 0.1%	0.10%
5	Surface Flatness	IS - 13630 - 1	+/- 0.2%	0.20%
6	Surface Quality	IS - 13630 - 1	95% of The Tiles Free From Visible Defect	95%
B	Physical Properties			
1	Water Absorption	IS - 13630 - 2	< 0.08%	0.06%
2	Moduls Of Rapture	IS - 13630 - 6	>35 N / MM ²	44
3 A	Flexure Breaking Strength (10 mm)	IS - 13630 - 6	>1300 N	1700 N
3 B	Flexure Breaking Strength (16 mm)	IS - 13630 - 6	>1300 N	3500 N
4	Moisture Expansion	IS - 13630 - 3	0.02%	Nil
5	Scratch Hardness (Moh's)	IS - 13630 - 13	Min - 5	7
6	Resistance of Surface Abrasion	IS - 13630 - 11	Class II Min.	Class - IV
7	Thermal Expansion	IS - 13630 - 4	$6 \times 10^{-6} K^{-1}$	$6 \times 10^{-6} K^{-1}$
8	Thermal Sock Resistance	IS - 13630 - 5	Min 10 Cycle	10 Cycle Passed
9	Frost Resistance	IS - 13630 - 10	No Damage	No Damage
10	Bulk Density	IS - 13630 - 2	> 2.2 gm/cc	> 2.3 gm/cc
11	Glosiness	Glossmeter	As Per Mfg. Norms.	>85%
C	Chemical Properties			
1	Resistance of Staining	IS - 13630 - 8	Class I Min.	Class II
2	Household Chemicals	IS - 13630 - 8	Class AA Min.	Class AA
3	Acid Resistance	IS - 13630 - 8	Resistance	Resistance

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DIGITAL WALL TILES

Sr No.	CHARACTRASTICS	TEST METHOD	15622 / 2013 Group B III		VARMORA VALUE	
			Rectified	Un - Rectified	Rectified	Un - Rectified
A	Dimension & Surface Quality					
1	Deviation in Length & Withd	IS - 13630 - 1	± 0.3%	± 0.4%	± 0.1%	± 0.2%
2	Deviation in Thickness	IS - 13630 - 1	± 5.0%	± 5.0%	± 3.0%	± 3.0%
3	Straightness of Side	IS - 13630 - 1	+/-0.15%	± 0.2%	± 0.1%	± 0.2%
4	Rectengularity	IS - 13630 - 1	± 0.2%	± 0.3%	± 0.15%	± 0.3%
5	Surface Flatness	IS - 13630 - 1	± 0.3%	± 0.3%	± 0.2%	± 0.2%
6	Surface Quality	IS - 13630 - 1	95% of The Tiles Free From Visible Defect	95% of The Tiles Free From Visible Defect	95%	95%
B	Physical Properties					
1	Water Absorption	IS - 13630 - 2	10 - 20%	10 - 20%	18%	18%
2	Moduls Of Rapture	IS - 13630 - 6	>15 N/MM ²	>15 N/MM ²	>17 N/MM ²	>17 N/MM ²
3	Flexure Breaking Strength	IS - 13630 - 6	>600 N	>600 N	>700 N	>700 N
4	Moisture Expansion	IS - 13630 - 3	0.04% Max.	0.04% Max.	0.01% Max.	0.01% Max.
5	Scratch Hardness (Moh's)	IS - 13630 - 13	Min. 3	Min. 3	Min. 3	Min. 3
6	Resistance of Surface Abrasion	IS - 13630 - 11	Min. II	Min. II	Min. II	Min. II
7	Thermal Expansion	IS - 13630 - 4	9 x 10 ⁻⁶ K ⁻¹	9 x 10 ⁻⁶ K ⁻¹	9 x 10 ⁻⁶ K ⁻¹	9 x 10 ⁻⁶ K ⁻¹
8	Thermal Sock Resistance	IS - 13630 - 5	Min. 10 Cycles	Min. 10 Cycles	10 Cycles Passed	10 Cycles Passed
9	Crazing Resistance	IS - 13630 - 9	Min. 04 Cycles	Min. 04 Cycles	04 Cycles Passed	04 Cycles Passed
C	Chemical Properties					
1	Resistance of Staining	IS - 13630 - 8	Class I Min.	Class I Min.	Class II	Class II
2	Household Chemicals	IS - 13630 - 8	Class AA Min.	Class AA Min.	Class AA	Class AA
3	Acid Resistance	IS - 13630 - 8	Resistance	Resistance	Resistance	Resistance

*Breaking strength & MOR parameters applicable for more than 7.5mm Thickness.