BRANZ Appraised
Appraisal No. 1155 [2021]

SIGA MAJCOAT® 150 AND 150 SOB

Appraisal No. 1155 (2021)

BRANZ Appraisals

Technical Assessments of products for building and construction.

SIGA Cover AG
Rütmattstrasse 7
Ruswil 6017
Switzerland
Tel: +41 41 496 6120
Email: siga@siga.swiss
Web: www.siga.swiss/global_en

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 SIGA Majcoat® 150 and 150 SOB are synthetic building underlays for use under wall claddings. The products are 3-layered with a functional layer of polypropylene protecting both sides. Majcoat® 150 and 150 SOB are coloured light-grey on the top face and black on the bottom face.

Scope

Flexible Wall Underlay

2.1 SIGA Majcoat® 150 and 150 SOB have been appraised for use as flexible wall underlays for timber and steel-framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
- the scope limitations of NASH Building Envelope Solutions, Paragraph 1.1 for steel-framed buildings; and,
- with direct fixed absorbent and non-absorbent wall claddings; or,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; or,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1 for timber-framed buildings or to NASH Building Envelope Solutions Paragraph 1.1 for steel-framed buildings; and,
- situated in NZS 3604 Wind Zones up to, and including, Very High.

Use over Rigid Wall Underlay

2.2 SIGA Majcoat® 150 and 150 SOB have been appraised for use as flexible wall underlays over rigid wall underlays on timber and steel-framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber-framed buildings; or,
- the scope limitations of NASH Building Envelope Solutions, Paragraph 1.1 for steel-framed buildings; and,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1 for timber-framed buildings or NASH Building Envelope Solutions for steel-framed buildings; and,
- situated in NZS 3604 and NASH Standard Part 2 Wind Zones up to, and including, Extra High.

Specific Design

2.3 SIGA Majcoat® 150 and 150 SOB have also been appraised for use on buildings subject to specific weathertightness design. Building designers are responsible for the building design and for the incorporation of SIGA Majcoat® 150 and 150 SOB into their design in accordance with the declared properties and the instructions of SIGA Cover AG.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, SIGA Majcoat® 150 and 150 SOB, if used, designed, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:**

Clause B2 DURABILITY: Performance B2.3.1 (a) not less than 50 years, B2.3.1 (b) 15 years and B2.3.2. SIGA Majcoat® 150 and 150 SOB meet these requirements.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the cladding system, SIGA Majcoat® 150 and 150 SOB will contribute to meeting this requirement.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. SIGA Majcoat® 150 and 150 SOB meet this requirement.

Technical Specification

4.1 SIGA Majcoat® 150 and 150 SOB are synthetic building underlays for use under wall claddings. The products are 3-layered with a functional layer of polypropylene protecting both sides. SIGA Majcoat® 150 and 150 SOB are coloured light-grey on the top face and black on bottom face.

4.2 SIGA Majcoat® 150 is supplied in rolls 3 m wide x 50 m long. SIGA Majcoat® 150 SOB has a self-adhesive strip top and bottom of the sheet and is supplied in rolls 1.5 m wide x 50 m long.

4.3 Accessories used with SIGA Majcoat® 150 and 150 SOB which are supplied by the installer are:

- **Fixings** – stainless steel staples, clouts, screws or proprietary underlay fixings, or other temporary fixings to attach the underlay to the framing.

4.4 Accessories used with SIGA Majcoat® 150 & 150 SOB which are supplied by SIGA are:

- **Wigluv** - a diffusible, single-sided adhesive tape suitable for bonding overlaps, penetrations and window joints where underlays are to be sealed.
- **Primur roll** - a flexible, self-adhesive roll tape suitable for bonding to various substrates to connect layers in exterior areas.
- **Dockskin** - a deep-penetrating, high-performance primer for strengthening problematic exterior substrates to ensure secure bonding with SIGA adhesive tapes.

Handling and Storage

5.1 Handling and storage of the product, whether on-site or off-site, is under the control of the installer. The rolls must be protected from damage and weather. They must be stored on end, under cover, in clean, dry conditions and must not be crushed.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for SIGA Majcoat® 150 and 150 SOB. The Technical Literature must be read in conjunction with this Appraisal. 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 SIGA Majcoat® 150 and 150 SOB are intended for use as an alternative to conventional building papers which are fixed over timber or steel-framed walls in order to limit the entry of wind into building cavities, and to act as a secondary barrier to wind-driven rain. Refer to Table 1 for material properties.

7.2 SIGA Majcoat® 150 and 150 SOB also provide a degree of temporary weather protection during early construction. However, the products will not make the building weathertight and some wetting of the underlying structure is always possible before the building is closed in. Hence, the building must be closed-in and made weatherproof before moisture sensitive materials such as wall or ceiling linings and insulation materials are installed.

7.3 SIGA Majcoat® 150 and 150 SOB must not be exposed to the weather or ultraviolet (UV) light for a total of more than 90 days before being covered by the wall cladding.

7.4 SIGA Majcoat® 150 and 150 SOB are suitable for use as an air barrier where walls are not lined, such as attic spaces at gable ends, in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.4 c) or NASH Building Envelope Solutions, Paragraph 9.1.4 (c).

7.5 In cavity installations where the cavity battens are installed at greater than 450 mm centres, the wall underlay must be supported between the battens to prevent the underlay bulging into the cavity space when bulk insulation is installed in the wall frame cavity in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5 for timber framing or NASH Building Envelope Solutions, Paragraph 9.1.9.5 for steel framing. Wall underlay support options include polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens or thermal break sheathing (steel framing only).

Table 1: NZBC E2/AS1, Table 23 Requirements

NZBC E2/AS1, Table 23 (NZS 2295) Wall Underlay Properties	Property Performance Requirements	Actual Property Performance
Absorbency	≥ 100 g/m²	Pass
Vapour Resistance	≤ 7 MN s/g	Pass
Water Resistance	≥ 20 mm	Pass
pH of Extract	≥ 5.5 and ≤ 8	Pass
Shrinkage	≤ 0.5%	Pass
Mechanical	Edge tear and tensile strength	**Edge tear (Average):** Machine direction = 266 N Cross direction = 167 N **Tensile strength (Average):** Machine direction = 5.9 N Cross direction = 3.6 N
Air Barrier	Air resistance: ≥ 0.1 MN s/m³	Pass

Cladding

7.6 SIGA Majcoat® 150 and 150 SOB are suitable for use under wall claddings as a wall underlay in accordance with NZBC Acceptable Solution E2/AS1, Table 23 on timber-framed building and NASH Building Envelope Solutions, Table 23 on steel-framed buildings, including non-absorbent wall claddings such as vinyl and metal-based weatherboards in direct-fixed situations. SIGA Majcoat® 150 and 150 SOB are suitable for use under cavity-based wall claddings as an absorbent synthetic wall underlay as called up in NZS 2295, Table 2.4 on steel-framed buildings.

Stucco Plaster

7.7 SIGA Majcoat® 150 and 150 SOB are suitable for use as a non-rigid backing material for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.5.1 for timber framing or NASH Building Envelope Solutions Paragraph 9.3.5.1 for steel framing. The underlay must be supported with a 75 galvanised mesh or wire at 150 mm centres run across the cavity battens to limit deflections to a maximum of 5 mm.

7.8 SIGA Majcoat® 150 and 150 SOB may also be used as a slip layer over rigid backing for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.3.1 b) for timber framing or NASH Building Envelope Solutions Paragraph 9.3.3.1 b) for steel framing.

Structure

8.1 SIGA Majcoat® 150 and 150 SOB are suitable for use in all Wind Zones of NZS 3604 and NASH Standard Part 2 up to, and including, Very High when used as a stand-alone flexible wall underlay, and all Wind Zones of NZS 3604 and NASH Standard Part 2 up to, and including, Extra High when used as an overlay for rigid wall underlays.

Durability

9.1 SIGA Majcoat® 150 and 150 SOB meet code compliance with NZBC Clause B2.3.1 (a) not less than 50 years for wall underlays used where the cladding durability requirement of expected serviceable life is not less than 50 years, e.g. behind masonry veneer, and code compliance with NZBC Clause B2.3.1 (b), 15 years for wall underlays used where the cladding durability requirement is 15 years.

Serviceable Life

9.2 Provided they are not exposed to the weather or UV light for a total of more than 90 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather resistant, SIGA Majcoat® 150 and 150 SOB are expected to have a serviceable life equal to that of the cladding.

Prevention of Fire Occurring

10.1 Separation or protection must be provided to SIGA Majcoat® 150 and 150 SOB from heat sources such as fireplaces, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 and C/AS2, and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

11.1 SIGA Majcoat® 150 and 150 SOB must only be used behind claddings that meet the requirements of the NZBC, such as those covered by NZBC Acceptable Solution E2/AS1, NASH Building Envelope Solutions, or claddings covered by a valid BRANZ Appraisal.

11.2 SIGA Majcoat® 150 and 150 SOB, when installed in accordance with the Technical Literature and this Appraisal, will assist in the total cladding systems compliance with NZBC Clause E2.

Installation Information

Installation Skill Level Requirements

12.1 All design and building work must be carried out in accordance with the SIGA Majcoat® 150 and 150 SOB Technical Literature and this Appraisal by competent and experienced tradespersons conversant with wall underlays. Where the work involves Restricted Building Work (RBW), this must be completed by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant Licence class.

Underlay Installation

13.1 SIGA Majcoat® 150 and 150 SOB must be fixed to all framing members at maximum 300 mm centres with large-head clouts 20 mm long, 6-8 mm staples, self drilling screws or proprietary underlay fixings. The membrane must be pulled taut over the framing before fixing.

13.2 SIGA Majcoat® 150 and 150 SOB must be run horizontally and must extend from the upper-side of the top plate to the under-side of the bearers or wall plates supporting ground floor joists, or below bottom plates on concrete slabs. Horizontal laps must be no less than 150 mm wide, with the direction of the lap ensuring that water is shed to the outer face of the membrane. End laps must be made over framing and be no less than 150 mm wide.

13.3 The wall underlay should be run over openings and these left covered until windows and doors are ready to be installed. Openings are formed in the membrane by cutting on a 45 degree diagonal from each corner of the penetration. The flaps of the cut membrane must be folded inside the opening and stapled to the penetration framing. Excess underlay may be cut off flush with the internal face of the wall frame.

13.4 SIGA Majcoat® 150 and 150 SOB can be added as a second layer over head flashings in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.10.3 for timber framing or NASH Building Envelope Solutions, Paragraph 9.1.11.3 for steel framing.

13.5 When fixing the product in windy conditions, care must be taken due to the large sail area created by wide roll widths.

13.6 Any damaged areas of SIGA Majcoat® 150 and 150 SOB, such as tears, holes or gaps around service penetrations, must be repaired. Damaged areas can be repaired by covering with new material lapping the damaged area by at least 150 mm and taping, or by taping small tears.

Inspections

13.7 The Technical Literature must be referred to during inspections of SIGA Majcoat® 150 and 150 SOB installation.

Basis of Appraisal

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

Tests

14.1 The following tests have been carried out on SIGA Majcoat® 150 and 150 SOB in accordance with NZBC Acceptable Solution E2/AS1, Table 23: tensile strength, edge-tear resistance and resistance to water vapour transmission in accordance with AS/NZS 4200.1, shrinkage in accordance with AS/NZS 4201.3, resistance to water penetration in accordance with AS/NZS 4201.4, surface water absorbency in accordance with AS/NZS 4201.6, pH extract in accordance with AS/NZS 1301.421s and air resistance to BS 6538.3. Vapour transmission to ASTM E96 (B), edge tear resistance to TAPPI T470. A range of these tests were completed before and after SIGA Majcoat® 150 and 150 SOB were exposed to UV light.

Other Investigations

15.1 A durability opinion was given by BRANZ technical experts.

15.2 An evaluation of the expected performance of SIGA Majcoat® 150 and 150 SOB in direct contact with metal wall cladding has been completed by BRANZ.

15.3 Site inspections were carried out by BRANZ to assess methods used for the installation of SIGA Majcoat® 150 and 150 SOB.

15.4 The marketer's Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

16.1 The manufacture of SIGA Majcoat® 150 and 150 SOB has not been examined by BRANZ, but details of the methods adopted for quality control and the quality of the materials used, have been obtained and found to be satisfactory. BRANZ undertakes an ongoing review of product quality on an inwards goods basis.

16.2 The quality of supply to the market is the responsibility of SIGA Cover AG.

16.3 Building designers are responsible for the design of the building, and for the incorporation of the wall underlay into their design in accordance with the instructions of SIGA Cover AG.

16.4 Quality of installation is the responsibility of the installer in accordance with the instructions of SIGA Cover AG.

Sources of Information

- AS 1530.2: 1993 Test for flammability of materials.
- AS/NZS 1301.421s: 1998 Determination of the pH value of aqueous extracts of paper, board and pulp - Cold extraction method.
- AS/NZS 4200.1: 1994 Pliable building membranes and underlays - Materials.
- AS/NZS 4201.3: 1994 Pliable building membranes and underlays - Methods of test - Shrinkage.
- AS/NZS 4201.4: 1994 Pliable building membranes and underlays - Methods of test - Resistance to water penetration.
- AS/NZS 4201.6: 1994 Pliable building membranes and underlays - Methods of test - Surface water absorbency.
- BS 6538.3: 1987 Method for determination of air permeance using the Garley apparatus.
- NASH Building Envelope Solutions: 2019 Light steel-framed buildings.
- NASH Standard Part 2: 2019 Light steel-framed buildings.
- NZS 2295: 2006 Pliable, permeable building underlays.
- 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.

BRANZ

In the opinion of BRANZ, SIGA Majcoat® 150 and 150 SOB 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 SIGA Cover AG, 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. SIGA Cover AG:
   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 SIGA Cover AG.
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 SIGA Cover AG or any third party.

For BRANZ

Chelydra Percy
Chief Executive

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