



BRANZ Appraised
Appraisal No. 1069 [2020]

**VSHIELD™ ROOF
UNDERLAYMENT**

Appraisal No. 1069 [2020]



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



VEER Plastics Private Limited

104 Sardar Patel Colony,
Stadium Road,
Ahmedabad,
Gujarat
380014
India
Tel: +91 79 2768 1159
Email: inquiries@veerplastics.com
Web: www.veerplastics.com



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 VShield™ Roof Underlayments are a range of synthetic building underlays for use under asphalt shingle roof cladding. The underlays consist of a woven base scrim, a non-woven scrim on the exposed side and an anti-slip coating on the sheathing side.

Scope

- 2.1 VShield™ Roof underlayment has been appraised for use as roof underlays 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 asphalt shingle roof cladding; and,
 - situated in NZS 3604 Wind Zones up to, and including Extra High.

Building Regulations

- 3.1 In the opinion of BRANZ, VShield™ Roof Underlayment if 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 [b], 15 years and B2.3.2 VShield™ Roof Underlayment meets these requirements. See paragraph 9.1 and 9.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the roof cladding system, VShield™ Roof Underlayment will contribute to meeting this requirement. See Paragraphs 11.1 and 11.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. VShield™ Roof Underlayment meets this requirement and will not present a health hazard to people



Technical Specification

- 4.1 VShield™ Roof underlayments are a range of synthetic building underlays for use under asphalt shingle roof cladding. The underlays consist of a woven base scrim, a non woven based scrim on the exposed side and an anti-slip coating on the sheathing side. A4, B4, C4 and D4 Synthetic Roofing Underlays are an alternative to the ASTM D226, Type I and II roof underlayments specified in Chapter 15 of the International Building Code and Chapter 9 of the International Residential Code.
- VShield™ A4 is 180 gsm and coloured grey on the exposed side and black on the sheathing side.
 - VShield™ B4 is 125 gsm and coloured green on the exposed side and black on the sheathing side.
 - VShield™ C4 is 100 gsm and coloured black on both sides.
 - VShield™ D4 is 85 gsm and coloured black on both sides.
 - VShield™ Roof underlayments are also provided in custom colours on the exposed and sheathing sides.

Accessories

- 4.2 Accessories used with the VShield™ Roofing Underlayment, which are supplied by the installer are:
- **Fixings**- Stainless steel staples, clouts, screws or proprietary underlay fixings, or other temporary fixings to attach the roof underlay to the sheathing.
 - **Plywood sheathing** - Minimum 15 mm thick, grade DD or better plywood complying with AS/NZS 2269. Minimum treatment requirements are: untreated plywood for ventilated truss roof cavities above 10° and H3 treated plywood for all closed cavity roofs, skillion roofs and roofs 10° and below. H3 treated plywood must also be used where the plywood edge is unprotected at the eaves. Concealed plywood edges at the eaves do not need to be treated. [Note: using plywood sheathing as structural bracing should be avoided as there may be additional requirements].

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 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 VShield™ Roofing Underlay. 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 roofing cladding manufacturer.

Substrate

- 7.2 Where LOSP treated plywood is used, the solvents must be allowed to evaporate off for at least one week before installation of the shingle underlayment.
- 7.3 Rafters or trusses must be at a maximum 900 mm centres for 15 and 17 mm plywood. [note: plywood manufacturer's Technical Literature must be referred to for confirmation of minimum plywood thickness and grades relative to roof pitch and framing centres.]
- 7.4 The plywood face grain must be laid at right angles to supports. The sheets must be laid with staggered joints in a brick bond pattern.
- 7.5 Tongue and groove plywood edges must be butt-jointed with no gaps between the sheet edges. Square plywood edges must have a 2 - 3 mm gap between the sheet edges.

General

- 7.6 VShield™ Roofing Underlayment is intended for use as an alternative to conventional kraft paper roof underlays in order to assist in the moisture management of the roof cladding system.
- 7.7 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.
- 7.8 VShield™ Roofing Underlayment is suitable for use under asphalt shingles. Refer to Table 1 for the material property of VShield™ Roofing Underlayment tested.

Table 1: NZBC /AS1 Table 23

NZBC E2/AS1 Table 23 Roof Underlay Properties	Property Performance Requirement	Results
Water Resistance	≥ 100 mm	PASS

- 7.9 VShield™ Roofing Underlayment is suitable for use in residential and commercial roofs with in the scope of this Appraisal under asphalt shingles. The product must be laid over a plywood substrate.

Structure

- 8.1 VShield™ Roofing Underlayment is suitable for use in all Wind Zones of NZS3604 up to, and including, Extra High.

Durability

- 9.1 VShield™ Roofing Underlayment meets code compliance with NZBC Clause B2.3.1 [b], 15 years 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, VShield™ Roofing Underlayment is expected to have a serviceable life equal to that of the roof cladding.

Prevention of Fire Occurring

- 10.1 Separation or protection must be provided to the VShield™ Roofing Underlayment from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Acceptable Solution C/AS2 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 11.1 VShield™ Roofing Underlayment must be used under asphalt roof shingles over a plywood substrate complying with E2/AS1.
- 11.2 VShield™ Roofing Underlayment, 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

12.1 All design and building work must be carried out in accordance with the VShield™ Roofing Underlayment Technical Literature and this Appraisal by competent and experienced tradespersons conversant with roofing underlay systems. 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 License class.

Substrate Installation

- 12.2 Plywood and framing must have a maximum moisture content of 18% at the time of installation of the roofing shingles.
- 12.3 The plywood must be designed and installed in accordance with the plywood manufacturer's instructions.

inspections

12.4 The Technical Literature must be referred to during the inspection of the VShield™ Roofing Underlayment installations.

Basis of Appraisal

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

Tests

13.1 The following tests have been carried out on VShield™ Roofing Underlayment in accordance with the NZBC Acceptable Solution E2/AS1, Table 23 Resistance to water penetration following AS/NZS 4201.4.

Other Investigations

- 14.1 A durability opinion has been given by BRANZ technical experts.
- 14.2 The practicability of installation of VShield™ Roofing Underlayment has been assessed by BRANZ and found to be satisfactory.
- 14.3 The technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

- 15.1 The manufacture of VShield™ Roof Underlayment 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.
- 15.2 The quality of supply to the market is the responsibility of VEER Plastics Private Limited.
- 15.3 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 VEER Plastics Private Limited.
- 15.4 Quality of installation is the responsibility of the installer in accordance with the instructions of VEER Plastics Private Limited



Sources of Information

- AS/NZS 4201.4 1994 Pliable building membranes and underlays- Methods of test - Resistance to water penetration
- NZS 2295: 2006 Pliable, permeable building underlays. Amendment 1.
- NZS 2295: 2006
- NZS3604:2011
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992



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In the opinion of BRANZ, **VShield™ Roof Underlayment** 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 **VEER Plastics Private Limited**, 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. **VEER Plastics Private Limited:**
 - 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 **VEER Plastics Private Limited**.
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 **VEER Plastics Private Limited**, or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

10 February 2020