Viblock

Masonry Specification

viblock.co.nz

Specification - Viblock Structural Architectural Masonry – Revised APR 2016

This section deals with the installation of Viblock solid Architectural Masonry for plastered and/or Architectural masonry finishes.

1. GENERAL

DOCUMENTS

1.1 DOCUMENTS REFERRED TO
Documents referred to in this section are:

NZS 3112	Methods of test for concrete Part 1, Tests relating to fresh concrete
NZS 4210	Masonry construction: Materials and workmanship
AS/NZS 4671	Steel reinforcing materials

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

GUIDANCE NOTE
List any additional cited documents.

RELATED DOCUMENTS
Refer to the following related documents when preparing this section:

NZBC B1/AS1	*Structure general, 3.0 Masonry*
NZBC B1/AS4	*Structure – foundations, 1.0 Foundations for small buildings*
AS/NZS 1170	*Structural design actions* *Part 1, Permanent, imposed and other actions* *Part 5, Earthquake actions – New Zealand*
AS/NZS 2699	*Built-in components for masonry, 2699.2: Connectors and accessories*
NZS 3101	*Part 2:1995 Concrete structures standard*
NZS 3104	*Specification for concrete production*
NZS 3604	*Timber framed buildings*
NZS 4203	*General structural design and design loadings for buildings*
NZS 4229	*Concrete masonry buildings not requiring specific engineering design*
NZS 4230	*Design of reinforced concrete masonry structures*
AS/NZS 4455	*Masonry units and segmental pavers*
AS/NZS 4858	*Waterproof membranes*
CCANZ CP 01; 2014 Code of practice for weather tight concrete	
BRANZ Good practice guide: Concrete floors and basements	
New Zealand Concrete Masonry Manual	
BRANZ	*Appraisal No 515 StoArmat Plaster System*
BRANZ	*Appraisal No 604 StoTherm Masonry Insulation Plaster System*

1.2 MANUFACTURER'S DOCUMENTS
Viblock Ltd documents relating to work in this section are:

Viblock Block Chart
Viblock Architectural Masonry information

Further information is available from Viblock Ltd either by phone 03 343 0394, or by fax 03 343 0393. Also at www.viblock.co.nz

REQUIREMENTS

1.3 QUALIFICATIONS
Masons to be, or supervised by, a Licensed Building Practitioner (LBP), familiar with the **Viblock** materials and deemed to comply with the competency requirements of NZS 4210.

1.4 CONSTRUCTION CONTROL AND CERTIFICATION, BLOCKWORK
Carry out all masonry work under the supervision of a LBP deemed to comply with the competency requirements of NZS 4210.

Construction observation Type B to be carried out by a Design Engineer or a nominated representative, who may be a mason who complies with the competency requirements of NZS 4210.

Construction observation Type A to be carried out by a Design Engineer or a nominated representative who may be a mason who complies with the competency requirements of NZS 4210. In addition to the inspection requirements of Type B masonry, Type A observation requires supervision at all critical stages during construction by a person approved by the Design Engineer.

The mason to provide documentation to the builder confirming that the blockwork and inspections have been carried out in accordance with the design, any relevant **Viblock** specifications, and any relevant New Zealand Standards.

1.5 CERTIFICATION: SEALERS FOR ARCHITECTURAL MASONRY
The sealer applicator is to provide documentation to the builder confirming that the sealer application has been carried out in accordance with the design and the manufacturer's specifications. A waranttee must be provided.

1.6 CERTIFICATION: PLASTERING
The plaster applicator is to provide documentation to the builder confirming that the plaster application has been carried out in accordance with the design and the manufacturer's specifications. A waranttee must be provided.

1.7 QUALITY
Keep accurate records relating to strength and quality of materials used in the construction, including photographs of as-built details. Provide information on request or as required.
Minor cracks, chips and blemishes may occur as a result of the manufacturing and/or delivery process, and is purely aesthetic only and not a defect. Once the product is laid it is deemed accepted.

PERFORMANCE - TESTS

1.8 TESTS FOR BUILDINGS REQUIRING SPECIFIC ENGINEERING DESIGN
Carry out all required tests to NZS 4210.
- compressive strength of mortar
- masonry to mortar bond
- spread of grout
- expansion of grout
- compressive strength of grout

GUIDANCE NOTE
Where masonry requires specific design, the following tests must be carried out if requested.

1.9 TESTING PROCEDURES
Testing to be carried out by an independent laboratory to NZS 4210.

1.10 COMPRESSIVE STRENGTH OF MORTAR, BAGGED MORTAR
Provide copies of the manufacturer's latest mortar test result information.
GUIDANCE NOTE
Bagged mortars are recommended as they are tested regularly and therefore on-site testing may not be required.

1.11 MASONRY TO MORTAR BOND TEST
If requested, carry out tests to NZS 4210: appendix 2B, Masonry to mortar bond strength test.

1.12 SPREAD OF GROUT
If requested, carry out on-site tests to NZS 3112: part 1 to the requirements of NZS 4210.

GUIDANCE NOTE
Pump operators should not add to much water to grout on site, as this will affect the quality of the grout. Spread testing is used to control this

1.13 EXPANSION OF GROUT
If requested and if using expanding additive, carry out tests to NZS 4210: appendix 2C, Test for expansion of grout.

1.14 COMPRESSIVE STRENGTH OF GROUT
Carry out tests to NZS 4210: appendix 2A, Compressive strength tests for mortar and grout.
GUIDANCE NOTE
Testing should be carried out after the addition of the expanding additive. Every project should have at least 2 tests on different days. Larger projects will require more tests. For specifically designed projects the engineer should recommend the required testing regime.

1.15 RECORDS OF TESTS
Records of tests and their results to be kept on site.

1.16 TESTS FOR BUILDINGS NOT REQUIRING SPECIFIC ENGINEERING DESIGN
NZS 4210 does not require any testing, but has record keeping requirements.
GUIDANCE NOTE
Viblock recommends that the following clauses should apply:
- *TESTING PROCEDURES*
- *COMPRESSIVE STRENGTH OF MORTAR, BAGGED MORTAR*
- *COMPRESSIVE STRENGTH OF MORTAR, SITE BATCHED MORTAR*
- *SPREAD OF GROUT*
  COMPRESSIVE STRENGTH OF GROUT

2. PRODUCTS

MATERIALS

2.1 VIBLOCK ARCHITECTURAL MASONRY
Viblock Architectural 20-Series masonry units. Refer 4. SELECTIONS.

2.2 ARCHITECTURAL MASONRY COLOUR
Fire Ash: Refer to 4. SELECTIONS.
Kohl:
Cream:
GUIDANCE NOTE
Select colour from 4 x options. Fire Ash, Kohl, Cream and Natural Grey Masonry.

2.3 ARCHITECTURAL MASONRY FINISH
Honed,
Split Face,
Fluted,
Fair Face: Refer to 4. SELECTIONS.
GUIDANCE NOTE
Select finish – Hone, Fluted & Split Face are made to order.

2.4 MORTAR
Bagged Mortar. Colour – Fire Ash, Kohl,Natural; refer to 4. SELECTIONS.
GUIDANCE NOTE
Select colour from 3 x options. Cemix Mortar must be used with Viblock Architectural Masonry. Site mixed mortar and normal mortar are not permitted. The Cemix Mortar colour should always compliment the Architectural Masonry Block colour.

2.5 WATER FOR MORTAR
Clean, fresh and free from excess alkali, salt, silt and organic materials.
GUIDANCE NOTE
Water from a local authority water supply is acceptable.

2.6 REINFORCEMENT

To AS/NZS 4671, deformed mild steel except for ties in plain round mild steel and as specified.

2.7 IN-JOINT REINFORCEMENT

Use suitable in-joint-reinforcing as specified. For Architectural Masonry (stack bond & stretcher bond) use in every 2nd course across the whole block panel on both sides of walls to tie blocks together until the grout has set. This also offers additional crack control over and above the horizontal steel after the grout has set. Break the IJR across control joints. Refer to 4. SELECTIONS.

GUIDANCE NOTE

In-joint reinforcing is very important for all Architectural Masonry applications.

2.8 GROUT

Option 1 – Grouting above 1200mm

Strength: 20 MPa minimum
Additive: Cavex or similar expanding additive
Spread: Spread 450 mm – 500 mm

GUIDANCE NOTE

Most masons practice grouting procedures that only comply with NZS 4210 if an expansive additive is used ie. they pour about 1200mm in one go. For these reasons use of an expansive additive is compulsory for this option as it reduces plastic settlement of the grout and therefore minimise problems related to this. Expansive additives may reduce the strength of grouts, therefore a minimum strength of 20 MPa must be used. ***Pre-wetting the block faces and progressive cleaning to remove grout leaching the day after grouting is very important with this option.***

Option 2 – Grouting to max 1200mm

Strength: 20 MPa minimum
Spread: Spread 450 mm – 500 mm

GUIDANCE NOTE

This is an option that can be used to minimise grout leaching with Architectural Masonry as the liquid head of pressure is lower & Cavex is not used. Grout is poured to a max height of 1200mm at any one time. No expanding additive is used. ***Pre-wetting the block faces and progressive cleaning to remove grout leaching the day after grouting is still required, but will more than likely be less.***

GENERAL GUIDANCE NOTE

Grout Strengths are increased with increasing durability requirements:
Min 20 MPa for blockwork exposed to weather, at least 500 metres above mean high tide mark, refer to NZS 3604: figure 4.1, Corrosion zone map.
Min 25 MPa for blockwork exposed to weather, but within 500 metres above mean high tide mark, refer to NZS 3604: figure 4.1, Corrosion zone map.

2.9 ARCHITECTURAL MASONRY: PROGRESSIVE CLEANING

Low pressure spray, and/or stiff nylon scrubbing brush, and/or suitable masonry cleaner as required.

2.11 WEATHERPROOFING AROUND OPENINGS

Refer to architectural details for use of the following in order to produce an appropriate solution:

- StoFlexyl waterproof membrane
- Sto joint sealant tape – 5/12 15mm
- Joinery mechanical fixings – 60mm GRB Jamb Ties or similar
- Selected waterproof expanding foam airseal
- Selected flexible sealant
- Drip ridge

2.12 WATERTIGHT MEMBRANE TO MASONRY AND PLASTER UNDERGROUND

SikaProof SB or similar to the manufacturer's specifications.

GUIDANCE NOTE

Retaining walls require suitable drainage. Control joints in retaining masonry will require specific design for the joint and coating.

2.13 ARCHITECTURAL MASONRY: FINAL CLEANING
Low pressure spray, and/or stiff nylon scrubbing brush, and/or suitable masonry cleaner as required. In some instances, a professional masonry cleaning contractor may be required to clean the product to desired standard.

2.14 ARCHITECTURAL MASONRY: CLEAR SEALING
Refer to 4. SELECTIONS.

Exterior to comply with CCANZ CP 01: 2011 clear coatings
S-Protect 2 Coats WS405 leave 5 days to catalise and apply 3 Coats StoProtect system by approved applicator to meet CCANZ CP 01; 2011

Or

Interior
Sto 2 Coats Stopur WV200 system or StoProtect by approved applicator

GUIDANCE NOTE
This is an exterior specification but can be used on any interior Architectural Masonry finishes to maintain pristine condition of the blocks. Advice and a list of approved applicators are available from Sto phone 03 338 3570. These are not anti-graffitti sealers, graffitti protection will require specific sealer design for each application.

2.15 ARCHITECTURAL MASONRY: CONTROL JOINT SEALANT
Selected suitable flexible sealant system compatible with clear sealers used. Include selected bond breaker tape or backing rod.
Sealer to be in compliance with i) Type F, Class 20LM or 25LM of ISO116600, or ii) low modulus Type II Class A of Federal Specification TT-S-00230C
GUIDANCE NOTE
Control joints in retaining masonry will require specific design for the joint and coating system.

2.16 EXTERIOR BLOCKWORK PLASTERING / INSULATION
Type: StoArmat Miral Plaster System BRANZ Appraisal 515
StoTherm Masonry Insulation System BRANZ Appraisal 604
GUIDANCE NOTE
Select plaster system. These plasters are suitable for Viblock Architectural or Standard Masonry. Expand on this clause where necessary to include plaster thickness, plaster finish, colours and any paint finishes. Sto has paint finishes and/or pre-colored plaster finishes to compliment their base plaster systems. Insulation thicknesses – 40mm-RV 1.0, 60mm-RV 1.5, 80mm-RV 2.0 & 100mm-RV 2.5 are important when using insulating to achieve required R-values. For detailed plaster and paint specifications, advice and a list of approved applicators are available from Sto phone 03 338 3570 – 04 801 7794 – 09 5221058 or visit www.sto.co.nz
For interior use an 8 mm gypsum plaster finish or mineral option.

2.17 PLASTERED MASONRY CONTROL JOINT
Sto PVC plaster control joint system to manufacturer's specifications.

3. EXECUTION

Conditions

3.1 GENERAL
To NZS 4210.

3.2 STORE MASONRY
Remove shrink wrap and store masonry units clear of the ground, under cover and well ventilated where they cannot be damaged or soiled and reduced exposure to the elements, until placed in the work.

3.3 CHECK CONCRETE BASE
Check that the base concrete on which masonry is being built is true to line and level, clean and free of any dirt or loose material, to ensure that work can be taken up true and plumb with 10 mm thick bed and perpendicular joints. Any variance in the foundation that

would cause the base mortar joint to be less than 7 mm or more than 15 mm thick, should be corrected prior to blocklaying commencing.

3.4 CUTTING
Always use a masonry saw to provide clean and accurate cuts.

3.5 BRACING & BOXING
Provide temporary lateral bracing where necessary to ensure stability until final supporting construction is in place. Box clean-out openings and any open ended blocks.
GUIDANCE NOTE
Stack bonded Architectural Masonry is less stable than stretcher bond untill the grout has set and therefore will require additional bracing, particularily at corners to prevent the end block splitting away from the panel.

3.6 COVER
Minimum cover to steel to NZS 4210; Table 2.E1. Minimum cover to steel with grout is 15 mm from the inside masonry face to the outside of the steel.

3.7 STARTER POSITIONS
Check the location of starter reinforcement before block laying commences, by measure or by a dry trial lay up of the first course. Do not attempt to correct misplacement by cranking bars. Where misplacement exceeds the location tolerance obtain written directions before proceeding further.

Application

3.8 GENERAL
Install product according to this specification, the design, and any relevant New Zealand Standards.

3.9 TOLERANCES
Construct within the tolerances set out in NZS 4210: clause 2.6.5, Tolerances and clause 2.7, Laying the units, unless specified otherwise on the drawings or in this specification. Lay blocks with jointing of consistent 10 mm nominal thickness throughout.

3.10 WATERPROOFED REBATES
If specified, coat rebates under walls with 2 coats of Sto Flexyl to manufacturer's specifications.

3.11 CLEAN OUT HOLES AND TYING OPENINGS
Use 100 mm x 75 mm clean-out openings to NZS 4210 at the base of each vertical steel rod.

3.12 BONDING PATTERN – ARCHITECTURAL MASONRY
Architectural Masonry: Stretcher bond or stack bond.
GUIDANCE NOTE
Select bonding pattern for Architectural Masonry applications. Engineering must incorporate the bond pattern into the structural design.

3.13 BONDING PATTERN – PLASTERED MASONRY
Plastered masonry: Stretcher bond

3.14 ARCHITECTURAL MASONRY WORKMANSHIP
Construct and complete walls to an acceptable Architectural Masonry finish.
Different block types will always vary in finish and colour as they are never made from the same batch and have different densities. Minor chipping and variations to surface appearance are not recognised as block defects, and should be expected. Completed exposed walls should be viewed from a distance of not less than 6.1 metres under diffused light when assessing. This complies with the requirements of ASTM C90.

3.15 CLEAN-OUT AND TYING OPENINGS - ARCHITECTURAL MASONRY

Provide clean out openings in accordance with NZS4210 at the base of each vertical steel rod and a the centre of sills.

Plastered / Cladded masonry:

Provide 100mm x 75mm clean-out openings at the base of each vertical steel rod.

Architectural Masonry:

Some thought needs to be given to provision of clean-out openings in this application as they should not be visible post construction. Options include:

i) Low lift construction methods – building to max 1200mm
ii) 100 mm x 75 mm openings at the base of each vertical steel starter rod in the wall, on the side to be covered with lining or plaster
ii) 100 mm x 75 mm openings at the base of each vertical steel starter rod in the concrete floor, formed with polystyrene
iv) 10 mm x 75 mm openings at the base of each vertical steel starter rod in the mortar. This is a last resort (and not the preferred option as the 10mm gap may not be sufficient for full cleaning. Patching may also be unsightly.
v) 90 x 90mm opening at the centre sill blocks

Fill and patch any openings that are not fully filled with grout after removing the boxing with suitable patching mortar.

3.16 HOLES AND CUT MASONRY

Provide all necessary holes, pockets and chases. Cut blocks when non-standard shapes are required.

3.17 IN-JOINT REINFORCING

Use suitable in-joint-reinforcing as specified. For Architectural Masonry (stack bond & stretcher bond) use in every 2nd course across the whole block panel on both sides of walls to tie blocks together until the grout has set. This also offers additional crack control over and above the horizontal steel after the grout has set. Break the IJR across control joints. Refer to 4. SELECTIONS.

GUIDANCE NOTE

In-joint reinforcing is very important for all Architectural Masonry applications.

3.18 ARCHITECTURAL MORTAR MIXING

Use bagged Cemix mortar only. Site batched mortar is not permitted. See directions on bag. Mix thoroughly with water in a suitable mixer, until a smooth mix is achieved.

3.19 MORTAR INSTALLATION

Apply Mortar to Masonry to achieve a minimum 30 mm mortar depth and a 10 mm nominal thickness on both horizontal and vertical joints. Take extra care to ensure that all mortar joints are completely filled to this depth to ensure weathertightness. More is better than less.

For partial-fill blockwork: cross web mortar on the sides of all vertical steel to prevent mortar flowing into the empty cores.

Clean any mortar smears or droppings off the masonry before they dry.

3.20 MORTAR FINISHING

Once the mortar has stiffened enough to resist thumb pressure, compact all joints by concave tooling the mortar on both sides of the wall, to close up gaps, reduce shrinkage and produce a sharp and uniform appearance. Raked joints are not permitted on the exterior of walls. Mortar joints on the upstand rebates around openings to be flush finished. Check for any holes, gaps or cracks and patch with fresh mortar or a suitable water repellent slurry. Blocks should not be moved once the mortar has stiffened.

3.21 CONTROL JOINTS

Build control joints as specified, typically 10mm nominal width. Ensure one side of horizontal steel at joint is sufficiently debonded using Denso Tape or similar. Rake mortar in joint on both sides of the wall to approx 10mm depth when using plastered masonry, or Architectural Masonry with a bond breaker tape sealant system. Rake to approx 20mm depth when using Architectural Masonry with a backing rod sealant system.Control joints in retaining masonry require specific design for the joint and tanking membrane.

3.22 TIE REINFORCING STEEL

Tie vertical reinforcing steel to starter bars. Lay and tie horizontal bars as the work proceeds.

3.23 REINFORCEMENT LAPS

Laps 40 diameters, except as noted otherwise on the drawings.

3.24 SERVICES

Ensure that provisions for installation of conduits, pipes and boxes are made and done as the work proceeds under the direction of the service installer. For services in masonry walls, run conduits in the empty cells for partial-fill blockwork, or cells without steel for solid fill blockwork. Always run extra conduits in case one gets blocked during blockfilling. Glue and tape all conduit joints. Use flexible conduit at corners and bends. All copper piping in contact with grout should be wrapped and protected. For strap and lining applications, run services in lining cavity where possible.

3.25 GROUT

Do not begin blockfilling until the mortar is strong enough to do so, all steel is in place, all service conduits have been installed and an engineer's inspection has taken place. Mortar droppings and loose material in the cores should be removed prior to grouting by water or compressed air jetting. The steel should be centrally located and not touch the inside faces of the blocks prior to grouting maintaining minimum cover requirements. Do not over-wet blockfill on site as this causes strength, durability and shrinkage problems. The spread should be within the range of 450-500mm. All cells containing steel should be grouted, with the steel completely encased by the grout, including the horizontal steel below window sills.
Use minimum 20MPa grout as follows:

Option 1 – Grouting above 1200mm

Strength: 20 MPa minimum
Additive: Cavex or similar expanding additive
Spread: Spread 450 mm – 500 mm

GUIDANCE NOTE

Most masons practice grouting procedures that only comply with NZS 4210 if an expansive additive is used ie. they pour abour 1200mm in one go. For these reasons use of an expansive additive is compulsory for this option as it reduces plastic settlement of the grout and therefore minimise problems related to this. Expansive additives may reduce the strength of grouts, therefore a minimum strength of 20 MPa must be used. ***Progressive cleaning to remove grout leaching the day after grouting is very important with this option.***

Option 2 – Grouting to max 1200mm

Strength: 20 MPa minimum
Spread: Spread 450 mm – 500 mm

GUIDANCE NOTE

This is an option that can be used to minmise grout leaching with Architectural Masonry as the liquid head of pressure is lower & Cavex is not used. Grout is poured to a max height of 1200mm at any one time. No expaning additive is used. ***Progressive cleaning to remove grout leaching the day after grouting is still required, but will more than likely be less.***

GENERAL GUIDANCE NOTE

Grout Strengths are increased with increasing durability requirements:
Min 20 MPa for blockwork exposed to weather, at least 500 metres above mean high tide mark, refer to NZS 3604: figure 4.1, Corrosion zone map.
Min 25 MPa for blockwork exposed to weather, but within 500 metres above mean high tide mark, refer to NZS 3604: figure 4.1, Corrosion zone map

3.27 PROGRESSIVE CLEANING - ARCHITECTURAL MASONRY

Clean mortar droppings and grout spills off walls before they dry.
Pre-wet block faces prior to pouring blockfill grout. Wash down block faces regularily untill grout has set. Clean grout leaching streaks off walls 1 to 2 days after pouring grout.
Regularily clean leaching / efflorescence / dirt stains / soiling off walls as required during construction, until the roof & sealer system are in place.

GUIDANCE NOTE

The masonry forms part of the finished product and should be kept in pristine condition during construction. The longer cleaning is left, the harder it becomes to remove spoiling.

3.28 PROTECTION - ARCHITECTURAL MASONRY

Protect masonry from all damage during the construction process

3.29 WATERTIGHT MEMBRANE TO IN-GROUND RETAINING MASONRY & PLASTER

Install SikaProof SB membrane, or similar to the manufacturer's specifications to in-ground retaining masonry and any in-ground plaster.

GUIDANCE NOTE

Retaining walls require suitable drainage. Control joints in retaining masonry require specific design of the joint and coatings.

3.30 FINAL CLEANING - ARCHITECTURAL MASONRY

Clean leaching / efflorescence / dirt stains / soiling off walls as required prior to sealing.

GUIDANCE NOTE

The masonry forms part of the finished product and should be in pristine condition just prior to sealing. Some instances a professional masonry cleaning contractor will be required.

3.31 CLEAR SEALING - ARCHITECTURAL MASONRY

Exterior to comply with CCANZ CP 01: 2011 clear coatings
S-Protect 2 Coats WS405 leave 5 days to catalise and apply 3 Coats StoProtect system by approved applicator to meet CCANZ CP 01; 2011
Or

Interior
Sto 2 Coats Stopur WV200 system or StoProtect by approved applicator

Ensure that all mortar joints are intact and completely filled prior to sealing. Test a small area of sealer prior to full sealer application. Seal after roof installation and after cleaning. No water should be getting in the top of walls. Seal around windows prior to windows being installed. Overlap clear sealer with Sto Flexyl membrane around openings by minimum 25 mm. Ensure that the insides of each control joint are well sealed and ready to accept flexible sealant.

GUIDANCE NOTE

This is an exterior specification but can be used on any interior Architectural Masonry finishes to maintain pristine condition of the blocks. Advice and a list of approved applicators are available from Sto phone 03 338 3570 – 04 801 7794 – 09 5221058 or visit www.sto.co.nz. These are not anti-graffitti sealers, graffitti protection will require specific sealer design for each application.

3.32 WEATHERPROOFING ALUMINIUM WINDOW/DOOR OPENINGS - ARCHITECTURAL MASONRY

Install joinery as per architectural details.

Basic installation methods to include:
- Rebated blocks (or formed rebates if required)
- Sill blocks below windows
- Rebates in concrete floors below doors and full height windows
- Flush mortar joints to the masonry upstands around openings
- StoFlexyl meshed waterproofing membrane to the perimeter of openings (mesh reinforced with formed rebates)
- Mechanical fixings for the joinery
- Interior waterproof expanding airseal foam to full opening perimeter
- Drip ridge and/or joinery flashing at heads
- Joinery flashing (or Flexible Sealant) as required at jambs
- 5mm drainage and pressure equalization gap at sill

3.33 CONTROL JOINT SEALING - ARCHITECTURAL MASONRY
Ensure that clear sealer has been applied into raked joint, particularily the sides of the joints. Ensure that flexible sealant is debonded from back of joint using suitable bondbreaker tape, or backing rod. Fill joint to a depth of 10mm with suitable flexible sealant. Ensure sealant is compatible with clear sealer and that it compliments the mortar/blocks.

3.34 WEATHERPROOFING ALUMINIUM WINDOW/DOOR OPENINGS FOR PLASTERED MASONRY
Install joinery as per architectural details.

Basic installation methods should include:
- Rebated blocks (or formed rebates if required)
- Sill blocks below windows
- Rebates in concrete floors below doors and full height windows
- Flush mortar joints to the masonry upstands around openings
- StoFlexyl meshed waterproofing membrane to the perimeter of openings (mesh reinforced with formed rebates) membrane at the heads and jambs
- Mechanical fixings for the joinery
- Interior waterproof expanding airseal foam to full opening perimeter
- Drip ridge (and/or joinery flashing) at heads
- Finish plaster 3mm clear of joinery
- Flexible Sealant as required to finish 3mm gap
- 5mm drainage and pressure equalization gap at sill

3.35 WEATHERPROOFING FULL LENGTH ALUMINIUM WINDOW OPENINGS AND DOOR BASES
Install joinery as per architectural details.

Basic installation methods to include:
- Rebates in concrete floors below doors and full height windows
- StoFlexyl meshed waterproof membrane to concrete rebates
- Mechanical fixings for the joinery as required
- Interior flexible sealant (or waterproof expanding foam) between the waterproofed concrete and the joinery
- 5mm drainage and pressure equalization gap below joinery

3.36 EXTERIOR PLASTERING/INSULATION
Selected Sto plaster / insulation system by approved applicator.
GUIDANCE NOTE
For plaster and insulation specifications, advice and a list of approved applicators are available from Sto phone 03 338 3570 – 04 801 7794 – 09 5221058 or visit www.sto.co.nz.

3.37 PLASTERED MASONRY CONROL JOINTS
Sto PVC control joint system to manufacturer's specifications.

COMPLETION

3.38 REMOVE
Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 MASONRY UNITS

Brand:	**Viblock** Architectural Masonry
Block Series:	Choose- 15-20-30-Series
Block type:	As required
Colour:	Fire Ash, Kohl, Cream or Natural
Finish:	Specify here

GUIDANCE NOTE
Select Architectural Masonry Block series, types, colours and finishes.

4.2 MORTAR

Brand: **Cemix** Water Repellant Mortar
Colour: Fire Ash, Kohl, Cream or Natural

GUIDANCE NOTE
Select Mortar colour to compliment Architectural Block colour.

4.3 IN JOINT REINFORCING

Option 1

Brand/type: **Straightened Galvanised Wire**
Wire: 2.5mm
Protection Galvanised or Stainless
Bend: Create 40-50mm right angle bend on each end during installation

GUIDANCE NOTE
Call Eagle Wire for all product specifications.

Option 2

Brand/type: **Bricklock**
Wire: 4mm welded
Protection Galvanised or Stainless
Width: 39mm

GUIDANCE NOTE
Call Eagle Wire for all product specifications.

4.4 CONTROL JOINT DEBOND

Brand/type: Denso Tape

4.6 CLEAR SEALER – ARCHITECTURAL MASONRY

Exterior
Manufacturer: Sto
Sealer: 2 flood coats S-Protect WS405 by approved applicator
Finishing: 3 coats StoProtect by approved applicator
Interior
Manufacturer: Sto
Final coats: 2 coats Sto PurVW 200 or StoProtect by approved applicator

Refer to 4. SELECTIONS.

GUIDANCE NOTE
This is an exterior specification but can be used on any interior Architectural Masonry finishes to maintain pristine condition of the blocks. Advice and a list of approved applicators are available from Sto phone 03 338 3570 – 04 801 7794 – 09 5221058 or visit www.sto.co.nz. These are not anti-graffitti sealers, graffitti protection will require specific sealer design for each application.

4.7 CONTROL JOINT SEALANT

Sealant: Selected Flexible Sealant
Bond breaker: Selected bondbreaker tape, or 10mm Backing Rod

4.8 GROUT

Brand:

Option 1 – Grouting above 1200mm

Strength: 20 MPa minimum
Additive: Cavex or similar expanding additive
Spread: Spread 450 mm – 500 mm

GUIDANCE NOTE
Most masons practice grouting procedures that only comply with NZS 4210 if an expansive additive is used ie. they pour abour 1200mm in one go. For these reasons use of an expansive additive is compulsory for this option as it reduces plastic settlement of the grout and therefore minimises problems related to this. Expansive additives may reduce the strength of grouts, therefore a minimum strength of 20 MPa must be used. ***Progressive cleaning to remove grout leaching the day after grouting is very important with this option.***

Option 2 – Grouting to max 1200mm at any one time

Strength: 20 MPa minimum
Spread: Spread 450 mm – 500 mm

GUIDANCE NOTE
This is an option can be used to minmise grout leaching with Architectural Masonry. Grout is poured to a max height of 1200mm at any one time. No expansive agent is used. ***Progressive cleaning to remove grout leaching the day after grouting is still required with this option, but is likely to be less.***

GENERAL GUIDANCE NOTE
Grout Strengths are increased with increasing durability requirements:
Min 20 MPa for blockwork exposed to weather, at least 500 metres above mean high tide mark, refer to NZS 3604: figure 4.1, Corrosion zone map.
Min 25 MPa for blockwork exposed to weather, but within 500 metres above mean high tide mark, refer to NZS 3604: figure 4.1, Corrosion zone map.

4.9 WATERTIGHT MEMBRANE
Brand & Type: SikaProof SB or similar
GUIDANCE NOTE
Choose membrane to suit application.

4.10 JOINT SEALANT TAPE
Brand: Sto
Type: 5/12 15mm tape

4.11 MECHANICAL JOINERY FIXINGS
Brand: GRB
Fixing: 60mm jamb ties
GUIDANCE NOTE
This product is ordered with the joinery. Other fixing systems may suit certain appliactions.

4.12 EXPANDING FOAM
Foam: Selected Waterproof Expanding Foam
GUIDANCE NOTE
Select a suitable waterproof expanding foam.

4.13 PLASTER SYSTEM
Brand: Sto
System: StoArmat Miral Plaster system
Finish: Stolit K or MP coloured finishing render
Paint: StoColor Maxicryl or S-Protect stay clean on MP
GUIDANCE NOTE
Select plaster / finish. It is recommended that plastering be carried out by an approved applicator. For plaster and paint specifications, advice and a list of approved applicators from Sto, phone 03 338 3570 – 04 801 7794 – 09 5221058 or visit www.sto.co.nz.

4.14 INSULATING SYSTEM
Brand: Sto
System: StoTherm Masonry Insulation Plaster system
Thickness: Select from StoTherm Panel 40-RV1, 60-RV1.5, 80-RV2.0, 100-RV2.5
Finish: Stolit K or MP coloured finishing render
Paint: StoColor Maxicryl or S-Protect stay clean on MP
GUIDANCE NOTE
Select plaster / paint finish / Insulating in order to achieve required R-values. It is recommended that plastering be carried out by an approved applicator. For plaster and paint specifications, advice and a list of approved applicators from Sto, phone 03 338 3570 – 04 801 7794 – 09 5221058 or visit www.sto.co.nz.

Viblock