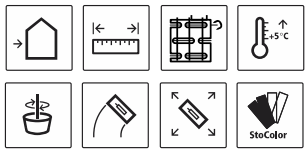
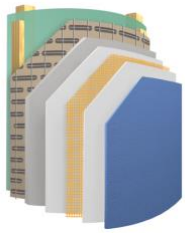
Sto Specification New Zealand

SS406 StoStucco Armat Render System on Timber Framing

StoStucco Armat Miral Render System
on **StoStucco Lath** over timber frame construction
BRANZ Appraisal No. 605
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:	**StoArmat Miral Render System 20-year Warranty - StoService Assurance**
StoArmat Miral Render System over StoStucco welded stainless steel lath (mesh) on timber frame construction. **Note: For Roughcast finish See StoStucco Roughcast Specification SS405RC**	This specification details the installation of the **StoStucco Lath** rendered in the **StoArmat Miral Render System** incorporating: 45 x 25 mm H3.1 treated timber cavity battens on timber frame construction, Stoanz supplied welded stainless steel stucco lath with a backing sheet, nominal 17 mm thick **LevelLite** basecoat, **StoArmat Classic** meshed reinforcement render, finished in a **Stolit coloured finishing render** then coated in a **StoColor façade paint** or **S-Protect clear sealer** for selected **Stolit MP or Milano finishes.** The **StoStucco Render System incorporating Sto S/S Lath is approximately 20 mm thick and** has been developed and tested using modern technology to emulate traditional stucco in accordance with NZBC Acceptable Solution E2/AS1.
Select Finishing Render:	Select
Select Facade Coating:	Select
Sto Registration Number:	i.e.23.01_StoReg tec_sales_SS406_project address.
Project Notes:	

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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 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 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 sub-contractors to ensure that all items relating to weathertightness, penetrations and dissimilar material junctions affecting the exterior facade are strictly in accordance with project-specific details, manufacturer's specifications 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 assembly tolerances should be within MBIE Guide to tolerances.

The **StoStucco Lath Installation QA** and **StoArmat Render Quality Assurance Document** are to be filled out as a record of the work undertaken by the lath installer and Sto Contractor.

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 maximum 600 mm centres in Low, Medium, High and Very High Wind Zones and maximum 400 mm centres for Extra High Wind Zones and specifically designed buildings. Dwangs must be fitted flush between the studs where required to support the internal linings. All framing shall be true in vertical and horizontal planes with attention to the 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 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 m^2 and NZBC Acceptable Solution H1/AS2 for buildings greater than 300 m^2, 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: Slab edge insulation where specified shall have a minimum R-value of R1.0 and shall be installed on all exterior vertical faces of the concrete or masonry foundations, extending from the outermost top edge down to the bottom of the wall footing.

Rasped StoTherm XPS sheets can be used for vertical edge insulation with 30 mm providing the required R1.0. Refer to the StoTherm Masonry Foundation Specification for insulated foundation options.

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SS406 StoStucco Armat Render System on Timber Framing

2.4 Wall Underlay

A flexible wall underlay is suitable for use in NZS 3604 Wind Zones up to, and including, Very High. A rigid wall underlay is required in the Extra High Wind Zone 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 a minimum of 75 mm at horizontal joints and a minimum of 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 a maximum of 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 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.

2.5 Soffits

Shall be fixed before cladding is installed and allowance made to close off the cavity with cavity battens to provide for the Stucanet fixings and to stop airflow into the roof space. The **StoStucco uPVC soffit cap** with masking tab is used to terminate the stucco system at the soffit to render junction (placed under the cavity battens). Once the render is finished, the masking tab is removed and a compatible MS sealant bead is applied to close off any gaps before the coating system is applied.

2.6 Penetrations and Fittings - refer 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.

2.7 StoStucco uPVC Flashings

All **Sto Stucco uPVC flashings** including joinery flashings, foot trays and soffits caps **must be fitted to the framing** before the cavity battens are installed.

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2.8 Aluminium Joinery

All joinery shall be detailed and fitted before the installation of the Sto Lath cladding with joinery support bars cut to finish 10 mm short of the joinery jambs. Proprietary head flashings are supplied by the main contractor, shall be fitted to butt into the pre-cut joinery jambs that form stop ends in the cavity, a minimum 15-degree slope, and be fixed prior to installation of the Sto Lath with flexible flashing tape securing the flashing upstand to the wall underlay.

All window and door joinery shall be positioned 24 – 25 mm off the timber frame to allow for the **StoStucco uPVC Jamb and Sill flashings** to clip into the joinery and be bonded in place. Refer to the current StoStucco CAD details.

All joinery shall be fitted with **StoStucco uPVC joinery flashings** before the installation of the cavity battens or stainless-steel lath. **StoStucco uPVC jamb flashings** must have PVC flange tabs removed and extended 30 mm above the window head and be cut at the sill to the 15º sill angle, so they fit tight. Proprietary aluminium joinery head flashings are butted into the jamb flashings (remove the StoStucco jamb flange leg and 5 mm kick tab off the back leg to fit) and then have the junction sealant sealed to form stop ends. The **Sto Adhesive uPVC sill flashing** is cut 50 mm longer than the window and positioned 25 mm on either side to under seat the jamb flashings that are scribed/cut to allow the sill flashing to butt under the jambs. To fit with the WANZ joinery sill bar, cut the Stucco Sill back flange off, leaving punched cavity wing that can be positioned on cavity spacers for support and adhere the uPVC Sill flashing to the window flange with panel bond premium (urethane) avoiding covering any drainage vents.

Note: Always refer to the **StoStucco CAD** details or project-specific details before commencing. Air seals are required to be fitted by the window installer in accordance with E2/AS1 details and the main contractor is to supply the head flashings.

2.9 Timber Cavity Battens

All exterior framing shall be battened starting from the pre-installed **StoStucco uPVC vented foot tray** installed horizontally as a datum starter on the timber bottom plate. Fix to all studs a **45mm x 25mm thick H3.1** treated timber batten in accordance with the StoStucco CAD drawings.

Cavity battens shall be installed over the wall underlay to the wall frame at a maximum of 300 mm centres where studs are at 600 mm centres, or at 400 mm centres where the studs are at 400 mm centres. The timber studs shall receive a cavity batten to the full length of the stud, preferably in one continuous length. Should joints be necessary, they should be tight butted with a 15 mm gap occurring when interstorey floor junctions are required in accordance with the StoStucco details.

The battens and any packers shall be mechanically fixed using 75 x 3.15 mm flat head, hot-dip galvanised nails driven home at minimum 300 mm centres on studs (all dwangs for any intermediate battening), using two nails into the top and bottom plates. All timber framing batten set out must comply with the relevant **StoStucco CAD details** and technical data to provide the required support and fixing requirements for the lath.

The cladding cavity is closed off at the top of the wall with a horizontal batten or a soffit plate on dwangs, though a horizontal batten is still required for lath fixings. A horizontal packer with a minimum 5-degree slope and a minimum 50 mm gap between the vertical battens is required on the bottom plate.

Additional battens or packers may also be required at openings and detailing for fixings as per the StoStucco CAD batten layout.

Note: Continuous cavity heights are limited to the lesser of 2-storeys or 7 m in height before an inter-storey drained flashing joint is required.

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2.10 Control of External Fire

The StoStucco System has been tested to ISO 5660.1 and achieved a peak heat release rate of less than 100 kW/m^2 and total heat released of less than 25 MJ/m^2. The system is therefore suitable for use on buildings at any distance to the relevant boundary.

Note: The Sto Contractor is to supply the StoStucco Flashings, but the StoStucco flashings, all wall underlay and flashing tapes, joinery, proprietary window head flashings and cavity battens, are supplied and installed by the Main Contractor or their nominated Sub-Contractors unless specifically agreed.

3. STO STAINLESS-STEEL LATH INSTALLATION

3.1 Responsibility

All work in this section is the responsibility of the **Sto Contractor** who shall check that the timber frame construction is satisfactory before proceeding with installing the lath. The **Sto Contractor** is to ensure adequate protection, access and equipment is supplied to meet their responsibilities for the work and the Health and Safety regulations and that all dissimilar materials junctions are correctly detailed.

3.2 Stainless Steel Lath Installation

The stainless-steel lath shall be installed strictly in accordance with the StoStucco CAD details and instructions. Care shall be taken to ensure that fixing patterns are maintained, and that lath edges are not damaged. Lath must be installed **horizontally** over the cavity battens in a staggered brick pattern working from the bottom tray up, with labelling facing the applicator. Lath joints are overlapped by two sections vertically and one section horizontally, with any overlapping bituminous paper and card on the second sheet of lath removed when joining to allow the render to bond through and around the overlapping wires. All lath must be bent around internal and external corners by at least 200 mm minimum (normally to the next batten) and be taken past all joinery jambs by 200 mm min. All fixings and ties shall be minimum Grade 304 stainless steel.

The lath is fixed to the vertical cavity battens using a minimum of 16g x 32 mm air-driven staples at 150 mm centres over the double reinforcing wires. At the top horizontal batten and bottom plate spacers, fixings are required between the vertical battens and all batten's laps must be secured. Where the join is not over a batten, sheets must be wired together at 150 mm (every fourth mesh square). When sheets are to be continued over junctions, particularly between floors, care shall be taken to ensure that the horizontal and vertical planes are maintained true across the junction and an interstorey joint is formed.

Control joints are formed by installing two parallel battens 10 mm apart on double studs and cutting through lath after the lath has been securely erected with fixings on both side of the control joint.

Note: Refer to **Stucco Lath Application Guide** and cover joinery when cutting with grinder to avoid marring glass with metal splatter. All narrow widths, stress points, doors, etc. are to be reinforced with lath butterflies (remove the backing card and paper).

3.3 Interstorey Joints and Control Joints

All control and interstorey joints as designated by the project drawings or Sto details must be followed. Refer to Sto CAD details for specific control joint design details.

Sto uPVC 8mm vertical control joints are required to be placed at **maximum 8 m centres** as per Sto details. **Sto uPVC 12mm horizontal control joints** are **not required** at interstorey junctions unless **unseasoned timber floor joists** have been used. **Horizontal drained junctions** are required to limit the cavity height to **two storeys** or **7.0 metres 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) timber, LVL joists or other proprietary dry floor joists have been used.

3.4 Sealant

Sealant joints shall be completed using a compatible **MS Polymer Sealant** installed in accordance with the manufacturer's Technical Data Sheets.

Note: Some manufacturers require a primer to be used on dissimilar materials.

3.5 Balustrade Caps

On balustrades, **StoFlexyl** must be correctly mixed (drill mix 1:1 with **fresh** cement) and applied over the LevelLite basecoat 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 1-1.5 mm. Extend the membrane 75 mm up or down adjacent vertical surfaces.

Note: Refer to the StoStucco CAD details for expanded view build details before commencing and allow to dry overnight. All **StoFlexyl waterproofing** is to be over-coated in **StoArmat Classic** meshed reinforcement render.

Note: StoFlexyl meshed waterproofing has been evaluated by BRANZ to meet the AS/NZS 4858 waterproofing membrane requirements of E2/AS1 for waterproofing membranes used with exterior render systems.

3.6 Parapet Flashings

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, a minimum of 70 mm in the Very High Wind Zone, and a minimum of 90 mm in the Extra High Wind Zone and specific design wind pressures.

3.7 Architectural Profiles and Shapes

Architectural shapes used to create decorative detailing shall be correctly cut to size and fitted using **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. Joins 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 reinforcement mesh coat with the perimeter edges meshed to the wall.

4. STOARMAT MIRAL RENDER SYSTEM

4.1 Responsibility

All work in this section is the responsibility of the **Sto Contractor** who shall assure themselves that the lath surfaces to be rendered are acceptable and correctly detailed.

SS406 StoStucco Armat Render System on Timber Framing

The **StoStucco Render System** is approximately 20 mm thick. Installation shall be carried out in stages over the **Sto Stainless Steel lath.** Adequate protection of all dissimilar material and adjacent surfaces must be undertaken before any render work commences and the Sto Contractor shall ensure they have the necessary equipment to carry out the render work.

4.2 Selection

Rendering shall be carried out in stages over the StoStucco cladding system incorporating: **LevelLite basecoat levelled with LevelLite or StoLevell Novo** render sealed with **Stoplex W** sealer, reinforced with **StoArmat Classic** meshed render, **Stolit** coloured finishing render coated in **StoColor** facade paint or **S-Protect SC** sealer on natural MP or Milano finishes.

4.3 Materials

Stoanz Ltd supplies all the following materials:

Sto LevelLite basecoat levelled with StoLevell Novo render	**Stoplex W sealer**
StoArmat Classic meshed reinforcement render	**Selected Stolit coloured finishing renders**
Sto uPVC pre-meshed corner angles, finishing edges and drip edges.	**Selected StoColor facade paint or sealer**
Sto Stainless Steel lath and fixings	**StoFlexyl waterproofing**

4.4 Basecoat Render

To clean, dry StoStucco lath, apply by machine pump the **LevelLite** basecoat render at approximately 10-12 mm thick, closing off the wet render with an h shaped rule to completely basecoat the lath. Finish with a comb before setting stainless steel corner beads etc. and leave to set.

To clean, set basecoat, apply by machine pump another coat of **LevelLite or StoLevell Novo** render at approximately 6-8 mm thick, closing off wet render with an h shaped rule to the flashing guidelines. Straighten the **LevelLite/StoLevell Novo** with a feathered straight edge to achieve a straight even surface, free of hollows and deviations. Remove any ridging, lines, or deviations in the **LevelLite/StoLevell Novo** with a rule or grater plane while the render is still green and leave to dry normally (approximately 7 days in fine weather).

Note: Given the thickness of the render it is recommended to use a pump to place the basecoat unless it's a small area.

4.5 Detailing

The StoStucco Render System detailing shall be strictly in accordance with StoStucco CAD details. **Sto Stainless Steel angles** shall be installed in the basecoat on external corners fixed with render dabs. All pre-fixed **StoStucco uPVC joinery flashings, foot trays and soffits caps** should have clean edges ready for the **StoArmat Classic mesh** coat. As required apply **StoFlexyl meshed waterproofing** over the basecoat.

4.6 Stoplex W sealer

To clean, dry **LevelLite/StoLevell Novo** surfaces, apply a sealer coat of **Stoplex W** by low-pressure spray or by brush and roller at approximately 8 m² per litre.

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4.7 Sealant Installation

After the sealer has dried, all render junctions between joinery, 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.

4.8 StoArmat Classic reinforcement render
StoArmat Classic HD with hardener for accelerated drying in cold damp weather is also available

To clean, dry and sealed base coated surfaces, apply an even coat of the selected **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. 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 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** 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.

4.9 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**

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 6-7 m² per litre. One (1) coat is acceptable though it will need recoating more frequently. Refer to **Section 6. StoService** for 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, or RMP Sponge coloured finishing render**

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. 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 m^2 per pail.

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

To **Stolit MP, MP Natural or RMP Sponge**, apply an even coat of **S-Protect SC** 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** from contaminating the surfaces. Any excess product must be removed after 15 minutes to avoid a surface film forming that can be difficult to remove. Refer to **Section 6** 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 6-7 m^2 per litre. One (1) coat is acceptable though it will need recoating more frequently. Refer to **Section 6** for recoating requirements.

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

4.11 Stolit Smooth Finish Render

- **Stolit Milano coloured finishing render**

Stolit Milano is a smooth pre-coloured finish applied in two (2) or three (3) coats. A basecoat of **Stolit Milano** tinted to the selected colour is applied and allowed to dry before the finishing coats of **Stolit Milano** are applied and steel troweled, floated or lightly randomly sponged to the selected pattern. The spreading rate of the Stolit Milano is approximately 16-18 m^2 per pail.

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

To **Stolit Milano**, 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** from contaminating the surfaces. Any excess product must be removed after 15 minutes to avoid a surface film forming that can be difficult to remove. Refer to **Section 6** for 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 (LRV) of 35%. Where a colour less than 35% LRV but above 20% 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, with other colours 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 manufacturer's instructions). Refer to StoService Maintenance Document online at www.sto.co.nz.

After cleaning a visual inspection is to be undertaken by the owner or the maintenance person 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 owner's 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.

Depending on the prevailing environmental conditions and the service record, recoating of the paint is normally required at 10 to 12½ years where two coats were applied, or 7½ to 9 years where one coat of paint or S-Protect silane sealer was applied, to maintain long-term integrity. This is carried out using a **StoColor Coating System** or **S-Protect System** applied in accordance with a Sto specification. Where a colour change is required, Stoanz Limited should be consulted.

7. WARRANTY

7.1 StoArmat Miral Render System 20-year Warranty with StoService Assurance

When the **StoStucco Armat Miral Render System** is applied in accordance with the Sto specification, Sto details and Sto PS3 Quality Assurance schedule a warranty is available to cover the Sto System for twenty (20) 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 twenty (20) 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 specified products' suitability for 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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