

Standard Specification for the installation of the Equus Soprema DuOtherm Warm Roof System on new metal tray substrate

Project:
Prepared for:
Specification:
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1.0 PREAMBLE:

This specification is for the installation of the **Equus Soprema DuOtherm Warm Roof System** over a new metal tray substrate. The system provides a durable, fully insulated and waterproof roof. As the insulation is continuous over the entire roof structure, thermal bridging is largely eliminated. The energy efficiency of the building is improved as a result thereby reducing heating and ventilation costs for the building owner.

The **Equus Soprema DuOtherm Warm Roof System** consists of a torch applied or self-adhesive vapour barrier, rigid PIR insulation (adhesive or mechanically) fixed to the vapour barrier with a 2-layer bitumen membrane system installed over the insulation to provide a fully waterproof and fire retardant covering for the roofing system.

The **Equus Soprema DuOtherm Warm Roof System** has been assessed for use on roofs, decks and gutters installed on metal deck or panel, treated plywood and concrete substrates on buildings within the following scope:

- Buildings where the supporting structure and associated elements are designed and constructed within the scope of New Zealand Building Code E2/AS1 clause 1.1.
- Specifically designed buildings constructed to comply with the New Zealand Building Code.

2.0 SURFACE PREPARATION:

2.1 General - Responsibility:

Unless expressly agreed otherwise at time of contract pricing, all work in this section shall be the responsibility of the main contractor, whether carried out by their own staff, other sub-trades or the roofing membrane sub-contractor.

2.1 Substrate:

The roof cladding shall be a minimum of 0.75-gauge Zinalume metal deck in a reverse run profile and must be installed in accordance with AS1562.1 – 1992 and HB39-1997

The metal decking will give a sound base for the material. The surface must be clean, dry, smooth, and free from oil, grease and other contamination.

2.2 Roof Drainage:

Good roofing practice requires falls to be provided beneath the warm roof system. The calculation of the roof drainage capacity will be based on statistical data for likely rainfall and roof water-flow characteristics. Outlets must be designed to prevent damage from deck overload, should blocking of the drains occur.



2.3 Metal deck (Existing Roof)

Where existing metal roofing drops into the gutter, the iron overlap is to be cut back to allow a plywood upstand to be installed to the height of the insulation which will allow for the **DuO** membrane to continue into the gutter.

INSTALLATION:

Note: A prestart meeting should be held onsite with the Main Contractor and the Equus Certified Applicator prior to commencement of warm roof installation.

3.0 VAPOUR BARRIER:

3.1 Primer: (Details and Upstands)

Where membrane may be fully bonded by torch or self-adhesive application: To the dried and prepared surface apply one (1) full coat of **Soprema DuO Primer** by brush/roller at a spreading rate of 5sqm/litre. Allow to dry for 4-24 hours depending upon prevailing weather conditions

3.2 Danosa Self Dan PE: (Self-Adhesive)

Remove the non-stick silicone backing film from the underside and place the membrane on the metal deck. Press the membrane against the substrate with a broom, across the high points. Overlaps must have a width of 70mm. Over upstands, the vapour barrier shall be taken up 50mm past the top of the insulation board. This ensures a suitable connection to create a complete waterproof envelope of the insulation.

3.3 Soprema DeboTack 2.5 T/F C175: (Self-Adhesive)

Decide the most suitable direction to follow. Unroll and discard packaging. Align the first roll and cut to length as required. Remove the siliconized film and press the membrane into place on the surface. The self-adhesive properties are automatically activated during installation. Light heating is recommended at the edges to ensure all laps are fully closed. Full adhesion is advanced when the **Soprema DuO HT 4 Slates/F C180 FC** Cap sheet is finally torched over it. Repeat in sequence with all rolls, maintaining minimum laps of 100mm. Offset end laps in adjacent runs. Over upstands, the vapour barrier shall be taken up 50mm past the top of the insulation board. This ensures a suitable connection to create a complete waterproof envelope of the insulation.

4.0 EQUUS PIR INSULATION:

4.1 Mechanically Fastened:

Install Equus PIR Insulation in a brick bond pattern using full boards where possible. Use one fastener per board to tack in place before loose laying the basesheet in place.

Alternatively, install the specified **Equus Soprema** fixings through the insulation boards into the plywood substrate following the **Soprema** project specific fixing layout plan. Ensure the fixings are securely fastened but not overly tightened so as to crush the insulation boards.

4.2 Fully Adhered:

Install Equus PIR Insulation in a brick pattern using full boards where possible. Boards shall be fixed in place using **Soprema Easyfoam** adhesive applied in accordance with the fixing pattern in the project specific **Equus Soprema** wind uplift report. Multiple layers of board shall be glued with adhesive between each board.

On site cutting of boards is permitted and should be done using a fine-toothed saw or by



scoring with a knife and snapping the board over a straight edge. Ensure accurate trimming to achieve a close tight butt finish. Any gaps between boards can be filled with **Soprema Easyfoam**.

Refer to Equus project specific data for fixing patterns and full installation instructions.

5.0 Roofboard: (if required)

5.1 Install **Equus Permabase Dek** roofboard in a brick bond pattern using full boards where possible. Boards shall be fixed in place using **Equus Soprema** fixings installed in accordance with the fixing pattern in the project specific **Equus Soprema** wind uplift report.

5.2 Priming:

The **Equus Permabase Dek** roofboard shall be primed with **Soprema DuO Primer** mixed and diluted 50/50 with white spirit. Apply one (1) coat of mixed material at a spreading rate of 4-5m²/litre by brush and/or roller. Allow to dry thoroughly before the selected base sheet is torched to the roofboard.

6.0 MEMBRANE APPLICATION:

6.1 Basesheet: Soprema DeboPlast 2.5 T/F C175 OR Soprema DeboFlex 2.5 T/F C175 (Mechanically fixed)

Decide the most suitable direction to follow. Unroll the roll and discard packaging. Align and cut to length as required. Laps at each sheet edge shall be 80mm.

Install specified fixings through the edges of the sheets approx. 20mm in from the edge into the substrate following the **Equus Soprema** project specific fixing layout plan. Ensure the fixings are securely fastened but not overly tightened so as to deform and/or cut the basesheet.

Repeat in sequence with all rolls. Torch this lap closed. Offset end laps in adjacent runs if possible.

Note: The **Soprema DeboPlast 2.5 T/F C175 OR DeboFlex 2.5 T/F C175** basesheet may be fully torched to the **Equus Permabase Dek** roofboard if it is included in the warm roof system. (see Section 5)

6.2 Soprema DeboTack 2.5 T/F C175 Aero: (self-adhesive)

Decide the most suitable direction to follow. Unroll and align the first roll. Discard packaging. Cut to length as required. Remove the siliconized film and press the membrane into place onto the surface of the insulation. The self-adhesive properties are automatically activated during installation. Light heating is recommended at the edges to ensure all laps are fully closed. Full adhesion is advanced when the **Equus Soprema DuO HT 4 Slates/F C180 FC** Cap sheet is finally torched over it. Repeat in sequence with all rolls, maintaining minimum laps of 100mm. Offset end laps in adjacent runs.

6.3 Soprema DuO HT 4 Slates/F C180 FC Cap Sheet (or variant):

Decide the most suitable direction to follow. Unroll the roll and discard packaging. Align and cut to length as required. Re-roll both ends to the middle, then torch evenly to the basesheet as the membrane is unrolled. Ensure even heat application. Repeat in sequence with all rolls, maintaining laps of minimum 80mm. The lap automatically closes during the torching process. All laps shall be offset to prevent coincidence with the base sheet laps. Following application of the cap sheet, all joints are back-sealed separately to ensure they are neatly and correctly closed.



If required, during the back-sealing operation, **Soprema Mineral Chip** may be carefully scattered over the joint to provide a uniform appearance. This may also be carried out on areas of detailing to provide protection and uniformity of finish.

6.4 Detailing:

Detailing shall be carried out using **Equus Soprema DuO** cap sheet and/or in combination with the **Matacryn Thix** liquid membrane finished with **Chevaline Dexe Topcoat** or **Soprema DuO Mineral Chip**. This includes all outlets, pipe penetrations, gutter stop ends, parapet upstands, machinery plinths and anything above or below the roof surface. This is carried out before, during or, in some cases, after laying the membrane, depending on the type of detail. All detailing shall be completed in accordance with the manufacturer's technical literature and the **DuOtherm** Application Manual current at the time of design, use, installation and/or maintenance.

6.5 Sealant:

Soprema DuO Kit or **Soprema DuO Ultra Seal** shall be used where required.

6.6 Membrane Termination:

The membrane will be terminated with **Soprema C-Profile** and **DuO Kit** on upstands and parapets as per the manufacturer's termination details.

6.7 Completion:

Upon completion of the system it shall be inspected and left for a short period (up to 2-3 weeks) to stabilize. At this time the entire installation shall be rechecked prior to any warranties being issued. Where possible, particularly on the deck areas, a pond-test (24 hours) should be carried out.

Note: Damage caused to the completed installation by other trades working over the membrane after the initial inspection shall be the responsibility of the Main Contractor, who shall arrange appropriate protection for the finished membrane system as required.

6.8 Trafficability:

The **Equus Soprema DuOtherm Warm Roof System** is suitable for foot traffic after the installation of compatible **Equus FixPlus** pedestal deck jacks, duckboards and roofwalk.

Equus Permabase Dek roofboard shall be installed if additional compressive strength for the roof system is required in areas of high traffic, around plantrooms, air conditioning units and other such roof mounted equipment. This will resist crushing from machinery or plant that may be temporarily placed on the roofing system during maintenance.

The **Equus Soprema DuOtherm Warm Roof System** shall be protected using a temporary protection board before objects are placed on the roof to prevent damage to the waterproofing membrane.

7.0 SPECIFICATION NOTES:

7.1 Quality Assurance (QA):

The Equus Certified Applicator is responsible for onsite **QA**. The Equus project checklists detailing the required processes shall be completed and signed as each stage of installation is completed. Photographs of each stage shall be taken and submitted as part of the overall **QA** documentation. A Warranty will not be issued unless a copy has been filed with Equus Industries Ltd. Third party QA documentation is acceptable provided it is in accordance with the Equus issued project **QA**.



8.0 MAINTENANCE AND WARRANTY:

8.1 Maintenance:

As normal maintenance, Equus Industries Limited recommends that the finished roof areas are inspected every six months for cleaning, and annually, by a Certified Equus Applicator, to ensure weathertightness and durability.

Ensure all outlets are free of blockages and clear of unwanted debris and that all associated flashings and membrane cap flashings are sound. Check the general condition of the membrane and ensure it is free from surface moss, mould or lichen.

Check all associated building elements that can impact on the durability of the membrane.

Higher risk areas such as sheet joints, substrate movement, edging, gutters, penetrations, corners, upstands, outlets and overflows require a thorough inspection for weathertightness on an annual basis.

8.2 Warranty:

The **Equus Soprema DuOthem Warm Roof System** described in this specification may be warranted to be waterproof for a period of up to twenty (20) years providing that:

- (a) All work is carried out by a Certified Equus Applicator.
- (b) The system is installed in accordance with the manufacturer's technical literature and the **Duotherm** Application Manual current at the time of design, use, installation and maintenance.
- (c) The Warranty is issued in conjunction with the appropriate Maintenance Statement.

The warranty period shall be determined for any contract in consultation with the Manufacturer or their representative prior to application.

The warranty is provided to the client by the Certified Equus Applicator carrying out the work and is backed by the Manufacturer as to the fitness for the purpose of the materials supplied for the contract.

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