

REEF STONE

Reef stone is commonly found in clear, warm and shallow marine waters where its character is developed from the accumulation of shell, coral and other sediments found in the sea. This highly technical series builds on nature creating a perfect chromatic colour palette. It is available in both 10mm and 20mm for all architectural needs.

REEFSTONE

GREY

SILVER

WHITE

BLACK

1CM
THICKNESS

2CM
THICKNESS

600x600mm
Matt
Lappato
External – 10 & 20mm

300x600mm
Matt
Lappato
External

300x300mm
Matt
Lappato
External

75x300mm
Lappato only



GNS Ceramics recommends that our retail shops pass on the following information to the installer and end-user.

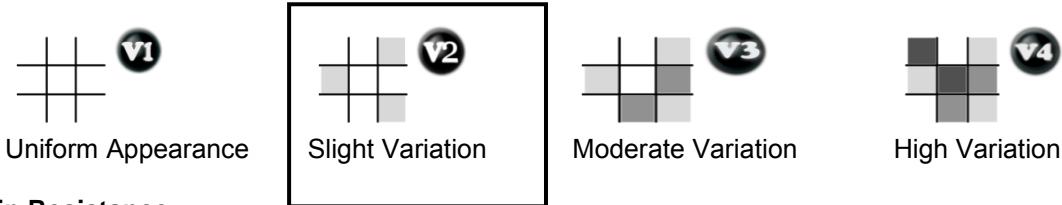
Ceramic tiles are only one component of a much larger building system. It is our experience that failure of any tiling system is very often the result of a combination of factors. For example; inappropriate design, type of substrate, surface preparation, temperature during installation, adhesives, incompatibility of products, product failure, environmental factors skill and knowledge of the installers etc; the latter being supplied or controlled by a variety of manufacturers and tradesmen. GNS Ceramics has no involvement in the design, selling and installation processes and once goods have been dispatched from our warehouse we have no control over where and how these products are used. As a result the project manager, and or the tiler are the only people in a position to ensure that all the components used in a project are compatible and that the product is installed in accordance with the Australian Building Code and the Australian Standards.

Installation Instructions for all types of tiles can be found in the GNS Ceramics Price List, and on our website. We suggest these are followed at all times.

Cleaning and Maintenance

Do not use abrasive cleaners and chemicals which could permanently scratch and damage the surface of the tile. For daily cleaning we recommend the use of a mild PH Neutral detergent. Should a more vigorous cleaning programme be required we recommend the use of a proprietary tile cleaner from a specialty tile supplier.

Colour & Pattern Variation Guide



Slip Resistance

The best way to minimise the risk of slipping is through safe design principals. This involves a risk management approach which evaluates the likelihood and consequence of an incident to occur. Slip resistive flooring is only one of the design components to consider, other design features should also be considered, including awnings, airlocks, matting and a suitable cleaning regime to reduce the extent of contaminates. Visual aids, warning signs, handrails and lighting, along with the footwear to be worn, should also be considered.

All ceramic tiles can be slippery, particularly when wet. This includes tiles, commonly used in wet areas such as bathrooms. It is important that customers be aware of the potential danger of wet ceramic tiles and seek advice from the retailer as to the level of slip-resistance of any particular tile, and its suitability for the intended application. If there is any doubt, tiles should be tested for slip-resistance immediately after being laid, under the conditions that they will be subject to during use. While tiles may achieve an acceptable standard in a laboratory test, it is quite probable that the performance in-situ will be less than expected, due to installation methods, wear & tear, cleaning regimes and unforeseen circumstances. Test results should therefore be seen as a relative guide to estimate the merits of one tile versus another and should be used in conjunction with the Australian Building Code and the relevant Australian Standards. Further information on slip resistance is provided in the Australian Standards HB198:2014 - An Introductory guide to the slip resistance of pedestrian surface materials.

There are many factors beyond the control of the supplier that can affect the level of slip-resistance of tiles, or contribute to the incidents of injury through slipping. Consequently, the laboratory test results presented here must not be viewed to mean that GNS Ceramics Pty Ltd, is providing any warranty, nor will accept any liability for personal injury or accidents arising from the selection or installation of tiles under any circumstances.

Classes of Use

The classification has taken into account the recommendations of the Australian Standards; however, they are given for general guidance only. They are valid for the given application under **NORMAL CONDITIONS** and should not be taken to provide accurate product specifications for specific requirements.

WARNING: Other standards and building code requirements may affect your selection of tiles.

Consideration should be given to the footwear, type of pedestrian traffic and cleaning methods expected. Floors should be adequately protected against soiling from following trades during installation; they should also be protected against scratching dirt at the entrances to building by interposing footwear cleaning devices. For example, mats, shoe scrapers, static devices, etc.


















CLASS 4 - Floor coverings that are walked on by regular traffic with some scratching dirt so that conditions are more severe than CLASS 3; For example, entrances, laundries with external access, living areas, entertainment areas, patio's, sales rooms, motels.

TECHNICAL SPECIFICATION

60x60cm 24"x24" ± 10mm



Compliant with standards EN 14411 annex G group Bla Compliant with standards ISO 13006 annex G group Bl_a

	Technical features	Test Method	Requirements for nominal size N			
			7cm≤N<15cm	N≥ 15cm		
			(mm)	(%)	(mm)	
	Length and width	ISO 10545–2	± 0.9	± 0.6	± 2.0	± 0.01% ± 0.02mm
	Thickness		± 0.5	± 5	± 0.5	± 1.00% ± 0.10mm
	Straightness of sides		± 0.75	± 0.5	± 1.5	± 0.04% ± 0.23mm
	Rectangularity		± 0.75...	± 0.5...	± 1.5...	± 0.06% ± 0.36mm
	Surface flatness		c.c ± 0.75	c.c ± 0.5	c.c ± 2.0	± 0.09% ± 0.74mm
			e.c ± 0.75	e.c ± 0.5	e.c ± 2.0	
			W. ± 0.75	W. ± 0.5	W. ± 2.0	
			En14411 annex G (Group Bl _a)		ISO 13006 annex G (Group Bl _a)	
	Water absorption	ISO 10545–3	E≤0.5% individual maximum 0.6%			E≤0. 11%
	Breaking strength	ISO 10545–4	S≥ 1300N			S≥2500N
	Modulus of rupture		R≥35N/mm²			R≥42.4N
	Abrasion resistance	ISO 10545–6	≤ 175mm³			Class 4
	Coefficient of thermal linear expansion	ISO 10545–8	Declared value		Test method available	3.9 X 10 ⁻⁶ K ⁻¹
	Thermal shock resistance	ISO 10545–9	Pass according to ISO 10545–1		Test method available	Resistant
	Resistance to household chemicals and swimming pool salts	ISO 10545–13	Minimum Class B		Class GA	Passed
	Resistance to low concentrations of acids and alkalis		Value		Class GLA	—
	Resistance to high concentrations of acids and alkalis		Value		Class GHA	—
	Moisture expansion(in mm/m)	ISO 10545–10	Declared value		Test method available	≤0.72 mm/m
	Frost resistance	ISO 10545–12	Pass according to ISO 10545–1		Required	Resistant
	Impact resistance, as coefficient of restitution	ISO 10545–5	Declared value		Test method available	≥0. 67
	Mohs hardness	EN 101	≥6(UGL)			7
	Bond strength/ adhesion	EN 1348	Declared value		—	N/A
	Reaction to fire		Class A1 or A1		—	A1 _s
	Resistance to staining	ISO 10545–14	Minimum Class 3		Test method available	Class 5
	Coefficient of friction(COF)	B.C.R.A.Rep.CEC/81	D M 236/89 del 14/06/89			1.21Dry 1.19Wet
	Dynamic coefficient of friction	ANSI A137.1–2012	ANSI A.137.1 Requires a minimum value of 0.42 for commercial areas that are likely to be wet			0.64Dry 0.61Wet
	Static coefficient of friction(SCOF)	ASTM C1028–2007	The Ceramic Tiles Institute identifies Tile Slip Resistant when SCOF≥0.60			≥0.80Dry ≥0.80Wet
	Slip resistance Classification of New Pedestrian Surface Materials	AS 4586 : 2013 Appendix A	Accredited for compliance with iso/iec 17025			P5
	Pendulum Friction Test	Appendix A(Four S rubber)	Declared classification of the pedestrian surface materials according to the Wet Pendulum Test			Class V
	Barefoot Ramp Test	DIN 51097 (CEN/TS 16165.Annex A)	Declared value		—	C
	Shod Ramp Test	DIN 51130 (CEN/TS 16165.Annex A)	Declared value		—	R11
	Pendulum Friction Test	BS 7976–2002(CEN/TS 16165. Annex C)	Declared value		—	PTV>64Dry PTV>38Wet



www.viewgres.com





Compliant with standards EN 14411 annex G group BIa Compliant with standards ISO 13006 annex G group BIa

	Technical features	Test Method	Requirements for nominal size N		
			7cm ≤ N < 15cm	N ≥ 15cm	
			(mm)	(%)	(mm)
	Length and width	ISO 10545-2	± 0.9	± 0.6	± 2.0
	Thickness		± 0.5	± 5	± 0.5
	Straightness of sides		± 0.75	± 0.5	± 1.5
	Rectangularity		± 0.75...	± 0.5...	± 1.5...
	Surface flatness	ISO 10545-2	c.c ± 0.75	c.c ± 0.5	c.c ± 2.0
			e.c ± 0.75	e.c ± 0.5	e.c ± 2.0
			W. ± 0.75	W. ± 0.5	W. ± 2.0
			En14411 annex G (Group BI _a) ISO 13006 annex G (Group BI _a)		
	Water absorption	ISO 10545-3	E ≤ 0.5% individual maximum 0.6%		
	Breaking strength	ISO 10545-4	S ≥ 1300N		
	Modulus of rupture		R ≥ 35N/mm ²		
	Abrasion resistance	ISO 10545-6	≤ 175mm ³		
	Coefficient of thermal linear expansion	ISO 10545-8	Declared value	Test method available	3.9 X 10 ⁻⁶ K ⁻¹
	Thermal shock resistance	ISO 10545-9	Pass according to ISO 10545-1	Test method available	Resistant
	Resistance to household chemicals and swimming pool salts	ISO 10545-13	Minimum Class B	Class GA	Passed
	Resistance to low concentrations of acids and alkalis		Value	Class GLA	—
	Resistance to high concentrations of acids and alkalis		Value	Class GH/A	—
	Moisture expansion(in mm/m)	ISO 10545-10	Declared value	Test method available	≤ 0.72 mm/m
	Frost resistance	ISO 10545-12	Pass according to ISO 10545-1	Required	Resistant
	Impact resistance, as coefficient of restitution	ISO 10545-5	Declared value	Test method available	≥ 0.7
	Mohs hardness	EN 101	≥ 6(UGL)		
	Bond strength/ adhesion	EN 1348	Declared value	—	N/A
	Reaction to fire		Class A1 or A1	—	A1 _s
	Resistance to staining	ISO 10545-14	Minimum Class 3	Test method available	Class 5
	Coefficient of friction(COF)	B.C.R.A.Rep.CEC/81	D M 236/89 del 14/06/89		
	Dynamic coefficient of friction	ANSI A137.1-2012	ANSI A.137.1 Requires a minimum value of 0.42 for commercial areas that are likely to be wet		
	Static coefficient of friction(SCOF)	ASTM C1028-2007	The Ceramic Tiles Institute identifies Tile Slip Resistant when SCOF ≥ 0.60		
	Slip resistance Classification of New Pedestrian Surface Materials	AS 4586 : 2013 Appendix A	Accredited for compliance with iso/iec 17025		
	Pendulum Friction Test	Appendix A(Four S rubber)	Declared classification of the pedestrian surface materials according to the Wet Pendulum Test		
	Barefoot Ramp Test	DIN 51097 (CEN/TS 16165, Annex A)	Declared value	—	C
	Shod Ramp Test	DIN 51130 (CEN/TS 16165, Annex A)	Declared value	—	R11
	Pendulum Friction Test	BS 7976-2002(CEN/TS 16165, Annex C)	Declared value	—	PTV > 90Dry PTV > 60Wet

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS AS 4586 (2013) "Appendix A" (Wet Pendulum Method)

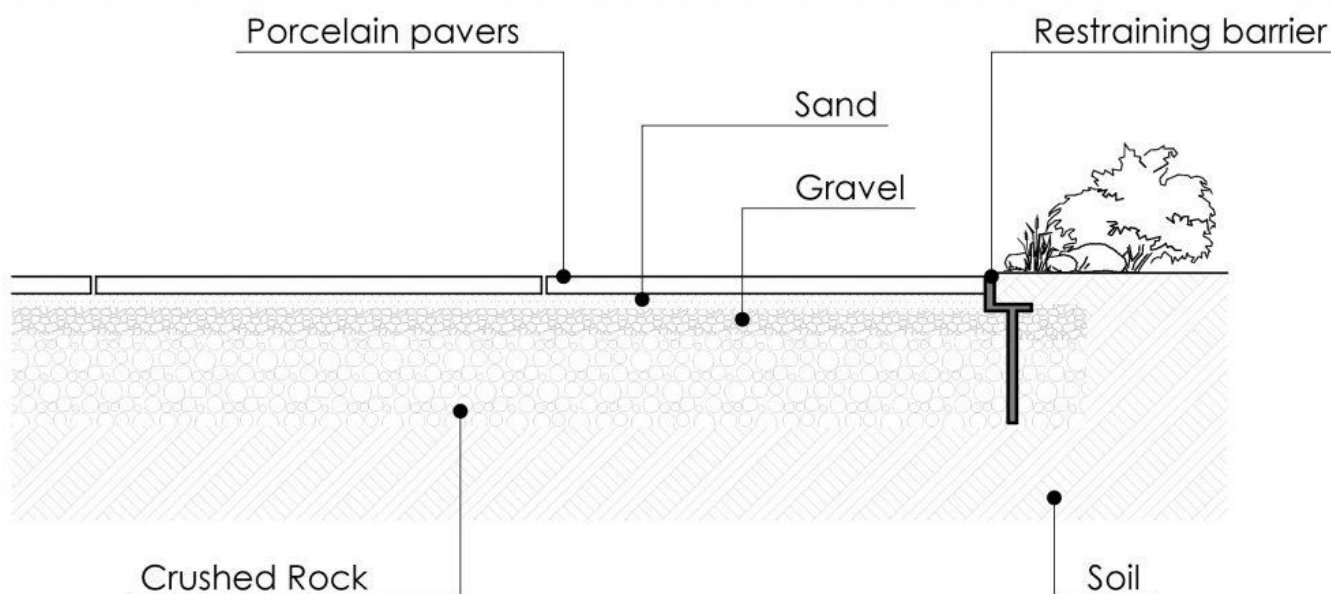
Client:	GNS Ceramics Pty Ltd		Client Address	3 Cox Place, Glendenning. NSW 2761								
Project:	Test tile samples as supplied											
Property Tested:	3 Cox Place, Glendenning. NSW 2761		Date	14/112017	Test Report	141120174			Issue Date	14/11/2017		
Testing was carried out using the Wet Test Method, using Type 96 (4S) rubber slider, in accordance with Australian Standard AS 4586 Appendix A. Slider was conditioned/prepared using P400 abrasive paper and 3 µm pink lapping film.												
Description of test sample (including any surface coatings, contamination and wear).		Specimen Number	Test Location	Test Type Fixed/ Unfixed	Surface Gradient Degrees	Type and extent of cleaning performed	Results of last three swings British Pendulum Number			Mean BPN Value (SRV)	Slope correction value (SCV)	Comments
Number of specimens tested		5										
600 mm x 600 mm Porcelain "Viewgres Reefstone Grey Matt" Tile. Code: RF 1666 (6REEGYM). Batch: H49C Samples clean and in good condition.		1	Tile 1	Unfixed	<1.5°	Water only. Samples tested in "as found" condition.	38	37	37	37	Not Applicable	
		2	Tile 2.	Unfixed	<1.5°		38	37	36	37	Not Applicable	
		3	Tile 3.	Unfixed	<1.5°		39	37	36	37	Not Applicable	
		4	Tile 4.	Unfixed	<1.5°		37	35	34	35	Not Applicable	
		5	Tile 5.	Unfixed	<1.5°		38	37	36	37	Not Applicable	
Comments			Mean BPN Slip Resistance Value (SRV)							37	Classification Without SCV	P3
Temperature:	21°C	Weather	Indoors									
Testing Officer & Signatory Mark McKay 			 ACCREDITED FOR TECHNICAL COMPETENCE	Sliptest NSW Materials Testing Laboratory – Accreditation No: 18615 27 Thomas Mitchell Rd, Killarney Vale. NSW 2261							For information regarding Slope Correction Values, please refer to Appendix F of AS 4586 and HB 198 Tables 3A and 3B.	
Testing Instrument: Munro Portable Skid Tester #1109 Calibration Date: 12th May 2017				Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements are traceable to Australian/National standards								
The AS 4586 standard provides a guide and recommendation for use, we recommend that this test report be read in conjunction with AS 4586 and Handbook HB 198:2014. The results in this test do not account for any future wear contamination or maintenance of this surface. Sliptest NSW or our agents, licensees or employees accept no responsibility for any actions whatsoever which may arise as a result of this test report, all information within this report is copyright and is protected by copyright law.												
Notes / Remarks / Variations												
1		Fixed Test: Testing is performed in the anticipated direction of pedestrian travel.										
2		Unfixed Test: Testing is performed in the direction of least anticipated slip resistance										
3												
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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS AS 4586 (2013) "Appendix A" (Wet Pendulum Method)

Client:	GNS Ceramics Pty Ltd		Client Address	3 Cox Place, Glendenning. NSW 2761								
Project:	Test tile samples as supplied											
Property Tested:	3 Cox Place, Glendenning. NSW 2761	Date	11/09/2017	Test Report	110920176a		Issue Date	11/09/2017				
Testing was carried out using the Wet Test Method, using Type 96 (4S) rubber slider, in accordance with Australian Standard AS 4586 Appendix A. Slider was conditioned/prepared using P400 abrasive paper and 3 µm pink lapping film.												
Description of test sample (including any surface coatings, contamination and wear).		Specimen Number	Test Location	Test Type Fixed/ Unfixed	Surface Gradient Degrees	Type and extent of cleaning performed	Results of last three swings British Pendulum Number	Mean BPN Value (SRV)	Slope correction value (SCV)	Comments		
Number of specimens tested		5										
300 mm x 300 mm Viewgres Reef Stone Grey external (Factory code RF1336A) Samples clean and in good condition.		1	Tile 1	Unfixed	<1.5°	Water only. Samples tested in "as found" condition.	65	65	64	65	Not Applicable	
		2	Tile 2.	Unfixed	<1.5°		64	64	64	64	Not Applicable	
		3	Tile 3.	Unfixed	<1.5°		65	65	64	65	Not Applicable	
		4	Tile 4.	Unfixed	<1.5°		65	65	65	65	Not Applicable	
		5	Tile 5.	Unfixed	<1.5°		65	65	64	65	Not Applicable	
Comments			Mean BPN Slip Resistance Value (SRV)					65	Classification Without SCV	P5		
Temperature:	19°C	Weather	Indoors									
Testing Officer & Signatory Mark McKay 				Sliptest NSW Materials Testing Laboratory – Accreditation No: 18615 27 Thomas Mitchell Rd, Killarney Vale. NSW 2261						For information regarding Slope Correction Values, please refer to Appendix F of AS 4586 and HB 198 Tables 3A and 3B.		
Testing Instrument: Munro Portable Skid Tester #1109 Calibration Date: 12th May 2017				Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements are traceable to Australian/National standards								
The AS 4586 standard provides a guide and recommendation for use, we recommend that this test report be read in conjunction with AS 4586 and Handbook HB 198:2014. The results in this test do not account for any future wear contamination or maintenance of this surface. Sliptest NSW or our agents, licensees or employees accept no responsibility for any actions whatsoever which may arise as a result of this test report, all information within this report is copyright and is protected by copyright law.			Notes / Remarks / Variations									
			1	Fixed Test: Testing is performed in the anticipated direction of pedestrian travel.								
			2	Unfixed Test: Testing is performed in the direction of least anticipated slip resistance								
			3									
			Controlled Document TR 4586 4S version 5 04.01.16									

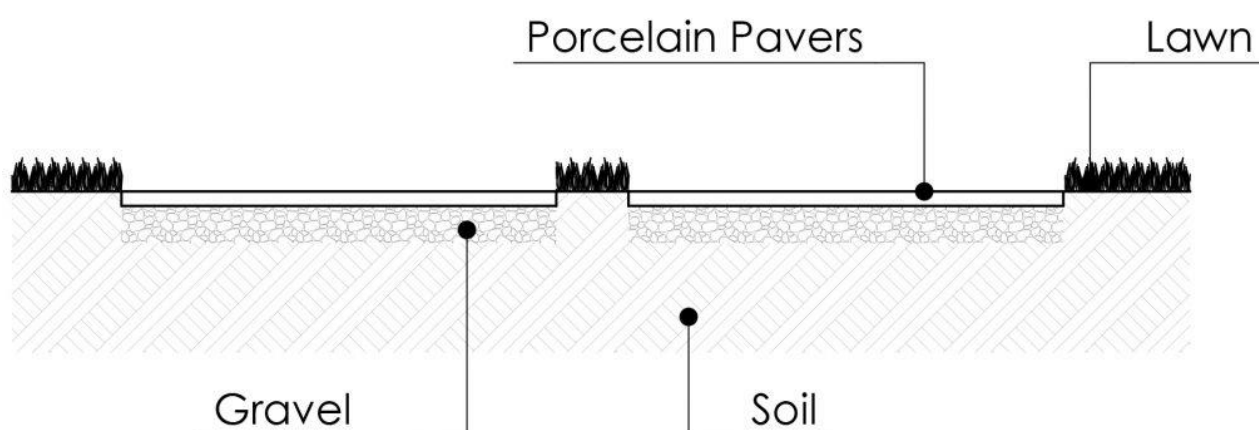
Porcelain pavers on a gravel/sand bed.

- Firstly, ensure there is a min. 2° slope for drainage which must be directed away from any building.
- After defining the area to be excavated, mark the perimeter using marker posts connected by a string. Note that the excavated area should be extended on all sides by approx. 200mm to ensure stability at the outer edges of the paved area.
- Remove the soil inside the marked area using a shovel or excavator. The depth of excavation will depend on several factors including the anticipated loading, the drainage capacity of the soil and the soil conditions in general.
- Using a rake or shovel, level the excavated area and ensure there is at least 2° slope for good drainage.
- Compact the soil with a vibrating compactor.
- A restraining perimeter wall should be installed prior to laying the gravel/sand bed unless it is in direct contact with a footpath, wall or an existing edge that is sufficiently rigid. The perimeter wall should be fixed to the ground with mechanical fixing devices or constructed as a solid barrier using poured concrete.
- Place a sheet of geotextile fabric on top of the compacted soil to prevent the soil from mixing with the gravel.
- Fill the excavated area with 15-20mm stone screenings to a thickness of 200 – 300mm, depending on the planned loading.
- Add a further layer of 10mm gravel to a thickness between 100- 200mm.
- Compact the two layers and then level ensuring there is a slope of approximately 2°.
- Place a sheet of geotextile fabric on top of the compacted gravel to prevent the gravel from mixing with the sand.
- Fill the area with paving sand to a thickness of between 20-25mm and compact with a vibrating compactor.
- Level the surface by sliding a wood or steel board placed on two parallel runners across the entire area, again ensuring there is a slope of approximately 2°.
- Taking care not to disturb the sand bed, lay the paving slabs using 3mm spacers. **Do not butt joint**
- Carefully tap the pavers with a rubber mallet to ensure they are not rocking on the sand bed and that they are level with each other. Fill the joints with polymeric sand that is suitable for use with porcelain tiles.



Porcelain pavers on grass.

- Lay the pavers on the ground to determine the numbers of steps needed for the garden path, making sure the pavers are placed at equal distance from each other.
- The joint width between the pavers should be chosen depending on the appearance required. For stepping stones or pathways, the pavers would be normally laid with open joints with grass in between. However for areas where outdoor furniture will be used, pavers would normally be laid with 3mm joints ensuring the joints are filled with polymeric sand that is suitable for use with porcelain tiles.
- Mark the perimeter of each paver with a spade and then remove the pavers.
- Remove the turf up to a depth of between 50-75mm.
- Fill with a layer of fine 5-10mm gravel and compact the gravel before laying the pavers. If preferred, lay 25mm thick layer of sand to add as a bed for the pavers.
- Carefully lay the pavers so they protrude above ground level by approximately 6-10mm. The pavers must not protrude above the lawn level, to avoid damaging lawn mower blades when cutting the grass.
- Carefully tap the pavers with a rubber mallet to ensure they are bedded properly.

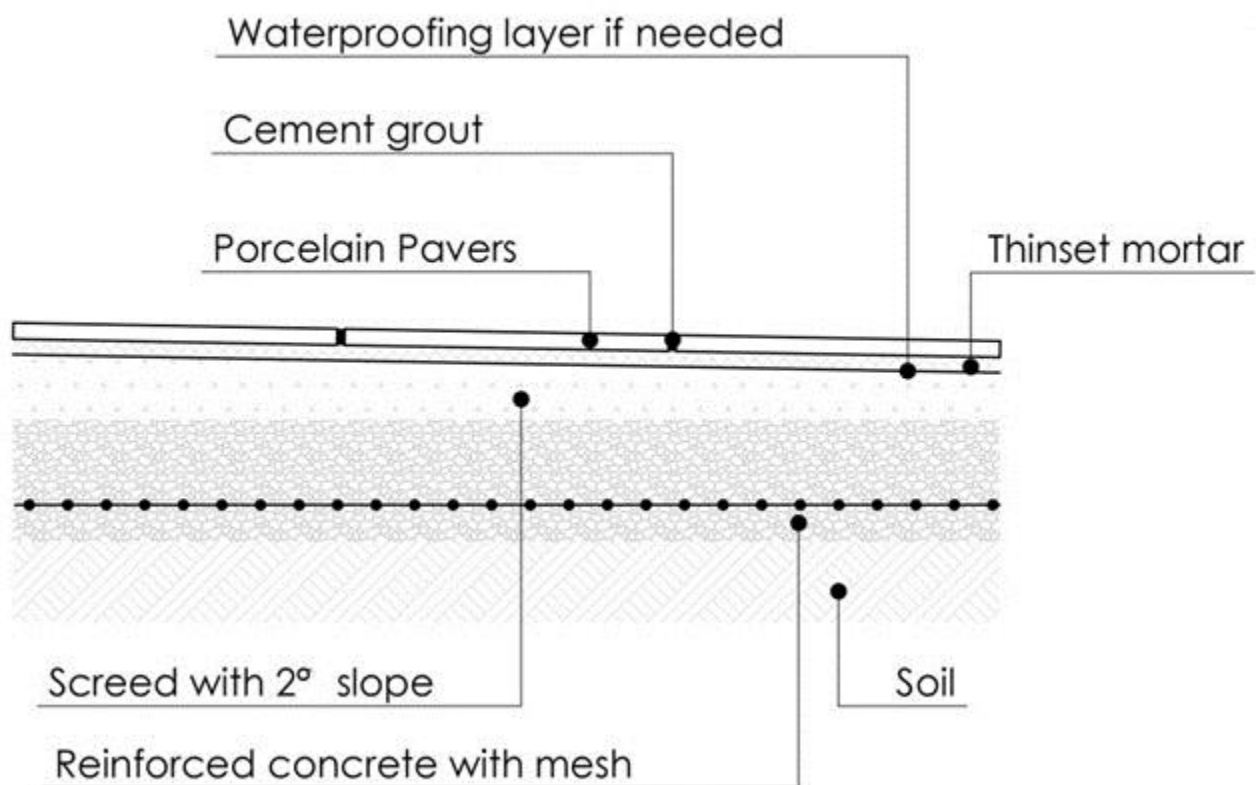


Porcelain pavers for elevated deck applications.


- For elevated deck applications, adjustable height pedestal supports offer the easiest and quickest way to construct a perfectly horizontal deck or terrace over sloping or uneven surfaces, avoiding the need to construct extensive supporting substructures of wood or metal beams. Electrical cables and pipes can be hidden under the pavers but easily inspected at any time by simply lifting individual pavers.
- Depending on the width of the pavers, pedestals are either placed directly under the pavers or are used to support an array of hollow steel beams, over which the pavers are laid.
- For instructions on how to install pavers using the pedestal system we recommend following the manufactures' instructions.

Porcelain pavers on a concrete base.

- Verify the concrete substrate is in good condition, is installed in accordance with relevant building codes and reinforced with steel mesh, and is constructed with a 2° slope pitched away from any building.
- Clean the surface of the concrete to ensure good adhesion of the pavers.
- Spread an approved exterior grade thin set mortar over the concrete using the correct sized notched trowel.
- Lay the pavers on the thin set with minimum 3mm joint spacing where the area is not large enough to require expansion joints, or with 5mm spacing where expansion joints are present. All expansion joints should be installed in accordance with Australian Standards and must be located along the joint line of the installed pavers to avoid cracking of the pavers.
- After the thin set has dried, grout the pavers with an approved exterior grade grout.
- Wash the pavers carefully after grouting to remove excess grout.
- A final buffered acid wash will also be required to remove any invisible grout residue.
- If polymeric sand is preferred over grout, we recommend proprietary Tile Sand which is specifically made for porcelain pavers.



SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS AS 4586 (2013) "Appendix A" (Wet Pendulum Method)

Client:	GNS Ceramics Pty Ltd	Client Address	3 Cox Place, Glendenning. NSW 2761									
Project:	Test tile samples as supplied											
Property Tested:	3 Cox Place, Glendenning. NSW 2761	Date	14/112017	Test Report	141120175			Issue Date	14/11/2017			
Testing was carried out using the Wet Test Method, using Type 96 (4S) rubber slider, in accordance with Australian Standard AS 4586 Appendix A. Slider was conditioned/prepared using P400 abrasive paper and 3 µm pink lapping film.												
Description of test sample (including any surface coatings, contamination and wear).		Specimen Number	Test Location	Test Type Fixed/ Unfixed	Surface Gradient Degrees	Type and extent of cleaning performed	Results of last three swings British Pendulum Number			Mean BPN Value (SRV)	Slope correction value (SCV)	Comments
Number of specimens tested		5										
600 mm x 600 mm x 20 mm Porcelain "Viewgres Reefstone Grey External" Tile. Code: RF 2666A (6REEGY2CX). Batch: H41C Samples clean and in good condition.		1	Tile 1	Unfixed	<1.5°	Water only. Samples tested in "as found" condition.	64	64	64	64	Not Applicable	
		2	Tile 2.	Unfixed	<1.5°		65	64	64	64	Not Applicable	
		3	Tile 3.	Unfixed	<1.5°		65	65	64	65	Not Applicable	
		4	Tile 4.	Unfixed	<1.5°		65	65	64	65	Not Applicable	
		5	Tile 5.	Unfixed	<1.5°		65	65	65	65	Not Applicable	
Comments			Mean BPN Slip Resistance Value (SRV)							65	Classification Without SCV	P5
Temperature:	21°C	Weather	Indoors									
Testing Officer & Signatory Mark McKay			Sliptest NSW Materials Testing Laboratory – Accreditation No: 18615 27 Thomas Mitchell Rd, Killarney Vale. NSW 2261									For information regarding Slope Correction Values, please refer to Appendix F of AS 4586 and HB 198 Tables 3A and 3B.
Testing Instrument: Munro Portable Skid Tester #1109 Calibration Date: 12th May 2017			Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements are traceable to Australian/National standards									
The AS 4586 standard provides a guide and recommendation for use, we recommend that this test report be read in conjunction with AS 4586 and Handbook HB 198:2014. The results in this test do not account for any future wear contamination or maintenance of this surface. Sliptest NSW or our agents, licensees or employees accept no responsibility for any actions whatsoever which may arise as a result of this test report, all information within this report is copyright and is protected by copyright law.												
Notes / Remarks / Variations												
1		Fixed Test: Testing is performed in the anticipated direction of pedestrian travel.										
2		Unfixed Test: Testing is performed in the direction of least anticipated slip resistance										
3												
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