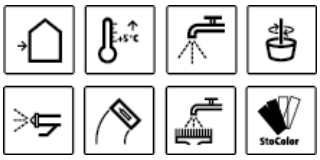
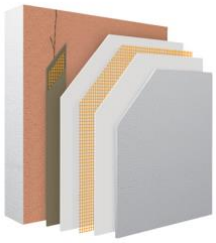
Sto Specification New Zealand

SS106R StoArmat Refurbishment Render System over EIFS

StoArmat Refurbishment Render System
over existing rendered polystyrene cladding
Based on BRANZ Appraisal No.478

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:	**StoArmat Refurbishment Render System 15-year Warranty with StoService**
StoArmat Refurbishment Render System over existing rendered EIFS cladding.	This specification details the application of the **StoArmat Render System** to refurbish existing exterior rendered polystyrene clad walls incorporating **Preparation**, **Stoplex W** consolidating sealer or **Sto Putzgrund** Primer, **Sto** crack repairs, **StoLevell Novo** basecoat as required, **StoArmat Classic** meshed reinforcement render finished in the selected **Stolit K coloured finishing render** and two coats of **StoColor Maxicryl** or **StoColor Dryonic** façade paint. StoArmat Render with its adhesive strength, flexibility and high impact resistance has up to 10 times more resistance than cement based mineral renders and when combined with the Stolit K coloured finishing render is the recommended system for upgrading and refurbishing existing exterior EIFS rendered walls. **Note:** This specification covers common problems associated with external rendered EIFS cladding. Any specific details or defects encountered need to be addressed by the Sto Contactor or Sto Technical team.
Select Finishing Render:	Select
Select Facade Coating:	Select
Sto Registration Number: (Sto Use Only)	
Project Notes:	Note: Where the cladding is face fixed (non-cavity - generally pre 2004 - E2/AS1) a careful examination should be undertaken to ensure the existing exterior building elements are sound, load bearing and fit for purpose. If required engage a Building Surveyor to sign off on the exterior elements to ensure they are satisfactory.

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2. EXISTING CONSTRUCTION & DETAILING

2.1 Responsibility

The Sto refurbishment specification addresses the exterior condition of the existing rendered surfaces only. It does not address other building elements. It is the responsibility of the building owners to ensure that all the existing building elements are sound, load bearing free from any defects, water damage or contamination and are weathertight. Where there is a possibility of water ingress or failure, an appropriate building professional must be engaged to verify the building's elements are in a sound condition and are suitable for the Sto system to be applied.

The **Sto Quality Assurance Document** is to be filled out as a record of the work undertaken by the Sto Contractor.

2.2 Building Elements

Stoanz Ltd accepts no responsibility for defective workmanship in relationship 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 refurbishment works.

2.3 Dissimilar Material Junctions, Flashings and Penetrations

All building flashings, dissimilar material joints and penetrations such as pipes and service fittings shall be checked to verify that they are sound and watertight.

2.4 Aluminium Joinery

The joinery must be watertight and all mitres, drain holes, vents etc. are to be sound and clear. Any existing joinery that is suspect will require a joinery specialist to evaluate the joinery to ensure the window and door joinery mitres, stanchions and drainage vents are still sound, working, and watertight. The existing joinery head, jamb and sill junctions with the existing cladding shall be inspected by the specifier to confirm they are weathertight. Any new joinery must be dimensioned appropriately and flashed accordingly to ensure it is weathertight.

Note: The StoArmat Refurbishment System does not include the installation of new joinery flashings. Where these are required, they shall be detailed by the specifier and installed by the Sto LBP Contractor prior to the application of the refurbishment system.

2.5 Roofs, Fascia's, and Decks

All existing roofs, fascia's and deck membranes affecting the existing wall surfaces must be evaluated to ensure they are still sound and appropriately detailed with proper clearances, flashings, etc. Gutters, rainwater heads, scuppers, overflows, flashings, pergolas etc. shall be correctly detailed with flashings, drip edges diverters and upstands. Existing surfaces must continue behind any overlaying items to a watertight junction.

2.6 Penetrations

Penetrations such as waste pipes and fixing brackets shall be adequately flashed prior to the panel installation. All piping and electrical wiring penetrations must be weatherproofed as per Sto standard and/or project specific details. All wiring should be sleeved in PVC conduit and the terminations sealed using MS Sealant.

2.7 Control of External Fire

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

2.8 Compliance

Where exterior wall assemblies have watertight issues, they must be investigated by a Building Surveyor to ensure they are remediated, and the substrate is satisfactory before proceeding. Where there is evidence of moisture ingress, the source of ingress must be identified and the walls remediated before proceeding to ensure the substrate is dry, sound, and load bearing.

Where the refurbishment works are required for the repair or replacement (other than maintenance or external refurbishment) of any component or assembly that has failed to satisfy the provisions of the building code for durability, it is the owner's responsibility to ensure that a building consent is obtained from the territorial authority.

3. SURFACE PREPARATION

3.1 Responsibility

All work in this section shall be the responsibility of the **Sto Contractor**, unless otherwise expressly agreed. The Sto Contractor check that the existing substrates and building elements are acceptable for the rendering process before proceeding. Adequate protection of all dissimilar materials and adjacent surfaces must be undertaken before commencing.

3.2 Aluminium joinery

All joinery shall be checked to ensure that it is sound and all mitres, drain holes, vents etc. are working and clear and the joinery has been installed correctly with head flashings and weathertight junctions at the existing cladding. Sealant jointed joinery jambs and sills (excluding flashed free draining sill trays or joinery with flange drainage holes) must have a new sealant bead applied to the perimeter at the render to joinery transition. Sealant joints can be formed using **Sto 3 mm finishing edges** set 3-4 mm off the joinery flange in the **StoArmat Classic render** coat before installing new MS Sealant seals around the jambs and sills.

Note: Where the joinery does not have head, jamb and/or sill flashings fitted, an appropriate professional is required to survey the joinery to confirm it is still sound and the junction between the joinery and existing cladding is watertight.

Note: Installing new joinery flashings is an extra unless specifically itemised and detailed in the project scope of work.

3.3 Fixtures and Fittings

All fittings and fixtures on the cladding such as downpipes, rainwater heads, gas appliances, handrails, taps etc. shall be checked to confirm they are secure. All fittings that can be removed shall be taken off and refitted securely after the system is finished ensuring all connections are watertight.

Note: Penetrations, pipes, wiring and lights must be appropriately sealed.

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3.4 Existing Rendered Polystyrene

All existing rendered polystyrene is to be checked to ensure it is dimensionally sound and securely fastened. The existing rendered cladding is to be examined to determine it is still in good condition. Where the existing render is cracked, delaminated, or damaged, the surface will require reinforcing, removal or, depending on how securely the cladding is attached, refixing using 60 mm StoTherm washers and appropriately sized screw anchors to achieve 30 mm embedment into the structure.

3.5 Render and Coating Removal

Any render that has delaminated, or coating that is adhesion impairing, requires removal. The contractor is to ensure all surfaces are sound, load bearing and clean before commencing.

3.6 Chemical Treatment

All surfaces to be refurbished shall be treated with a chemical solution to remove all moss, mould and any contaminants, including any existing oxidized powdery paint film. The properties for the removal of contaminants can vary depending on the various contaminants that may be present.

- Multipurpose cleaner for buildings
- Ready to use once diluted
- Safe on painted surfaces
- Removes dirt, mould, algae, lichen, oils and general atmospheric contaminants
- pH neutral
- Biodegradable
- Compatible with water pressure cleaners
- Plant friendly

Note: Any areas with oil or grease type contaminants on the surface will require a water based solvent cleaner. Ensure the stipulated reaction times are observed before washing off all residue during the cleaning process.

3.7 Cleaning

All surfaces to be refurbished shall be water blasted with a commercial 3000 psi (minimum) water blaster with sufficient pressure and volume to remove all residual contaminants or loose, friable material without damaging the substrate, supplemented by hand or mechanical removal of any other loose or friable material. Any coatings that are adhesion impairing, must be removed, or treated to establish a sound, clean, load bearing surface.

Note: When cleaning with the water blaster, due care must be taken to avoid any damage to the building elements, dissimilar materials, adjacent surfaces, or water ingress. Generally, the pressure is controlled by the distance (150 – 200 mm from the surface), the fan (20 – 25 degrees), and the pressure and volume of water.

3.8 Control Joints

Any existing control joints are to be mirrored through the new render system using Sto uPVC control joints. Where vertical cacks have occurred due to stress they can used to form control joints to mitigate any future stress.

3.9 Sealant Beads

All new sealant beads associated with the cladding system shall be a compatible **MS Sealant** applied in accordance with the manufacturer's Technical Data Sheets. Existing sealant beads around the joinery, fittings, and penetrations shall be checked and reinstalled as required before commencing with the render process.

3.10 Parapets

Metal parapet caps shall be installed with a min 5° slope and overlap the cladding minimum 50 mm in Low, Medium and High Wind Zones, minimum 70 mm in the Very High Wind Zone, and minimum 90 mm in the Extra High Wind Zone and specific design wind pressures.

3.11 Architectural Profiles

Any existing polystyrene shapes used to create detailing shall be checked. Profiles shall have been pre-meshed or receive a **StoArmat Mesh** reinforcement coat. Where the existing base mesh coat is not continuous under the profile, the profile shall be meshed onto the main walls. New profiles are placed after the **StoArmat Meshed** reinforcement coat using **StoFlexyl** adhesive and mechanically fastening as required before meshing the perimeter onto the wall. Where interstorey control joins are covered by a profile the bottom edge must be left free with a 5 mm gap.

4. STOARMAT REFURBISHMENT RENDER SYSTEM

4.1 General

The system is a trowel applied finish, and appropriate masking of all dissimilar materials and adjacent surfaces must be carried out prior to commencement. All work shall be carried out strictly in accordance with Sto standard details or project specific details. As previously noted, all surfaces to be rendered must be treated with a chemical solution and be thoroughly cleaned before commencing rendering. Where the existing texture is coarse or uneven, or the EPS has cupped, the surface can be levelled by applying a coat of basecoat render.

4.2 Selection

Rendering shall be carried out in stages incorporating **Preparation, StoLevell Novo** basecoat as required to straighten the wall, **StoArmat Classic** mesh reinforced render finished with the **selected Stolit** coloured finishing render, coated with the **selected StoColor** facade paint.

4.3 Materials

Stoanz Ltd supplies all the following materials:

StoLevell Novo basecoat	**StoArmat Classic meshed render**
Selected Stolit coloured finishing renders	**Sto Putzgrund and Stoplex W sealer**
Selected StoColor facade paint	**StoFlexyl waterproofing**

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4.4 Primer / Sealer

As required, apply one full coat of **Sto Putzgrund** by brush or roller at the approximate spreading rate of 7 m² per litre to any **StoFlexyl**, repaired bare spots or smooth painted areas. If the existing surface is bare or powdery, apply a coat of **Stoplex W** to seal and consolidate the surface.

4.5 Crack Addressment

All stable cracks in the EIFS shall be raked clean, sealed with **Stoplex W** and filled with **StoGold Filler** for cracks < 1.0 mm in width before rendering commences.

Any cracks > than 1.0 mm but < than 2.5 mm will require filling with **Sto Flexyl** and reinforcement with **Sto 100mm Jointing Tape** embedded into **Sto Flexyl** and flushed out before commencing with the refurbishment work.

Note: Where cracks occur on joints, ensure the surrounding cladding is sound and secure. Refix if necessary.

4.6 StoLevell Novo Basecoat Render to Level Texture or Straighten Walls

As required to straighten walls or fill in an existing course texture. Ensure the surface is clean and dry (treat coated surfaces as necessary to provide adhesion). Apply a basecoat of **StoLevell Novo** by hawk and trowel to clean dry wall surfaces to fill the texture or straighten the walls.

Once the base coat is set (still green) use a rule to straighten the surface to achieve a flat wall surface free of deviations and leave to dry.

4.7 Stoplex W Sealer

Once the basecoat renders have dried and been rasped, apply one coat of **Stoplex W sealer** by brush and roller at approximately 8 m^2 per litre.

4.8 StoFlexyl Waterproofing and Crack Filler

A minimum of 10 degrees fall is required on all horizontal rendered surfaces. For rendered balustrades, mix **StoFlexyl** with fresh Portland cement at a ratio of 1:1 by weight and apply a coat of **StoFlexyl** render by hawk and trowel at approximate thickness of 1.0 mm to the top and sides returning down (or up) over walls a minimum 75 mm. While the **StoFlexyl** is still wet, lightly embed the **Sto mesh**, ensuring adjacent drops of mesh are overlapped by a minimum of 75 mm. Lightly float the surface to ensure that the mesh has been completely embedded into the basecoat. Once dry apply StoArmat meshed render system.

Note: StoFlexyl meshed waterproofing has been evaluated by BRANZ to meet the requirements of AS/NZS 4858 for waterproof membranes used with render systems.

4.9 Detailing

Sto pre-meshed corner angles shall be installed on all external corners. All internal corners will be checked and double reinforced meshed in **StoArmat Classic render**. Sto pre-meshed finishing edges are to be installed as required and as previously detailed.

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Note: Sto uPVC pre-meshed corners, **Sto uPVC pre-meshed 3mm finishing edges**, **Sto trays and caps** are available as required for the **StoArmat Render System**.

4.10 StoArmat Classic Reinforcing Render
StoArmat Classic HD with hardener for accelerated drying in cold damp weather is also available.

To clean, dry, sealed base coated surfaces, apply an even coat of **StoArmat Classic** render by hawk and trowel at approximately 2 mm thick. While the **StoArmat Classic** is still wet, lightly apply **Sto reinforcing mesh** ensuring adjacent drops of mesh are overlapped by a minimum of 75 mm and float the surface to ensure the mesh has been embedded in and allow to dry. Once dry, apply a further coat of **StoArmat Classic** at approximately 1.5 mm (minimum overall DFT 2.5 mm) by hawk and trowel to cover the mesh and leave an even, flat surface free of voids or deviations.

Once dry, remove any slight ridging etc. of the **StoArmat Classic** with a Sto rasp ready for subsequent top coating. All application procedures for the **StoArmat Classic** must be in accordance with the Sto Technical Data Sheets.

Detailing: Always install **Sto pre meshed angles, drip edges** and **Sto finishing edges** as required.

4.11 Sealant Installation

All junctions between joinery and render and around penetrations, flashings and similar details shall be sealed with a compatible **MS Sealant** in accordance with the manufacturer's Technical Data Sheets. Note some manufacturers require primers on PVC or porous materials.

Note: Some types of joinery have drainage holes under the sill flange; ensure these remain clear. 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.

4.12 Stolit Float Finish Renders (refer to header 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**

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 as selected.**

All **Stolit K** surfaces require two (2) coats of **StoColor Dryonic** or **StoColor Maxicryl** façade paint, tinted to the selected colour and applied by brush and roller at approximately 7-8 m^2 per litre per coat.

Note: Always maintain wet edges between cutting in and roll in tight to ensure an even film build is maintained. Refer to **Section 6** for maintenance and recoating requirements.

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5. GENERAL NOTES

5.1 Colour

As selected by the client or specifier. Stoanz Limited recommends that the selected colour must have a minimum Light Reflectance Value of 35%. Where a colour less than 35% LRV but above 15% is selected, the render system shall be finished with two coats of **StoColor Dryonic façade paint** 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. Other colours are available depending on the 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 manufacturer's instructions. The owner is also responsible for organising the maintenance in accordance with the 3-yearly StoService Schedule available online at 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 faults 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 between 7½ to 10 -years 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 StoArmat Refurbishment Render System 15-year Warranty with StoService Assurance

When the **StoArmat Refurbishment 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.

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 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, structural movement, 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.

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.