



BRANZ Appraised
Appraisal No. 1215 [2022]

CASALI BITUMEN MEMBRANES

Appraisal No. 1215 [2022]

Amended 02 May 2024



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



APTC Australia Pty Ltd

18-22 Pacific Drive
Keysborough 3173
Victoria

Tel: +61 1300 394 239

Web: aptcaust.com.au



BRANZ

BRANZ

1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
Tel: 04 237 1170
branz.co.nz

Product

- 1.1 Casali Bitumen Membranes are torch-on APAO and APP bitumen-modified waterproofing membranes for roofs and decks.

Scope

- 2.1 Casali Bitumen Membranes have been appraised for use as roof and deck waterproofing membranes on buildings designed within the following scope:
- with building structures designed and constructed to comply with the National Construction Code (NCC); and,
 - with roof and deck supporting structures of timber framing with substrates of plywood or fibre cement compressed sheet; and,
 - with substrates of suspended concrete slab; and,
 - subjected to maximum wind pressures; and,
 - with the weathertightness design of all junctions being the subject of design by the designer. *[Note: The design of these junctions has not been appraised by BRANZ and is outside the scope of this Appraisal.]*
- 2.2 Roofs and decks waterproofed with Casali Bitumen Membranes must be designed and constructed in accordance with the following limitations:
- nominally flat, curved or pitched roofs constructed to drain water to gutters and drainage outlets complying with the NCC; and,
 - where decks are designed and constructed such that deflections do not exceed 1/360th of the span; and,
 - when protected from ultraviolet (UV) exposure and physical damage; and,
 - constructed to suitable falls; and,
 - with no integral roof gardens.
- 2.3 The design and construction of the substrate and movement and control joints are specific to each building, and therefore is the responsibility of the building designer and building contractor and are outside the scope of this Appraisal.
- 2.4 The membranes must be installed by APTC Australia Pty Ltd certified applicators.



Building Regulations

National Construction Code (NCC)

- 3.1 In the opinion of BRANZ, Casali Bitumen Membranes, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NCC:

NCC 2022 Volume One – Building Code of Australia

Part F3 ROOF AND WALL CLADDING: Performance Requirement F3P1. Casali Bitumen Membranes meet this requirement. See Paragraphs 14.1–14.8.

NCC 2022 Volume Two – Building Code of Australia

Part H2 DAMP AND WEATHERPROOFING: Performance H2P2. Casali Bitumen Membranes meet this requirement. See Paragraphs 14.1–14.8.

Technical Specification

- 4.1 Materials supplied by APTC Australia Pty Ltd are as follows:
- **Casali Dermabit Extra 30160** – a 3 mm thick APAO modified bitumen torch-applied sheet waterproofing membrane used as a base sheet in a double-layer system. The lower face has a polyethylene film which is torched off during application and an upper face is finished with sand or polyethylene film. It is supplied in rolls 1 m wide and 10 m long.
 - **Casali Dermabit Extra 43170 Ardesiato [Slated]** – a nominally 4 mm thick APAO modified bitumen, torch-applied sheet waterproofing membrane used as a cap sheet in a double-layer system. The lower face has a polyethylene film which is torched off during application and an upper face is finished with slate chips. It is supplied in rolls 1 m wide and 10 m long.
 - **Casali Dermabit FF Gluty 250** – a nominally 4 mm thick APP modified bitumen, flame-free hot air application waterproofing membrane used as a cap sheet. It is supplied in rolls 1 m wide and 10 m long.
 - **Casali Olympia** – a 3 mm thick APP modified bitumen torch-applied sheet waterproofing membrane used as a base sheet in a double-layer system. The lower face has a polyethylene film which is torched off during application and an upper face which is finished with sand or polyethylene film. It is supplied in rolls 1 m wide and 10 m long.
 - **Casali Olympia Mineral** – a 4 mm thick APP modified bitumen torch-applied sheet waterproofing membrane used as a cap sheet in a double-layer system. The lower face has a polyethylene film which is torched off during application and an upper face which is finished with mineral chip. It is supplied in rolls 1 m wide and 10 m long.
 - **Casali Dermafil** – a nominally 4 mm thick APP modified bitumen, torch-applied sheet waterproofing membrane used as a cap sheet in a double-layer system. The lower face has a polyethylene film which is torched off during application and an upper face is finished with slate chips. It is supplied in rolls 1 m wide and 10 m long.
 - **Casali Eradix** – a 4 mm thick anti-root bituminous membrane with a PE film on both sides for concrete substrates only. It is supplied in rolls 1 m wide and 10 m long.
 - **Casali Aderix** – a 2.5 mm thick, self-adhesive, bituminous membrane with a PE film on the top and a siliconised film on the bottom. It is supplied in rolls 1 m wide and 10 m long.
 - **Dermaprimer** – a solvent-based bituminous primer for priming all substrates prior to the installation of the membranes. It is available in 5, 10 and 20 L containers.
 - **Reflex AR** – a protective, reflecting, aluminium-filled coating for reducing the effects of UV. It is supplied in 10 and 20 L containers.
 - **Acrytop** – a protective acrylic coating for reducing the effect of UV. It is supplied in 20 kg containers.

Handling and Storage

- 5.1 Handling and storage of all materials, whether on-site or off-site, is under the control of the APTC Australia Pty Ltd certified applicators. 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:
- Casali Bitumen Membranes Architectural Details, dated 10/2/23.
- 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 Casali Bitumen Membranes are for use on roofs, gutters, decks and parapets 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. APTC Australia Pty Ltd should be consulted as to the suitability of any existing substrates prior to using Casali Bitumen Membranes.

Structure

- 8.1 Casali Bitumen Membranes fully bonded systems are suitable for use in areas subject to maximum wind pressures of 6 kPa ultimate limit state.

Substrates

Plywood

- 9.1 Structural plywood must be a minimum of 17 mm thick, complying with AS/NZS 2269. The structural plywood must be supported with joists at a maximum spacing as detailed in AS 1684.3, Table 7.3, and fixings shall be as per "Technical Note on the Use of EWPAA Branded Structural Plywood As Exterior Decking". *[Note: LOSP treated plywood must not be used.]*

Concrete

- 9.2 Concrete substrates must be designed in accordance with the NCC.

Existing Construction

- 9.3 A thorough inspection of the substrate must be made to ensure it is in fit condition and does not contain any materials that will adversely affect the performance of the membrane.
- 9.4 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, re-fixed as for new plywood.

Durability

Serviceable Life

- 10.1 Casali Bitumen Membranes will have a durability of at least 15 years and an expected serviceable life of over 20 years, provided they are designed, used, installed and maintained in accordance with this Appraisal and the Technical Literature.

Chemical Resistance

- 10.2 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

- 11.1 The membrane roof system, must be regularly [at least annually] checked for damage, rubbish or debris. Damage, such as small punctures and tears, must be repaired as recommended by APTC Australia Pty Ltd.
- 11.2 Special care must be taken when inspecting the membrane roof systems to ensure the continuing prevention of moisture ingress, and repairs must be undertaken where required.
- 11.3 Drainage outlets must be maintained to operate effectively.

Outbreak of Fire

- 12.1 Casali Bitumen Membranes must be protected or separated from fireplaces, heating appliances, chimneys and flues in accordance with the requirements of NCC Volume One, Part G2 Performance G2P1 and NCC Volume Two, Part H7 Performance H7P3.

Spread of Fire

- 13.1 The Casali Bitumen Membranes are combustible materials. Designers must take this into account when undertaking the fire design for the building.

External Moisture

- 14.1 Roofs and decks must be designed and constructed to meet code compliance with NCC Volume One, Part F3 Roof and Wall Cladding, Performance F3P1 or NCC Volume Two, Part H2 Damp and weatherproofing, Performance H2P2. They must also take account of snowfalls in snow prone areas.
- 14.2 When installed in accordance with this Appraisal and the manufacturer's Technical Literature, Casali Bitumen Membranes will prevent the penetration of water and will therefore meet code compliance with NCC Volume One, Part F3 Roof and Wall Cladding, Performance F3P1 and NCC Volume Two, Part H2 Damp and Weatherproofing, Performance H2P2. The membranes are impervious to water and will give weathertight roofs and decks capable of accepting minor structural movements.
- 14.3 The minimum fall is 1 in 30 for plywood roofs, 1 in 60 for concrete roofs, and 1 in 100 for gutters. The minimum falls for decks is 1 in 40. 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 BRANZ recommend a fall of 1:60 for gutters.]*
- 14.4 Roof and deck falls must be built into the substrate and not created with mortar screeds applied over the membrane.
- 14.5 Allowance for deflection and settlement of the substrate must be made in the design of the roofs and decks.
- 14.6 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.
- 14.7 Penetrations and upstands of the membranes must be raised above the level of any possible flooding caused by the blockage of roof drainage.
- 14.8 The design of details not covered by the Technical Literature is subject to specific weathertightness design, and is outside the scope of this Appraisal.

Installation Information

Installation Skill Level Requirement

- 15.1 Installation of the membranes must be completed by APTC Australia Pty Ltd certified applicators.
- 15.2 Installation of substrates must be completed by tradespersons with an understanding of roof construction, in accordance with instructions given within the APTC Australia Pty Ltd Technical Literature and this Appraisal.

Preparation of Substrates

- 16.1 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.
- 16.2 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.
- 16.3 The moisture content of the plywood and timber substructure must be a maximum of 20%, and the plywood sheets 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.
- 16.4 All substrates must be primed with Dermaprimer and left to dry [4-5 hours] before the membrane is installed.

Membrane Installation

- 17.1 The membranes must be installed in accordance with the Technical Literature.
- 17.2 All roof and wall junctions must have a 20 mm x 20 mm wooden fillet installed at the junction. Concrete substrate junctions must have a 20 mm x 20 mm cement mortar fillet installed. All external edges must be chamfered to a 5 mm radius to remove sharp edges.
- 17.3 The membrane is installed from the lowest point and each layer is installed across the roof fall allowing a 80 mm side overlap and a 100 mm end overlap. The cap sheet layer must be offset against the base sheet layer. *[Note: These are minimum overlap widths. Please refer to the manufacturer's instructions for the specific overlap widths for the product being specified.]*

Inspections

- 18.1 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 manufacturer's instructions.

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 Casali Bitumen Membranes:
 - Physical properties included tensile strength, elongation, tear strength, dimensional stability.
 - Service performance testing included low temperature flexibility, heat resistance, static and dynamic indentation, fatigue cycling and peel resistance.
 - Testing by SGS for dimensional stability, tear resistance, tensile strength, elongation at break, low temperature flexibility, heat resistance and tensile shear at joints.
 - British Board of Agrément No. 98/3537.
- 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 the membranes 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. The manufacturer of Casali Bitumen Membranes have been assessed and registered as meeting the requirements of ISO 9001.
- 21.2 The quality of the supply of products to the Australian market is the responsibility of APTC Australia Pty Ltd.
- 21.3 Quality on-site is the responsibility of the APTC Australia Pty Ltd certified applicators.
- 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 APTC Australia Pty Ltd and this Appraisal.
- 21.5 Building owners are responsible for the maintenance of the membrane systems in accordance with the instructions of APTC Australia Pty Ltd and this Appraisal.

Sources of Information

- AS 1684.3:2021 Residential timber-framed construction – Cyclonic areas.
- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 2269:2012 Plywood – Structural.
- BRANZ Bulletin No. 585 Measuring moisture in timber and concrete, June 2015.
- National Construction Code 2022, Australian Building Codes Board.
- Technical Note on the Use of EWPA Branded Structural Plywood As Exterior Decking – PAA Engineered Wood Products Association of Australasia.

Amendments

Amendment No. 1, dated 21 November 2023

This Appraisal has been amended to add the following new membranes: Casali Dermabit FF Gluty 250, Casali Eradix and Casali Aderix. References to the NCC have also been updated to NCC 2022.

Amendment No. 2, dated 02 May 2024

This Appraisal has been amended to add the 4 mm thick Casali Olympia Mineral membrane.



In the opinion of BRANZ, **Casali Bitumen Membranes** 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 **APTC Australia Pty 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. **APTC Australia Pty 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 quality of work;
 - 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 **APTC Australia Pty 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 **APTC Australia Pty Ltd** or any third party.

For BRANZ



Chelydra Percy

Chief Executive

Date of Issue:

31 August 2022