



STOPROTECT CLEAR COATING SPECIFICATION OVER EXTERIOR ARCHITECTURAL CONCRETE BLOCK CONSTRUCTION

Complies with CCANZ CP 01: 2011 (E2/AS3) ACAD Details www.sto.co.nz building with Sto

Project:

Prepared for:

StoProtect Clear Coating System

This specification details the application of a clear coating system over exterior concrete block construction incorporating; **StoFlexyl waterproofing** as required, sealing the exterior blocks with **S-Protect WS405 Silane sealer** before finishing in three coats of **StoProtect transparent** to leave a clear durable finish. **Note:** The **StoProtect Clear Coating System** can be used on other masonry surfaces but a specific specification is required.

1. CONSTRUCTION

Responsibility

All work in this section shall be the responsibility of the Main Contractor. All concrete block masonry construction must in accordance with the relevant New Zealand standards, NZ Building Code and the applicable manufactures specifications and details. Any dissimilar material joins shall be in strict accordance with the project specifications & drawings. The Specifier must be advised of any anomalies and approve of all such details prior to work commencing.

Concrete Block Construction

The concrete block installation, including reinforcement and concrete infill shall be made in strict accordance with the project specifications & drawings and the **manufactures design & installation manual for coated blocks**. In particular the blocks shall be laid true in both vertical and horizontal planes laid in a minimum 45mm ground floor foundation rebate using 12.5 MPa mortar in a nominal 10 mm width compressed by tooling with all window, door and services cutouts correctly made using rebated blocks for all joinery openings. At least 28 drying days shall be allowed after concrete placement as per AS/NZS 2311:2000, for curing and stabilization to take place before application of the Sto coating system. Any minor surface damage or defective pointing shall be repaired before commencing. All maximum tolerances shall be in strict accordance with NZS 4210: 2001 2.7.1.4 Table 2.2, i.e. No more than 3mm surface alignment deviation over a 1200mm radius. The main contractor shall ensure concrete blocks are clean, dry and free of all surface contaminants before the coating applicator commences and that any areas, details or flashings above or adjacent to the Sto Coating System have been adequately waterproofed to prevent water migration behind the Sto Coating System. All mortar joints are to be tight tooled and neatly pointed, rebated joinery blocks must be waterproofed as necessary especially sill blocks and joinery must be installed as per Sto ACAD details for concrete block using StoFlexyl waterproofing as required - www.sto.co.nz all construction contaminates must be removed.

Note: Certain concrete blocks or block profiles may be unsuitable for clear coating check with the block manufacturer prior to construction

Concrete Block Construction - Clear Coating Systems

- 45mm minimum rebate required in foundations for residential projects.
- Joinery openings are to be waterproofed and formed with rebated blocks & sill blocks.
- Clear coated block faces must be of an even colour & consistency.
- Blocks must be covered on site and laid dry. Where honed Architectural blocks are used ensure any on site honing matches the manufactures honing to achieve continuity.
- Before starting be conscious that certain soils, clays, vegetation etc can cause staining.
- Control joints are placed at maximum 6.0metre centres refer to the project documentation and NZS 4229 for placement and detailing.
- Mortar to be minimum 12.5MP, with an expansion agent tooled smooth and compressed as per NZS 4210.
- Where specified use the manufactures bagged mortar.
- Mortar to full depth of webbing up to 20mm thick in first course and then 10mm +/- 3mm.
- Washout ports to have block face removed, mortared back after and braced for grout.
- Ensure there is no impediment to grout flow remove ends or biscuits to prevent air pockets
- Blocks, especially stack bonded and insulated blocks – must have full mortar joints both horizontally and vertically any voids created by leaving ends in etc need to be mortared by the block layer during the laying process to achieve a continuous solid fill.
- Blocks laid open end to depressed web end at all times.
- Inverted blocks are to be fully mortared across the web and any block end such as insulated blocks that have a vertical void at the join are to mortar filled.
- Column blocks must only be used on the ends of wall and must be cut to allow grout flow to every course
- Block layer to ensure a solid fill is achieved throughout the entire wall. Blocks should be filled in 1.200mm lifts and mechanically vibrated to eliminate air pockets that can cause structural weak points or efflorescence.
- Sill blocks should be filled by leaving one sill block out to avoid air entrapment.
- Remove any mortar or grout slurry from block faces before it sets.
- Drying times vary according to block thickness, grout and weather a minimum 28 days is required for settlement and curing – the blocks must be completely dry before coating.
- Where walls are back filled a manufactures certified tanking membrane is required.
- Always waterproof blocks behind or adjacent to any overlays or abutments such as staircases especially adjoining concrete stairs or separate garden walls etc.
- Exposed tops of walls must be waterproofed with StoFlexyl mesh and finished with block caps before coating commences.

Cleaning – Visual Presentation

The finished concrete blocks must be clean and visually acceptable. It is the responsibility of the main contractor and their appointed block layer to ensure a clean unified surface is achieved with an acceptable continuity of block faces. If the blocks are defective, stained or discoloured the block manufacturer must be notified before any blocks are laid. The coating system is transparent therefore it is essential to ensure that the block layer has **left the concrete block walls clean with no marks, stains, slurry, uneven pointing, or defects and that the continuity of colour in the laid blocks is acceptable to the client or specifier.** Any repairs or specialist cleaning required **must** be undertaken before the Sto Coatings Applicator commences.

2. BLOCK COATING PREPARATION

Responsibility

All coating work in this section shall be the responsibility of the nominated Sto Coatings Applicator

Joinery Rebates, Parapet & Balustrade Caps - horizontal surfaces

Joinery shall be fixed over rebated concrete blocks that have been **StoFlexyl waterproofed** prior to the coating application. Before fixing joinery **StoFlexyl** shall be used to waterproof the rebates mixed correctly 1/1 with fresh Portland cement and brushed on in two (2) coats over the concrete block rebated openings to fill all the block holes. Additionally **sills** are required to be **StoFlexyl meshed waterproofed** from the bottom of the rebate out to the exterior with the mesh taken 40mm up the jambs. Jointing the installed joinery perimeter with **MS Sealant** at the **head & jambs** then forms the primary seal with the **sill** left open to allow for a 5mm drainage gap after the finishing plaster has been applied. Note; the visual **StoFlexyl** component on the rebates is to be primed with **Sto Putzgrund** and plastered in the **Stolit K plaster system** taking care to avoid marring the face of the blocks. The main contractor must incorporate **air seals** around all interior joinery openings and the MS Sealant joints to the exterior joinery shall be the responsibility of the nominated joinery installer. The main contractor shall ensure all joinery openings are formed using rebated concrete blocks and sill blocks.

Alternatively: Where a clear finish is required on the head and jamb rebates the **StoFlexyl waterproofing** is applied approximately 15/18mm out from the rebate step onto the exterior rebate to sit 3mm past the installed joinery flange that is then covered by the sealant joint (window 6mm + 5 mm air gap + 5mm). The sill blocks are normally **StoFlexyl meshed waterproofed** finished neat to the jamb sides (not taken 40mm up jambs as previously detailed) and then primed and plastered. Where solid filled sill blocks are used the **StoProtect** clear coating system can be used but an additional two (2) coats are required on the sills.

Note: Parapets caps, balustrade caps and horizontal surfaces must also be waterproofed using **StoFlexyl meshed waterproofing** which can be installed under concrete block finishing caps.

Finishing of exposed StoFlexyl waterproofing

All exposed **StoFlexyl** surfaces are to be finished in the selected **Stolit** plaster system. To clean dry **StoFlexyl** surfaces apply one coat of **Sto Putzgrund** primer tinted to the selected colour and plaster in the selected **Stolit** coloured finishing render ensuring adequate masking is undertaken before coating in **StoProtect Transparent**.

Foundation Splash Zone

The blocks must be laid in a minimum 45mm rebated floor slab to ensure this transition remains watertight the **StoProtect Clear System** then extends down over the foundation a minimum 100mm past the interior floor level. Foundations can alternatively be plastered in a **Sto Plaster System**.

Note: **StoFlexyl Meshed waterproofing** has been evaluated by BRANZ to meet **AS/NZS 4858** for a waterproof membrane as required by **E2/AS3 & CCANZ CP 01: 2011**

3. STOPROTECT CLEAR COATING SYSTEM

All work in this section shall be the responsibility of the Sto Coating Applicator who must check the blocks are clean, dry and adequate masking has been undertaken before commencing.

Clear Coating Procedure

Before commencing **check the block wall surfaces are clean, visually acceptable, pointing is tight and any flashings, dissimilar material overlays, parapets or joinery rebates are waterproofed**. Though the coatings are clear appropriate masking must be undertaken to protect joinery and adjacent surfaces.

Note application rates will vary depending on the blocks being treated the spreading rates are based on tight honed block - standard blocks and pumice blocks etc all have different matrixes and porosities that may require additional product.

S-Protect WS 405 Silane Sealer

To cured, dry, clean exterior surfaces apply a flood coat of **S-Protect WS 405 Silane** at 4 - 6 square metres per litre applied with low-pressure back pack sprayer using a block brush to control the wet edge and remove lingering drops, allow to dry a **minimum 2 hours** before applying a second coat of **S-Protect WS 405** at 7 - 8sqm per litre. Then **leave a minimum 5 days** for full catalysis reaction all in accordance with the TDS sheets before applying the **StoProtect Transparent**.

Note: Spray gun application is not recommended unless a low pressure delivery system is used.

Note; S-Protect WS 405 Silane will not etch glass but leaves a film that can be difficult to remove once it dries ensure adjacent surfaces and dissimilar materials are masked off with plastic.

StoProtect Clear Coating System

To clean dry honed blocks sealed with **S-Protect WS405** apply three (3) coats of **StoProtect Transparent** thinning the first coat by adding approximately 1.5 - 2 litres of clean fresh water and applying by brush and roller at approximately 7 – 8 square metres per litre for honed blocks. Allow the first coat to dry completely before applying the second and third coat un-thinned at approximately 7 - 8 square metres. Always maintain wet edges when applying to prevent shadow lines especially between cutting in and roller applications. Ensure the surface is well coated and that the mortar joints are brushed, and any block pit holes, voids and joints are well filled before applying the final coat. Depending on the block profile and porosity the spreading rate will vary accordantly. The **StoProtect** is not to be spray applied as the surface must be well coated with the coating worked into the block profile to fill block pit holes and the pointing to achieve a minimum dry film thickness of 150 microns.

Note: The spreading rates are based on **honed dry blocked surfaces** allowances must be made for other blocks depending on their porosity and profile. Where the blocks haven't been honed or the matrix is particularly porous an additional coat of **StoProtect** will be required. On negative pointing clear coated sills or horizontal caps additional coats are required to give a minimum dry film build of 180 microns.

For interior use the Silane sealer is not required though the coating applicator must ensure wet edges are maintained to avoid shadow lines. Where a hard interior finish is required such as service areas StoPur WV 200 transparent is recommended.

4. GENERAL

Before removing the masking check all the block faces are evenly sealed and that any blemishes have been rectified.

5. MAINTENANCE**Refer; Sto Maintenance Schedule for comprehensive guide**

The **StoProtect Transparent System** must be checked and cleaned annually by low pressure washing or chemical cleaning to remove all surface contaminants, with special attention to non-rain washed areas. When recoating is required at seven year cycles to maintain long-term integrity this can be carried out using **StoProtect Transparent** over a cleaned surface.

Block Substrate Maintenance Inspections

The owner is to arrange for an initial inspection of the block surfaces six months after practical completion to ensure there are no fractures in the block surface from the concrete curing process or settlement. After the six month inspection the exterior is to be cleaned and checked annually to clearly identify any faults relating to substrate stress, sealant beads, flashings and other penetrations. A repair process must be implemented immediately to address any faults discovered so the warranty is not compromised.

6. WARRANTY

The **StoProtect Clear Coating System** described in this specification is warranted for a period of ten (10) years from the date of practical completion to comply with the coating requirements of the NZBC for this type of building element provided the maintenance requirements as set out in the StoProtect Specification & Maintenance Schedule are followed.

A five (5) year workmanship warranty is issued by the Sto Applicator carrying out the work, and is backed by the Manufacturer as to the suitability for use of the material supplied, provided that.

- (a) The approved Sto Applicator who must adequately complete the Sto QA Compliance Procedure Form and PS3 Applicator Warranty carries out all specified work.
- (b) All work is carried out in accordance with this Specification or any written amendments issued by Stoanz Limited.
- (c) The warranty does not cover situations where the coating system is subject to physical disturbance, structural stress, chemical spillage or interference.

