



Stoanz Ltd
Authorized partner of Sto

STOARMAT MIRAL PLASTER SYSTEM SPECIFICATION

STOARMAT MIRAL PLASTER OVER REINFORCED BLOCK CONSTRUCTION

BRANZ Appraisal No 515 (2007) - ACAD Details www.sto.co.nz building with Sto

Project:

Prepared for:

Selected Finish: Stolit K 1.5mm coated in **StoColor Maxicryl** façade paint

StoArmat Miral Plaster System on concrete block

This specification details the application of the **StoArmat Miral Plaster System** incorporating;
A basecoat of **LevelLite** plaster to straighten the blocks, **StoFlexyl waterproofing** as required followed by **StoArmat Classic meshed** reinforcement plaster finished in the selected **Stolit K** coloured finishing render coated in **StoColor Maxicryl** façade paint over exterior concrete block construction.

1. CONSTRUCTION & DETAILING

Responsibility

All work in this section shall be the responsibility of the Main Contractor. All concrete block construction must be in accordance with the project drawings, specifications and block manufactures technical data. The Main Contractor is to ensure they are fully conversant with all Sto standard installation and fixing details (Sto ACAD details www.sto.co.nz) and their responsibilities before the block works commences. The Main Contractor is also responsible for all liaison with the various sub contractors to ensure that all items or elements affecting the Sto plaster system are correctly detailed before installing the StoArmat Miral Plaster System.

Concrete Blocks

The concrete block installation including reinforcement and concrete infill shall be made in strict accordance with the project drawings, specifications and the block manufactures technical data. In particular the blocks shall be laid true in both vertical and horizontal planes with all joinery and service openings correctly formed and waterproofed in accordance with Sto details. Control joints must be installed as per the projects structural drawings or manufactures details to manage shrinkage and structural stress. The ground floor slab to block junction should be rebated to provide waterproofing and interstorey floors should be poured within the block structure leaving the outer block shell to continue to avoid cracking. At least 28 days shall be allowed after concrete placement as per AS/NZS 2311:2000, for curing and stabilization to take place before commencing the StoArmat Miral Plaster System. All Maximum Tolerances shall be in strict accordance with NZS 4210: 2001 2.7.1.4 Table 2.2, i.e. no more than 3mm surface alignment deviation over a 1200mm radius. The concrete blocks shall be clean, dry and free of all surface contaminants before plastering and the Main Contractor is to ensure that any areas or details adjacent to the StoArmat Miral Plaster System have been adequately waterproofed or flashed to avoid any water migration behind the StoArmat Miral Plaster System.

The information contained in this Specification is based on our experience and testing and represents the latest information available at the date of production. No responsibility is taken for uses to which this information may be put, but we advise that where application of products and processes is in complete conformity with this specification an appropriate warranty is available. We reserve the right to alter or update information parameters and formulations at any time without prior notice.

Concrete Block Construction

- A rebate is recommended in foundations for residential projects.
- Joinery openings are to be formed using rebated blocks & sill blocks.
- Block should be covered on site and laid dry.
- Control joints are placed at maximum 6.0metre centres refer to the project documentation and NZS 4229 for placement and detailing.
- Mortar to be minimum 12.5MP, tool smooth and compressed as per NZS 4210.
- Where specified use manufactures bagged mortar.
- Mortar to full depth of webbing up to 20mm thick in first course and then 10mm +/- 3mm.
- Washout ports required to remove mortar droppings
- Ensure there is no impediment to grout flow remove ends or biscuits to prevent air pockets
- Stack bonded, column blocks and insulated block voids may need to be grouted by the block layer during laying process to ensure a solid fill is achieved.
- Blocks should be filled in 1.2 lifts and mechanically vibrated to avoid air voids and subsequent efflorescence.
- Sill blocks should be filled by leaving one sill block out to avoid air entrapment.
- Remove any grout slurry from block faces before it sets.
- Drying times vary according to block thickness, grout and weather a minimum 28 days is required for settlement and curing – the blocks must be completely dry before coating.
- Where walls are back filled a 50 year tanking membrane is required.
- Always waterproof blocks behind or adjacent to any overlays or abutments such as concrete staircases, separate adjoining walls, soffits, porches etc.
- Exposed tops of walls should be finished with block caps.

Wall Insulation

NZBC Acceptable Solution H1/AS1 or NZBC Verification Method H1/VM1 can be used for housing, communal residential, communal non-residential and commercial buildings. For buildings with a glazing area of 30% or less of the total wall area, the minimum wall R-values required for solid construction are: Climate Zone 1 – R0.8 (Option 1a and 1b); Climate Zone 2 – R1.0 (Option 2a) or R0.9 (Option 2b) and Climate Zone 3 – R1.2 (Option 3a) or R1.0 (Option 3b). Refer to the BRANZ House Insulation Guide Third Edition for further information and construction R-values for concrete block construction with External Insulation and Finish System overlays.

Note: H1 Insulation - Internally insulated masonry walls must meet the timber insulation code

2. SURFACE PREPARATION

Responsibility

All work in this section shall be the responsibility of the **Main Contractor** or his sub contractors with the **Sto Contractor** responsible for the Sto detailing unless it is otherwise expressly agreed.

Aluminium Joinery

All joinery shall be fixed over **StoFlexyl waterproofing** prior to plaster application. Before fixing joinery fill any holes in the rebates and use **StoFlexyl** to waterproof the rebates mixed correctly (1 /1 with fresh cement) and brushed on in two coats to the recessed rebate of the blocks at the **head and jambs** and **sill interior rebate** while the **exterior sills** tops are to be **StoFlexyl meshed** with the mesh taken 40mm up the jambs. Sealing the joinery perimeter with MS sealant at the head & jambs then forms the primary seal while the **sill** is left open with a 5mm drainage gap. To complete the waterproofing process **air seals** are required to be installed around all interior joinery to rebate openings by the main contractor. **Note: StoFlexyl meshed waterproofing** has been tested by BRANZ to meet **AS/NZS 4858** for a waterproof membrane as required by **CCANZ : CP01 2011 & E2/AS3**.

The air seals and sealant work to the joinery is the responsibility of the window installer.

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Sealant

All sealant junctions between the plaster and adjacent surfaces or dissimilar materials shall be jointed with **MS Sealant** applied strictly in accordance with the manufactures TDS sheet.

Detailing

All plaster details must be in accordance with the specific project details or StoArmat Miral ACAD details available from www.sto.co.nz.

Plastered Wall Caps, Parapet & Balustrade caps - Foundations

All plastered horizontal surfaces must have a minimum 10° fall and have **StoFlexyl waterproofing** membrane installed on **wall caps, balustrades and parapets** **StoFlexyl** must be correctly mixed (drill mix 1/1- with **fresh** cement) and applied with a layer of Sto mesh embedded into the StoFlexyl coat giving a total film thickness of 1.5mm. The Sto meshed Flexyl should extend 75 mm up or down adjacent vertical surfaces as per Sto ACAD Details and be left to dry normally overnight. All **Sto Flexyl waterproofing** is to be over coated in **StoArmat Classic meshed** reinforcement plaster. Any floor slabs that are brought through the blocks and non rebated ground floor slabs must have **StoFlexyl meshed waterproofing** applied from 50mm above and below the transition before the plaster system commences, foundation splash zones are to have two coats of Sto Flexyl waterproofing brush applied over the basecoat plaster from 150mm above ground level to 50mm below the plaster termination point.

Note: StoFlexyl meshed waterproofing has been tested by BRANZ to meet **AS/NZS 4858** for a waterproof membrane as required by **E2/AS1** and **CCANZ CP 01: 2011**.

Penetrations

Penetrations such as waste pipes and fixtures shall be adequately flashed and waterproofed prior to the plaster installation. Note: All penetrations through the Sto Plaster System shall be adequately sealed with MS Sealant applied as a minimum 6.0mm joint after the mesh coat. PEF rod should be used as a backer material as required depending on the width of the joint. Any electrical wiring that penetrates the Sto plaster system shall be in cased in appropriate sized uPVC conduit sheathing acting as an insulator installed @ a minimum 5° down wards rake. The conduit and any plumbing piping etc must then be sealed using M S Sealant once the base meshed coat has been applied.

Architectural Shapes & Profiles

Any architectural shapes used to create decorative detailing shall be correctly cut to size and fitted using **Gluecoat Mortar** 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 **StoEze Joint filler** and any control joints must be carried through the Profile. Profiles shall be premeshed or receive a **StoArmat** mesh coat and are placed after the reinforcement mesh coat with top edges meshed to the wall.

3. STOARMAT MIRAL PLASTER SYSTEM

Responsibility

All work in this section shall be the responsibility of the Sto Contractor. The Sto Contractor is to satisfy themselves that the concrete block surfaces are satisfactory and that adequate protection of all dissimilar materials and adjacent surfaces has been under taken before commencing.

General

Installation of the **StoArmat Miral Plaster System** shall be carried out in stages incorporating; **LevelLite** basecoat, **StoFlexyl meshed** waterproofing, **StoArmat Classic meshed** reinforcement plaster, finished in selected **Stolit K** coloured finishing render coated in **StoColor Maxicryl** façade paint or for **Stolit MP** render sealed with **S-Protect SC easy clean**.

Materials

LevelLite basecoat plaster
Stolit K or MP coloured finishing render
StoColor Maxicryl façade paint
MS Sealant or Sto Joint Seal tape

StoArmat Classic meshed plaster
Sto uPVC 12 or 8mm Control Joints
StoFlexyl meshed waterproofing
Sto – Angles, Drip Edges, finishing edges

LevelLite basecoat plaster

To clean, dry and cured block surfaces, apply one straightening coat of **LevelLite** by hawk and trowel or pump at approximate thickness of 6.0 - 8.0 mm (thickness to level plane-dependent on surface minimum 5.0mm). Float or screed the surface with an h rule to achieve an even straight plane free of hollows and deviations. Allow to set and remove any ridging or bumps in **LevelLite** with a Sto feathered straight edge or Grid Plane. The main contractor is to be advised of any walls that may require a variation to building out with additional coats to achieve a level surface. Allow plaster to dry before subsequent plaster coats are applied.

StoFlexyl waterproofing

As detailed previously ensure all necessary **StoFlexyl waterproofing** has been completed.

Control Joints

All existing control joints as designated by the project drawings or manufacturer's specifications must be brought through. Control joints must be installed in the **StoArmat mesh** coat using the **Sto uPVC Control Joint** ensuring the mesh coat does not overlay the "V" joint. Once dry remove the cleaning tab and either apply two coats of the paint and leave as a negative detail or fill with MS Sealant.

StoArmat Classic meshed reinforcement plaster

To clean dry base coated surfaces apply an even coat of **StoArmat Classic** plaster by hawk and trowel at approximately 1.5 to 2.0mm and while the **StoArmat Classic** is still wet lightly apply **Sto reinforcing mesh** ensuring adjacent drops of mesh are overlapped by a minimum 75mm and float the surface to ensure the mesh has been embedded in and allow to dry. Once dry apply a further coat of **StoArmat Classic** at approximately 1.0mm thick by hawk and trowel to cover the mesh and leave a plane even surface free of voids or deviations. Before applying the selected finishing render remove any slight ridging etc of the **StoArmat Classic** with a Sto rasp ready for subsequent top coating. All application procedures for the **StoArmat Classic** should be in accordance with the Sto TDS sheets.

Detailing: Always install **Sto pre meshed Drip Edges** on lintel openings, **Sto pre meshed corners** or **Stainless Steel angles** and **Sto Stop Beads** in basecoat as required.

Sealant Installation

All junctions or detailing between the plaster mesh coat and dissimilar materials shall be sealed with MS Sealant in accordance with the TDS sheets.

Finishing Section - see heading for selected finishes

Stolit K coloured finishing render as selected

Stolit K texture is available in a flat 1.0mm , 1.5mm or 2.0mm coloured render

To all exterior plastered surfaces apply selected finishing render **Stolit K** tinted to the selected colour, applied with a stainless steel trowel gauging to the thickness of the aggregate size and finished with a plastic trowel to the requisite pattern and allow to dry normally overnight. The spreading rate shall be approximately 12sqm/1.0mm, 9sqm/1.5mm, 7sqm/2.0mm -/per pail.

StoColor Maxicryl façade paint

All **Stolit K** surfaces shall receive one (1) full coat of **StoColor Maxicryl** façade paint tinted to the selected colour and applied by brush and roller at approximately 6/7 m² per litre. **Note:** Always maintain wet edges between cutting in and roll in tight to ensure an even film build is maintained.

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ALTERNATIVE SELECTION

Stolit MP or MP Natural coloured finishing render

Stolit MP or MP Natural are fine pre coloured sponge finishes applied in two (2) tight coats.

A basecoat of **Stolit MP or MP Natural** or alternatively depending on finish **Stolit K 1.0 or 1.5mm** tinted to the selected colour is applied and allowed to dry before the finishing coat of **Stolit MP or MP Natural** is applied and float finished or randomly lightly sponged to the selected pattern. The spreading rate of the Stolit MP is approximately 12 – 16sqm -per pail.

S-Protect SC easy clean sealer

To **Stolit MP** Apply an even coat of **S-Protect SC easy clean** Silane sealer (clear invisible sealer) in a flood coat using a low pressure garden sprayer and Sto block brush to work the product into the Stolit plaster wiping off any lingering drips etc. Surfaces must be well coated and work in a pattern preferably out of the sun to ensure that there are no misses as the sealer is invisible once dry.

Note: S-Protect SC easy clean all joinery and glazing must be completely masked off to prevent the glazing being damage and any excess product must be removed or polished into the surface during application to avoid a surface film forming.

4. GENERAL NOTES

Colour

The project colours are normally selected by the Architect or Client and if required the applicator shall prepare a sample for approval before the main works commence. Stoanz recommend a minimum LR Value of 20% to avoid interior heat retention and thermal stress on elevations exposed to the sun.

5. MAINTENANCE

Refer; Sto Maintenance Schedule for comprehensive guide

The **StoArmat Miral Plaster System** is to be cleaned annually by washing to remove all existing surface contaminants with special attention to non-rain washed areas. When recoating is required, at the 7/8-year period to maintain long-term integrity and a pristine condition this can be carried out using the appropriate coating over a cleaned surface. Where a colour change is required Stoanz Limited should be consulted for a specific specification. Physical damage must be repaired using Sto plasters and recoating as required.

Annual inspections are to be implemented after completion to clearly identify any faults in the cladding, sealant beads, flashings and any other connections. A repair process must be implemented immediately to address any faults so the long-term warranty is not compromised.

6. WARRANTY

The **StoArmat Miral Plaster System** described in this specification is warranted for a period of fifteen (15) years from the date of practical completion. This is to comply with the relevant clauses in the New Zealand Building Code; B2 Durability, E2 External Moisture and F2 Hazardous Building Material for this type of building element provided normal maintenance requirements as set out in the Sto Maintenance Schedule are followed.

The warranty is supplied by the Sto Contractor on completion with a five (5) year workmanship warranty signed off on completion of the work. The warranty document and the material warranty is issued by Stoanz Limited provided that;

- (a) All specified work is carried out by the approved Sto Contractor who must complete and sign the Sto QA Compliance Procedure Forms and a PS3 Workmanship Warranty
- (b) All work is carried out in accordance with this Specification or any written amendments issued by the Manufacturers.
- (c) The warranty does not cover situations where the plaster system is subjected to physical disturbance, chemical spillage or interference.

