

| MANUAL SECTION | ISSUE DATE | AUTHORISED | REPLACES | PAGE |
|----------------|------------|------------|----------|------|
|----------------|------------|------------|----------|------|

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|----------------|---------------------|-----------|-----------------|---------------|
| <i>Roofing</i> | <i>October 2011</i> | <i>PM</i> | <i>Oct 2007</i> | <i>1 of 4</i> |
|----------------|---------------------|-----------|-----------------|---------------|

SOPRALENE FLAM 180 AND AR TORCH ON ROOFING MEMBRANE

GENERAL

Sopralene is a Double layer torch on roofing membrane system based on highly elastic SBS polymers in a bitumen blend. It is reinforced with fabrics .

It offers:

- Extreme durability
- Long term flexibility
- Crack bridging
- Outstanding weatherproofing and waterproofing.

SOPRALENE FLAM 180 is a hot torch applied bituminous waterproofing membrane system which is available in double layer totalling 7mm thickness. The bitumen is modified with SBS polymers for flexibility and reinforced with 180gsm/m² non woven polyester.

Sopralene systems are highly flexible, resistant to aging, Resistant to UV and cope with repeated stain.

This specification deals with:

1. Manufacture of Materials
2. System Description
3. Surface Preparation
4. Application
5. Decks
6. Warranty
7. Maintenance
8. Producer Statement

1. **MANUFACTURE OF MATERIALS**

All materials shall be produced supplied or specified by Nuplex Industries Ltd. To avoid incompatibility of component materials it is essential that Nuplex technical staff be consulted before any product other than those specified is used. These roofs are suitable for maintenance traffic only.

2. **SYSTEM DESCRIPTION**

Sopralene Flam 180 is available in a variety of granule finishes. The system is installed as follows:

- a) Double Layer
Sopralene Flam 180 torched directly to substrate. **Sopralene Flam 180AR** is torched directly to the prefixed Sopralene Flam 180.
Sample double layer system: base sheet of Sopralene Flam 180 Plain 3mm overlaid with a cap sheet of Sopralene Flam 180AR Black Slate (AR=aggregated). Codes: B1SOF180 and B1SOBS

- c) Drains
Two layers of Sopralene Flam 180 overcoated with one coat of Cural Aluminium coating at 400gsm.

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3. **SURFACE PREPARATION**

It is the contractor's responsibility to inspect all areas which are to receive the waterproofing membrane and report any unsatisfactory conditions to the main contractor. Listed below are detailed specifications for preparing various substrates.

The surface to be waterproofed must be clean and sound. Remove all dust, dirt, laitence or any other contaminants which may hinder adhesion of the membrane.

VENTILATION

It is important that membrane roof structures are vented to prevent condensation build up and subsequent damage. Ventilate between roofing framing and to the exterior. Specific designs and advice are available. Ridge vent caps are an effective solution.

ROOF SLOPE

This Soprasun double layer roofing system will fully waterproof a flat roof. (However the New Zealand Building Code, E2/AS1, requires a 1.5° slope. 1:40). Very low pitched roofs will pond unless care is taken with roof substrate preparation and attention to detail is applied to the sheet layout to prevent water ponding behind laps. Nuplex offer specific design options to prevent ponding behind laps.

CONCRETE

Any hollows shall be filled and ridges ground smooth (use Nuplex FLC). Surface must be free of any spalled areas, loose aggregate and sharp protrusions. Outside corners must be free of sharp edges.

Substrate must be dry. The use of Nuplex Aquaguard 101 is an option to isolate damp concrete. Aerisol Flam ventilation sheet is recommended (with vents) to control moisture being emitted from the concrete substrate. This is applied under the membrane sheets.

Control joints shall be treated as specified by architect, engineer and approved by membrane manufacturer. For suggestions see "detailing" on Nuplex website.

BLOCKWORK

Soprasun 4AR may be applied to smooth concrete block substrates.

Any pointed blockwork must be flushed out.

If blockwork is rough a well adhered coat of Nuplex FLC may be used to achieve a smooth substrate.

PLYWOOD

Plywood must comply with AS/NZS2269 for structural plywood. Plywood must be minimum 17mm, H3.2 treated CCA (waterbased treatment).

Refer CHH Ecoply Specification & installation guide June 2011

Plywood grade : Structural Square Edge H3.2 CCA, min. 17mm

Plywood is loose butted. Plywood must be fastened by stainless steel corrosion resistant screws (preferably 50mm stainless screws) at 150mm centres around the perimeter and 200mm centres within the sheets as per E2/AS1. Frame center spacing should be at a maximum of 600mm. Center nog joists at 1200mm. All sides and ends must be noggged. Plywood sheets must be staggered. Refer to plywood suppliers charts for alternate roof usage/slope directions.

All fastenings must be countersunk. All joints must be left with an even uniform finish. Ply upstands must be strong and sound and be well supported and strengthened. Use epoxy and fibreglass if necessary to ensure adequate strength.

The engineering designer or plywood suppliers structural specification for roof structure and plywood installation shall override the Nuplex specification.

Install expansion joints in the plywood structure to allow for plywood movement. Plywood roof structures tend to move in sections (or "rafts"). Form joints in natural areas where movement is likely to occur. Nuplex provide control joint detailing. Roof runs (on plain flat structures) longer than 15m will require control joints.

VENTILATION

Moisture builds up in roof cavities due to human activity below. With double layer membranes, that are impervious, this moisture cannot escape. Ventilation to the full roof cavity must be provided to prevent moisture build up in the cavity. It also helps prevent excessive heat build-up which causes excessive cyclic movement in the building. This ensures durability of the building elements (not the membrane which is unaffected by moisture). The vented area should be below the ply but above any insulation. Side vents on opposite sides of the building are preferred with full cross ventilation designed into the structure. Distances exceeding 10m should have separate roof vents.

Nuplex provide vent systems. Ensure vents are correctly installed and select a type that will not allow water to enter the building in times of high rain, rain "bounce" or high wind.

COMPRESSED FIBRECEMENT SHEET

Sheets must be fastened by screws. All fastenings must be well countersunk. All joints must be left with an even uniform finish. Any indentations shall be flushed out with a suitable flushing compound. Refer previous paragraph covering ventilation, upstands and expansion joints.

The suppliers structural specification for sheet installation shall override the Nuplex specification.

ROOFING DESIGN & OTHER

Any other substrate or areas with existing waterproofing membranes please refer to Nuplex Industries Ltd for advice.

The designer must consider ventilation and heat build-up in the roof cavity. Excessive moisture build-up and heat build-up are detrimental to the whole building. Heat and moisture are simple to control with vents.

4. APPLICATION

All products shall be applied by approved contractors.

DOUBLE LAYER APPLICATION

Apply Nuplex Membrane Primer at a spreading rate of 5m²/litre.

To all interior and exterior corners hot torch apply a 100mm Sopralene Flam 180 fillet. Hot tool chamfer all edges.

Install expansion joints (in the ply) to allow for plywood movement. The position of the joints will be specified by the roofing engineer. Nuplex provide expansion joint details.

A double layer roofing system will tank a fully flat roof; however the NZ Building Code stipulates a minimum 1:30 roof pitch.

To all drains, sumps or protrusions hot torch apply 2 layers of Sopralene Flam 180 extending at least 150mm in all directions. Complete at conclusion with one coat of **CURAL** (aluminium coating) at 400gsm. The code stipulates a 1:100 pitch for gutters.

To main roof area hot torch apply a layer of Sopralene Flam 180 with 75mm wide side laps and 100mm end laps. Hot tool chamfer all edges.

To parapets and upstands hot torch apply Sopralene Flam 180 extending lap over main roof areas by at least 75mm.

Hot torch apply second layer of Sopralene Flam 180AR to first layer ensuring that all laps are staggered.

Hot torch apply second layer of Sopralene Flam 180 to all parapets and vertical upstands extending laps over main roof area at least 100mm.

Any terminations to vertical surfaces are to be finished into a flushing mechanically fixed and sealed with a suitable sealant.

5. DECKS

Decks that cover an internal part of the building are to be treated in exactly the same

Way described. They are in effect a "roof". Protection of deck (roof) membranes are by the way of:

- Pavers over a polythene slip layer.
- Tiles on a 75mm concrete slab on a polythene slip layer.

- Nuplex pedestals supporting square pavers or timber squares. These are compliant with the Building Act as they provide direct access to the drained membrane surface.

6. **WARRANTY**

Soprema provide a 10 year material and labour warranty against claims due to product failure or incorrect specification. An insurance policy provides guarantee of cover. A further policy is jointly provided by Nuplex and Nuplex licensed contractors to extend the warranty to 15 years in compliance with the New Zealand Building Act. This warranty covers the performance of the membrane itself and does not warrant against excessive building movement. Only double layers systems are covered by the 15 year warranty.

7. **MAINTENANCE**

Regular inspections are to be carried out to identify any areas of damage. These are to be repaired by apply a patch or the Curnoir/Cural system. Cural is to be cleaned down and overcoated every five years with one coat of Cural at a rate of 500gm/m².

8. **PRODUCER STATEMENT**

Sopralene Flam 180 is provided by Soprema as suitable as an exterior roof material in the New Zealand environment. Nuplex Industries Ltd state that these are compliant with the Building Act and all requirements of E2/AS1 watertightness and B2 durability. They comply with the acts 15 year requirement.

This specification is to be read in conjunction with relevant technical data sheets. If in any doubt or confusion exists please contact Nuplex Industries Ltd, Construction Products Division.