

# Technical Data Sheet

## SOPRALENE FLAM 180



### DESCRIPTION

**SOPRALENE 180** membranes are composed of a non-woven polyester reinforcement and SBS modified bitumen. **SOPRALENE FLAM 180** can be used as a waterproofing membrane on foundation walls and others horizontal or vertical below grade concrete surfaces.

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/m<sup>2</sup> non-woven polyester. Sopralene systems are highly flexible, resistant to aging, Resistant to UV and cope with repeated stain.

**FOR COMPLETE INFORMATION ON APPLICATION AND SYSTEMS, PLEASE CONSULT OUR SPECIFICATION MANUAL.**

### PROPERTIES

(As per CAN/CGSB-37.56-M, 9th draft).

Properties	SOPRALENE	
	FLAM 180	FLAM 180 GR
Thickness	3.0 mm	4.0 mm
Dimension	10 × 1 m	8 × 1 m
Weight	36 kg	39 kg
Top Face	Film	Granules
Under face	Thermofusible plastic	
Reinforcement	Non-woven polyester	
Storage	Upright on pallet	
Application method	Torch applied	
Strain energy, (MD/XD)	9.0 / 7.0 kN/m	
Breaking strength, (MD/XD)	17 / 12.5 kN/m	
Ultimate elongation, (MD/XD)	60 / 65 %	
Tear resistance	60 N	
Static puncture	400 N	
Dimensional stability, (MD/XD)	-0.3 / 0.3%	
Water Vapour Transmission (ASTM E96 method B)	0.21 ng / Pas.m <sup>2</sup>	
Plastic flow	105 °C	
Cold bending*	-30 °C	
Lap adhesion	- Initial	23.5 kN/m
	- 5 days at 50°C	24.0 kN/m
	- 14 days at 70°C	24.0 kN/m

\* Initial and after 90 days ageing at 70 °C. (All values are nominal)

## CERTIFICATIONS

BRANZ Appraisal No: (819) 2014

## ADDITIONAL CHARACTERISTICS

Properties	Standards	Values
Ultraviolet resistance*	AS 4654.1	pass
Heat ageing	AS 4654.1	pass
Cyclic movement	AS 4654.1	pass

\* for self-protected membrane SOPRALENE FLAM 180 GR.

SBS (Styrene Butadiene Styrene) is suited for more extreme climates, such as New Zealand's Climate Zone 3 (South Island and North Island's volcanic plateau).

Sopralene Flam SBS Waterproofing Membranes have been assessed as roof waterproofing membranes on buildings within the following scope:

The scope limitations of NZS 3604:2011 and NZBC Acceptable Solution E2/AS1, Paragraph 1.1; or,  
The scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area when subject to specific structural design; and,  
Sited in NZS 3604:2011 Wind Zones, up to and including Extra High; and,  
With substrates of plywood or suspended concrete slab.

## New Zealand Building Code (NZBC)

These products will, if employed in accordance with the supplier's installation and maintenance requirements, assist with meeting the following provisions of the building code:

- Clause B1 Structure: Performance B1.3.1, B1.3.4, B1.3.4(b), B1.3.4(c), B1.3.4(d), B1.3.4(e)
- Clause B2 Durability: Performance B2.3.1, B2.3.1(b)
- Clause E2 External moisture: Performance E2.3.1, E2.3.2, E2.3.7, E2.3.7(b), E2.3.7(c)
- Clause F2 Hazardous building materials: Performance F2.3.1

## MANUFACTURE OF MATERIALS

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

## SYSTEM DESCRIPTION

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

### 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).

## 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, laitance 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 is available. Ridge vent caps are an effective solution.

## ROOF SLOPE

This Sopralene 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) Allnex Soprema membranes are BRANZ appraised to 1:30 on plywood, 1:60 on concrete substrates and 1:40 on decks. 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. Allnex offer specific design options to prevent ponding behind laps.

## CONCRETE

Any hollows shall be filled and ridges ground smooth (use Allnex 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 Allnex 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 Allnex website.

## 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 centre spacing should be at a maximum of 600mm. Centre nog joists at 1200mm. All sides and ends must be noggled. 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 supplier's structural specification for roof structure and plywood installation shall override the Allnex 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.

## 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.

Allnex 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 supplier's structural specification for sheet installation shall override the Allnex specification.

## ROOFING DESIGN & OTHER

Any other substrate or areas with existing waterproofing membranes please refer to Allnex New Zealand 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.

## APPLICATION

All products shall be applied by approved contractors.

### DOUBLE LAYER APPLICATION

Apply Elastocol 500 at the appropriate spread rate as per the relevant technical data sheets. 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.

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 **ALSAN FLASHING**. 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.

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

## WARRANTY

A warranty of 20 years is applicable to double layer Sopralene roof systems. This is in excess of the 15 year warranty required by law.

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 warranty. This applies to new work in accordance with the Building Code and E2/AS1.

## MAINTENANCE

Regular inspections are to be carried out to identify any areas of damage. These are to be repaired by applying a patch or the Alsan Flashing system

## PRODUCER STATEMENT

Sopralene is provided by Soprema as suitable as an exterior roof cladding in the New Zealand environment. As such it is compliant with the New Zealand Building Act. A warranty is supplied by the contractor. Double layer Sopralene Flam 180AR is an alternative solution with the requirements of E2/AS1 July 2005.

A written opinion on Sopralene Flam 180AR’s compliance with E2/AS1 as an alternative solution is available. *Allnex New Zealand Ltd are a founding member of the Membrane group Code of Practice for Torch-on membranes.*

Allnex are members of the Roofing Association of NZ. **BRANZ appraised 2014.**



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

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