

TECHNICAL DATA SHEET

UNGLAZED PORCELAIN TILES

Whitehaven Unglazed Porcelain Floor Tiles

Dimensions and Surface Quality	Test Method	Requirements		Test Result	Verdict
Length and Width: The deviation, of the average size for each tile (4 sides) from the work size	ISO 10545-2	$N \geq 15\text{cm}$	$\pm 0.6\%$ $\pm 2.0\text{mm}$	-0.04%~-0.02% -0.2mm~-0.1mm	Pass Pass
The thickness shall be specified by the manufacturer		Declared Thickness		9.1mm	-
The deviation, of the average thickness of each tile from the work size thickness	ISO 10545-2	$N \geq 15\text{cm}$	$\pm 0.5\%$ $\pm 0.5\text{mm}$	-1.8%~+ 1.0% -0.2mm~+0.1mm	Pass Pass
Straightness of Sides: The maximum deviation from straightness related to the corresponding work sizes	ISO 10545-2	$N \geq 15\text{cm}$	$\pm 0.5\%$ $\pm 1.5\text{mm}$	-0.01%~+ 0.01% -0.1mm~0	Pass Pass
Rectangularity The maximum deviation from Rectangularity related to the corresponding work sizes	ISO 10545-2	$N \geq 15\text{cm}$	$\pm 0.5\%$ $\pm 2.0\text{mm}$	+0.02%~+ 0.03% +0.1mm~+0.2mm	Pass
Surface Flatness: The maximum deviation from flatness					
a) Centre Curvature, related to diagonal calculated from the work size	ISO 10545-2	$N \geq 15\text{cm}$	$\pm 0.5\%$ $\pm 2.0\text{mm}$	-0.02%~+ 0.01% -0.2mm~+0.1mm	Pass
b) Edge Curvature, related to the corresponding work sizes	ISO 10545-2	$N \geq 15\text{cm}$	$\pm 0.5\%$ $\pm 2.0\text{mm}$	-0.06%~-0.05% -0.3mm	Pass
c) Warpage, related to diagonal calculated from the work size	ISO 10545-2	$N \geq 15\text{cm}$	$\pm 0.5\%$ $\pm 2.0\text{mm}$	+0.03%~+ 0.04% +0.2mm~+0.3mm	Pass
Physical Properties					
Water Absorption	ISO 10545-3	$E < 0.5\%$		0.07%	Pass
		Individual minimum 0.6%		0.05%~-0.08%	Pass
Breaking Strength, in N	ISO 10545-4	≥ 1300		1737	Pass
Modulus of Rupture (Mpa)	ISO 10545-4	Minimum ≥ 35 Individual minimum ≥ 32		45.5 40.4~48.0	Pass
Impact Resistance: Coefficient of restitution (COR)	ISO 10545-5	Test Method Available		0.88	Pass
Abrasion Resistance Resistance to deep abrasion of unglazed tiles Removed volume, in cubic millimetres	ISO 10545-6	≤ 175		131~139	Pass
Coefficient of linear thermal expansion	ISO 10545-8	Test Method Available		$7.2 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$	-
Moisture expansion, in mm	ISO 10545-10	Test Method Available		0.01	-
Frost Resistance	ISO 10545-12	Test Method Available		Fully Resistant	Pass
MOHs scale of hardness	EN15771-2010			5	
Gloss, in GU Test method of specular gloss for decorative building materials	GB/T 13891-2008			90	

TECHNICAL DATA SHEET

UNGLAZED PORCELAIN TILES

Whitehaven Unglazed Porcelain Floor Tiles

Chemical Properties	Test Method	Requirements	Specifications	Verdict
Resistance to staining a) Red staining agent in light oil b) Green staining agent in light oil c) Iodine, 13g/L solution in alcohol d) Olive Oil	ISO 10545-14	Declared Value	Class 5	
Resistance to Chemicals Resistance to household chemicals and Swimming Pool Salts				
a) Household chemicals: Ammonium chloride, 100g/L b) Swimming pool salts: Sodium hypochlorite solution, 20mg/L	ISO 10545-13	Minimum class B	UA	Pass
Resistance to low concentrations of acids and alkalis				
a) Hydrochloric acid solution, 3% (v/v) b) Citric acid solution, 100g/L c) Potassium Hydroxide, 30g/L	ISO 10545-13	Declared Value	ULA ULA ULB	
Resistance to high concentrations of acids and alkalis				
a) Hydrochloric acid solution, 18% (v/v) b) Lactic acid, 5% (v/v) c) Potassium Hydroxide, 100g/L	ISO 10545-13	Declared Value	UHA UHA UHB	

The above Johnson Tiles technical specifications are a general indication only.
Please contact your local Johnson Tiles representative or state office for more detailed information.