



BRANZ Appraised

Appraisal No. 901 [2015]

ENVIROSEAL™ PROCTORWRAP™ HT-X ROOF UNDERLAY

Appraisal No. 901 [2015]

Amended 04 May 2016



BRANZ Appraisals

Technical Assessments of products
for building and construction.



Proctor Group Australia Pty Ltd

Unit 8, 171-175 Newton Rd
Wetherill Park
NSW 2164
Australia

Marketed in NZ By:



CSR Bradford Insulation

PO Box 204115
Highbrook
Auckland 2013
Tel: 0800 277 123

Email: Bradford@csr.co.nz

Web: www.bradfordinsulation.co.nz



BRANZ BRANZ

1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
branz.co.nz



Product

- 1.1 Enviroseal™ ProctorWrap™ HT-X is a synthetic building underlay for use under roof claddings. The product consists of a water resistant film laminated between two layers of spun bonded polyolefin, with an integrated reinforcement scrim.

Scope

- 2.1 Enviroseal™ ProctorWrap™ HT-X has been appraised for use as a self-supporting roof underlay on 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,
 - with masonry tile roof cladding; and,
 - with metal tile and profiled metal roof cladding; and,
 - situated in NZS 3604 Wind Zones up to, and including Extra High.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Enviroseal™ Proctorwrap™ HT-X, 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. Enviroseal™ ProctorWrap™ HT-X meets these requirements. See Paragraphs 9.1 and 9.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the roof cladding system, Enviroseal™ ProctorWrap™ HT-X will contribute to meeting this requirement. See Paragraphs 12.1 and 12.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Enviroseal™ ProctorWrap™ HT-X meets this requirement and will not present a health hazard to people.

- 3.2 This is an Appraisal of an **Alternative Solution** in terms of the New Zealand Building Code compliance.

Technical Specification

- 4.1 Enviroseal™ ProctorWrap™ HT-X is a synthetic building underlay for use under roof claddings. The product consists of a water resistant film laminated between two layers of spun bonded polyolefin, with an integrated reinforcement scrim. Enviroseal™ ProctorWrap™ HT-X is coloured white on the top and bottom faces.
- 4.2 Enviroseal™ ProctorWrap™ HT-X is supplied in rolls 1.50 m wide x 34 m long. The product is printed with the Enviroseal™ ProctorWrap™ HT-X name repeated along the length of the roll. The rolls are wrapped in clear polythene film.
- 4.3 Enviroseal™ ProctorWrap™ HighTack Tape is used where required to seal the laps of Enviroseal™ ProctorWrap™ HT-X and to repair rips and tears in the underlay.

Accessories

- 4.4 Accessories used with Enviroseal™ ProctorWrap™ HT-X which are supplied by the installer are:
 - **Fixings** - stainless steel staples 6-8 mm long, 20 mm long large-head clouts, screws, proprietary underlay fixings, or other temporary fixings to attach the roof underlay to the framing.
 - **Roof underlay support** - polypropylene strap, or minimum 0.9 mm diameter galvanised steel wire mesh to support the underlay [where required]. *[Note: The mesh must be galvanised in accordance with AS/NZS 4534.]*

Handling and Storage

- 5.1 Handling and storage of the product, whether on or off site, is under the control of the installer. The rolls must be protected from damage and weather. They must be stored on their side or upright, 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 Enviroseal™ ProctorWrap™ HT-X. 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

Timber and Steel Framing

- 7.1 Timber and steel roof framing must be provided in accordance with the requirements of the NZBC and the roof cladding manufacturer.

General

- 7.2 Enviroseal™ ProctorWrap™ HT-X is intended for use as an alternative to conventional kraft paper roof underlays, which are fixed over timber or steel framed roofs in order to limit the entry of wind into the roof cavity, and to assist in the moisture management of the roof cladding system.
- 7.3 The material also provides a degree of temporary weather protection during early construction. However, the product will not make the roof weathertight and some wetting of the underlying structure is always possible before the roof cladding is installed. Hence, the entire building must be closed-in and made weatherproof before moisture sensitive materials such as ceiling linings and insulation materials are installed.
- 7.4 Enviroseal™ ProctorWrap™ HT-X must not be exposed to the weather or ultra violet light for a total of more than 7 days before being covered by the roof cladding.
- 7.5 Enviroseal™ ProctorWrap™ HT-X is suitable for use under roof claddings on buildings as a roof underlay as called up in NZBC Acceptable Solution E2/AS1, Table 23. Refer to Table 1 for the material properties of the Enviroseal™ ProctorWrap™ HT-X.

Table 1: NZBC E2/AS1, Table 23 (NZS 2295) Requirements

NZBC E2/AS1, Table 23 (NZS 2295) Roof Underlay Properties	Property Performance Requirement	Results
Absorbency	≥ 150 g/m ²	Pass
Vapour Resistance	≤ 7 MN s/g	Pass
Water Resistance	≥ 100 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 > 300 N Cross direction > 260 N Tensile strength [Average]: Machine direction > 6.6 kN/m Cross direction > 5.6 kN/m

Roof Pitches

- 7.6 Enviroseal™ ProctorWrap™ HT-X Roof Underlay is suitable for use in residential and commercial roofs with roof pitches of minimum 3°. The product must not span unsupported more than 1200 mm in one direction. Spans greater than 1200 mm require additional support such as galvanised wire mesh or safety mesh.
- 7.7 At roof pitches of 8° or more, Enviroseal™ ProctorWrap™ HT-X Roof Underlay may be run horizontally or vertically.
- 7.8 At roof pitches less than 8°, Enviroseal™ ProctorWrap™ HT-X Roof Underlay may be run horizontally, or vertically if installed over a roof underlay support.
- 7.9 See Table 2 for a summary of the roof underlay support requirements.

Table 2: Roof Underlay Support Requirements

Roof Pitch	Span	Roof Underlay Support Required?	
		Horizontally Installed	Vertically Installed
8° or more	Greater than 1200 mm	Yes	Yes
	1200 mm or less	No	No
Less than 8° [min 3°]	Greater than 1200 mm	Yes	Yes
	1200 mm or less	No	Yes

Structure

- 8.1 Enviroseal™ ProctorWrap™ HT-X is suitable for use in all Wind Zones of NZS 3604 up to, and including Extra High.

Durability

- 9.1 Enviroseal™ ProctorWrap™ HT-X meets code compliance with NZBC Clause B2.3.1 [a], not less than 50 years for roof underlays used where the roof cladding durability requirement or expected serviceable life is not less than 50 years, e.g. behind masonry roof tile cladding, and code compliance with NZBC Clause B2.3.1 [b], 15 years for roof underlays used where the roof cladding durability requirement is 15 years.

Serviceable Life

- 9.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 7 days, and provided the roof cladding is maintained in accordance with the cladding manufacturer's instructions and the roof cladding remains weather resistant, Enviroseal™ ProctorWrap™ HT-X is expected to have a serviceable life equal to that of the roof cladding.

Control of Internal Fire and Smoke Spread

- 10.1 Enviroseal™ ProctorWrap™ HT-X has an AS 1530 Part 2 Flammability Index of not greater than 5 and therefore meets the requirements of NZBC Acceptable Solutions C/AS2 to C/AS6, Paragraph 4.17.8 b), for the surface finish requirements of suspended flexible fabric used as an underlay to exterior cladding that is exposed to view in occupied spaces. It may therefore be used with no restrictions in all buildings.

Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Enviroseal™ ProctorWrap™ HT-X from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 to C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 12.1 Enviroseal™ ProctorWrap™ HT-X must only be used under roof claddings that meet the requirements of the NZBC, such as those covered by NZBC Acceptable Solution E2/AS1, or roof claddings covered by a valid BRANZ Appraisal.
- 12.2 Enviroseal™ ProctorWrap™ HT-X, when installed in accordance with the Technical Literature and this Appraisal, will assist in the total cladding system's compliance with NZBC Clause E2.

Installation Information

Installation Skill Level Requirements

- 13.1 Installation must always be carried out by or under the supervision of a Licensed Building Practitioner with the relevant License Class in accordance with the Enviroseal™ ProctorWrap™ HT-X Technical Literature and this Appraisal.

Underlay Installation

- 14.1 Enviroseal™ ProctorWrap™ HT-X must be fixed at maximum 300 mm centres to all framing members with large-head clouts 20 mm long, 6 - 8 mm stainless steel staples, self-drilling screws or proprietary underlay fixings. The membrane must be pulled taut over the framing before fixing.
- 14.2 Enviroseal™ ProctorWrap™ HT-X Roof Underlay may be run horizontally or vertically. Refer to Table 2 for a summary of roof underlay support requirements. The roof underlay must extend from the ridge and overhang the fascia board by 20-25 mm.
- 14.3 Vertical laps must be no less than 150 mm wide. Horizontal laps must also be no less than 150 mm, with the direction of the lap ensuring that water is shed to the outer face of the underlay. End laps must be made over framing and be no less than 150 mm wide. To assist with achieving the correct lap dimension, Enviroseal™ ProctorWrap™ HT-X Roof Underlay has a 150 mm lap line printed continuously along the top face.
- 14.4 When fixing the product in windy conditions, care must be taken due to the large sail area created.
- 14.5 Any damaged areas of Enviroseal™ ProctorWrap™ HT-X, 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 with Enviroseal™ ProctorWrap™ HighTack Tape. Small tears and holes may also be repaired with Enviroseal™ ProctorWrap™ HighTack Tape.

Inspections

- 14.6 The Technical Literature must be referred to during the inspection of Enviroseal™ ProctorWrap™ HT-X installations.

Basis of Appraisal

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

Tests

- 15.1 The following tests have been carried out on Enviroseal™ ProctorWrap™ HT-X 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 and pH of extract in accordance with AS/NZS 1301.421s. A range of these tests were completed before and after Enviroseal™ ProctorWrap™ HT-X was exposed to ultra-violet light.
- 15.2 The Flammability Index of Enviroseal™ ProctorWrap™ HT-X has been evaluated in accordance with AS 1530.2.

Other Investigations

- 16.1 A durability opinion has been given by BRANZ technical experts.
- 16.2 An evaluation of the expected performance of Enviroseal™ ProctorWrap™ HT-X in direct contact with metal roof cladding has been completed by BRANZ.
- 16.3 The moisture management properties of the underlay have been evaluated by BRANZ in accordance with the no-drip test method detailed in BRANZ Study Report SR228.
- 16.4 The practicability of installation of Enviroseal™ ProctorWrap™ HT-X has been assessed by BRANZ and found to be satisfactory.
- 16.5 The Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

- 17.1 The manufacture of Enviroseal™ ProctorWrap 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 covering quality aspects associated with the product. BRANZ also undertakes an ongoing review of product quality on an inwards goods basis.
- 17.2 The quality of supply to the market is the responsibility of Proctor Group Australia Pty Ltd.
- 17.3 Building designers are responsible for the design of the building, and for the incorporation of the roof underlay into their design in accordance with the instructions of CSR Bradford Insulation.
- 17.4 Quality of installation is the responsibility of the installer in accordance with the instructions of CSR Bradford Insulation.



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.
- AS/NZS 4534: 2006 Zinc and zinc/aluminium-alloy coatings on steel wire.
- BRANZ, Study Report SR 228 [2010] Study of the Moisture Management Properties of Roof Underlays.
- NZS 3604: 2011 Timber-framed Buildings.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005 [Amendment 6, 14 February 2014].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No.1, dated 04 May 2016

This Appraisal has been amended to update the condensation control measures as a result of a change in the product specification. The BRANZ logo No. 901 [2015] is printed on the updated product itself. The original product does not bear this logo.

The Appraisal has also been amended to update the colour of Enviroseal™ ProctorWrap™ HT-X from grey to white.



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18 September 2015

ENVIROSEAL™
PROCTORWRAP™ HT-X ROOF
UNDERLAY



In the opinion of BRANZ, **Enviroseal™ Proctorwrap™ HT-X Roof Underlay** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Proctor Group 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. **Proctor Group 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 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 **Proctor Group 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 **Proctor Group Australia Pty Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

18 September 2015