



## BRANZ Appraised

Appraisal No. 819 [2019]

## SOPREMA ROOFING MEMBRANE SYSTEMS

### Appraisal No. 819 [2019]

This Appraisal replaces BRANZ  
Appraisal No. 819 [2014]

Amended 31 August 2022



### BRANZ Appraisals

Technical Assessments of products  
for building and construction.



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## Product

- 1.1 Soprema Roofing Membrane Systems are a range of double-layer, torch-applied fully bonded reinforced modified-bitumen membranes for use on nominally flat or pitched roofs and decks.

## Scope

- 2.1 Soprema Roofing Membrane Systems have been appraised as roof and deck waterproofing membranes on buildings within the following scope:
  - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan areas; and,
  - situated in NZS 3604 Wind Zones up to, and including, Extra High; and,
  - the building is subject to specific structural design; and,
  - a substrate of plywood on timber framing; or,
  - a substrate of suspended concrete slab; and,
  - with minimum fall for plywood roofs of 1:30, concrete substrates of 1:60 and all decks of 1:40; and,
  - with deck size limited to 40 m<sup>2</sup>.
- 2.2 Roofs and decks waterproofed with Soprema Roofing Membrane Systems must be designed and constructed in accordance with the following limitations:
  - nominally flat or pitched roofs and decks constructed to drain water to gutters and drainage outlets complying with the NZBC; and,
  - with no steps within the deck level, no integral roof gardens and no downpipes directly discharging to the deck; and,
  - with the deck membranes continually protected from physical damage by pedestal protection system.
- 2.3 The design and construction of the substrate and movement and control joints is specific to each building, and are therefore the responsibility of the building designer and building contractor and is outside the scope of this Appraisal.
- 2.4 The membranes must be installed by Equus Industries Ltd certified applicators.

## Building Regulations

### New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Soprema Roofing Membrane Systems, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

**Clause B2 DURABILITY:** Performance B2.3.1 (b) 15 years. Soprema Roofing Membrane Systems meet this requirement. See Paragraph 9.1.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.1 and E2.3.2. Soprema Roofing Membrane Systems meet these requirements. See Paragraphs 12.1-12.9.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Soprema Roofing Membrane Systems meet this requirement.

## Technical Specification

4.1 Materials supplied by Equus Industries Ltd are as follows:

- **Soprasun Plus 3 and Soprasun Plus 4** - APP modified bitumen sheet waterproofing membranes used as a base layer in a double layer system. The lower face has a thermofusible film which is torched off during application and the upper face is finished with sand. It is supplied as a roll 3 or 4 mm thick, 1 m wide and 10 m long.
- **Soprasun Plus 4.5 kg Mineral** - an APP modified bitumen sheet waterproofing membrane used as a cap sheet in a double layer system. The lower face has a thermofusible film which is torched off during application and an upper face finished with slate chipping. It is supplied as a roll, grey or black in colour, 4 mm thick, 1 m wide and 10 m long.
- **Sopralene Flam 180** - a SBS modified bitumen sheet waterproofing membrane used as a base layer in a double layer system. The lower and upper faces have a thermofusible film which is torched off during application. It is supplied as a roll 3 mm thick, 1 m wide and 10 m long.
- **Sopralene Flam 180 GR** - a SBS modified bitumen sheet waterproofing membrane used as a cap sheet in a double layer system. The lower face has a thermofusible film which is torched off during application and an upper face finished with slate chipping. It is supplied as a roll, black in colour, 4 mm thick, 1 m wide and 8 m long.
- **Soprastar Flam GR** - a SBS modified bitumen sheet waterproofing membrane used as a cap sheet in a double layer system. The lower face has a thermofusible film which is torched off during application and an upper face of high reflective white granules. It is supplied in rolls 4 mm thick, 1 m wide and 8 m long.
- **Sopragum Garden Plus 4** - a APP modified bitumen sheet waterproofing membrane used as a cap sheet in a double layer system. The lower surface has a thermofusible film which is torched off during application and an upper face finished with sand. This membrane is used in protected system that require root resistance. It is supplied in rolls 4 mm thick, 1 m wide and 10 m long.
- **Soprafix Base 630** - a SBS modified bitumen sheet waterproofing membrane with a composite reinforcement. The upper face is covered with a thermofusible plastic film and the lower face is sanded. Soprafix Base 630 is provided with Duo Selvege technology which allows the immediate sealing of the membrane alongside laps. It is supplied as a roll, 2.5 mm thick, 1 m wide and 10 m long.
- **Sopralast TV Copper** - a SBS modified bitumen sheet waterproofing membrane used as a cap sheet in a double layer system. The lower face has a thermofusible film which is torched off during application and an upper face finished with copper foil. It is supplied as a roll, copper in colour, 3 mm thick, 1 m wide and 8 m long.
- **Sopraply Stick Duo** - a SBS modified bitumen, self-adhered waterproofing membrane used as a base sheet in a double layer system. The self-adhesive lower face is covered with a silicone release film and the upper face is sanded. It has a composite reinforcement of polyester and glass fibre. It is supplied as a roll, 3 mm thick, 1 m wide and 10 m long.



- **Colvent Base 840** – a partially-bonded, SBS modified bitumen, self-adhered waterproofing membrane used as a base sheet in a double layer system. The lower face, made of discontinuous self-adhesive strips, is covered with a silicone release film and the upper face is sanded. It has a glass matt reinforcement. It is supplied as a roll, 2.5 mm thick, 1 m wide and 12 m long.
- **Sopraply Stick Traffic Cap** – a SBS modified bitumen, self-adhered waterproofing membrane used as a cap sheet in a double layer system. The self-adhesive lower face is covered with a split-back silicone release film and the upper face is protected with coloured granules. It has a composite reinforcement of polyester and glass fibre. It is supplied as a roll, 4 mm thick, 1 m wide and 10 m long.
- **Aerisol Flam Vent Sheet** – a perforated bituminous separating membrane designed for partial bonding of torch-applied waterproofing membranes. It is supplied as a roll, 1.5 mm thick, 1 m wide and 40 m long.
- **Sopradere Quick primer** – a solvent-based, bituminous varnish used to prime dry and porous surfaces. It is supplied in 25 L pails.
- **Soprema Alsan Flashing** – a waterproofing, one-component polyurethane/bitumen resin. It is dedicated to roof flashings and details where it is difficult to apply waterproofing membranes. It is supplied in 19 L pails.
- **Sopraboard** – a support panel composed of asphalt-saturated glass mat reinforcement covering a mineral-fortified asphaltic core. It is used as a support panel on low-slope roofing. It is supplied as a panel in different thicknesses and dimensions.
- **2-1 Soprasmart Board** – a support panel composed of an SBS modified bitumen waterproofing membrane with non-woven polyester reinforcement and an upper face covered with a thermofusible film. This membrane is factory laminated to the Sopraboard. It is used as a base sheet in a double layer system. It is supplied as a panel in different thicknesses, 0.914 m wide and 2.44 m long.
- **Duotack** – a low-rise, two-component polyurethane adhesive used to adhere layers of insulation boards of polystyrene, of polyurethane, of approved mineral fibre [stone wool] and for cover boards such as asphaltic, wood fibre, perlite, gypsum or cement boards. It is supplied in 18.9 L kits.
- **Elastocol Stick/Equus Peel & Stick primer** – a blend of SBS synthetic rubbers, volatile solvents and adhesive enhancing resins used to adhere self-adhesive membranes at temperatures above 10°C.
- **Soprema Alsan Mastic 2200** – a bituminous, adhesive/sealant used for cold bonding and sealing when necessary. It is a black paste, supplied in 310 ml cartridges.
- **Equus Fix Plus pedestals** – adjustable pedestal protection system.
- **Permabase Dek Roof Cover Board** – a lightweight cement roof cover board for modified bitumen waterproofing membranes. It is supplied as a 9 mm thick, 2.4 m long and 1.2 m wide board.

## Handling and Storage

- 5.1 Handling and storage of all materials, whether on-site or off-site, is under the control of the Equus Industries Ltd certified applicator. Dry storage must be provided for all products and the rolls of membrane must be stored in an upright position.

## Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- Equus Sopralene Membrane System – Details on Concrete, May 2022.
  - Equus Sopralene Membrane System – Details on Plywood, May 2022.
  - Equus Soprasun Membrane System – Details on Concrete, May 2022.
  - Equus Soprasun Membrane System – Details on Plywood, May 2022.
- 6.2 All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.



## Design Information

### General

- 7.1 Soprema Roofing Membrane Systems are for use on roofs, gutters and decks where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas. The products can be used on new or existing buildings. Equus Industries Ltd should be consulted as to the suitability of any existing substrates prior to using Soprema Roofing Membrane Systems.
- 7.2 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membrane. Refer to the BRANZ Good Practice Guide: Membrane Roofing.
- 7.3 There are a number of different base sheets and cap sheets contained within the Soprema Roofing Membrane Systems. Generally the cap sheets have a slate or metal foil finish for when ultraviolet (UV) protection is required. All the systems require a pedestal protection system for when anything other than irregular maintenance foot traffic is expected. When the deck membrane system is two-layers of plain membrane, this system requires UV protection as well as the pedestal protection system. Equus Industries Ltd should be consulted for the best system to meet the design requirements.

### Substrates

#### Plywood

- 8.1 Plywood must be treated to H3 [CCA treated]. LOSP treated plywood must not be used. Plywood must comply with NZBC Acceptable Solution E2/AS1, Paragraph 8.5.3 and 8.5.5, or to a specific design.

#### Concrete

- 8.2 Concrete substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101.

#### Existing Construction

- 8.3 A thorough inspection of the substrate must be made to ensure it is in a fit condition and does not contain any materials that will adversely affect the performance of the membrane.
- 8.4 Repairs must be undertaken, where applicable, to ensure the substrate is sound, the joints are sealed, and the flashings are sound. Plywood substrates must be checked for screw fixings, and if necessary refixed as for new plywood.

### Durability

#### Serviceable Life

- 9.1 Soprema Roofing Membrane Systems are expected to have a serviceable life of at least 15 years, provided they are designed, used, installed and maintained in accordance with this Appraisal and the Technical Literature.

#### Chemical Resistance

- 9.2 Industrial air pollutants and windborne salt deposits should not significantly affect the durability of the membranes. However, the long term properties of the material may be affected by contact with petroleum-based products such as oils, greases and solvents.

### Maintenance

- 10.1 Soprema Roofing Membrane Systems must be regularly [at least annually] checked for damage, rubbish, debris or coating breakdown. Special care must be taken when inspecting the membrane roof and deck systems to ensure the continuing prevention of moisture ingress, and repairs must be undertaken where required. Damage, such as small punctures and tears must be repaired and coatings reapplied as recommended by Equus Industries Ltd.
- 10.2 Drainage outlets must be maintained to operate effectively.



## Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Soprema Roofing Membrane Systems from heat sources such as fireplaces, heating appliances, flues and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

## External Moisture

- 12.1 Roofs and decks must be designed and constructed to shed precipitated moisture. They must also take account of snowfalls in snow prone areas. A means of meeting code compliance with NZBC Clause E2.3.1 is given by the Technical Literature which aligns with details in NZBC Acceptable Solution E2/AS1.
- 12.2 When installed in accordance with this Appraisal and the Technical Literature, Soprema Roofing Membrane Systems will prevent the penetration of water and will therefore meet code compliance with NZBC Clause E2.3.2. The membranes are impervious to water and will give a weathertight roof.
- 12.3 Roof and deck falls must be built into the substrate.
- 12.4 The minimum fall to roofs is 1:30, decks 1:40, concrete substrates 1:60 and gutters 1:100. All falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane. *[Note: Where possible a gutter fall of 1:60 is preferred.]*
- 12.5 Allowance for deflection and settlement of the substrate must be made in the design of the roof to ensure falls are maintained and no ponding of water can occur.
- 12.6 Soprema Roofing Membrane Systems are impermeable; therefore a means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with NZBC Clause E2.3.6.
- 12.7 Drainage flanges must be used for any outlet and must be fitted with a grate or cage to reduce potential sources of blockages. An overflow must be provided where the roof does not drain to an external gutter or spouting.
- 12.8 Penetrations and upstands of the membrane must be raised above the level of any possible flooding caused by the blockage of roof drainage.
- 12.9 The design of details not covered by the Technical Literature is subject to specific weathertightness design and is outside the scope of this Appraisal.

## Water Supplies

- 13.1 Soprema Roofing Membrane Systems have not been assessed for roofs used for the collection of potable water.

## Installation Information

### Installation Skill Level Requirement

- 14.1 Installation of the membranes must be completed by an Equus Industries Ltd certified applicator.
- 14.2 Installation of substrates must be carried out in accordance with the Equus Industries Ltd Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant Licence Class.

### Preparation of Substrates

- 15.1 Substrates must be dry, clean and stable before installation commences. Surfaces must be smooth and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents. All surface defects must be filled to achieve an even and uniform surface.
- 15.2 The relative humidity of concrete substrates must be 75% or less before membrane application. The concrete can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 585.

- 15.3 The moisture content of the plywood and timber substructure must be a maximum of 20%. The plywood sheet surface must be dry at time of membrane application. This will generally require plywood sheets to be covered until just before the membrane is laid, to prevent rain wetting.
- 15.4 All substrates must be primed with a suitable Soproma primer and installed following the manufacturer's Technical Literature.

### Membrane Installation

- 16.1 The membranes must be installed in accordance with the Technical Literature.
- 16.2 All roof/deck and wall junctions must have a 20 x 20 mm fillet installed at the junction. Plywood substrates must use a wooden fillet and concrete substrate junctions a cement mortar fillet installed. All external edges must be chamfered to a 5 mm radius to remove sharp edges. Alternatively, pre-formed bitumen fillets of 25 x 25 mm can be used.
- 16.3 The membranes are installed from the lowest point and each layer is installed across the roof fall allowing an 80 mm side overlap and a 150 mm end overlap. The cap sheet layer must be offset against the base sheet layer.

### Inspections

- 17.1 Critical areas of inspection for waterproofing systems are:
- Construction of substrates, including crack control and installation of bond breakers and movement control joints.
  - Moisture content of the substrate prior to the application of the membrane.
  - Acceptance of the substrate by the membrane installer prior to application of the membrane.
  - Installation of the membrane to the Technical Literature instructions.

### Health and Safety

- 18.1 Safe use and handling procedures for Soproma Roofing Membrane Systems is provided in the Technical Literature. The products must be used in conjunction with the relevant Material Safety Data Sheets for each membrane.

## Basis of Appraisal

The following is a summary of the technical investigations carried out:

### Tests

- 19.1 The following is a summary of the testing and test reports on Soproma Roofing Membrane Systems: Tensile strength, elongation, tear strength, dimensional stability, low temperature flexibility of heat aged [180 days at 70°C] and UV aged [2,000 hours xenon arc], heat resistance after heat aged [180 days at 70°C], unrolling at low temperatures, sliding resistance, watertightness, static and dynamic indentation, fatigue cycling of heat aged specimens [28 days at 80°C], peel resistance of heat aged specimens [28 days at 70°C], tests on joints including: air pressure after heat ageing [28 days at 80°C] and water soak [7 days at 60°C], tensile strength of joints after heat ageing [28 days at 80°C] and water soak [7 days at 60°C]
- 19.2 The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

### Other Investigations

- 20.1 A durability opinion has been provided by BRANZ technical experts.
- 20.2 Installation of the membranes has been assessed by BRANZ for practicability of installation and found to be satisfactory.
- 20.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.



## Quality

- 21.1 The manufacture of Soprema Roofing Membrane Systems has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory. BRANZ has taken note of product certification and compliance certificates covering quality aspects associated with these products.
- 21.2 The quality of the supply of products to the New Zealand market is the responsibility of Equus Industries Ltd.
- 21.3 Quality on-site is the responsibility of the Equus Industries Ltd certified applicator.
- 21.4 Designers are responsible for the building design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of Equus Industries Ltd and this Appraisal.
- 21.5 Building owners are responsible for the maintenance of the membrane systems in accordance with the instructions of Equus Industries Ltd and this Appraisal.

## Sources of Information

- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 2269:2012 Plywood - structural.
- BRANZ Bulletin No. 585 Measuring moisture in timber and concrete.
- BRANZ Good Practice Guide: Membrane Roofing (Second Edition), October 2015.
- Code of Practice for Torch-on Membrane Systems for Roofs and Decks, September 2015, second edition.
- NZS 3101:2006 Concrete structures standard.
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

## Amendments

### Amendment No. 1, dated 29 March 2021.

This Appraisal has been amended to add Soprastar Flam GR to the technical specifications.

### Amendment No. 2, dated 31 August 2022.

This Appraisal has been amended to add update the Appraisal holder and distributor.



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23 May 2019

SOPREMA ROOFING MEMBRANE  
SYSTEMS



In the opinion of BRANZ, **Soprema Roofing Membrane Systems** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Soprema New Zealand Ltd** and is valid until further notice, subject to the Conditions of Appraisal.

### Conditions of Appraisal

1. This Appraisal:
  - a) relates only to the product as described herein;
  - b) must be read, considered and used in full together with the Technical Literature;
  - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
  - d) is copyright of BRANZ.
2. **Soprema New Zealand Ltd**
  - a) continues to have the product reviewed by BRANZ;
  - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
  - c) abides by the BRANZ Appraisals Services Terms and Conditions;
  - d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
  - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
  - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
  - c) any guarantee or warranty offered by **Soprema New Zealand Ltd**
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Soprema New Zealand Ltd** or any third party.

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For BRANZ

**Chelydra Percy**

Chief Executive

Date of Issue:

23 May 2019