

Sto Specification New Zealand

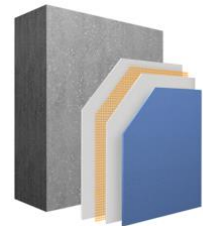
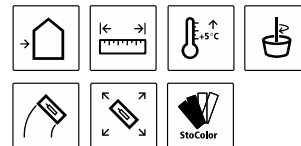
SS205 StoMiral Render on Insitu Concrete Construction

StoMiral Render System

Over reinforced insitu concrete walls

Based on BRANZ Appraisal No. 515 and CCANZ CP 01:2014

CAD Details www.sto.co.nz



Sto Registration: To register your project with Stoanz Ltd please email the completed specification to info@sto.co.nz

1. PROJECT DETAILS

Specifier:

Project and Address:

Project Owner:

Sto Warranty: **StoMiral Render System 15-year Warranty with StoService Assurance**

StoMiral Render System on reinforced insitu concrete walls. Note if required on gloss

This specification details the application of the **StoMiral Render System** incorporating: **StoLevell Novo** basecoat to straighten the walls, **StoLevell Novo mesh coat** with **Stoplex W** sealer, finished in selected **Stolit K coloured finishing render** coated in two (2) coats of selected **StoColor façade paint** over reinforced Insitu concrete construction.

The **StoMiral Render System** is based on polymer modified mineral renders finished in a **Stolit** coloured finishing render coated in **StoColor façade paint** and is designed for areas where an economical system is required.

Select Finishing Render:

Select Facade Coating:

Sto Registration Number:
(Sto Use Only)

i.e. 24.01_StoReg tec_sales_SS205_project address

Project Notes:

Note: The **StoMiral Render System** must be applied over sound, structurally stable substrates. Any substrate movement resulting in the render system cracking is not covered by the Sto Warranty.

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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 or site conditions.

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 insitu concrete 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 LBP registered contractors and the joinery is installed in accordance with the project drawings, manufacturer's details and Sto CAD details.

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

2.2 Insitu concrete

The insitu concrete construction including reinforcement shall be made in strict accordance with the project drawings, specifications, and the concrete manufacturers technical data. The concrete shall be placed 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 projects structural drawings to manage shrinkage and structural stress. It is recommended the ground floor slab to wall junction should be rebated to provide a water stop. At least 28 days shall be allowed after concrete placement as per AS/NZS 2311:2000, for curing and stabilization to take place before commencing the StoMiral Render System. The exterior surface shall be clean, dry and free of all surface contaminants including formwork releasing agents before commencing any rendering work 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. Building tolerances should be within MBIE Guide to tolerances.

2.3 Insitu Concrete Construction

- The insitu concrete construction including reinforcement shall be completed in accordance with the project drawings, specifications, and the concrete manufacturers technical data.
- The concrete shall be placed 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 to manage shrinkage and structural stress.
- It is recommended that the ground floor slab to wall junction be rebated to provide a water stop.
- At least 28 days shall be allowed after concrete placement as per AS/NZS 2311:2000, for curing and stabilisation to take place before commencing the StoMiral Render System. Ensure the concrete is cured before application commences.
- All tolerances shall be in accordance with NZS 4210, i.e. no more than 3 mm surface alignment deviation over a 1200 mm radius.
- All concrete surfaces shall be clean, dry and de-nibbed to present an even surface. The exterior surface shall be free of all surface contaminants including formwork releasing agents. Walls may require moss-killing/degreasing

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and/or high-pressure water blasting to ensure existing mould, surface dirt and laitance/scale are removed exposing a sound surface.

- The Main Contractor is to ensure that any concrete areas behind or adjacent to the Sto Insulation System, e.g. concrete / timber staircases, abutting garden walls, soffits, attached porches, posts etc. have been adequately waterproofed or flashed to avoid any water migration behind the render system.
- Concrete shall be formed true and even. Off-form concrete shall be a minimum F3 finish, with all nibs and protrusions ground off, and step discontinuities no greater than 3 mm. Bagging of the surface is not normally required with concrete of the prescribed standard. If the concrete has had any fast cure additives added or release agents applied, this may affect the adhesion of the applied plaster system. Confirm with the Sto Applicator before they proceed.
- Any defects shall be patched with the Sto Concrete Repair System.
- Rebated joinery openings are to be formed using formwork cut to profile and securely held in place during placing of concrete.
- Where retaining walls occur around inhabited areas, a 50-year tanking/waterproofing membrane is required. Garden retaining walls should be tanked to avoid water migration damaging the finished render.
- Exposed tops of walls should be sloping to drain water and must be waterproofed with StoFlexyl.

2.4 Insulation

Thermal resistance requirements of the building envelope shall be determined using the Schedule or Calculation methods of NZBC Acceptable Solution H1/AS1 for all housing and buildings up to 300 m² and NZBC Acceptable Solution H1/AS2 for housing and buildings greater than 300 m², or the Modelling method in H1/VM1. The minimum construction R-value for walls that do not contain embedded heating elements is R2.0, and for heated walls is R2.9.

Foundations: H1/AS2 require –Vertical edge insulation with an R -value of 1.0 m² K/W, installed on all exterior vertical faces of the concrete slab / wall footings, extending from the outermost top edge down to bottom of wall footing.

Rasped XPS sheets can be used for vertical edge insulation with 30 mm providing the required RV 1.0. Refer to the StoTherm Masonry Foundation Specification for other insulated foundation options.

2.5 Soffits

Soffits are normally fixed before the rendering commences with a 6-8 mm finishing bead of compatible MS Sealant applied after the mesh coat. The main contractor is to ensure any weatherproofing required on the concrete behind the soffits or adjacent surfaces is carried out before the soffits are installed.

2.6 Control of External Fire

The specified Sto renders have been tested to EN 13501-1 and have achieved an A2-s1, d0 rating. The StoMiral Render System has been tested to ISO 5660.1 and achieved a peak heat release rate of less than 100 kW/m² and total heat released of less than 25 MJ/m². The system is therefore suitable for use on buildings at any distance to the relevant boundary. **Note:** On commercial buildings and Multi Unit complex's, contact Stoanz Ltd for more specific information.

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.

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3.2 Aluminium joinery

All joinery shall be fixed over **StoFlexyl waterproofing** allowing for a 5 mm offset from the face of the rebate leaving a 5 mm gap at the sill prior to render application. Before installing the joinery, fill any holes in the rebates and use **StoFlexyl** to waterproof the rebates mixed correctly (1:1 with fresh cement) and brushed on in two coats to the head, jamb and **internal rebate** of the blocks, including the rebate step while the **exterior sills** are to be **StoFlexyl meshed** with the mesh taken 40 mm up the jambs. Sealing the joinery perimeter with MS sealant at the head and jambs after the mesh coat then forms the primary seal while the **sill** is left open with a 5 mm drainage gap. To complete the waterproofing process, **air seals** are required to be installed around all interior joinery to rebate openings.

Note: Timber joinery is also fixed over StoFlexyl. Refer to Sto CAD details for flashing requirements. **StoFlexyl meshed waterproofing** has been tested by BRANZ to **AS/NZS 4858**. **Air seals and sealant work (primer is required where the sealant contacts StoFlexyl) is the responsibility of the window installer.**

3.3 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. A primer is required on **StoFlexyl surfaces** and as required on PVC, porous substrates, and dissimilar materials.

3.4 Detailing

All details must be in accordance with the project drawings and Sto concrete details available from www.sto.co.nz can be used for reference.

3.5 Penetrations

Penetrations such as waste pipes and fixtures shall be adequately flashed and waterproofed prior to the render installation. 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 5° downwards rake.

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

All rendered horizontal wall surfaces should have a minimum 10° fall 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. **StoFlexyl meshed waterproofing** has been tested by BRANZ to meet **AS/NZS 4858** as required by **CCANZ CP 01**

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3.7 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 render 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 the **selected Stolit K** coloured finishing render coated in selected **StoColor** façade paint.

4.3 Materials

Stoanz Ltd supplies the following materials:

StoLevell Novo or Levellite meshed basecoat render	Stoplex W sealer
Selected Stolit K coloured finishing render	Selected StoColor facade paint
StoFlexyl meshed waterproofing	Sto uPVC pre-meshed corner angles, finishing edges and drip edges, mesh, etc

4.4 StoFlexyl Waterproofing

Ensure all **StoFlexyl** waterproofing has been completed.

Note: As required, flush out **StoFlexyl meshed waterproofing** overlays to eliminate any surface read.

4.5 Control Joints

All control joints in the concrete wall, 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, sealant seal junctions apply two coats of the façade paint to the V joint for a negative detail.

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4.6 Meshed Basecoat Render

To clean, dry and cured block surfaces, apply one coat of **StoLevel Nov** render by hawk and trowel or pump at an approximate thickness of 5-6 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 **StoLevel Nov** 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. **StoLevel Nov** 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 m² per litre.

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.

Note: Where sealant is being applied directly over StoFlexyl waterproofing, the StoFlexyl must be primed to promote adhesion in accordance with the sealant manufacturer's instructions. The joinery sills must remain unsealed and open to permit ventilation of the window trim cavity.

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

- **Stolit K coloured finishing render as selected**

To all exterior plastered surfaces, apply the selected **Stolit K** coloured finishing render 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 m² per pail (1.0 mm), 9 m² per pail (1.5 mm), 7 m² per pail (2.0 mm) and 4 m² per pail (3.0 mm).

- **StoColor façade paint**

All **Stolit K** surfaces shall receive 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. Refer **Section 6. StoService** for recoating requirements.

Note: Maintain wet edges between cutting in and roll in tight to achieve an even film build

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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 should 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 paint finish is normally required at the 8-year period 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.

7. WARRANTY

7.1 StoMiral Render System 15-year Warranty with StoService Assurance

When the **StoMiral Render System** is applied in accordance with the Sto specification, Sto details and Sto Quality Assurance Schedule, a warranty is available for the Sto System for fifteen (15) 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 in the New Zealand Building Code for this type of building element.

To register your project with Stoanz Ltd for the warranty and StoService email new specifications to: info@sto.co.nz

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Stoanz Ltd | Authorized Distribution Partner of Sto SE and Co KGaA.

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The Sto Warranty 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 warranty does not cover situations where the render system is subjected to damage, physical disturbance, chemical contamination, or interference.
- (d) The substrate under the render must be structurally sound. Cracks in the substrate that reflect through the render are not covered by the StoWarranty.
- (e) The warranty does not cover situations where the concrete wall acts as 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.