

## TECHNICAL SPECIFICATIONS

DESCRIPTION	STANDARD TEST	MEASUREMENT UNIT	ISO STANDARD REQUIREMENT	NIRO GRANITE
Length & Width	ISO 10545 -2	mm	±0.6% Max	±0.30% Max
Thickness	ISO 10545 -2	mm	±5.0% Max	±5.0% Max
Sides Straightness	ISO 10545 -2	mm	±0.5% Max	±0.25% Max
Rectangularity	ISO 10545 -2	mm	±0.6% Max	±0.25% Max
Flatness: a) Centre Curvature	ISO 10545 -2	mm	±0.5% Max	±0.20% Max / Max 2.0mm
b) Edge Curvature	ISO 10545 -2	mm	±0.5% Max	±0.20% Max / Max 2.0mm
c) Warpage	ISO 10545 -2	mm	±0.5% Max	±0.20% Max / Max 2.0mm
Surface Quality	ISO 10545 -2	One Major Area of Tiles	≥ 95% free from visible defect	Comply
Water Absorption	ISO 10545 -3	Mass	≤0.5%	≤0.20%
Breaking Strength	ISO 10545 -4	N	≥ 1300 N	≥ 1300 N
Modulus of Rupture	ISO 10545 -4	N/mm <sup>2</sup>	≥ 35 N/mm <sup>2</sup> Individual ≥ 32 N/mm <sup>2</sup>	≥ 35 N/mm <sup>2</sup> Individual ≥ 32 N/mm <sup>2</sup>
Abrasion Resistance				
a) Deep Abrasion for unglazed tiles	ISO 10545 -6	mm <sup>3</sup>	≤ 175 mm <sup>3</sup>	≤ 160 mm <sup>3</sup>
b) Surfaces Abrasion for glazed tiles	ISO 10545 -7	Visual Check	Manuf. to state abrasion class, cycle and passed	≥ PEI 3 (Dependent on product type)*
Crazing Test (glazed tiles)	ISO 10545 -11	Visual Check	No Sign of Crazing	No Sign of Crazing
Frost Resistance	ISO 10545 -12	Visual Check	Required	No Visible Crack
Chemical Resistance				
a) Low concentrations	ISO 10545 -13	Visual Check	Manuf. to State	Class A Class B (For Polished Tile)
b) Household chemicals and swimming pool salts	ISO 10545 -13	Visual Check	≥ Class B	Class A Class B (For Polished Tile)
Stain Resistance				
a) For unglazed tiles	ISO 10545 -14	Visual Check	Manuf. to State	≥ Class 3
b) For glazed tiles	ISO 10545 -14	Visual Check	≥ Class 3	≥ Class 3
Slip Resistance (Excluding Polished, Lappato and Matt Stain finishing)	AS/NZS 4586 App. A	P0 to P5	Manuf. to State	Wet Pendulum ≥ P2 (Dependent on product type)*

The technical specifications is only for rectified tiles. \* Refer to test report for specific test result.

Each different tiles series are produced to meet different performance requirements. For specific product technical performance, please request from Niro Granite sales team or their agent or distributor.

Colour Variations: Since the colour reproduction in this printed piece will vary from the actual tile colours, final selection should be made from tile samples. Colour, shade and glaze variations may exist due to the inherent characteristics of porcelain tile.

Due to the low porosity of porcelain tiles, an Improved High Performance Cementitious adhesive in accordance to BS EN 12004 & ISO 13007-1 is highly recommended for proper installation. Products that meet this standard are available amongst leading adhesive manufacturers. Please seek expert advice from adhesive manufacturers for proper selection and application.



## SHADE AND TONALITIES

<b>U1</b> UNIFORM FROM TILE TO TILE	<b>U2</b> SLIGHTLY NOTICEABLE FROM TILE TO TILE	<b>U3</b> MODERATELY NOTICEABLE FROM TILE TO TILE	<b>U4</b> DISTINCTLY NOTICEABLE FROM TILE TO TILE
Uniform from tile to tile The range of colours and tones within the same shade is relatively uniform from tile to tile. Minimal to no difference among pieces from the same production run.	Slightly noticeable from tile to tile The range of colours and tones within the same shade is slightly noticeable from tile to tile. Clearly distinguishable differences in design or pattern with similar or slight change in colour tones.	Moderately noticeable from tile to tile The range of colours and tones within the same shade is moderately noticeable from tile to tile. Clearly distinguishable differences in design or pattern.	Distinctly noticeable from tile to tile The range of colours and tones within the same shade is distinctly different from tile to tile. Random colour differences from tile to tile, so that some tile may have totally different colour tones than other tiles. Final installation can be unique.



PASSIONATE ABOUT LIFE







Muse is for the whimsical dreamers among us. It is about breaking out of the box; and adopting a free spirit rather than structural approach to interior design and lifestyle at large.

With a fusion of 16 different patterns – each printed on tiles in dimension of 60x60cm – Muse simplifies the mix-and-match game, making it feasible for anyone to weave an artful, exotic patchwork into their own homes or commercial spaces. Even better, it harmonises with any interior aesthetic, given the choice of natural hues of blue, brown and grey. Colour options as such would appeal to even the most minimalist tastemakers as it allows one to play and build his or her preferred interior look with ease.

Whether installed on the wall or floor, Muse constantly oozes a thriving and creative energy. It is the answer to channelling a deeply individual eclectic style; a bohemian spirit that feels fresh and new in its own way.





*House*

*Sings A New*

*Bohemian Rhapsody*





# Hazel



GMU01 HAZEL

60x60cm . matt

*Muse*  
Sings A New Bohemian Rhapsody





# Marine



GMU02 MARINE

60x60cm . matt

*Muse*  
Sings A New Bohemian Rhapsody





**NIRO GRANITE**  
THE SWISS QUALITY TILE

*Dusty*



GMU03 DUSTY

60x60cm . matt

*Muse*  
Sings A New Bohemian Rhapsody





TECHNICAL SPECIFICATIONS				
DESCRIPTION	STANDARD TEST	MEASUREMENT UNIT	ISO STANDARD REQUIREMENT	NIRO GRANITE
Length & Width	ISO 10545 -2	mm	±0.6% Max	±0.30% Max
Thickness	ISO 10545 -2	mm	±5.0% Max	±5.0% Max
Sides Straightness	ISO 10545 -2	mm	±0.5% Max	±0.25% Max
Rectangularity	ISO 10545 -2	mm	±0.5% Max	±0.25% Max
Flatness: a) Centre Curvature	ISO 10545 -2	mm	±0.5% Max	±0.20% Max / Max 2.0mm
b) Edge Curvature	ISO 10545 -2	mm	±0.5% Max	±0.20% Max / Max 2.0mm
c) Warpage	ISO 10545 -2	mm	±0.5% Max	±0.20% Max / Max 2.0mm
Surface Quality	ISO 10545 -2	One Major Area of Tiles	≥ 95% free from visible defect	Comply
Water Absorption	ISO 10545 -3	Mass	≤0.5%	≤0.20%
Becking Strength	ISO 10545 -4	N	≥ 1300 N	≥ 1300 N
Modulus of Rupture	ISO 10545 -4	N/mm <sup>2</sup>	≥ 35 N/mm <sup>2</sup> Individual ≥ 32 N/mm <sup>2</sup>	≥ 35 N/mm <sup>2</sup> Individual ≥ 32 N/mm <sup>2</sup>
Abrasion Resistance				
a) Deep Abrasion for unglazed tiles	ISO 10545 -6	mm <sup>3</sup>	≤ 175 mm <sup>3</sup>	≤ 160 mm <sup>3</sup>
b) Surfaces Abrasion for glazed tiles	ISO 10545 -7	Visual Check	Manuf. to state abrasion class, cycle and passed	≥ PEI 3 (Dependent on product type)*
Crazing Test (glazed tiles)	ISO 10545 -11	Visual Check	No Sign of Crazing	No Sign of Crazing
Frost Resistance	ISO 10545 -12	Visual Check	Required	No Visible Crack
Chemical Resistance				
a) Low concentrations	ISO 10545 -13	Visual Check	Manuf. To State	Class A Class B (For Polished Tile)
b) Household chemicals and swimming pool salts	ISO 10545 -13	Visual Check	≥ Class B	Class A Class B (For Polished Tile)
Stain Resistance				
a) For unglazed tiles	ISO 10545 -14	Visual Check	Manuf. to State	≥ Class 3
b) For glazed tiles	ISO 10545 -14	Visual Check	≥ Class 3	≥ Class 3
Slip Resistance (Excluding Polished, Lappato and Matt Satin finishing)	AS/NZS 4586 App. A	P0 to P5	Manuf. to State	Wet Pendulum ≥ P2 (Dependent on product type)*

The technical specifications is only for rectified tiles. \* Refer to test report for specific test result.  
 Each different tiles series are produced to meet different performance requirements. For specific product technical performance, please request from Niro Granite sales team or their agent or distributor.

Colour Variations: Since the colour reproduction in this printed piece will vary from the actual tile colours, final selection should be made from tile samples. Colour, shade and glaze variations may exist due to the inherent characteristics of porcelain tile.

Due to the low porosity of porcelain tiles, an Improved High Performance Cementitious adhesive in accordance to BS EN 12004 & ISO 13007-1 is highly recommended for proper installation. Products that meet this standard are available amongst leading adhesive manufacturers. Please seek expert advice from adhesive manufacturers for proper selection and application.



SHADE AND TONALITIES

<b>U1</b> UNIFORM FROM TILE TO TILE	<b>V1</b> SLIGHTLY NOTICEABLE FROM TILE TO TILE	<b>V2</b> MODERATELY NOTICEABLE FROM TILE TO TILE	<b>D1</b> DISTINCTLY NOTICEABLE FROM TILE TO TILE
<b>U1</b> Uniform from tile to tile The range of colours and tones within the same shade is relatively uniform from tile to tile. Minimal to no difference among pieces from the same production run.	<b>V1</b> Slightly noticeable from tile to tile The range of colours and tones within the same shade is slightly noticeable from tile to tile. Clearly distinguishable differences in design or pattern with similar or slight change in colour tones.	<b>V2</b> Moderately noticeable from tile to tile The range of colours and tones within the same shade is moderately noticeable from tile to tile. Clearly distinguishable differences in design or pattern.	<b>D1</b> Distinctly noticeable from tile to tile The range of colours and tones within the same shade is distinctly different from tile to tile. Random colour differences from tile to tile, so that one tile may have totally different colour from the other tiles. Final installation can be unique.

