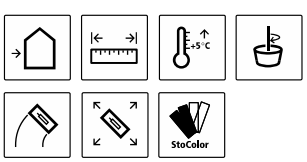
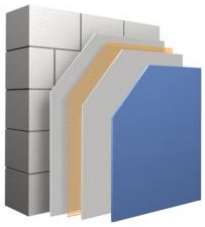
Sto Specification New Zealand

SS205 StoMiral Render System on Concrete Landscape Walls

StoMiral Render System
Over solid filled reinforced concrete block landscape walls
Based on BRANZ Appraisal No. 515 and CCANZ CP 01:2014
CAD Details www.sto.co.nz

Sto Registration: For StoWarranty the completed specification must be registered with Stoanz Ltd email to info@sto.co.nz





1. PROJECT DETAILS	
Specifier:	
Project and Address:	
Project Owner:	
Sto Warranty:	**StoMiral Render 10-year Producer Statement with StoService Assurance**
StoMiral Render System on concrete block landscape walls. **Note: This system is only suitable for use on 20 series stretcher bonded fair faced, structurally sound, concrete blocks.**	This specification details the application of the **StoMiral Render System** incorporating: **StoLevell Novo** basecoat to straighten the blocks, **StoLevell Novo mesh coat** with **Stoplex W** sealer, finished in either the selected **Stolit K coloured finishing render** coated in two coats of selected **StoColor façade paint**, or selected **Stolit MP / RMP Sponge** coloured finishing render coated in selected **StoColor façade paint,** or **S-Protect stay clear sealer** over reinforced concrete block landscape walls. The **StoMiral Render System** is based on polymer modified mineral renders finished in a **Stolit** coloured finishing render and is designed for areas where an economical system is required. Note: **Stoanz LevelLite or Multiscreed** basecoats are also acceptable
Select Finishing Render:	Select
Select Facade Coating:	Select
Specification Number: Office Use Only	i.e. 24.01_StoReg tec_sales_SS205L_project address
Project Notes:	**Note:** The **StoMiral Render System** must be applied on a dimensionally sound, structurally stable substrate. Any substrate movement resulting in the render system cracking is not covered by the Sto Warranty. The back face of any retaining walls that are backfilled must be tanked with a suitable waterproofing system to prevent water entry into the block structure.

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2. CONSTRUCTION & DETAILING

2.1 Responsibility

All work in this section shall be the responsibility of the Main Contractor, unless previously agreed in writing. Stoanz Limited accepts no responsibility for defective workmanship in relation to the application of the Sto system, or for defects in the design, construction, or condition of the building, either as built or in relation to the works.

The Main Contractor is to ensure that they are fully conversant with exterior legislation requirements, the project specifications and details, current Sto Specification and Sto CAD details (www.sto.co.nz) and any specific concrete block installation requirements relating to the Main Contractor's responsibilities before any works commence. The Main Contractor is also responsible for the various subcontractors to ensure that all items relating to weathertightness, penetrations and dissimilar material junctions affecting the construction system are strictly in accordance with project specific details, manufacturer's instructions and Sto CAD details i.e. items such as roofs, soffits, openings, lights and security fittings, electrical wiring, flashings, deck membranes, dissimilar junctions etc. that abut, flash or penetrate the system. The Main Contractor shall also ensure that all exterior licensed work is undertaken by an LBP registered contractor and the joinery is installed in accordance with the project drawings, manufacturer's details and Sto CAD details.

A **StoService Quality Assurance Document** is to be filled out as a record of the work undertaken by the Sto Contracting Company and concrete block installer.

2.2 Concrete Blocks

The concrete block installation including reinforcement and concrete infill shall be undertaken in strict accordance with the project drawings, specifications, and the block manufacturer's technical data. The blocks shall be laid true in both vertical and horizontal planes with all joinery and service openings correctly formed and waterproofed in accordance with Sto details. Control joints must be installed as per the project's structural drawings or block manufacturer's details to manage shrinkage and structural stress. It is recommended the ground floor slab to block junction should be rebated to provide a water stop, and interstorey floors should be poured within the block structure leaving the outer block shell to continue to avoid cracking. At least 28 days shall be allowed after concrete placement as per CCANZ CP 01:2014, for curing and stabilisation to take place before commencing the Sto Render System. All maximum tolerances shall be in strict accordance with NZS 4210, i.e. no more than 3 mm surface alignment deviation over a 1200 mm radius. The exterior surface shall be clean, dry, and free of all surface contaminants before commencing and the Main Contractor is to ensure that any areas or details adjacent to the Sto Render System have been adequately waterproofed or flashed to avoid any water migration behind the render system.

2.3 Concrete Block Construction

- A rebate is recommended in the concrete ground floor slab to block junction to form a weatherproof stop. Where a rebate is not provided, the exterior face of the wall shall be waterproofed across this junction.
- Joinery openings are formed using rebated blocks and sill blocks - cut flush if detailed.
- Concrete Blocks should be covered on site and laid dry.
- Vertical control joints are placed in accordance with the project structural drawings, block manufacturer's documentation or refer to NZS 4229 for placement and detailing.
- Mortar to be minimum 12.5 MPa, tooled smooth and compressed as per NZS 4210.
- Manufacturer's bagged mortar is recommended to meet the specifications.
- Mortar to full depth of webbing up to 20 mm thick in first course and then 10 mm +/- 3 mm.

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- Washout ports are required to remove mortar droppings from the foundation.
- Ensure there is no impediment to grout flow; remove ends or biscuits to prevent air pockets.
- Do not use stack bonded, column blocks or insulated blocks that are more suspectable to structural stress.
- Blocks should be filled in accordance with manufacturer's recommendations and mechanically vibrated to avoid air voids and subsequent efflorescence.
- Sill blocks should be filled using a gap in the blocks to avoid air entrapment.
- Remove any 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 commencing rendering.
- Where retaining walls occur around inhabited spaces, a 50-year rated waterproofing or tanking membrane is required. Garden retaining walls must be waterproofed against any back fill to avoid water migration damaging the finished render.
- Always waterproof blocks before installing any adjacent overlays or items such as concrete / timber staircases, abutting garden walls, soffits, attached porches, posts etc.
- Wall tops should have block caps and must be waterproofed with StoFlexyl meshed waterproofing.

2.4 Control of External Fire

The specified Sto renders have been tested to EN 13501-1 and have achieved an A2-s1, d0 rating.

3. SURFACE PREPARATION

3.1 Responsibility

All work in this section shall be the responsibility of the **Main Contractor** or his sub-contractors with the **Sto Contractor** responsible for the Sto detailing unless otherwise expressly agreed.

3.2 Sealant

All sealant junctions between the render and adjacent surfaces or dissimilar materials shall be jointed with compatible **MS Sealant** applied in accordance with the manufacturer's Technical Data Sheets. Note some manufacturers require primers for PVC or porous substrates.

3.3 Detailing

All details must be in accordance with the project drawings or Sto concrete block rendering details available from www.sto.co.nz.

3.4 Penetrations

Penetrations such as waste pipes and fixtures shall be adequately flashed and waterproofed prior to the render installation.

Note: All penetrations through the render must be adequately sealed with MS Sealant applied as a minimum 6 mm sealant bead using PEF backing rod or Sto joint seal tape.

Any electrical wiring that penetrates the render shall be encased in an appropriately sized uPVC conduit installed at a minimum 5º downwards rake.

3.5 Parapets, Balustrades, Wall Caps and Foundations (adjoining exterior concrete walkways, terraces and splash zones)

All rendered horizontal wall surfaces should have a minimum 10º fall (5º with block caps) and have **StoFlexyl waterproofing** installed over the basecoat render. On **parapets**, **balustrades, and wall caps, StoFlexyl** must be correctly mixed (drill mix 1:1 with fresh cement) and applied with a layer of Sto mesh embedded into the **StoFlexyl** coat giving a total film thickness of 1.5 mm. The meshed **StoFlexyl** should extend 75 mm up or down adjacent vertical surfaces as per the Sto CAD details and be left to dry overnight. All **StoFlexyl waterproofing** is to be applied over the **meshed** reinforcement render before the final coat is applied to cover the mesh and to avoid any shadow lines.

Any floor slabs that are brought through the blocks and non-rebated ground floor slabs/block junctions must have **StoFlexyl meshed waterproofing** applied from 100 mm above and below the transition before the render system commences. Foundation splash zones shall have a brush coat of **StoFlexyl** waterproofing applied over the basecoat render from 150 mm above ground level to 50 mm below the render termination point.

Note: StoFlexyl meshed waterproofing has been tested by BRANZ to **AS/NZS 4858** as required by **CCANZ CP 01:2014 and E2/AS1.**

3.6 Architectural Profiles and Shapes

Architectural shapes used to create decorative detailing shall be correctly cut to size and fitted using **StoFlexyl adhesive** notch towelled to the back of the shape prior to placing. As required, construction fixings are used to mechanically fix large or heavy shapes, but care is required to avoid distortion. Joints are butted together using **StoFlexyl** and any control joints must be mirrored through the profile. Profiles shall be pre-meshed or receive a **StoArmat** mesh coat and are placed after the wall reinforcement mesh coat with the perimeter edge meshed onto the wall.

4. STOMIRAL RENDER SYSTEM

4.1 Responsibility

All work in this section shall be the responsibility of the **Sto Contractor** who shall ensure that the surfaces are acceptable before commencing and that adequate protection of all dissimilar materials and adjacent surfaces has been undertaken.

4.2 Selection

The **StoMiral Render System** shall be carried out in stages incorporating **StoLevell Novo** basecoat meshed reinforcement render, **StoFlexyl** waterproofing, **Stoplex W** sealer, finished in either the **selected Stolit K** coloured finishing render coated in two coats of **StoColor** façade paint, or **Stolit MP/MP Natural/RMP Sponge** coloured finishing renders sealed with **S-Protect clear sealer**.

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4.3 Materials

Stoanz Ltd supplies the following materials:

StoLevell Novo meshed basecoat render	**Stoplex W sealer**
Selected Stolit K coloured finishing render	**Selected Stolit MP/MP Natural/RMP coloured finishing render**
Selected StoColor facade paint or S-Protect SC stay clean on sponge finishes	**StoFlexyl meshed waterproofing**
Accessories: Sto fibreglass reinforcing mesh, **MS Sealant and Sto Joint Seal Tape**	**Sto uPVC pre-meshed corner angles, finishing edges and drip edges**

4.4 Control Joints

All existing control joints in the blocks, as designated by the project drawings, must be expressed through the render system. Control joints must be installed in the **mesh** coat using the **Sto uPVC Control Joints**, ensuring the mesh coat does not overlay the V joint. Once set, remove the cleaning tab and sealant fill the V joint with a compatible exterior MS sealant and primer (if required by the sealant manufacturer). Alternatively, apply two coats of the façade paint to the V joint for a negative detail.

4.5 StoFlexyl Waterproofing

Ensure all **StoFlexyl** waterproofing has been completed.
Note: As required, flush out **StoFlexyl meshed waterproofing** overlays to eliminate any surface read.

4.6 Meshed Basecoat Render

To clean, dry and cured block surfaces, apply one coat of **StoLevell Novo** render by hawk and trowel or pump at an approximate thickness of 5-7 mm and screed the surface with an h rule to achieve an even, straight surface free of hollows and deviations. While still wet, lightly apply **Sto reinforcing mesh** ensuring adjacent drops of mesh are overlapped by a minimum 75 mm and float the surface to ensure the mesh has been embedded in before applying a finishing coat of **StoLevell Novo** at approximately 2 mm to cover the mesh, removing any ridges or bumps with a Sto feathered straight edge. Once dry, Sto rasp ready for the finishing render coating. **StoLevell Novo** application procedures must be in accordance with the relevant Technical Data Sheets.

Always install **Sto pre-meshed uPVC drip edges** on block lintels, **Sto pre-meshed** corner angles on external corners and **Sto pre-meshed finishing edges** as detailed.

The main contractor is to be advised of any walls that require a written variation to building out with additional coats to achieve a level surface.

4.7 Stoplex W sealer

To clean, dry, prepared mesh rendered surfaces apply one full coat of **Stoplex W sealer** by brush and roller at approximately 8 m^2 per litre.

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4.8 Sealant Installation

All junctions or detailing between the render mesh coat and dissimilar materials shall be sealed with compatible exterior MS Sealant in accordance with the manufacturer's Technical Data Sheets. A primer is required on **StoFlexyl surfaces** and as required on PVC, porous substrates, and dissimilar materials.

4.9 Stolit Float Finish Renders (refer to the front page for selected finish)
Stolit K texture is available in a flat 1.0, 1.5, 2.0, or 3.0 mm aggregate as selected.

- **Stolit K coloured finishing render**

Apply the selected **Stolit K** coloured finishing render to prepared rendered surfaces with a stainless-steel trowel, gauging to the thickness of the aggregate size. Finish with a plastic float to the requisite pattern and allow to dry (normally overnight). The spreading rate shall be approximately 12 m^2 per pail (1.0 mm), 9 m^2 per pail (1.5 mm), 7 m^2 per pail (2.0 mm) and 4 m^2 per pail (3.0 mm).

- **StoColor façade paint**

All **Stolit K** surfaces require two (2) coats of **StoColor Maxicryl, or StoColor Dryonic** façade paint tinted to the selected colour and applied by brush and roller at approximately 6-7 m² per litre per coat. Refer to **Section 6 StoService Assurance** for maintenance and recoating requirements.

Note: Always maintain wet edges between cutting in and roll in tight to ensure an even film build is maintained.

4.10 Selected Stolit MP Finished Renders (refer to front page for selected finish)
Stolit MP fine coloured finish, MP Natural salt & pepper sand, RMP Sponge coarser salt & pepper sand

- **Selected Stolit MP, MP Natural, and RMP Sponge coloured finishing render**

Stolit MP fine, MP Natural sandy and **RMP Sponge sandy** are coloured finishing renders applied in two (2) coats. A basecoat of the selected **Stolit MP** or alternatively, depending on the finish, **Stolit K 1.0 mm** tinted to the selected colour, is applied, and allowed to dry. The finishing coat of **Stolit MP, MP Natural, or RMP Sponge** is then applied, float finished and randomly lightly sponged. Alternatively, the finish can be float finished, sponged, or smooth finished with a S/S Marmorino trowel to the selected pattern. The spreading rate of the **Stolit MP**, **MP Natural or RMP Sponge** is approximately 12-14 m^2 per pail.

- **S-Protect SC Stay Clean Invisible Silane Sealer (clear sealer)**

To selected **Stolit MP finishes**, apply an even coat of **S-Protect SC Stay Clean** hydrophobic sealer (clear invisible Silane sealer) in a flood coat using a low-pressure sprayer and Sto block brush to work the product into the Stolit render, avoiding runs and brushing in any lingering drips etc. so they don't show up. Surfaces must be well coated, and it is recommended to work in a pattern preferably out of the sun to ensure that there are no misses as the sealer is invisible once dry.

Note: All joinery and glazing must be masked off to prevent the **S-Protect SC Stay Clean** contaminating the joinery or glazing. Any excess product must be removed after 15 minutes to avoid a surface film forming that can be difficult to remove. **Note:** S-Protect SC requires recoating every 5 to 7½ years depending on the environment.

- **StoColor façade paint if selected**

If selected it is recommended that all **Stolit MP** surfaces receive two (2) coats of **StoColor Dryonic** or **StoColor Maxicryl** façade paint tinted to the selected colour and applied by brush and roller at approximately 6-7 m² per litre per coat (One (1) coat is acceptable though it will need recoating more frequently). Refer to **Section 6 StoService Assurance** for maintenance and recoating requirements.

5. GENERAL NOTES

5.1 Colour

As selected by the client or specifier, Stoanz Limited recommends that the selected colour should have a minimum Light Reflectance Value (LRV) of 25%. For colours below 25% but above 10%, the render system shall be finished with two coats of **StoColor Dryonic a Sto iQ coating** with **X-Black technology additive** to avoid thermal stress.

StoColor Dryonic façade paint with **Sun blocker** and **fast dry film biomimetics**. is available in the StoColor range, with other colours available depending on formulation.

6. STOSERVICE ASSURANCE

6.1 StoService - Refer to StoService Documents for a comprehensive guide

It is the owner's responsibility to clean the Sto System annually by low pressure washing or hosing down to remove surface contaminants with special attention to sheltered areas, as required, use a proprietary house wash sprayed on first with a low-pressure garden spray in accordance with the manufactures instructions. The owner is also responsible for organising the maintenance in accordance with the 3-yearly StoService Schedule available online www.sto.co.nz.

After cleaning a visual inspection is to be undertaken by the person undertaking the annual maintenance to check for any physical damage or faults in the exterior building elements, to ensure any damage or defects are identified and repaired.

To assist the property owner in establishing a regular maintenance cycle, the property owners email address can be registered with service@sto.co.nz. Stoanz Limited will then provide 2½ yearly reminder notices that the property is due for the 3-yearly StoService.

Depending on the prevailing environmental conditions and the service record, recoating of the finish is normally required at the 8 -year period where S-Protect Silane was applied, or 10 to 12½ years where two coats of paint were applied to maintain long-term integrity. This is carried out using a **StoColor Coating System** applied in accordance with a Sto specification. Where a colour change is required, Stoanz Limited should be consulted.

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7. PRODUCER STATEMENT

7.1 StoMiral Render System 10-year Producer Statement with StoService Assurance

When the **StoMiral Render System** is applied in accordance with the Sto specification, Sto details and Sto Quality Assurance Schedule, a Producer Statement is available for the Sto System for ten (10) years from the date of practical completion, provided maintenance requirements as set out in the StoService Schedule are followed.

This is to comply with the relevant clauses of the New Zealand Building Code for this type of building element.

The Sto Producer Statement is supplied by Stoanz Limited to the Sto Contractor who signs off the work on completion of the project. Stoanz Limited confirms the materials supplied have been appraised and are fit for purpose provided that:

(a) All specified work is carried out by a registered Sto Contractor who must complete the Sto Quality Assurance Schedule, submit the Sto Warranty Request, and sign off the five-year PS3 Workmanship Warranty.

(b) All work is carried out in accordance with this Specification, or any written amendments issued by Stoanz Limited.

(c) The Producer Statement does not cover situations where the render system is subjected to damage, physical disturbance, chemical contamination, water seepage from behind the substrate, or interference.

(d) The masonry substrate under the render must be structurally sound. Cracks in the substrate that reflect through the render are not covered by the Sto Producer Statement.

(e) The warranty does not cover situations where there is seepage through a retaining wall.

8. DISCLAIMER

8.1 Disclaimer

The information contained in this specification is based on our findings, experience, testing and certification at the revision date. End users are still responsible for establishing the suitability of the specified products regarding their intended use. No liability is undertaken for use of this information outside of Stoanz Limited parameters or for the substrates, design, construction, and project site conditions that are outside of Stoanz Limited's control. Where a Sto registered contractor applies Stoanz purchased products in accordance with the Sto Specifications, Material Technical Data Sheets and Sto Details, a Sto Material Warranty document is available, but the installation of the materials remains the responsibility of the Sto Contractor who provides the PS3 Warranty. Any warranty is conditional on the system being maintained and serviced in accordance with the StoService documentation. Stoanz reserves the right to alter or update information and formulations at any time without prior notice.

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