



RAYAL INDUSTRIAL (PTY) LTD

14 GALENA STREET EKANDUSTRIA
BRONKHORSTSPRUIT, PRETORIA, 1028
SOUTH AFRICA

Product Name: Stoneware Porcelain

Product Type: Slip Resistant Tile

Item	Test Method	Standard Requirements	Results
Product Size	ISO10545-2		600mm x 600mm x 10mm
Thickness	ISO10545-2	±5% (Max 0.45mm)	10±0.3mm
Straightness of Side(mm)	ISO10545-2	±0.5% (Max 1.5mm)	±0.5mm
Rectangularity(Average)	ISO10545-2	±0.5% (Max 2.0mm)	±1.5mm
Centre Curvature(mm)	ISO10545-2	±0.5% (Max 2.0mm)	- 0.65mm ~ +1.3mm
Edge Curvatue	ISO10545-2	±0.5% (Max 2.0mm)	- 0.5mm ~ +1mm
Warpage(mm)	ISO10545-2	±0.5% (Max 2.0mm)	- 0.4mm ~ +0.7mm
Water Absorption %	ISO10545-3	0.5% < E ≤ 3%	Average: 1.2 %
Modulus of Rupture (Mpa)	ISO10545-4	Average ≥ 30N/MM ²	Average ≥ 38N/MM ²
Breaking Strength (N)	ISO10545-4	Average ≥ 1100N	Average ≥ 1451N
Abrasion Resistance (PEI Rating)	ISO10545-7	≥ Class 3	Class 4
Linear Thermal Expansion	ISO10545-8	----	Pass
Resistance to Thermal shock	ISO10545-9	Resistant	Resistant
Moisture Expansion	ISO10545-10	----	0.034%(mm/m)
Resistance to Crazing	ISO10545-11	No Cracking or Flacking	Resistant
Frost Resistance	ISO10545-12	No Cracking or Flacking	Resistant
Chemical Resistance	ISO10545-13	Resistant	Resistant
Stain Resistance	ISO10545-14	≥ Class 3	Class 5
Small Color Difference	ISO10545-16	Resistant	Resistant
Slip Resistance	ISO10545-17	----	R11
Mohs Hardness	BS 6431-13-1986	----	Class 7

Applications

Product features are with good abrasion resistance and significant scratch hardness.

As Such, It is indicated for flooring in Public Commercial areas as well for domestic use.

Ideally Used In Outdoor Applications

Table 1 - Classification of ceramic tiles with respect to water absorption and shaping

Shaping	Group I Ev≤3%	Group II a 3%<Ev≤6%	Group II b 6%<Ev≤10%	Group III Ev>10%
A Extruded body	Group A I a Ev≤0.5% [see Annex M]	Group A II a-1 ^a [see Annex B]	Group A II b-1 ^a [see Annex D]	Group AIII [see Annex F]
	Group A I b 0.5%<Ev≤3% [see Annex A]	Group A II a-2 ^a [see Annex C]	Group A II b-2 ^a [see Annex E]	
B Dry pressed body	Group B I a Ev≤0.5% [see Annex G]	Group B II a [see Annex J]	Group B II b [see Annex K]	Group BIIIb [see Annex L]
	Group B I b 0.5%<Ev≤3% [see Annex H]			

a, Groups A II a & A II b are divided into two subgroups [Parts 1 and 2] with different product specifications.

b, Group BIII covers glazed tiles only. There is a low quantity of dry-pressed unglazed tiles produced with water absorption greater than 10% mass fraction, which is not covered by this product group.

According to the ISO Standard, **Royal Tile** belongs to **Group I**, (BIb), which is Stoneware Porcelain.

Recommended Adhesive for Royal tiles Installation: **Royal Porcelain Tile Adhesive & Mapei Porcelain Tile Adhesive**,

Or **TAL Goldstar & TAL Porcelain Adhesive**