



STOTHERM MASONRY INSULATION SYSTEM SPECIFICATION

STOTHERM MASONRY INSULATION ON MASONRY FOUNDATIONS

BRANZ Appraisal No 604 (2008) - ACAD Details www.sto.co.nz building with Sto

Project:

Prepared for:

StoTherm Masonry System on Masonry Foundations

This specification covers the application of the **StoTherm Masonry Plaster System** incorporating; **Selected StoTherm 40, 60, 80, 100mm Insulation Panels** (600 x 1200 panels) adhesively and mechanically fixed over masonry with **Gluecoat mortar** & countersunk **StoTherm Anchors, StoFlexyl** meshed waterproofing, plastered in **Multiscreed** basecoat, **StoArmat meshed** reinforcement plaster and finished in selected **Stolit K** coloured finishing render coated in **StoColor Maxicryl** façade paint

The **StoTherm Masonry Insulation System** mirrors the European methodology of overlaying masonry construction to provide thermal insulation 40mm, RV1.0 – 60mm, RV 1.5 – 80mm, RV 2.0 & 100mm RV 2.5 minimizing heating costs and maintaining energy efficiency during seasonal changes.

1. CONSTRUCTION PREPARATION AND DETAILING

Responsibility

All work in this section shall be the responsibility of the Main Contractor.

The Main Contractor is to ensure that he or she is fully conversant with all Sto Standard installation and fixing details (ACAD Detail Handbook) and the Main Contractor's responsibilities before works commence. The Main Contractor is to be responsible to liaison with the various sub contractors to ensure that all items relating to weather tightness of joints/connections affecting the StoTherm insulation system are strictly in accordance with Sto Specification, Sto ACAD standard or project specific details, i.e. items such as down pipes, light & security fittings, electrical wiring, flashings, plumbers trays etc or any items that flash or penetrate the StoTherm Insulation System. The main contractor shall be responsible for ensuring any joinery openings, head flashings, etc are installed in accordance with the Sto specification by others, but before the StoTherm Insulation System cladding has commenced.

Materials of Construction

Concrete Foundations

The concrete installation, including reinforcement and concrete infill shall be made in strict accordance with the project specifications, drawings and Stoanz drawings. In particular the substrate shall be laid true, in both vertical and horizontal planes, with all joinery and services openings correctly formed. Control joints must be installed as per the engineers details to manage shrinkage and structural stress. At least 28 days shall be allowed after concrete placement all as per AS/NZS 2311:2000, for curing and stabilization to take place, before application of the StoTherm Insulation System. Any minor surface damage can be repaired using LevelLite.

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 substrate must be clean, dry and free of all surface contaminants before commencing. The Main Contractor is to ensure that any areas or details adjacent to the StoTherm Insulation System have been adequately waterproofed / flashed to avoid any water migration behind the StoTherm Insulation System. The mortar joints are to be tooled flush finish and any slurry or splashes ground or stoned off. The surface planar alignment must be in accordance with New Zealand Standards to achieve a level even plane.

Insulation

StoTherm 40mm Panel insulation value is approximately **RV 1.0**

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.

Penetrations

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

2. STOTHERM PANEL INSTALLATION

Responsibility

All work in this section shall be the responsibility of the **Sto Applicator**, unless otherwise expressly agreed. If others fix the polystyrene overlay, the **Sto Applicator** shall satisfy themselves that the surface is satisfactory before proceeding with any plastering work.

Materials

StoFlexyl waterproofing at Foundation

Any plastered horizontal surfaces must have a minimum 10° fall.

At ground level the foundation is to be sealed with one coat of **StoFlexyl** brushed on from 150mm above ground down to the foundation. The back and edges of the StoTherm insulation are also treated with one coat rolled on before fixing in place with GlueCoat mortar. Once dry a full **StoFlexyl** mesh coat is applied to the StoTherm insulation sheets from 150mm above ground down onto the foundation.

Note: Sto Flexyl waterproofing has been evaluated by BRANZ to meet **AS/NZS 4858** waterproof membrane requirements as required by **E2/AS1**.

StoTherm Panels (1200 x 600mm)

Ensure where possible the **StoTherm Panel** layout is arranged in a **brick pattern** to avoid continuous joint lines. If there are any voids between the panels joints due to variations in the edges, **Adhesive Foam** shall be used to foam fill them before proceeding with plastering.

GlueCoat Mortar Adhesive

StoTherm Panels shall be trued from the base; brick patterned and incorporate a StoTherm foundation detail. **StoTherm Panels** shall be fixed with a minimum 75mm wide notched continuous band of **Gluecoat Mortar** applied to the perimeter of the panel with three 150mm spots through the middle or apply to the wall to mirror panel application. All panels are initially tight butted, fixed and then levelled on the **Gluecoat Mortar** the panels are then left to set before being mechanically fixed with StoTherm Masonry Anchors if required. **Note:** Detailing shall be in accordance with Sto ACAD details.

Control Joints / MS Sealant

Any existing control joints must be brought through the StoTherm Insulation System using a **Sto uPVC control joints** that can then be painted and left as a negative detail or sealanted. All sealant work associated with the system is to be carried out with a MS Sealant applied in accordance with the sealant manufactures instructions.

3. STOTHERM INSULATION PLASTER SYSTEM

Responsibility

All work in this section shall be the responsibility of the Sto Applicator up to and including provision of external sealant beads and the Sto finishes specified.

Materials

Stoanz Ltd supplies all the following materials

Multiscreed basecoat plaster
StoColor Maxicryl façade paint
Sto Adhesive Foam

Sto Flexyl / Meshed waterproofing
Gluecoat Mortar adhesive plaster
StoTherm 40mm Panels

General

Installation shall be carried out after the fixing of the **StoTherm Panel** i.e. **Multiscreed** float / sponge finishing plaster coated with **StoColor Maxicryl** facade paint. Adequate protection of all adjacent surfaces shall be undertaken.

Control Joints

All control joints must be brought through the system

Installed StoTherm Panels

Check the surface and adhesive foam fill any voids to avoid thermal bridging, rasp to straighten the surface as necessary, install any sealant work required and ensure any flashing details are in place before commencing plastering.

StoFlexyl waterproofing at Foundation

Once dry a full **StoFlexyl waterproofing** mesh coat is applied to the **StoTherm insulation** sheets from 150mm above ground down onto the foundation.

Note: Sto Flexyl waterproofing has been evaluated by BRANZ to meet **AS/NZS 4858** waterproof membrane requirements as required by **E2/AS1**.

Multiscreed basecoat plaster

To clean, dry surfaces apply **Multiscreed** by hawk and trowel at approximate thickness of 3 – 4mm and float or screed the surface to achieve an even level plane surface free of hollows and deviations and sponge or re float to selected finish.

Sealant Installation

All dissimilar material junctions and transitions between the cladding and around penetrations, flashings and similar details shall be sealed with MS Sealant applied in accordance with the manufactures instructions.

StoColor Maxicryl façade paint

All **plastered** surfaces shall receive two (2) full coats 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 tight to achieve an even coat.

4. GENERAL NOTES

Colour

As requested by the Architect or Client. Stoanz Limited recommends that the LRV (Light Reflectance Value) of the selected colour be greater than 25%. If a colour is selected outside of this recommendation, the warranty will be affected as darker colours subject the cladding system to additional thermal shock.

5. MAINTENANCE

Refer; Sto Maintenance Schedule for comprehensive guide

The StoTherm Masonry Insulation System must be cleaned annually by low pressure washing to remove all existing surface contaminants. 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 a Sto façade paint or sealer over a cleaned surface. Where a colour change is required, Stoanz Limited should be consulted for a specific recommendation/specification.

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 **StoTherm Masonry Insulation Foundation System** described in this specification is warranted for a period of five (5) years from the date of practical completion. This is to comply with the relevant New Zealand Building Code clauses 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 Applicator with a five (5) year workmanship warranty signed off by the Sto Applicator carrying out the work. The warranty document including the material warranty is issued by Stoanz Limited provided that;

- (a) All specified work is carried out by the approved Sto Applicator 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.

