

Standard Specification for the application of EQUUS SOPREMA FLAGON TPO waterproofing membrane to concrete surfaces

Project:
Prepared for:
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1.0 PREAMBLE:

This specification is for the application of the **EQUUS SOPREMA FLAGON TPO** roll-roofing membrane system, in a single layer configuration over concrete to create a watertight and aesthetically pleasing roofing system.

TPO (Thermo Plastic Poly-Olefin) roofing membrane is a modified polyolefin synthetic membrane obtained by co-extrusion which is dimensionally stabilised by a glass fibre. The upper grey layer has a high resistance to weather agents and UV rays. The membrane is manufactured in a plant certified by UNI EN ISO 9001 (Quality management system) and UNI EN ISO 14001 (environmental management system).

The **EQUUS SOPREMA FLAGON TPO** waterproofing membrane system has been assessed for use on roofs, decks and gutters, installed on treated plywood or concrete substrate 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.

2.2 Concrete:

.1 Concrete structures must be specifically engineered to meet the requirements of the New Zealand Building Code.

Concrete curing times are dependent on location, mix designs and climate conditions. Allow sufficient drying time after the concrete has been poured which is generally between 14 and 28 days. To verify concrete has sufficiently dried, a measurement can be taken using a hygrometer. A maximum relative humidity of 75% is required, measured at the time of vapour barrier application.

Concrete curing compounds are not recommended. Consult Equus Industries Ltd for advice if specified by others. Ensure that all traces of the compound are gone or removed before commencing installation.

- .2 Shall be finished to NZS3114:1987 U3, with a light trowel texture.
- .3 Shall have all ridges and protrusions stoned flush.
- .4 Depressions shall be flushed with Schomburg **ASOCRET BIS 5/40** and allowed to cure 48 hours before overcoating.
- .5 Roof, deck and gutter falls must be laid in accordance with the New Zealand Building Code.
- .6 Corners shall have leading edges chamfered to 5mm radius and min.
- .7 Shall be water-blasted to remove all detritus and allowed to dry.
- .8 Existing substrates and structures must be thoroughly inspected prior to specification to ensure that they will not compromise the performance of the warm roof system when installed.
- .9 **Outlets:**
Roof and deck outlets shall be installed as per clause 8.5.6 of E2 External Moisture of the New Zealand Building Code.

Outlets shall be sized in accordance with section E1 Surface Water of the New Zealand Building Code.

3.0 MEMBRANE APPLICATION:

3.1 Membrane: **FLAGON TPO EP/PR or FLAGON EP/PV-F**

Decide the most suitable direction to follow. Align the roll and unroll into final position. Discard packaging. Fold back the required length of TPO to be glued exposing both the substrate and the back of the membrane. Secure temporarily to prevent wind uplift.

3.2 Adhesive:

Apply one (1) coat of **EQUUS TPO** adhesive by means of spraying. This is a bottle spray kit application. Apply adhesive to both substrate and underside of membrane.

3.3 Membrane installation: **FLAGON TPO EP/PR**

Once the adhesive has tacked off, carefully unfold the membrane into place, using a heavy weight roller 20kg+, evenly roll membrane to ensure full contact adhesion between the membrane and concrete substrate. Repeat in sequence with all rolls. Offset end laps in adjacent runs if possible.

Repeat in sequence with all rolls maintaining side and end laps of minimum 50mm. On completion, edge laps are welded closed using a suitable hot air welding machine such as Leister. Perform a test weld to confirm the correct machine heat setting for the prevailing weather conditions onsite. Weights are to be used on sheets while adhesive cures over the next few hours.

3.4 Membrane installation: **FLAGON TPO EP/PV-F**

Used over uneven surfaces or where fleece-backed is preferred.

Once the adhesive has tacked off, carefully unfold the membrane into place, using a heavy weight roller 20kg+, evenly roll membrane to ensure full contact adhesion between the membrane and concrete substrate. Repeat in sequence with all rolls. Offset end laps in adjacent runs if possible.

Repeat in sequence with all rolls maintaining side and end laps of minimum 50mm. On completion, edge laps are welded closed using a suitable hot air welding machine such as Leister. Perform a test weld to confirm the correct machine heat setting for the prevailing weather conditions onsite. Weights are to be used on sheets while adhesive cures over the next few hours.

*Note: Where the TPO is adhered to uneven surfaces **FLAGON TPO EP/PV-F** is to be used. This membrane has a fleece-backed underside and will provide a smoother finish.*

3.5 Detailing:

Detailing is completed with **FLAGON TPO EP/S** unreinforced membrane welded to the **FLAGON TPO EP/PR** waterproofing membrane, **Cantac ROOF-TAC Spray**, and a double-sided tape to create one single impervious waterproofing system at all critical junctions.

This shall include 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 of the membrane depending on the detail type. All detailing shall be done in accordance with the manufacturer's technical literature current at the time of design, use, installation and/or maintenance.

3.6 Sealant:

TREMFLEX 834 shall be used where required.

3.7 Membrane Termination:

The membrane will be terminated with **FLAGON TPO TERMINATION BAR** and **TREMFLEX 834** on upstands and parapets as per the manufacturer's termination details.

3.8 Completion:

Upon completion of the system, it shall be inspected and left for a short period (up to 2-3 weeks) to stabilise. 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.

3.9 Trafficability:

The **EQUUS SOPREMA FLAGON TPO** system is suitable for light foot traffic after the installation of duckboards, roof walk systems or **EQUUS FIXPLUS** pedestals and pavers or **KRAITEC STEP** rubber tiles. Alternatively, **WALKWAY TPO** can be installed over the finished system to delineate regular pathways across the roof.

3.10 Photovoltaic Panel Supports (if required):

Where photovoltaic panels are to be installed, **SOPRASOLAR FIX EVO TILT** for TPO roofs are to be installed as per the installation sheet provided by Equus Industries.

4.0 QUALITY ASSURANCE (QA):

The Equus Certified Applicator is responsible for onsite **QA**. The Equus project checklists outlining 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**. A Warranty will not be issued unless a copy of the documentation has been filed with Equus Industries Ltd. Third party QA documentation is acceptable provided it is equivalent to the Equus issued QA.

5.0 MAINTENANCE AND WARRANTY:

5.1 Maintenance:

As normal maintenance, Equus Industries Limited recommends that the finished roof areas are inspected every six months for cleaning, and annually, by an Equus Certified 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

5.2 Warranty:

The **EQUUS SOPREMA FLAGON TPO** waterproofing membrane system described in this specification may be warranted for sheet integrity and to be waterproof for a period of up to twenty (20) years providing that:

- (a) All work is carried out by an Equus Certified Applicator.
- (b) The **EQUUS SOPREMA FLAGON TPO** system must be installed in accordance with the manufacturer's technical literature 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 period of warranty is determined by, but not limited to, the situation of the installation (e.g., old, or new substrate, plain poof or open plant roof, etc.)

The warranty is provided to the client by the Equus Certified 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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