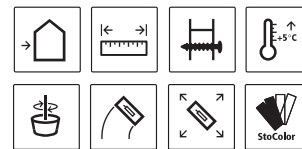


Sto Specification New Zealand

SS505 StoMiral Render System over StoArmour facade panel

StoMiral Render System over StoArmour Facade Panel

on a cavity over timber or steel framing construction
 BRANZ Appraisal No.772
 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: _____

StoWarranty: **StoMiral Render System on StoArmour Panels 15-year Warranty with StoService Assurance**

StoMiral Render System over StoArmour 50 mm reinforced façade panel. This Specification details the installation of the **StoArmour Facade System** using **StoArmour 50 mm Façade Panels rendered in the StoMiral Render System** on timber or steel framed construction incorporating: **cavity battens, 50 mm StoArmour facade panels, S-Protect WS205** stay dry sealer, selected **StoMiral render** meshed basecoat primed with **Stoplex W sealer**, finished in selected **Stolit coloured finishing render** coated with selected **StoColor facade paint** or **S-Protect SC clear sealer** on **Stolit MP or Milano finishes**.

Sto Miral Renders:
StoLevell Novo render
Stoanz Poren Render

StoArmour Panel is a light aerated concrete steel reinforced concrete panel produced in a manufacturing audited plant and covered by a BRANZ Appraisal. The panels has been subjected to testing in accordance with AS/NZS 4284:2008, E2/VM1 façade tests and BS 8414 and AS 5113 fire test.

Select Finishing Render: _____

Select Facade Coating: _____

Sto Registration Number:
(Sto Use Only)

i.e.23.01_StoReg tec_sales_SS505_project address

Project Notes: _____



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SS505 StoMiral Render System over StoArmour facade panel

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 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 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 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 carried out by LBP registered contractors and the window and door joinery is installed in accordance with the project drawings, manufacturer's details and Sto CAD details. Building tolerances should be within MBIE Guide to tolerances.

A **Sto Quality Assurance Document** is to be filled out as a record of the work undertaken by the Sto Contractor and StoArmour facade panel installer.

2.2 Timber Frame

Timber framing must comply with NZS 3604 for buildings or parts of a building within the scope limitations of NZS 3604. Buildings or parts of a building outside the scope of NZS 3604 must be to a specific design in accordance with NZS 3603 and AS/NZS 1170. Studs must be at a maximum of 600 mm centres in NZS 3604 Wind Zones up to, and including, Extra High, and a maximum of 400 mm centres for specifically designed buildings. Dwargs must be fitted flush between the studs as required for the fixing of interior linings. All framing shall be true in vertical and horizontal planes with attention to intersections between top plate, floor joists and bottom plate in multi-storey construction. Adequate timber framing including blocking shall be provided by the Main Contractor to facilitate cladding fixings for the designated wind zone, membrane upstands, dissimilar materials, and exterior fixtures on the cladding.

The level of timber treatment shall be in accordance with the current requirements contained in NZBC Acceptable Solution B2/AS1. Generally, this will require a minimum treatment level of H1.2. The moisture content of the timber frame shall be no more than 24% prior to installing the cavity cladding system.

2.3 Steel Frame

Steel framing must be to a specific design meeting the requirements of the NZBC. The minimum framing specification is 'C' section studs and dwargs of overall section size of 75 mm web and 32 mm flange. Steel thickness must be minimum 0.75 mm. Studs must be at a maximum of 600 mm centres in NZS 3604 Wind Zones up to, and including, Extra High, and a maximum of 400 mm centres for specifically designed buildings. Dwargs must be fitted flush between the studs as required for the fixing of interior linings.

2.4 Steel Framing Thermal Break

Steel frame construction requires that a thermal break is installed in accordance with the requirements of NZBC Acceptable Solution E3/AS1, Paragraph 1.1.4(d). The National Association of Steel Frame Housing (NASH) lists solutions using battens or sheathing. Alternatively, a proprietary rigid thermal sheathing covered by a BRANZ Appraisal can be used.

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2.5 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 StoTherm 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 insulated foundation options.

2.6 Wall Underlay

A flexible wall underlay is suitable for use in NZS 3604 Wind Zones up to, and including, Very High. A rigid underlay is required in Extra High Wind Zones and specific design wind pressures.

Flexible wall underlays complying with NZBC Acceptable Solution E2/AS1, Table 23 shall be installed in accordance with the underlay manufacturer's instructions. The underlay shall be installed horizontally and be continuous around corners. The underlay must be lapped minimum 75 mm at horizontal joints, and minimum 150 mm over studs at vertical joints. Where studs are at greater than 450 mm centres, a wall underlay support must be installed over the underlay at maximum 300 mm centres horizontally (or additional vertical cavity battens can be installed) to prevent bulging of the underlay into the cavity space.

Generic rigid wall underlay materials shall be installed in accordance with E2/AS1 and be overlaid with a flexible wall underlay. Proprietary systems covered by a valid BRANZ Appraisal or CodeMark Certificate shall be installed in accordance with the manufacturer's instructions. Where rigid wall underlays are used, the fibre cement sheet fixing length shall be increased by at least the thickness of the underlay.

Unlined gables or walls shall incorporate a rigid wall underlay or a flexible air barrier which meets the requirements of E2/AS1, Table 23.

Note: Ensure any items requiring fixing to the timber frame or items penetrating the wall underlay such as fixing brackets etc. are installed and flashing taped onto the wall underlay in accordance with E2/AS1.

2.7 Soffits

Should be fixed before the cladding is installed. The top of the cavity shall be closed off with a continuous horizontal cavity batten to provide support for cladding fixings and restrict any air flow into the roof space. A 6-8 mm bead of compatible sealant is installed after the StoArmour panel work is completed and before plastering commences. Inclined sloping soffits require a flashing.

2.8 Aluminium Joinery

All windows and doors shall be fitted prior to installation of the panels by the appointed window installer positioned to sit approximately 24–25 mm from the frame (or face of the rigid wall underlay) to the back of window flange (to allow for tapes) on a 20 mm cavity. The WANZ joinery support bar is to finish 15 mm short of the joinery jambs (30 mm total). All Joinery is fitted with **Sto uPVC Adhesive Sill and Jamb flashings** before the panels are installed.

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The sill flashing is to under seat the jamb flashing by 8 mm each side, so the flexible tabs abut each other, and the jamb flashing is cut on a rake to butt tight against the sill at the junction before being sealant jointed.

Note: **Sto uPVC Cavity Jamb** flashings (with the uPVC leg back to the frame) can be used and extended 30 mm above the head flashing to form stop ends where required. On some joinery, the sill flanges have vents underneath. Ensure they remain clear.

2.9 Aluminium Head Flashings

Proprietary aluminium head flashings are to be installed by the Main Contractor or joinery installer and shall be taped onto the wall underlay. They must measure 8.0 mm past the joinery jambs (16 mm total) so they cover the **StoArmour Adhesive jamb flashing** flexible channel. The aluminium head flashing is required to have a minimum 20 mm folded stop end or proprietary cavity stop ends, a minimum 35 mm upstand (60 mm upstand in Extra High Wind Zones and above), 15° slope and 10 mm cover over the joinery flange. Where **Sto Cavity Jamb flashings** are used, the head flashing is cut 10 mm longer than the joinery (5 mm either side) and the **Sto Cavity Jamb flashings** continue 30 mm past the head flashing and are sealant jointed to form stop ends. A **Sto uPVC vented cavity closer** or **Sto uPVC vented base cap** is fitted over the head flashing to close the cavity.

Note: The main contractor or window installer is to co-ordinate the head flashing length with the Sto Contractor.

2.10 Penetrations (Refer also to E2/AS1 Fig 68)

Penetrations and fittings such as waste pipes, vents etc. shall slope to the exterior, be adequately supported by blocking and as required be sealed to the underlay with flexible flashing tape in accordance with E2/AS1 Fig 68, or with a proprietary penetration seal covered by a valid BRANZ Appraisal or CodeMark Certificate, prior to cladding installation. Exterior flange plates shall be installed as required around the penetration after the cladding has been installed.

Blocking must be installed for the fixing of taps, door hooks, lights, gas fittings, security alarms etc. Electrical wiring shall only penetrate the cladding and render system in a PVC conduit with a downwards rake of 5 degrees. MS sealant applied over a backing rod shall be used to seal around the conduit where it penetrates the cladding.

2.11 Control of External Fire

The specified Sto renders have been tested to EN 13501-1 and have achieved an A2-s1, d0 rating. The Sto Miral 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 Multi Units or Multi Storey refer to StoArmour Panel System BS 8414 and AS 5113 fire test report available on request.

The Main Contractor is required to familiarise themselves with the StoArmour façade panel installation details and requirements before works commence to ascertain their obligations. For StoArmour façade panel CAD installation details, visit www.sto.co.nz.

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3. STOARMOUR FAÇADE PANEL INSTALLATION

3.1 Responsibility

All work in this section shall be the responsibility of the **Sto Contractor** or their installer, who shall check that the timber or steel frame construction is satisfactory before proceeding with the installation of the cladding. The **Sto Contractor** is to ensure adequate protection, access and equipment is supplied to meet their responsibilities under the Health and Safety regulations and that all dissimilar and adjacent surfaces are correctly detailed.

3.2 Selection

The **StoArmour Facade System** incorporates: **20 mm selected, StoTherm, timber or CLD fibre cement cavity battens, 50 mm StoArmour facade panels** sealed with **S-Protect WS 205 stay dry**, levelled, and reinforced with **StoMiral** basecoat render sealed with **Stoplex W** sealer, before finishing in the **selected Stolit** coloured finishing render and **StoColor** facade paint or **S-Protect sealer** for natural finishes.

3.3 Panel Materials

- **StoArmour 50 mm façade panels**
- **AAC Fixings**
- **AAC Mineral Panel Adhesive or AAC Construction Glue**
- **S-Protect WS 205 stay dry panel sealer**
- **Sto uPVC joinery flashings, drip edges, pre meshed corners and control joints.**

3.4 Framing

The framing is to be checked to ensure it is satisfactory and to ensure that adequate blocking or additional studs are installed by the builder before commencing.

3.5 20 mm Cavity Battens

All exterior framing shall be battened using either StoTherm 20 mm VH EPS cavity battens, minimum 45 x 18 mm H3.1 treated timber cavity battens, or James Hardie CLD fibre cement cavity battens, placed in accordance with the batten layout set out in the Sto Panel CAD details. The battens are temporarily fixed to the full length of the studs. The battens must be centred on the studs with an additional batten line or strap required between studs on flexible underlay where the stud centres are greater than 450 mm to prevent the insulation encroaching into the cavity.

Note: Timber and CLD cavity battens are supplied and installed by the main contractor. CLD battens shall be fixed to the studs at 200 mm centres to prevent bowing when the StoArmour panels are installed.

Note: **40 mm cavity battens** can be used but **125 mm AAC panel fixings** must be used to achieve a minimum 30 mm frame embedment. See BRANZ Appraisal 772 for **200mm Cavity Spacers and fixings**.

Extra vertical battens are also required as necessary at internal and external corners, joinery openings, dissimilar material junctions, etc. Horizontal spacer battens offset at a minimum 5-degree slope and with a minimum 50 mm gap at the vertical batten transitions can be used as required on 600 mm framing or at the joinery heads or sills for support.

A drained interstorey metal flashing is required to limit the drainage cavity to two storeys with a maximum unrestricted cavity height of 7 metres.

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3.6 Foundations

At the foundation, a vented Sto uPVC adjustable foot tray is installed with the cladding set 50 mm below the bottom plate or supporting frame.

3.7 Rebated Concrete Foundations

Where a solid concrete foundation rebate is detailed, the rebate must be a minimum 50 mm below the concrete floor slab and be dimensioned so the panel is flush or overhangs the foundation by 5 mm. The rebate is to have a brush coat of **StoFlexyl** or other approved liquid waterproofing before the panels are installed.

3.8 Cavity Ventilation Openings

Where a solid concrete rebate is detailed, weather screened vents shall be installed through the bottom of the panel at the junction with the rebate. The vents must be sized and positioned to provide a minimum ventilation area of 1000 mm² per lineal metre of wall.

3.9 50 mm StoArmour Façade Panel Installation

StoArmour facade panels are installed horizontally in a straight line starting at the base of the wall. The panels shall be set at least 50 mm below the supporting frame or on a solid foundation rebate with vertical panel joints occurring on or off the stud. Alternative panel courses shall be laid in a brick pattern (minimum 150 mm offset) to avoid continuous vertical joints.

The panels are fixed to studs at maximum 300 mm centres, normally centred 150 mm from the edge of the panel using **AAC 100 mm fixings for a 20 mm cavity or 125 mm fixings for a 40 mm cavity**. The fixings are centred on the studs.

Fixings should always be a minimum 50 mm from the vertical edge of the panel and countersunk 5-12 mm below the surface. In particular, the panels shall be laid in a brick pattern, true in both vertical and horizontal planes, with edges bedded in **AAC Mineral Panel Adhesive** or an approved **AAC 2hr Construction Glue**, with all joinery openings and service cut outs correctly detailed. The panels against the joinery jambs shall be installed before the head and sill infill panels. The sill should have a 15° fall to the exterior and the head is capped with a Sto base cap or drip edge. Building assemblies should be set within MBIE Guide to tolerances. After installation, remove any contaminants and excess adhesive before it dries. Rasp back any irregularities and leave to dry before the application of the **S-Protect WS 205 stay dry sealer**.

The Main Contractor is to ensure that any areas or details adjacent to the panels have been adequately waterproofed or flashed to avoid any water migration behind the cladding. Interstorey floor joists must be seasoned (dry) or proprietary dry joists. A drained interstorey metal flashing is required for three storey cavity construction to limit the cavity to two storeys with a maximum unrestricted cavity height of 7 metres. Vertical control joints in the framing and panels are required at 8.0 metre centres refer to the Sto CAD details and project drawing for layout. **Note:** Any exposed panel reinforcing steel shall be primed with an anti-corrosive steel primer.

Note: Where a rigid underlay is used, the panel fixings are to be countersunk up to a maximum of 15 mm to maintain the 30 mm embedment required in the framing.

Wind Zone: Up to 2.5 kPa ULS – 59.5 m/s (NZS 3604 Extra High Wind Zone is 2.13 kPa ULS – 55 m/s)

Refer to Stoanz for fixing requirements in specific design pressures up to 4.8 kPa ULS.

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3.10 S-Protect WS 205 Stay Dry

As the panels are installed, they must be treated with a sealer coat of **S-Protect WS 205 stay dry** at approximately 5 m² per litre. The **S-Protect WS 205 stay dry** can be applied using a low-pressure sprayer and block brush ensuring dissimilar surfaces are protected before leaving to dry overnight.

3.11 Control Joints

All control and interstorey joints as designated by the project drawings or Sto details must be followed. Refer Sto CAD details for specific control joint design details. **Sto uPVC 8 mm vertical control joints** are required to be placed at **maximum 8.0 metres** as per Sto details. **Sto uPVC 12 mm horizontal control joints** are only required at **inter-storey junctions** where unseasoned timber joists have been used. **Horizontal drained junctions** are required to limit continuous cavities to two storeys or 7 m in height, whichever is less, in accordance with NZBC Acceptable Solution E2/AS1.

Note: Horizontal control joints are not required at interstorey junctions where seasoned (dry) or proprietary dry floor joists have been used.

3.12 Aluminum Joinery (refer to Section 2)

Joinery is flashed using the **Sto uPVC Adhesive Sill and Jamb flashings**. The aluminium head flashing is installed with stop ends as previously detailed in Section 2 and the **Sto CAD** details (refer to www.sto.co.nz). The **Sto uPVC Adhesive Sill and Jamb flashing** must be cut to butt tight to the raked **Sto uPVC Adhesive Sill and Jamb flashing** at the sill and finish under the stop ended aluminium head flashing.

Alternatively, where **Sto Cavity Jamb flashings** are used, the head flashing is cut 10 mm longer than the joinery (5 mm either side) and the **Sto Cavity Jamb flashings** continue 30 mm past the head flashing (removing 30 mm off the back tab at the tear line and the joinery flashing tab for a tight fit) and are sealant jointed to form stop ends. The aluminium head flashing is cut to sit tight against the extended uPVC jamb and is sealed in place with MS Sealant. A **Sto 50 mm vented base cap** is used to seal the cavity at the head flashing.

Note: MS sealant joint jamb to sill junctions and joinery to Sto uPVC joinery flashings.

3.13 Sealant

All junctions between the cladding and adjacent dissimilar material surfaces shall be flashed by the main contractor in accordance with the consented project drawings and shall be finished where necessary with a compatible **MS Sealant** over PEF rod. The sealant must be applied in accordance with the manufacturer's Technical Data Sheet. A primer is required on **StoFlexyl** surfaces and as required on PVC, porous substrates, and dissimilar materials

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

3.14 Architectural Profiles and Shapes

Architectural shapes used to create decorative detailing shall be correctly cut to size and fitted using mixed **StoFlexyl** 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 adhesive** and any control joints must be mirrored through the profile. Profiles shall be pre-meshed or receive a Sto mesh coat and are placed after the wall reinforcement mesh coat with perimeter edges meshed to the wall unless the bottom edge is covering a control joint.

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4. STOMIRAL RENDER SYSTEM

4.1 Responsibility

All work in this section shall be the responsibility of the **Sto Contractor** who must assure themselves that the surfaces to be rendered are dry, free of contamination and satisfactory before work commences. Adequate protection of all adjacent surfaces shall be undertaken prior to commencing.

4.2 Selection

Rendering shall be carried out in stages over the **StoArmour Façade Panel Cladding System** incorporating: **Selected StoLevell Novo** basecoat meshed reinforcement render sealed with **Stoplex W** sealer, finished in **selected Stolit coloured finishing render** coated in **StoColor facade paint** or **S-Protect SC** sealer on **Stolit MP** or **Milano** finishes.

4.3 Materials

Stoanz Ltd supplies all the following materials:

StoArmour facade panels, AAC Fixings StoTherm VH Poly cavity battens and AAC Panel Adhesive, WS 205 sealer	Sto uPVC pre meshed corner angles, finishing edges and drip edges, joinery flashings & control joints
StoLevell Novo meshed basecoat with Stoplex W sealer	Selected Stolit K or MP / MP Natural coloured finishing renders
Selected StoColor facade paint or S-Protect sealer	StoFlexyl meshed waterproofing

4.4 Detailing

Sto uPVC flashings and **Sto pre-meshed corners / edges** are positioned on the **StoLevell Novo** basecoat.

4.5 StoMiral Basecoat (StoLevell Novo Render)

To clean, dry, sealed panel surfaces apply a basecoat of **StoLevell Novo render** by hawk and trowel at approximate thickness of 5 mm. While the render is still wet, lightly embed **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 embedded onto the basecoat and use Sto pre meshed corner angles on all external corners. Allow to set up and apply a further coat of **StoLevell Novo** at approximately 2 – 4 mm by hawk and trowel to completely cover the mesh and leave an even surface free of hollows and deviations.

Note: Narrow widths or stress points require additional mesh butterflies on top of the mesh coat. Once dry, remove any ridging etc of the finished surface with a Sto rasp. As required, install **Sto pre-meshed drip edges**, **Sto pre-meshed corners** and **Sto pre-meshed finishing edges**.

4.6 Parapets and Balustrades

All rendered horizontal surfaces must have a minimum 10° fall (sills 15° falls). On rendered **parapets** or **balustrade 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**, which is then floated to a level surface attaining a total minimum film thickness of 1.5 mm. Extend the membrane 75 mm up or down adjacent vertical surfaces and allow to dry overnight.

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Apply **StoFlexyl meshed waterproofing** over the meshed basecoat before the second coat of basecoat render to avoid a buildup and subsequent shadow line.

Note: **StoFlexyl waterproofing** has been evaluated by BRANZ to meet the **AS/NZS 4858** waterproof membrane requirements for render systems as required by NZBC Acceptable Solution E2/AS1. **StoFlexyl meshed waterproofing** must be flushed out to avoid mirroring/reading of the meshed waterproofing through the finishing.

4.7 Stoplex W sealer

To clean, dry, fibreglass mesh reinforced basecoat rendered surfaces, apply a sealer coat of **Stoplex W sealer** by low pressure spray or by brush and roller at an approximate coverage of 8 m² per litre.

4.8 Sealant Installation

After the sealer has dried, all render junctions between joinery and adjacent dissimilar surfaces and around penetrations shall be sealed with **MS Sealant** in accordance with the manufacturer's Technical Data Sheets. Some manufacturers require primers for PVC or porous substrates.

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.

4.9 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**

It is recommended that all **Stolit K** surfaces 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 6-8 m² per litre. One (1) coat is acceptable though it will need recoating more frequently. Refer **Section 6. StoService** for recoating requirements.

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

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, or RMP Sponge coloured finishing renders**

Stolit MP fine, MP Natural and **RMP Sponge** 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.

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Alternatively, the finish can be float finished, sponged, or smooth finished with a stainless steel Marmorino trowel to the selected pattern. The spreading rate of the **Stolit MP, MP Natural or RMP Sponge** is approximately 12-14 m² per pail.

- **S-Protect SC stay clean invisible Silane sealer (clear sealer)**

To **Stolit MP or MP Natural**, 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, glazing and adjacent surfaces must be masked off to prevent the **S-Protect SC stay clean** contaminating the surfaces. Any excess product must be removed after 15 minutes to prevent a film forming that can be difficult to remove. Refer **Section 6. StoService** for recoating requirements.

- **StoColor façade paint (paint finish if selected)**

If selected it is recommended that all **Stolit MP** surfaces 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 6-8 m² per litre. One (1) coat is acceptable though it will need recoating more frequently. Refer **Section 6. StoService** for recoating requirements. **Note:** Maintain wet edges between cutting in and roll in tight to achieve an even film build.

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 15%. Where a colour less than 15% LRV but above 10% is selected, the render system is 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, other colours are available depending on the formulation.

6. STOSERVICE ASSURANCE

6.1 StoService - Refer to StoService Documents for a comprehensive guide.

The Sto Render System should be cleaned 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). Note refer to StoService Maintenance Document online www.sto.co.nz.

After cleaning a visual inspection is to be undertaken by the owner or the person undertaking the maintenance to check for any physical damage or faults in the exterior building elements, to ensure any damage or defect 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 to be serviced within the following six months.

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Depending on the prevailing environmental conditions and the service record, recoating of the paint finish is normally required at the 7½ to 9-year period where one coat of paint or S-Protect Silane was applied, or 10 – 12½ -years where two coats 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.

7. WARRANTY

7.1 StoMiral Render System on StoArmour façade panels 15-year Warranty with StoService Assurance

When the **StoMiral Render System on StoArmour facade panels** is applied in accordance with the Sto specification, Sto details and Sto PS3 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 documents are followed.

This is to comply with the relevant clauses in the New Zealand Building Code being B2 Durability, E2 External Moisture and F2 Hazardous Building Materials for this type of building element.

The fifteen (15) year warranty is supplied by the Sto Contractor on completion of the project with the warranty issued and backed by Stoanz Limited as to the suitability of the material supplied provided that:

- (a) All specified work is carried out by a registered Sto Contractor who must complete and sign off the Sto Quality Assurance Schedule and 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 physical disturbance, chemical contamination, structural movement, or interference.

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 Workmanship 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.