



**RAYAL INDUSTRIAL (PTY) LTD**

14 GALENA STREET EKANDUSTRIA  
BRONKHORSTSPRUIT, PRETORIA, 1028  
SOUTH AFRICA

**Product Name: Stoneware Porcelain**

**Product Type: Glazed Floor Tiles**

Item	Test Method	Standard Requirements	Results
Product Size	ISO10545-2		800mm x 800mm 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/MM2	Average≥32N/MM2
Breaking Strength (N)	ISO10545-4	Average≥1100N	Average≥1600N
Abrasion Resistance (PEI Rating)	ISO10545-7	≥Class3	Class4
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	≥Class3	Class5
Small Color Difference	ISO10545-16	Resistant	Resistant
Slip Resistance	ISO10545-17	----	R9
Mohs Hardness	BS 6431-13-1986	----	Class5

#### 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.

**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%
<b>A</b> Extruded body	Group A I a Ev≤0.5% [see Annex M]	Group A II a-1 <sup>a</sup> [see Annex B]	Group A II b-1 <sup>a</sup> [see Annex D]	Group AIII [see Annex F]
	Group A I b 0.5%<Ev≤3% [see Annex A]	Group A II a-2 <sup>a</sup> [see Annex C]	Group A II b-2 <sup>a</sup> [see Annex E]	
<b>B</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]
	<b>Group B I b</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** or **Mapei Porcelain Tile Adhesive** .