

# TECHNICAL SPECIFICATION SHEET

## Grange Porcelain



Standard Specifications Required	
Nominal Size	450 x 450 x 9 & 600 x 600 x 10
Number of tiles per covered square metre	5 & 2.8
Surface Finish	Polished Gloss Glaze
Eureka classification	Dry Pressed Porcelain Tile
Manufacturing Standard	ISO 13006:1998 Group B1a
Deviation in Length and Width (ISO 10545-2)	± 0.6%
Deviation in Thickness (ISO 10545-2)	± 5%
Straightness of Sides (ISO 10545-2)	± 0.5%
Rectangularity (ISO 10545-2)	± 0.6%
Surface Flatness - Curvature (ISO 10545-2)	± 0.5%
- Warpage (ISO 10545-2)	± 0.5%
Surface Quality (ISO 10545-1)	95%
Resistance to Thermal Shock (ISO 10545-9)	Resistant
Crazing Resistance (Glazed Tiles Only) ISO 10545-11	Resistant
Chemical Resistance (ISO 10545-13)	Resistant
Determination of Moisture Expansion (ISO 10545-10)	See results below
Water Absorption (ISO 10545-3)	≤0.5%
Modulus of Rupture (ISO 10545-4)	35 Mpa Minimum
Breaking Strength (ISO 10545-4)	1.3 kN Minimum
Scratch Hardness - MOH's (BS6431 Part 13)	See results below

### SAMPLE RANGE RESULTS

Test / Method	Grand Covee	Harvest	Blackberry	Traminer	Vineyard	Vintage
Water Absorption (ISO 10545-3)	< 0.2%	< 0.2%	< 0.2%	< 0.2%	< 0.2%	< 0.2%
Modulus of Rupture (ISO 10545-4)	40Mpa	40 Mpa	40 Mpa	40 Mpa	40 Mpa	40Mpa
Breaking Strength (ISO 10545-4)	3.39 kN	3.39 kN	3.39 Kn	3.39 kN	3.39 Kn	3.39kN
Scratch Hardness – MOH's (BS6431 Part 13)	5	5	5	5	5	5
Resistance to Surface Abrasion (ISO 10545-7)	4	4	3	4	4	4
Moisture Expansion (ISO 10545-10)	<0.01mm/M(0.001%)	< 0.01 mm/M(0.001%)	< 0.01 mm/M(0.001%)	< 0.01mm/M(0.001%)	< 0.01 mm/M(0.001%)	< 0.01 mm/M(0.001%)
Resistance to Deep Abrasion (ISO 10545-6)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Slip Resistance Classifications (AS/NZS 4586:1999)</b>	<b>Mean Range Result</b>					
• Appendix A: WET Pendulum (Four S)	Class Z	Class Z	Class Z	Class Z	Class Z	Class Z
• Appendix B: DRY (FFT) - Tortus	Class F	Class F	Class F	Class F	Class F	Class F

**SAMPLING:** Sampling and the basis for acceptance complied with the requirements of ISO 10545-1.

**COMPLIANCE:** When tested according to the relevant method indicated in parenthesis, the above results all conform to the requirements of the Manufacturing Standard.

**REMARKS ON SLIP RESISTANCE CLASSIFICATIONS (AS/NZS 4586:1999):** Tiles tested to AS/NZS 4586:1999 'Slip resistance classification of new pedestrian surface materials'. The slip resistance of a surface may change with use either becoming more slippery because of natural polishing, or less due to abrasion and roughening of the surface. The presence of dirt or contaminants may make surfaces more slippery, as can poor maintenance practices.

**CLASSIFICATIONS:** In order to interpret the classifications, please refer to Standards Australia Handbook 197 'An introductory guide to the slip resistance of pedestrian surface materials' which recommends minimum classifications for a wide variety of locations. It is important to realise that test results obtained on unused factory-fresh samples may not be directly applicable in service, where propriety surface coatings, contamination, wear and subsequent cleaning all influence the behaviour of the pedestrian surface.

**REMARKS ON THE MOISTURE EXPANSION OF CERAMIC TILES:** The majority of glazed and unglazed tiles have negligible natural moisture expansion that does not contribute to tiling problems when tile are correctly fixed. However, with unsatisfactory fixing practices and in certain climatic conditions, natural moisture expansion may aggravate problems, especially when tiles are directly fixed to inadequately aged concrete substances. Source: ISO 10545-10.

**NOTE:** Regular Quality Control Audits ensure continuing compliance to the Standard although minor variations can occur in some values from batch to batch, within the allowable tolerances. These specifications will be re-issued if major variations occur, for example with the installation of new manufacturing equipment.