Viblock

Paving Installation Specification

viblock.co.nz

I have checked this specification and related Q&A thoroughly and have verified its content and technic al accuracy.
☐ It is approved for issue
✓ It is approved for issue with changes as marked

Signed:.....Ben Freeman.....Date:.....23/7/21.....

8231VB VIBLOCK PAVING

1. GENERAL

This section relates to the supply, bedding and laying of **Viblock** pavers.

It includes:

- Dry Cast Pavers, pavers for patios, walkways and light vehicle traffic
- Dry Cast Pavers, pavers for public pathways and commercial vehicular traffic

1.1 RELATED WORK
Refer to the 8212 SUB BASES TO SEALING AND PAVING for sub base preparation.

1.2 ABBREVIATIONS AND DEFINITIONS
Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following definitions apply specifically to this section:

Flagstone Pavers	Large format solid paver with a gross plan area of greater than 0.08m² and at least 40mm thick. (in accordance with NZS 3116).

Delete abbreviations or definitions that are not used.

Documents

1.3 DOCUMENTS
Refer to the general section 1233 REFERENCED DOCUMENTS. The following docume nts are specifically referred to in this section:

NZBC D1/AS1	Access Routes
AS/NZS 1428.4.1	Design for access & mobility. Part 4.1 Means of assist the orientation o f people with a visual impairment - Tactile ground surface indicators
NZS 3104	Specification for concrete production
NZS 3116	Concrete segmental and flagstone paving
NZS 3661.1	Slip Resistance of pedestrian surfaces - Requirements
NZS 4121	Design for access & mobility - buildings and associated facilities
AS 4586	Slip resistance classification of new pedestrian surface materials

Delete from the DOCUMENTS clause any document not cited. List any additional cited documents. AS/NZS 3661.1 has been superseded, but is still cited in NZBC D1/AS1.

1.4 MANUFACTURER/SUPPLIER DOCUMENTS
Manufacturer and supplier documents relating to this part of the work:

Viblock	Masonry & Paving Chart
Viblock	Paving Brochure
Viblock	Masonry Paving Laying Guide
Slip Resistance Testing	Fulton Hogan -Lab Ref CAN20W2928 / CAN20S-09865 for Life style Paving - 450mm x450mm
Slip Resistance Testing	Fulton Hogan -Lab Ref CAN21W2126 / CAN21S-06285 for Con crete Masonry 200x100mm fairfaced, honed & textured
Test Report Pavers	Central Testing Services. Various test reports to AS/NZS 4456. 2 & 5 Breaking load & flexural strength, for various pavers.

Manufacturer/supplier contact details

Company:	Viblock
Web:	www.viblock.co.nz
Email:	sales@viblock.co.nz
Telephone:	03-343-0394

Requirements

1.5 QUALIFICATIONS GENERALLY
Refer to 1270 CONSTRUCTION for requirements relating to qualifications.

1.6 NO SUBSTITUTIONS
Substitutions are not permitted to any of the specified Viblock pavers and associated Vibl ock products listed in this section.

1.7 CONFIRM APPEARANCE
Before commencing work confirm the layout and any elements affecting the visual appear ance of the work. Pavers should be mixed on site from several pallets to ensure blending and avoid colour contrasts. Ensure extra paving is from the same batch to avoid colour v ariation.

Performance – Slip resistance

1.8 SLIP RESISTANCE - SURFACES EXEMPT FROM TESTING
Walking surfaces comply with NZBC D1/AS1, Table 2 for slip resistance requirements an d are exempt from testing.

1.9 SLIP RESISTANCE - PREVIOUSLY TESTED SURFACE
The following walking surfaces have previously been tested for slip resistance, and compl y with NZBC D1/AS1 requirements.

Lifestyle Paving, plain: 450x450mm	Fulton Hogan -Lab Ref CAN20W2928 / CAN20S-09865 Tested to AS 4586 (Appendix A -wet pendulum test) & Co-efficient of friction obtained from NZS 3661.1 Slip Resistance Value 63 Co-efficient of friction 0.71 AS 4586 Table 2 - class P5
Concrete Pavers, honed: 200x100mm	Fulton Hogan -Lab Ref CAN21W2126 / CAN21S-06285 Tested to AS 4586 (Appendix A -wet pendulum test) & Co-efficient of friction obtained from NZS 3661.1 Slip Resistance Value 62/62/60 Co-efficient of friction 0.69/0.69/0.67 AS 4586 Table 2 - class P5
Concrete Pavers, fair-faced 2l.,.00x100mm	Fulton Hogan -Lab Ref CAN21W2126 / CAN21S-06285 Tested to AS 4586 (Appendix A -wet pendulum test) & Co-efficient of friction obtained from NZS 3661.1 Slip Resistance Value 65/64/63 Co-efficient of friction 0.74/0.72/0.71 AS 4586 Table 2 - class P5
Concrete Pavers, textured: 200x100mm	Fulton Hogan -Lab Ref CAN21W2126 / CAN21S-06285 Tested to AS 4586 (Appendix A -wet pendulum test) & Co-efficient of friction obtained from NZS 3661.1 Slip Resistance Value 74/76/75 Co-efficient of friction 0.87/0.90/0.88 AS 4586 Table 2 - class P5

1.10 TEST - SLIP RESISTANCE
Test walking surfaces for slip resistance, refer to SELECTIONS for test condition.

2. PRODUCTS

Materials - general

2.1 BASECOURSE
Graded granular base material with hard durable particles free from organic matter to NZS 3116.

2.2 BEDDING SAND
Hard, durable, angular particles to NZS 3116 to Table 3 depending on paving application and to the grading limits of table 4, Grading limits for bedding sand.

2.3 JOINTING SAND
Cemix Joint Sand to NZS 3116.

2.4 STABILISED JOINTING SAND
Cemix Pavetight Sand to NZS 3116, a blend of graded sand and other admixtures to improve workability and locking performance.
Note: Cemix Pavetight Sand is ideal for use in high winds, steep gradients and high trafficked areas .

2.6 CONCRETE
Prescribed mix to NZS 3104 (except where specified otherwise).

Haunching concrete:	17.5 MPa
Infill concrete:	25 MPa

Materials - Commercial Pavers

2.17 COMMERCIAL DRY CAST PAVERS
Viblock dry cast, commercial concrete pavers to NZS 3116. Cobblestone 60mm thick, London Pavers 80mm thick or Lifestyle Pavers 60mm or 80mm thick, available in fair-face, honed or textured finish in a range of sizes and colours. Refer to SELECTIONS for details.

2.22 PAVING SEALER
Refer to SELECTIONS

3. EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS
Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

Take delivery of pavers on protected pallets, undamaged and dry. Store on level hard standings, protect from damage and keep dry until laid.

Deliver to site only sufficient sands for current work. Keep dry until used

3.2 ROUTINE MATTERS
Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-INSTALLATION REQUIREMENTS

Check work previously carried out and confirm it is of the required standard for this part of the work.

Before starting paving work inspect the area to ensure that kerbing, edge restraints, drain age, cesspits, channels, basecourse and other services are in place to correct falls and to allow work of the required standard.

3.4 PAVING PATTERN

Confirm paving pattern and header course.

Laying pattern: 45 deg/90 deg Herringbone: suitable for vehicle use when laid at 45 deg or 9 0 deg to traffic direction
Stretcher bond: suitable for patios, courtyards or paths only
Basket weave: suitable for patios, courtyards or paths only

3.5 SURFACE TOLERANCES

Final surface of paving:	±10mm of design level
Surface level above drainage:	5mm minimum above drainage channels or gully entrie s and continuously graded towards them
Maximum deviation:	8mm in 3 metres without ponding
Surface variation:	2mm maximum surface variation between two adjacent pavers.
Between adjacent blocks:	2mm - 4mm joint generally

Levels are critical with all paving work, as falls are often minimal for providing proper run-off. Add f urther inspection and verification clauses for larger paved areas particularly.

Installation - general

3.6 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

3.7 EXCAVATE AND PREPARE THE SUB-GRADE

Remove all organic matter, top soil and excavate to the required depth. Assess for streng th, uniformity, remove any soft, loose areas. Fill as required using organic-free material. Compact in 100mm layers maximum. Compact using a plate compactor or rammer. The finished sub-grade should match the exact contour for the final paving within a tolerance of ±20mm at any point, use string lines to assist.

Delete clause if using 8212 SUB BASES TO SEALING AND PAVING

3.8 EXCAVATE AND PREPARE THE SUB-GRADE - COMMERCIAL APPLICATIONS

Refer to 8212 SUB BASES TO SEALING AND PAVING for details

3.9 PREPARE THE BASECOURSE

Construct basecourse to required thickness to NZS 3116, table 2, Basecourse thickness i n mm. Fill in and compact in 100mm layers maximum and compact to a uniform dense c ondition, particularly around manholes and kerbs. If the texture of the finished base cours e allows bedding sand to drain through, seal the base course with GAP7 before proceedi ng. The finished base course should match the exact contour for the final paving within a tolerance of ±10mm at any point.

3.10 INSTALL EDGE RESTRAINT

Install selected edge restraint to the perimeter of the paved area. Edge restraint should e xtend at least 50mm below the bedding sand and should be installed prior to the laying of the pavers.

3.11 LAY BEDDING SAND - GENERALLY

Loose lay sand using screeds over the prepared basecourse to a depth dependent on the sand and its water content to give a nominal compacted thickness of 30mm. Check thick ness by initial compaction of the first few metres of paving. If the correct finished level is not obtained, lift pavers, rack sand and re screed. Screed the compacted surface to finis

h completely level. Temporary screed boards shall be used where screed widths exceed 5m.

The sand shall be protected against any form of compaction / traffic until the pavers are la id, do not place bedding sand that cannot be covered with paving on the same day.

3.13 LAY PAVERS - GENERALLY

Set up string lines in 2 directions at 5 metre centres maximum to ensure joint lines are str aight and square. Lay whole pavers first within the string line grid with joint widths in the r ange of 2mm to 4mm. For segmental pavers compact to NZS 3116, clause 310.4 Laying and Initial Compaction.

Pedestrian areas Private driveways	Standard plate compactor(s): 60 - 120 kg static weight 10 - 24 kN centrifugal force
All other uses including Pedestrian areas subject to heavy vehicles Driveways subject to heavy vehicles Roading	Heavy duty plate compactor(s) 300 - 600 kg static weight 30 - 65kN centrifugal force

3.14 LAY PAVERS - ON PRE-COMPACTED SAND

Set up string lines in 2 directions at 5 metre centres maximum to ensure joint lines are str aight and square. Lay whole pavers first within the string line grid with joint widths in the r ange of 2mm to 4mm. The segmental / flagstone pavers shall be bedded into the loose t op surface of the bedding sand, position and level using a rubber mallet as required in ac cordance to NZS 3116, clause 310.5.

3.15 CUTTING PAVERS

Cut pavers, neat and tidy with a diamond-tipped saw blade. Do not use cut units less tha n half a paver. Adjust pattern to suit as necessary.

3.17 FORM CONCRETE HAUNCHING

Excavate and cut away base course to at least 50mm below bedding sand and place hau nching concrete. Set paver soldier course in concrete haunching to the levels shown. All ow concrete to cure before making good the adjoining basecourse. Do not allow traffic on adjacent paving while work is being carried out and until concrete has set.

3.18 JOINT FILLING AND COMPACTION - GENERALLY

On completion of the paver compaction, spread joint filling sand dry over the surface and broom in to fill joints completely. Once haunching has set, compact the pavers using a su itable vibrating plate compactor.

Keep topping up the joints as the jointing sand settles until they are completely full and th e pavers locked in. Sweep off the excess sand and compact again. Inspect after 3 days and re-sand and re-vibrate again as necessary.

Repeat at 2 week intervals once the pavers have had traffic, until 2 such inspections sho w no loss or settlement of joint sand.

A vibrating compactor can only be used on pavers 50mm thick minimum and from a 300mm x 300 mm paver size downwards.

Completion & Commissioning

3.37 COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioni ng requirements.

4. SELECTIONS

For further details on selections go to www.Viblock.co.nz.
Substitutions are not permitted to the following, unless stated otherwise.

Performance

4.1 TEST - SLIP RESISTANCE

Test walking surface for slip resistance to comply with NZBC D1/AS1, 2.1 Slip resistance. Refer to 1278SR SCHEDULE OF SLIP RESISTANCE TESTING for test method, minimu m test value required and general reporting requirements.

Location:	~
Surface:	~
Test condition:	~
Level / slope:	~
Specific reporting req uirements:	~

Use this clause if NZBC D1/AS1, Table 2, requires a surface to be tested (or if the surface is outsid e the scope of Table 2) and the contractor is to organize the test.

Location:	*Describe, testing on site (possible multiple locations), testing off site in a lab , etc.*
Surface:	*Identify surface to be tested, expand clause if multiple surfaces require diffe rent tests.*
Test condition:	*Copy descriptions below unaltered, as they determine test method and mini mum test value, as stated in 1278SR SCHEDULE OF SLIP RESISTANCE TESTING*
	Level access wet
	Sloping access wet
	Stairs wet - with slip resistant nosings
	Stairs wet - without slip resistant nosings
	Wet areas primarily used barefoot
	Level access dry
	Sloping access dry
	Stairs dry - with slip resistant nosings
	Stairs dry - without slip resistant nosings
	Contaminated walking surfaces (by oils and similar slip-inducing materials)
	Other - nominate test condition required and provide supporting test method and minimum test value required in 1278SR SCHEDULE OF SLIP RESIST ANCE TESTING
Level / slope:	*Level or nominate slope as a ratio or in degrees*
	Level surface includes slopes no steeper than 1:50
	Sloping surfaces for wet conditions - slopes > 1:50 but < 1:10
	Sloping surfaces for dry conditions - slopes > 1:50 but < 1:8
Reporting requirements:	*Nominate a date for submission of test results and a recipient.*

Ensure the section 1278SR SCHEDULE OF SLIP RESISTANCE TESTING is included in the specif ication, as it is required to supplement TEST - SLIP RESISTANCE clause content.

Commercial Pavers

4.7 COMMERCIAL DRY CAST, LIFESTYLE PAVERS

Location:	~
Manufacturer:	Viblock
Type:	Lifestyle Pavers
Size:	~
Colour:	~
Finish:	~
Laying pattern:	~
Installation:	On prepared bedding sand to NZS 3116 309.3.2 Method 2, Sand pre-c ompaction over compacted base course to NZS 3116
Joints:	~

Options:

Location:	*Suitable for public footpaths, residential medium traffic and commercial vehicular traffic (NZS 3661 -Roads -Minor) applications.*
Size:	*300mm x 300mm x 50mm - suitable for residential pedestrian*
	450mm x 450mm x 50mm - suitable for residential pedestrian
	400mm x 400mm x 60mm - suitable for public footpaths and residential light vehicle traffic
	400mm x 400mm x 80mm - suitable for public footpaths and residential light vehicle traffic
	400mm x 200mm x 60mm - suitable for public footpaths and residential light vehicle traffic ~~and commercial vehicular traffic applications~~. Not recommended for roading applications.
	400mm x 200mm x 80mm - suitable for public footpaths, residential light vehicle traffic and commercial vehicular traffic (NZS 3661 -Roads -Minor) applications
Colour:	*Bannockburn*
	Charcoal
	Earthern
	Golden Leaves
	Natural
	Savanna
	Southern Boulder
	Terracotta
	Tussock
Finish:	*fair face, honed, textured or rumbled*
Laying Pattern:	*45 degree or 90 degree Herringbone (suitable for vehicle use when laid at 45 degree to traffic direction).*
	Stretcher bond (suitable for patios, courtyards or paths)
	Basketweave (suitable for patios, courtyards or paths)
Installation:	*On prepared bedding sand to NZS 3116 309.3.2 Method 2 Sand pre-compaction, over compacted base course to NZS 3116 - Method 2 Sand pre-compaction, is applicable to flagstone paving - pavers greater than 0.08m2 surface area (300mm x 300mm) or segmental paving. (up to 0.08m2 surface area).*
	On prepared bedding sand to NZS 3116 309.3.1 Method 1, Sand surcharge, over compacted base course to NZS 3116 - Method 1 Sand surcharge, is applicable to segmental pavers up to 0.08m2 surface area (400mm x 200mm pavers are suitable for this method.)
Joints:	
	Cemix Pavetight Sand - ideal for use in high winds, steep gradients and high trafficked areas.
Note:	*50 & 60mm thick fair face (natural finish), all colours - in stock*
	80mm thick pavers fair face (natural finish), all colours - made to order. .
	Honed, textured or rumbled finish - made to order.

4.8 COMMERCIAL DRY CAST, LONDON PAVERS

Location:	~
Manufacturer:	Viblock
Type:	~
Size:	200mm x 100mm x ~mm
Colour:	~
Finish:	~
Laying pattern:	~
Installation:	On prepared bedding sand to NZS 3116 309.3.1 Method 1, Sand Surcharge over compacted base course to NZS 3116
Joints:	

Options:

Location:	*Suitable for suitable for residential footpaths, residential medium traffic, public footpaths, commercial vehicular traffic (NZS 3661 -Roads -Minor) applications, public roads (NZS 3661 -Roads -Local and Main) and for Industrial Pavements*
Type:	*London Paver*
	London Paver Sett
Size:	*200mm x 100mm x 60mm - suitable for residential footpaths, public footpaths and residential light vehicle traffic*

	200mm x 100mm x 80mm - suitable for residential footpaths public footpaths, residential light vehicle traffic commercial vehicular traffic (NZS 3661 -Roads -Minor), public roads (NZS 3661 -Roads -Local and Main) and for Industrial Pavements. Contact Viblock for further information if considering Industrial Pavement applications.
Colour:	*Bannockburn*
	Charcoal
	Earthern
	Golden Leaves
	Natural
	Savanna
	Southern Boulder
	Terracotta
	Tussock
Finish:	*fair face, honed, textured or rumbled*
Laying Pattern:	*45 degree or 90 degree Herringbone (suitable for vehicle use when laid at 45 degree to traffic direction).*
	Stretcher bond (suitable for patios, courtyards or paths)
	Basketweave (suitable for patios, courtyards or paths)
Joints:	
	Cemix Pavetight Sand - ideal for use in high winds, steep gradients and high trafficked areas.
Note:	*Fair face (natural finish), all colours - in stock*
	Honed, textured or rumbled finish - made to order.

4.9

Accessories

4.12 EDGE RESTRAINT

Location:	~
Brand / Type:	~
Size:	~
Finish:	~

Options:

Type / size:	*pre-cast kerb, kerb and channel, interlocking border block, pavers on edge, timber edge, concrete haunching or refer to detail*
Note:	*Modify clause to refer to relevant section such as 8420 MISCELLANEOUS SITE WORKS or 8421 EDGING, KERBS, GUTTERS & FOOTPATHS if kerbing included in another section.*

4.13 PAVING SEALER

Location:	~
Brand / Type:	~

Brand/type:	*Viblock Penetrating Sealer - invisible sealer, water repellent*
	Viblock Wet-Look Sealer applied over Viblock Penetrating Sealer
Note:	*Where slip resistant performance is a requirement, ensure the selection of the sealer type does not compromise slip resistance.*

Viblock

www.viblock.co.nz