

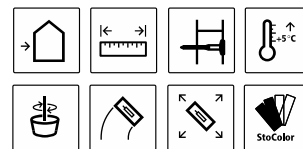
Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

StoTherm Miral Render System

On selected EPS insulation panels over timber/steel frame construction.
BRANZ Appraisal No.478
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: **StoTherm Miral Render System 15-year Warranty with StoService Assurance**

StoTherm Miral Render System on selected Insulation panels over timber / steel frame construction:

Note: StoLevell Novo or Stoanz Multiscreed are approved basecoats.

This specification details the application of the **StoTherm Miral Render System on selected Insulation Panels** over timber or steel framed construction in accordance with NZS 3604 or to a specific engineering design with a vented cavity incorporating: **Selected Insulation panels, StoLevell Novo** mesh reinforced mineral basecoat plaster, sealed with **Stoplex W** primer, finished in selected **Stolit K coloured finishing render** coated in selected **StoColor Maxicryl or StoColor Dryonic iQ facade paint**.

The **StoTherm Miral System** incorporates an economical mineral meshed reinforced basecoat render commonly used throughout Australasia. Alternatively, the **StoTherm Armat Render System** includes 4.0 mm of malleable, weathertight, synthetic renders with approximately 8 times more resilience than cement-based renders with a 20-year warranty.

Select Insulation:

Minimum thickness **50 mm**.
Insulation panels thicker than 60 mm require **StoTherm timber anchors**.

Select Finishing Render:

Select Facade Coating:

Sto Registration Number:
(Sto Use Only)

i.e. 24.01_StoReg tec_sales_SS105_project address

Project Notes:

Note: EPS sheets have a propensity to pillow (cup). This phenomenon does not affect the performance of the cladding or its compliance with the NZBC, but the pillowing of the individual sheets is visible in a critical light. To avoid pillowing Sto recommend using the **StoArmour Panel Façade System** (50 mm lite reinforced concrete panel).

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

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 or site conditions.

The Main Contractor is to ensure that they are fully conversant with legislation requirements, the project specifications and details, fibre cement sheet manufacturer's documents, 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 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 cladding 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 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. Dwargs must be fitted flush between the studs at maximum 800 mm centres when the studs are at 600 mm centres and at maximum 1200 mm centres when the studs are at 400 mm centres. 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.

Note: Any areas to be supported by **Sto Power Bloc** are required to be designated/assigned prior to the cavity batten installation and timber framing added, as necessary.

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 0.55 mm. For steel framed buildings situated in NZS 3604 defined Wind Zones up to, and including, Very High, studs must be at maximum 600 mm centres. For all other buildings, studs must be at maximum 400 mm centres. Dwargs must be fitted flush between the studs at maximum 800 mm centres.

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

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.

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.

In accordance with NZS 4214, the R-value of each layer between the ventilated air gap and the outside air (i.e. the cladding) shall be de-rated by 45%

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 insulated foundation options.

- **White EPS Insulation Panel R-Values** – 50 mm / R0.76 – 60 mm / R0.9
(Including **45% deduction** due to the cavity)
- **Graphite EPS Insulation Panel R-Values** – 50 mm / R0.86 – 60 mm / R1.03
(Including **45% deduction** due to the cavity)

Note: It is recommended to always achieve the minimum Climate Zone R-value requirements through bulk insulation in the framing, with the blanket insulation provided by the selected panel insulation giving an additional value.

2.6 Wall Underlay

A flexible wall underlay is suitable for use on buildings within the scope limitations of NZBC Acceptable Solution E2/AS1 (with regards to building height and floor plan area), situated in NZS 3604 Wind Zones up to, and including, Very High. A rigid underlay is required for buildings outside the scope of NZBC Acceptable Solution E2/AS1, and buildings situated 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 shall 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 panel fixing length shall be increased by at least the thickness of the underlay.

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

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 frame or items penetrating the wall underlay such as fixing brackets etc. are installed and flashing taped onto the wall underlay in accordance with NZBC Acceptable Solution E2/AS1.

2.7 Soffits

Soffits shall 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 cladding work is completed and before plastering commences. Inclined sloping soffits require a flashing and eave's flashings shall be installed when required by E2/AS1. Sto Joint Seal Tape can be installed in accordance with the CAD details in high wind zones as required.

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 (or Sto Cavity Jamb flashings on Jambs)** before the EPS sheets are installed.

The sill flashing is to under seat the jamb flashing by 10 mm 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 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 overhang the joinery by 6 mm each side, so they cover the **Sto Adhesive jamb flashing** sealant 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 **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 and Fittings (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 installing the cladding. Blocking must be installed for the fixing of taps, door hooks, lights, gas fittings, security alarms etc.

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

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.

For the mounting of exterior taps, use a **Sto Power Bloc** mechanically fixed and adhesively joined onto the panel. Fixtures that have a face load weight of less than 8 kg i.e. items such as downpipe saddles, etc. can be installed using **Sto Zylinders or Spirals** after the render system has been applied.

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 commercial buildings and Multi Unit complex's contact Stoanz for more specific information.

3. SELECTED INSULATION 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 **StoTherm Cladding System** incorporates **StoTherm cavity battens**, **StoTherm Miral** meshed reinforcement render before finishing in the **selected Stolit K coloured finishing render** and **StoColor facade paint** over selected insulation panels.

3.3 Foundations

At the foundation, a vented Sto uPVC adjustable foot tray or Sto Base Cap (check there is no gaps) is installed at a minimum 50 mm below the bottom plate or supporting frame. As required, install the StoTherm masonry insulation system to concrete foundations following the appropriate Sto specification.

Use rasped XPS sheets for inground use with minimum **30 mm thickness to achieve the required R 1.0**.

3.4 Cavity Battens

All exterior wall surfaces shall be battened using **StoTherm VH Grade cavity battens** placed in accordance with the batten layout as set out in the StoTherm CAD details.

The **Sto uPVC Adjustable vented foot tray** (minimum ventilation area of 1000 mm² per lineal metre) must be installed fixed onto the bottom plate as a level starter with vertical battens installed from inside the foot tray (unless a **Sto uPVC Base Cap** is used).

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

Fix **StoTherm VH cavity battens** to the full length of the stud with all joints tight butted. The battens must be centred on the studs and if a flexible underlay is used an additional batten or strap is required where the stud spacing is greater than 450 mm centres to prevent the insulation bulging into the cavity space. Additional vertical battens are also required at openings as per the StoTherm batten layout. Gables must be lined or incorporate an air barrier to prevent air flow into the roof space.

Depending on fixing requirements, dwangs require a cavity batten packer offset at a minimum 5 degrees slope and with a minimum 50 mm gap at the vertical batten junctions. Additional horizontal spacers are required at the head and sill for support of the StoTherm panel. A drained interstorey metal flashing is required for three storey construction to limit the cavity to two stories or 7 metres, whichever is less.

Note: Ex 50 x 25 mm (minimum 45 x 18 mm) H3.1 treated timber cavity battens can also be used.

3.5 Selected Insulation Panels

Shall be minimum 50 mm thick, H or M grade self-extinguishing EPS manufactured to AS 1366.3 by an approved manufacturer and stress relieved off site or install and leave for 2 weeks before rendering to help alleviate cupping.

Insulation panels are installed as per the Sto details with panels tight butted and sheet joints, gaps etc. flush filled with **low expansion adhesive polyurethane foam** as per the manufacturer's Technical Data Sheets, taking care to prevent the foam expanding into the cavity. **Selected XPS in ground foundation** panels must be rasped for render adhesion.

3.6 StoTherm Fixings

Insulation panel fixings shall be galvanised flathead nails with a minimum 30 mm frame penetration with 40 mm **yellow** washers. For steel frame use the same washers with self-drilling AS 3566 Class 4 or Grade 304 Stainless Steel 6-gauge screws in Exposure Zone D with a minimum 10 mm screw penetration.

Panel thicknesses more than 60 mm or countersunk fixings require appropriately sized **StoTherm Screw Anchors**.

3.7 Selected Panel Installation

Panels shall be installed true from the base, set in **Sto uPVC Adjustable Foot Trays** (fitted before the cavity battens) as a starter. Joinery is flashed using the **Sto uPVC Adhesive or Cavity Jamb Flashings** and the **Sto Vented Head detail**, all installed in accordance with the Sto CAD details.

For the mounting of exterior taps, use a **Sto Power Bloc** mechanically fixed and adhesively joined onto the panel. Fixtures that have a face load weight of less than 8 kg i.e. items such as downpipe saddles, etc. can be installed using **Sto Zylinders or Spirals** after the render system has been applied.

StoTherm Fixing Centres for edges and intermediate studs.

NZS 3604 Building Wind Zone	Maximum Fixing Centres (mm)
Low ¹	300
Medium ¹	300
High ¹	300
Very High ²	200

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

1. One fixing is also required into each dwang and top and bottom plates between the studs.
2. Fixings are also required in each dwang at 200 mm centres and top and bottom plates between studs.

NZS 3604 Wind Zone Extra High and specifically designed buildings up to 2.5 kPa ULS wind pressure with studs at 400 mm centres		
Maximum vertical fixing centres (mm) along studs	Maximum horizontal fixing centres (mm) along top and bottom plates	Maximum horizontal fixing centres (mm) along dwangs
150	200	150

Panel joints shall always occur over a batten on a framing member and shall be straight, true and in the same plane. When fixing the sheet joints, fixings in adjacent sheets shall be staggered.

Note: Where WANZ joinery sill support brackets are used, a **Sto Adhesive Joinery Sill and Jamb flashing** is required at the sill to accommodate the bracket.

Wind Pressures: 2.5 kPa = 59.5 m/s – Extra High is 2.130 kPa = 55 m/s.

Note: To minimise the pillowing effect, it is recommended to install the **selected insulation and leave them for 14 days to stabilize before rendering**. Installation details must be in accordance with **StoTherm CAD details**.

3.8 Control & Interstorey Joints

Vertical control joints are required at maximum 20 metre centres (or less for structural stress points), where the system abuts dissimilar material or overlays different construction material. Horizontal joints are required at 7 metre centres including gables. Continuous cavity height is limited to two stories with a drained interstorey flashing required at the third storey floor junction, all in accordance with NZBC E2/AS1. Refer to the StoTherm control joint details.

3.9 Parapets & 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. 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.

3.10 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.

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

3.11 Architectural Profiles & 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 **StoArmat** 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.

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

4. STOTHERM MIRAL 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 insulation system incorporating: **Selected StoLevell Novo meshed render** sealed with **Stoplex W** sealer, **StoArmat Classic** joinery reinforcement, **selected Stolit K coloured finishing render** coated in **StoColor Maxicryl** or **Dryonic iQ** facade paint.

Note: StoLevell Uni or Stoanz Multiscreed and Levellite are approved basecoats.

4.3 Materials

Stoanz Ltd supplies all the following materials:

StoLevell Novo basecoat render	StoArmat Classic reinforcement render on joinery rebates
Sto Stoplex W sealer	Sto uPVC pre meshed corner angles, finishing edges and drip edges.
StoFlexyl waterproofing	Selected Stolit K coloured finishing renders
StoColor Maxicryl or Dryonic façade paint	Sto Adhesive Foam

4.4 Detailing

Sto uPVC Sill and Jamb flashings and **Sto pre-meshed corners** are bedded in the **selected basecoat render** before reinforcing the joinery reveals with **StoArmat Classic meshed plaster** and applying the selected **StoLevell Novo basecoat render** incorporating any **StoFlexyl waterproofing** work required before completing the basecoat render.

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

4.5 StoMiral Mesh Reinforced Basecoat Render

To clean, dry, sound StoTherm panels that been lightly abraded to open the surface and level the joints, apply the selected basecoat of **StoLevell Novo** render by hawk and trowel at approximate thickness of 3-5 mm. While the render is still wet, lightly embed **Sto uPVC pre-meshed corners and finishing edges** before applying the **Sto mesh**, ensuring adjacent drops of mesh are overlapped by a minimum of 75 mm, with all stress points at joinery corners etc. reinforced with mesh butterflies on top of the mesh coat.

The surface is then lightly floated to ensure that the mesh is embedded into the basecoat. Allow to dry and apply one further coat of **StoLevell Novo or Stoanz Multiscreed** at approximately 1.5-2 mm by hawk and trowel to completely cover the mesh and leave an even surface free of hollows and deviations, free of visible mesh. Once dry remove any slight ridging etc. of the plastered surface with a Sto rasp ready for subsequent topcoat.

4.6 Sealer

To clean, dry, meshed basecoat rendered surfaces, apply one coat of **Stoplex W** primer by brush and roller to seal the surface at approximately 8 m² per litre.

4.7 Sealant

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 using a primer on **StoFlexyl surfaces** and as required for PVC, porous substrates, and dissimilar materials.

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

4.8 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, or 3.0mm 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 are to 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 Refer **Section 6. StoService** for recoating requirements.

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

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

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%. For colours under 35%, but above 25 % 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 iQ 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 Maintenance Documents for a comprehensive guide.

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

After cleaning a visual inspection is to be undertaken by the person undertaking the annual maintenance to check for any physical damage or faults in the exterior building elements, to ensure any 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 for one coat of paint or 10 – 12½ -years where two coats of paint were applied to maintain long-term integrity. This is carried out using a **StoColor Coating System** applied in accordance with a Sto specification. Where a colour change is required, Stoanz Limited should be consulted.

7. WARRANTY

7.1 StoTherm Miral Render System 15-year Warranty with StoService Assurance

When the **StoTherm Miral Render System** is applied in accordance with the Sto specification, Sto details and Sto PS3 Quality Assurance schedule, a warranty is available to 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.

Sto Specification New Zealand

SS105 StoTherm Miral Render System on Insulation over Framing

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, structural movement, interference, or situations where the EPS insulated cladding cups or pillows under the render system.

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.