

Viking Enviroclad (TPO) Waterproofing Membrane



BRANZ Appraised
Appraisal No. 656 [2020]
VIKING ENVIROCLAD
ROOFING AND DECK
MEMBRANE

Product Description

Enviroclad complies with E2 as an Alternative Solution, supported by CodeMark certification and BRANZ appraisal. Enviroclad is a single ply, polyester fabric reinforced, thermoplastic polyolefin (TPO) waterproofing sheet membrane for flat or pitched roofs and decks. It can be applied as a fully bonded or mechanically fixed system. It contains no liquid plasticizers and does not contain chlorine nor chlorine-containing ingredients. Enviroclad TPO membrane, reinforced and non-reinforced, is 100 percent recyclable during the production process, resulting in 100 percent reuse of recycled product during manufacture.

Enviroclad offers NZs widest range of colour options to suit the building owner's tastes, the architect's specification or the local council's covenants.

Enviroclad is suitable for collection of Potable water, provides High UV resistance and Heat-welded, strong vulcanised seams for maximum durability and water-tightness. Possessing high puncture resistance (from the polyester mesh scrim) and elongation properties that forgive building movement. Savings in power and construction costs can be made by incorporating Enviroclad with a Viking WarmRoof or WarmSpan solution. Refer Masterspec further in PTS.

Enviroclad rolls are wider and longer (up-to 3.660m wide x 30.4m long = 109 m²) than traditional membranes (of 10m² - 25m²), meaning fewer seams on the finished roof. Enviroclad Weldable Walkway-Roll is available which offers further protection and durability to the roof surface, This Grip-tread TPO Walkway Roll is welded directly over the Enviroclad for safe traffic access when the roof or plant is being inspected or serviced or for clear escape routes from the building. There are many useful proprietary accessories for Enviroclad that ensures NZs most complete water-tight roof system.

Enviroclad can be used for both commercial and residential buildings. It can be applied over an existing surface as a re-roof solution use Enviroclad FBS (Fleece-Backed System) or [RhinoBond technology](#). It is also suitable for low-slope and pitched roofs, internal gutters and parapets, balconies / decks and roof gardens. Enviroclad has no limitations within New Zealand where it can be specified and used. It may be specified in all Climate Zones as defined in NZBC H1/AS1 and all Exposure Zones as defined in NZS3604. Viking Roofspec advise that all membranes (other than Dec-K-ing) also incorporate a traffic floating deck surface on pedestals. LINK: [Refer Viking Buzon Screwjack Pedestals](#).

Roll length: 30.4m x widths of 3.660mt and 3.050mt (3mt width sold cut to length). Enviroclad is manufactured by Carlisle-Syntec Inc. in the US and has many environmental benefits. For a full list of these benefits, see the 'Environmental' section of this statement.

Warranties:

Enviroclad is backed by Vikings 20-year product warranty with Certificate of Workmanship provided by Viking Approved Applicator companies.

Specific projects may be eligible for [Viking's Full System Warranty](#) (FSW), which must be applied for directly with Viking Roofspec and is a process that warrants the full installation of product and workmanship in one document, conditions apply.

Viking Roofspec only supply Viking Enviroclad to our Approved Applicator network of Viking Licensed Installers.

FSW: Only Approved Applicator Companies with Installers licensed to Level 2 of Viking training may install for Viking Full System Warranty projects.

Viking licensing / training:

Viking Roofspec provides training and Viking licensing as recognition of the Viking Approved Applicator network. Viking Roofspec invest heavily in this area and Viking Licensing is recognised at 3 levels.

- Level 1 - all installers of Viking Enviroclad are to complete Viking Stage 1 training at a Viking Roofspec facility.
- Level 2 - licensed installers have had onsite assessments by Viking Roofspec to prove high competency of unsupervised correct installation and detailing to Viking Roofspec specification.
- Level 3 - includes installer having either an LBP or NZ Certificate in membrane roofing.

Viking Enviroclad provides:

- 6.5kPa (ULS) Wind uplift resistance – fully adhered system
- 2.7kPa (ULS) Wind uplift resistance with standard fixing pattern for mechanical fasteners (increased kPa Wind uplift can be provided for specific request)
- Potability: Enviroclad fully complies with test requirements of AS/NZS4020:2005
- Can be incorporated with Viking WarmRoof / WarmSpan Insulated Roof Systems. Refer Masterspec.
- Enviroclad has NZ's widest range of colours and proprietary accessories
- 20 Yr Viking Product Warranty or [Viking 20 yr Full System Warranty \(conditions apply\)](#)

Enviroclad Colours with Light Reflectance Values, (L.R.V) and Solar Reflectance Index (SRI) are as follows: *Contact us directly if you require samples*

LRV%	SRI%	initial	(3 yr aged)
- White: 87.63%	- White: 99%	99%	(85%)
- Grey: 32.7%	- Grey: 53%	53%	(48%)
- Patina Green: 23.93%			
- Rock Brown: 21.07%			
- Slate Grey: 20.16%			
- Medium Bronze: 11.6%			

(Note: L.R.V is a Numeric value for the amount of visible light reflected by a surface. Whereas SRI is the measure of the roofs ability to reflect solar heat)

Scope of Use:

Viking Enviroclad Roofing and Deck Membrane System has been assessed as a roof and deck waterproofing membrane on buildings within the following scope:

- The scope limitations of NZS 3604:2011 and NZBC Acceptable Solution E2/AS1, Paragraph 1.1; or,
- The scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area when subject to specific structural design; and,
- Situated in NZS 3604:2011 Wind Zones, up to, and including Extra High; and,

- With substrates of plywood, suspended concrete slab or PIR Polyiso Insulation

Scope of Use: continued

Viking Enviroclad Roofing and Deck Membrane System has also been assessed for use as a roof and deck waterproofing membrane on specifically designed buildings within the following scope;

- Subject to specific structural and weathertightness design situated in wind pressures up to a maximum design differential ultimate limit state (ULS) of 6.5kPa; and,
- With substrates of plywood or suspended concrete slab.
- With the weathertightness design of junctions for each specific structure being the responsibility of the building designer.

New Zealand Building Code (NZCB):

The product will, if employed in accordance with the supplier's installation and maintenance requirements, assist with meeting the following provisions of the building code:

- Clause B1 Structure: Performance B1.3.1, B1.3.2, B1.3.3, B1.3.3(a), B1.3.3(c), B1.3.3(e), B1.3.3(h), B1.3.3(m), B1.3.3(p), B1.3.4, B1.3.4 (b), B1.3.4(c), B1.3.4(d), B1.3.4(e)
- Clause B2 Durability: Performance B2.3.1, B2.3.1(b), B2.3.2, B2.3.2 (a)
- Clause E2 External moisture: Performance E2.3.1, E2.3.2, E2.3.7, E2.3.7(b), E2.3.7(c)
- Clause F2 Hazardous building materials: Performance F2.3.1 Notes

Evidence

The product meets the requirements set out in the following documents, or relevant parts of cited standards within the documents:

Please refer to the CodeMark certificate attached for all evidence of compliance.

Supporting Evidence

The product has and can make available, the following additional evidence to support the above statements:

- Codemark Certificate GM-CM30058
- Branz Appraisal No. 656

Product Criteria

Design Requirements

Product specification and incorporation of Viking Enviroclad into the building design shall be carried out by a designer/ architect/engineer or a building professional who:

- Is qualified to design the buildings covered under the 'Scope' of use of this product.
- Has ready access to the technical specifications including installation details and standards referenced in both the BRANZ Appraisal No.656 and CodeMark certificate GM-CM30058 where the design limitations are outlined for the scope of this PTS.

Enviroclad is supplied as a complete system with proprietary heat weldable accessories to deal with roof penetrations including internal and external corners and pourable pockets. [Click here for a comprehensive list of accessories.](#)

Installation Requirements

- Installation shall be carried out by a Viking Roofspec trained and licensed installer.
- Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the BRANZ Appraisal No. 656 and the Viking Roofspec Enviroclad Applicator Handbook.
- Builder must refer to the Substrate Checklist: Concrete or Substrate Checklist: Plywood. For a full list of installation requirements, please refer to the CodeMark certificate GM-CM30058.

Maintenance Requirements

- Maintenance requirements for Enviroclad are outlined in Viking's 'Membrane Care and Maintenance Guide'.
- In the event of damage to the membrane, the membrane must be repaired by an approved applicator only who can remove the damaged portion and heat weld a patch as for new work.
- Drainage outlets must be cleared and maintained to operate effectively.

Company Product Information

Environmental

Enviroclad is US ENERGY STAR rated and Cool Roof Rating Council certified. In New Zealand, the reduction in energy consumption will contribute points to a building's Green Star rating. Other environmental benefits include:

- Potability: Enviroclad fully complies with test requirements of AS/NZS4020:2005
- Ability to be installed over existing membranes means no dumping of old product into local landfill.
- Minimise waste due to 3mt wide Enviroclad able to be supplied cut-to-length.
- 100 percent recyclable during the production process, resulting in 100 percent reuse of recycled product during manufacture.
- No liquid plasticizers and does not contain chlorine nor chlorine-containing ingredients
- Solar reflectivity = lower energy usage for cooling buildings (aged White Enviroclad offers 85% solar reflectivity).
- Heat weldability (just hot air) means no oil-based tapes and primers.
- Can be installed using mechanical fastenings which negates the need for adhesive if desired, or
- Full adhesion with Low-VOC CAV-GRIPIII, methylene chloride-free formula.

Supporting Documents to this PTS to include for consent

masterspec

Visit nextgen or masterspec for the online version of our specification.

4422VE VIKING ENVIROCLAD

4422VS VIKING WARMSPAN *where Enviroclad can also be selected*
4422VW VIKING WARMROOF *where Enviroclad can also be selected*

CAD Details

Please visit our website www.vikingroofspec.co.nz or our masterspec listing for our latest CAD Roofing details.

Physical Properties

Physical Properties	Test Method	Property of Unaged Sheet	Property after ASTM D573 aging 128 days @ 240°F
Tolerance on nominal thickness, %	ASTM D751	± 10	
Thickness over scrim, in. (mm) - 45-mil - 60-mil	ASTM D6878 Optical Method (avg. of 3 areas)	typical 0.018 (0.457) ± 10% 0.024 (0.610) ± 10%	Criterion – no visible cracks after bending aged test specimen around 3"-diameter mandrel
Breaking strength, lbf (kN)	ASTM D751 Grab Method	225 (1.0) min. 45-mil 320 (1.4) typical 45-mil 250 (1.1) min. 60-mil 360 (1.6) typical 60-mil	225 (1.0) min.45-mil 320 (1.4) typical 45-mil 250 (1.1) min. 60-mil 360 (1.6) typical 60-mil
Elongation at break of fabric, %	ASTM D751	25 typical	25 typical
Tearing strength, lbf (N) 8" by 8" in. specimen	ASTM D751 B Tongue Tear	55 (245) min. 130 (578) typical	55 (245) min. 130 (578) typical
Brittleness point, °F (°C)	ASTM D2137	-40 (-40) max. -50 (-46) typical.	
Linear Dimensional Change (shrinkage), % -After 6 hours at 158°F (70°C)	ASTM D1204	+/-0.5 max. - 0.2 typical	
Ozone resistance, 100 pphm, 168 hours	ASTM D1149	No cracks	No cracks
Resistance to water absorption -After 166 hrs immersion 158 °F (70 °C) -Change in mass, %	ASTM D471 (top surface only)	4.0 max. 2.0 typical ± 3.0 max	
Resistance to microbial surface growth, -rating (1 is very poor, 10 is no growth)	ASTM D3274 2 yr S. Florida	9-10 typical	
Field seam strength, lbf/in. (kN/m) -Seam tested in peel	ASTM D1876	25 (4.4) min. 60 (10.5) typical	
Water vapor permeance, Perms	ASTM E96	0.10 max. 0.05 typical	
Puncture resistance, lbf (kN) (see supplemental section for additional puncture data)	FTM 101C	250 (1.1) min. 45-mil 325 (1.4) typical 45-mil 300 (1.3) min. 60-mil 350 (1.6) typical 60-mil	
Resistance to xenon-arc weathering 2 Requirement 10,080 kJ/m ² at 340nm -Xenon-Arc, 17640 kJm ² total radiant exposure, visual condition at 10x	ASTM D6878 ASTM G155 0.70 W/m ² 80 °C B.P.T	No cracks No loss of breaking or tearing strength	
Maximum sustained temperature		not to exceed 70°C	

1. Aging conditions are 28 days at 240 °F (116 °C) equivalent to 400 days at 176 °F (80 °C) for breaking strength, elongation, tearing strength, ozone and puncture resistance.
2. Approximately equivalent to 14,000 hours exposure at 0.35 W/m² irradiance B.P.T. is black panel temperature.

CERTIFICATE OF CONFORMITY

This product Certificate is issued under Section 269 of the Building Act 2004 for:

Viking Enviroclad Roofing and Deck Membranes System



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Product Description

Viking Enviroclad Roofing and Deck Membrane System is a single ply, polyester fabric reinforced, thermoplastic polyolefin (TPO) waterproofing sheet membrane for flat or pitched roofs and decks. It can be applied as a fully bonded or mechanically fixed system. Some Membranes are supplied with an APEEL™ protective film. The film which provides protection during construction is to be removed within 90 days of installation. The main membrane components are:

STP100	Enviroclad TPO white 1.14mm x 3.0m x 30.4m	STP500	Enviroclad TPO white 1.52mm x 3.0m x 30.4m
STP110	Enviroclad TPO grey 1.14mm x 3.0m x 30.4m	STP110A	Enviroclad Apeel TPO grey 1.14mm x 3.0m x 30.4m
STP510	Enviroclad TPO grey 1.52mm x 3.0m x 30.4m	STP510A	Enviroclad Apeel TPO grey 1.52mm x 3.0m x 30.4m
STP113	Enviroclad TPO grey 1.14mm x 3.66m wide	STP513	Enviroclad TPO grey 1.52mm x 3.66m wide
STP000	Enviroclad adhesive 19L		

Viking Enviroclad Roofing and Deck Membrane System must be installed using Viking Roofspec ancillary components as described in the Viking Roofspec Applicator Handbook V1.3 (30/05/2016) referenced as the Handbook.

Product purpose and use

1- Viking Enviroclad Roofing and Deck Membrane System has been assessed as a roof and deck waterproofing membrane on buildings within the following scope:

- the scope limitations of NZS 3604:2011 and NZBC Acceptable Solution E2/AS1, Paragraph 1.1; or,
- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area when subject to specific structural design; and,
- situated in NZS 3604:2011 Wind Zones, up to, and including Extra High; and,
- with substrates of plywood or suspended concrete slab.

2- Viking Enviroclad Roofing and Deck Membrane System has also been assessed for use as a roof and deck waterproofing membrane on specifically designed or existing buildings within the following scope:

- subject to specific structural and weathertightness design situated in wind pressures up to a maximum design differential ultimate limit state (ULS) of 6.5 kPa; and,
- with substrates of plywood or suspended concrete slab.
- with the weathertightness design of junctions for each specific structure being the responsibility of the building designer.

Certificate holder

Viking Roofspec, A Division of Viking Group Ltd, 80 Alexander Crescent, Otara, Manukau City 2023, New Zealand
 Free phone: 0800 729 799, Free fax: 0800 729 788, Email: info@vikingroofspec.co.nz
 Web: www.vikingroofspec.co.nz

CodeMark Certification Body		28/03/2018	06/08/2018	28/03/2021	GM-CM30058-RevD
Global-Mark Pty Ltd, Suite 4.07, 32 Delhi Road, North Ryde NSW 2113, Australia Tel: +61 (0)2 9886 0222	Herve Michoux Managing Director	Date of issue	Last update	Date of next re-certification	Certificate Number

The purpose of construction site audits is to confirm the practicability of installing the product; and to confirm the appropriateness and accuracy of installation instructions. In issuing this certificate, Global-Mark has relied on the independent expert and/or laboratory advise or reports. This certificate is issued by Global-Mark Pty Limited, an independent certification body accredited by the product certification accreditation body (JAS-ANZ) appointed by the Chief Executive of the Ministry of Business Innovation and Employment under the Building Act 2004. The Ministry of Business Innovation and Employment does not in any way warrant, guarantee, or represent that the building method or product the subject of this certificate conforms with the New Zealand Building Code, nor accept any liability arising out of the use of the building method or product. The Ministry of Business Innovation and Employment disclaims, to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages, and costs arising as a result of the use of the building method(s) or product(s) referred to in this certificate. This Certificate may only be reproduced in its entirety.

It is advised to check that this Certificate of Conformity is currently valid and not withdrawn, suspended or superseded by a later issue by referring to the Ministry of Business Innovation and Employment website, <http://www.mbie.govt.nz/>

New Zealand Building Code (NZBC) references the Building Code in force at the time of issuing the product certificate.

Certificate holder will notify Global-Mark Pty Ltd in accordance with Regulation 15 of the Building (Product Certification) Regulations 2008

CERTIFICATE OF CONFORMITY

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Viking Enviroclad Roofing and Deck Membranes System



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Compliance with the New Zealand Building Code (NZBC):

Viking Enviroclad Roofing and Deck Membrane System if designed, used, installed and maintained in accordance with the scope of this Certificate, will meet the following provisions of the NZBC:

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4 (b) (c) (d) (e) for the relevant physical conditions of B1.3.3 (a), (c), (h), & (p) Viking Enviroclad Roofing and Deck Membrane System meets these requirements.

Clause B2 DURABILITY: Performance B2.3.1 (b) and B2.3.2 (a), 15 years. Viking Enviroclad Roofing and Deck Membrane System meets these requirements.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1, E2.3.2 and E2.3.7 (b) and (c). Viking Enviroclad Roofing and Deck Membrane System meets these requirements.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Viking Enviroclad Roofing and Deck Membrane System meets this requirement and will not present a health hazard to people.

Water Supplies: Water is not contaminated by Viking Enviroclad Roof and Deck Membrane System which complies with AS/NZS 4020:2005.

Subject to the following conditions and limitations:

1. Maintaining the validity of and compliance with the BRANZ Appraisal No. 656 (2015) Amended 14 November 2017 Viking Enviroclad Roofing and Deck Membrane referenced as the BRANZ Appraisal including inspection and maintenance requirements
2. Comply with Viking Roofspec Membrane Care and Maintenance Guide V1.0
3. The Viking Enviroclad Roofing and Deck Membrane System can only be used with the ancillary components provided by Viking Roofspec listed in the Handbook. Where these components are substituted with alternative products, these applications fall outside the scope of this Certification.
4. For existing buildings, the suitability of the roof or deck needs to be confirmed by a professional meeting the design conditions 1 of this certificate.

Design Conditions:

1. Product specification and incorporation of the Viking Enviroclad Roofing and Deck Membrane System into the building design shall be carried out by a designer / architect / engineer or a building professional who is qualified to design the buildings covered under the 'Scope' of use of this product.
2. The design must be in compliance with the requirements of the BRANZ Appraisal and the Technical Literature Enviroclad Set series 1.10 dated 29/04/2015 Detail EC01 to EC24, which includes but not limited to drainage flanges, outlets, grates or cages, and overflow details. Penetrations and upstands of the membrane must be raised above the level of any possible flooding caused by blockage of roof drainage.
3. The design of details not covered by the Technical Literature is subject to specific weathertightness design. Weathertightness details that are developed by the designer are outside of the scope of this Certificate.
4. The design and construction of the substrate and movement and control joints is specific to each building, and therefore is the responsibility of the building designer and building contractor and is outside the scope of this Certificate. 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.
5. Viking Enviroclad Roofing and Deck Membrane System installed using any of the three installation methods is suitable for use in areas subject to a maximum design differential Ultimate Limit State wind pressure of 2.7 kPa, subject to the limitations of the substrate.
6. Minimum fall requirements are 1 in 30 (2 degrees) for roofs; 1 in 40 (1.5 degrees) for decks and 1 in 100 (0.5 degrees) for gutters. *Note: Where possible BRANZ recommends a minimum 1:60 (1 degree) slope for gutters.*
7. All falls must slope to an outlet and be built into the substrate. Fall can not be created with mortar screeds over the membrane.
8. Separation or protection must be provided to Viking Enviroclad Roofing and Deck Membrane System from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 - C/AS6 and NZBC Verification Method C/MM1 provide methods for separation and protection of combustible materials from heat sources.
9. Viking Enviroclad Roofing and Deck Membrane System is 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.
10. Integral roof gardens, steps within the deck and direct downpipe discharge to the decks level are outside the scope of this Certificate.
11. The membrane must be continually protected from physical damage for trafficable area by pedestal protection system for deck or the use of Enviroclad walkway for roof.
12. Though Viking Enviroclad Roof and Deck Membrane Systems have been shown to comply with AS/NZS 4020:2005, it must be noted that all water collected off roof surfaces made from any material is considered to be non-potable due to possible

CERTIFICATE OF CONFORMITY

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contamination from other sources. Water collection in this way can only be considered potable if it has been passed through a suitable sterilization system. Sterilization systems such as this have not been assessed and are outside the scope of this Certificate.

13. Viking Enviroclad Roof and Deck Membrane Systems installed using the standard method of fully bonded with heat welded seams is suitable for use in areas subject to a maximum design differential Ultimate Limit State wind pressure of 6.5kPa, subject to the limitations of the substrate. Viking Enviroclad Roof and Deck Membrane Systems installed using either of the mechanical fastenings methods, HP-X Fasteners and Piranha Plates or Rhino Bond System is suitable for use in areas subject to maximum design differential Ultimate Limit State wind pressure of 2.7 kPa, subject to the limitations of the substrate.

Product Installation Conditions:

1. Installation shall be carried out by a Viking Roofspec trained and licensed installer.
2. Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the BRANZ Appraisal and the Handbook.
3. Installer must complete the Substrate Checklist: concrete (September 2013) or Substrate Checklist; Plywood (March 2015).
4. Long term properties of the material may be affected by contact with bituminous materials or polystyrene insulation. Viking Roofspec should be contacted for advice in either of these situations.
5. Dry storage must be provided for all products and the rolls of membrane must be lying down on pallets.
6. 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.
7. Concrete substrates can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 515. The relative humidity of the concrete must be 75% or less before membrane application.
8. The moisture content of a timber substructure must be a maximum of 20% and plywood sheet 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.
9. The first 25 mm of rainfall from a newly installed Viking Enviroclad Roof and Deck Membrane System roof must be discarded before water collection starts. This is to remove residues which may have developed in the processes involved in the production of a Viking Enviroclad Roof and Deck Membrane System membrane roof.

End of the record



BRANZ Appraised
Appraisal No. 656 [2020]

VIKING ENVIROCLAD ROOFING AND DECK MEMBRANE

Appraisal No. 656 [2020]

This Appraisal replaces BRANZ
Appraisal No. 656 [2015].



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 Viking Enviroclad is a single ply, polyester fabric reinforced, thermoplastic polyolefin (TPO) waterproofing sheet membrane for flat or pitched roofs and decks. It can be applied as a fully bonded or mechanically fixed system.

Scope

- 2.1 Viking Enviroclad has been appraised as a roof and deck waterproofing membrane on buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; or
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan areas when subject to specific design; and,
 - with building structures designed and constructed to meet the requirements of the NZBC; and,
 - with substrates of plywood or concrete slab; and,
 - with minimum falls for roofs of 1:30 and decks of 1:40; and,
 - with decks that have a maximum area of 40 m²; and,
 - situated in NZS 3604 Wind Zones, up to, and including Extra High.
- 2.2 Viking Enviroclad has also been appraised for use as a roof and deck waterproofing membrane on specifically designed buildings within the following scope:
 - subject to specific structural and weathertightness design; and,
 - with substrates of plywood or concrete slab; and,
 - situated in specific design wind pressures (refer Paragraph 8.1) and,
 - with the weathertightness design of junctions for each specific structure being the responsibility of the building designer.
- 2.3 Roofs and decks waterproofed with Viking Enviroclad 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 membrane continually protected from physical damage by a pedestal protection system or Viking Decoupling System.
- 2.4 The design and construction of the substrate and movement and control joints is specific to each building, and therefore is the responsibility of the building designer and building contractor and is outside the scope of this Appraisal.
- 2.5 The membrane must be installed by Viking Roofs spec Licensed and Trained Installers.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Viking Enviroclad, 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 B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Viking Enviroclad meets these requirements for loads arising from wind [i.e. B1.3.3 (h).] See Paragraph 8.1.

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years. Viking Enviroclad meets this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1, E2.3.2 and E2.3.6. Roofs incorporating Viking Enviroclad meet these requirements. See Paragraphs 13.1 - 13.9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Viking Enviroclad meets this requirement and will not present a health hazard to people.

Technical Specification

4.1 Materials used with the Viking Enviroclad Roofing and Deck Membrane supplied by Viking Roofspec are as follows:

- **Viking Enviroclad** - a light grey 1.14, 1.5 or 2.0 mm polyester fabric reinforced, multilayer, synthetic roof waterproofing sheet based on thermoplastic polyolefin (TPO). It is supplied in rolls 3.0 m wide x 30.4 m long and 3.66 m wide x 30.4 m long.
- **Viking Enviroclad with APEEL™ Protective Film** - as per Viking Enviroclad but with a removable protective film to protect the Enviroclad during construction. Note: APEEL™ Protective film is to be removed within 90 days of installation.
- **HP-X Fasteners** - #15 wire diameter, mini drill point, buttress style thread fasteners for the mechanically fixed Viking Enviroclad.
- **Piranha Plates (washers)** - Galvalume coated plates (washers) with twelve barbs (in two rows of six). They are 60 mm diameter, 0.9 mm thick with upturned edges.
- **Rhino Bond System:**
 - Induction welding tool.
 - 80 mm round specially coated plates.
 - Magnetic heat sink poles.
- **Heat Weldable Walkway** - heat weldable walkway pad with a rough upper surface for traction. It is available in 3 mm thick rolls, 750 mm wide x 15 m long.
- **Sure-Weld Bonding Adhesive** - a high strength, solvent based contact adhesive that is used to bond Viking Enviroclad to various porous or non-porous substrates. It is supplied as a yellow liquid in 5 US Gallon pails.
- **Pipe Seal** - an injection moulded, pre-formed flashing for pipes from 25 to 650 mm diameter. They are approximately 200 mm in height with a stepped configuration with a large base diameter to cover plates used for attaching the membrane.
- **Coated Metal** - a galvanised metal sheet covered with unreinforced Enviroclad membrane. It is used for edge flashing details and is supplied as a sheet 3.1 m long x 1.2 m wide, and then cut to size.
- **Universal Corners** - weldable pre-formed internal and external corners for detailing.
- **CCW-102 Sealant** - a one-part, moisture curing, elastomeric polyurethane sealant. It is used to fill the sealant pockets to waterproof around penetrations. It is supplied as a white paste in cartridges of 10.3 Fl oz each.
- **Sealant Pockets** - pre-fabricated polymer pockets used for placing around penetrations prior to filling with CCW 102 sealant to ensure weathertight detailing.



- **Cut Edge Sealant** - a free flowing polymeric sealant designed to seal cut edges of Viking Enviroclad and therefore seal in any loose reinforcing strands at the cut edge. It is supplied as high solids, gun consistency material or medium solids, free flowing material. It is either white, grey or tan coloured in 8 oz bottles or 11 oz tubes.
- **Viking Decoupling System:**
 - Viking Decoupling Mat.
 - Viking Decoupling Tape.
 - Base Adhesive.

Handling and Storage

- 5.1 Handling and storage of all materials whether on or off site is under the control of the Viking Roofspec Licensed and Trained Installers. Dry storage must be provided for all products and the rolls of membrane must be lying down on pallets.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Viking Enviroclad Roofing and Deck Membrane. 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 Viking Enviroclad Roofing and Deck Membrane can be installed using three different fixing methods, one fully bonded, the other two mechanical. The standard method is fully bonded with heat welded seams. The first mechanical method uses HP-X Fasteners and Piranha Plates fixed through the membrane and then covered by the membrane laps. The second mechanical method, Rhino Bond System, induction welds the membrane to pre-installed washers beneath the membrane.
- 7.2 Viking Enviroclad is for use on roofs, decks, balconies, gutters and parapets where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas.
- 7.3 Viking Enviroclad can be adversely affected by contact with bituminous materials or polystyrene insulation. Viking Roofspec should be contacted for advice in either of these situations.
- 7.4 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membrane. Refer to BRANZ publication "Good Practice Guide to Membrane Roofing".
- 7.5 Timber framing systems must comply with NZS 3604, or where specific engineering design is used, the framing shall be of at least equivalent stiffness to the framing provisions of NZS 3604, or comply with the serviceability criteria of AS/NZS 1170. In all cases framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and that all sheet edges are fully supported.
- 7.6 Roofs where regular foot traffic is expected i.e. for the maintenance of lift equipment, a heat weldable walkway should be used to ensure the membrane is protected. Viking Enviroclad is designed for limited, irregular pedestrian access only.
- 7.7 Decks must always be protected by a pedestal protection system or Viking Decoupling System.
- 7.8 Refer to Viking Roofspec for deck foot traffic protection system specifications.

Structure

- 8.1 Viking Enviroclad installed using the standard method of fully bonded with heat welded seams is suitable for use in areas subject to a maximum design differential Ultimate Limit State wind pressure of 6.5kPa, subject to the limitations of the substrate. Viking Enviroclad installed using either of the mechanical fastenings methods, HP-X Fasteners and Piranha Plates or Rhino Bond System is suitable for use in areas subject to maximum design differential Ultimate Limit State wind pressure of 2.7 kPa, subject to the limitations of the substrate.

Substrates

Plywood

- 9.1 Plywood must be treated to H3 [CCA treated]. LOSP treated plywood must not be used. Plywood must comply with NZBC Acceptable Solution E2/AS1, Paragraphs 8.5.3 and 8.5.5. Where specific design is required [i.e. the building is outside the scope of NZS 3604 and NZBC Acceptable Solution E2/AS1], the plywood thickness and fixing size may increase and centres may decrease to meet specific wind loadings.

Concrete

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

Existing Construction

- 9.3 A thorough inspection of the plywood or concrete substrate must be made to ensure it is in a fit condition and does not contain any materials or contaminants 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 refixed as for new plywood.

Durability

Serviceable Life

- 10.1 Viking Enviroclad installations when subjected to normal conditions of environment and with proper maintenance can expect to have a serviceable life of at least 15 years.

Maintenance

- 11.1 Maintenance requirements of the membrane are provided by Viking Roofspec.
- 11.2 In the event of damage to the membrane, the membrane must be repaired by removing the damaged portion and applying a patch as for new work.
- 11.3 Drainage outlets must be maintained to operate effectively.

Prevention of Fire Occurring

- 12.1 Separation or protection must be provided to Viking Enviroclad from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1, C/AS2 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 13.1 Roofs and decks must be designed and constructed to shed precipitated moisture. They must also be designed and constructed to shed melted snow in snow prone areas. A means of meeting code compliance with NZBC Clause E2.3.1 for buildings within the scope limitations of Paragraph 2.1 is given by the Technical Literature which aligns with details in NZBC Acceptable Solution E2/AS1.
- 13.2 When installed in accordance with this Appraisal and the Technical Literature, Viking Enviroclad will prevent the penetration of water and will therefore meet code compliance with NZBC Clause E2.3.2. The membrane is impervious to water and will give a weathertight roof or deck.



- 13.3 The minimum fall for roofs is 1 in 30, for decks 1 in 40 and for gutters 1 in 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 in 60 is preferred.]*
- 13.4 Viking Enviroclad is 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.
- 13.5 Roof falls must be built into the substrate and not created with mortar screeds over the membrane.
- 13.6 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.
- 13.7 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 or deck does not drain to an external gutter or spouting.
- 13.8 Penetrations and upstands of the membrane must be raised above the level of any possible flooding caused by blockage of roof drainage.
- 13.9 The design of details not covered by the Technical Literature is subject to specific weathertightness design. Weathertightness details that are developed by the designer are outside of the scope of this Appraisal and are the responsibility of the designer for compliance with the NZBC.

Installation Information

Installation Skill Level Requirement

- 14.1 Installation of the membrane must be completed by trained installers, approved by Viking Roofspec.
- 14.2 Installation of substrates must be completed by tradespersons with an understanding of roof and deck construction, in accordance with instructions given within the Viking Roofspec Technical Literature and this Appraisal.

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 Concrete substrates can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 585. The relative humidity of the concrete must be 75% or less before membrane application.
- 15.3 The moisture content of a timber substructure must be a maximum of 20% and 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.

Membrane Installation

- 16.1 The installation of this membrane system is very complex and limited to trained applicators only. The Viking Enviroclad Applicators Manual should be referred to in all instances for the correct procedures.

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 the membrane system is provided in the Technical Literature. The products must be used in conjunction with the relevant Materials Safety Data Sheet.

Basis of Appraisal

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

Tests

- 19.1 Testing has been carried out on the membrane by various organisations for shear/joint strength, adhesion, peel resistance, resistance to ageing, resistance to impact, resistance to frost, resistance to freeze/thaw, resistance to UV, elongation, tensile strength, seam strength, breaking strength, low temperature resistance, static puncture resistance, dynamic puncture resistance and artificial weathering followed by tensile strength, elongation, low temperature flexibility retention, and mechanical fastening. Results and test methods have been reviewed by BRANZ and found to be satisfactory.
- 19.2 Wind face load and fastener pull through testing was completed for the Viking Enviroclad mechanically fastened systems incorporating Piranha Plates and the Rhino Bond System. BRANZ determined design wind suction pressures, and by comparing these pressures with the NZS 3604 design wind speeds and AS/NZS 1170 pressure coefficients, the fixing requirements were determined for plywood and concrete substrates

Other Investigations

- 20.1 A durability opinion has been provided by BRANZ technical experts.
- 20.2 Site inspections have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 20.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

- 21.1 The manufacture of Viking Enviroclad 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 this product.
- 21.2 The quality of supply of the product to the market is the responsibility of Viking Roofspec.
- 21.3 Quality on site is the responsibility of the Viking Roofspec Licensed and Trained Installers.
- 21.4 Designers are responsible for the building and substrate design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of the substrate manufacturer, Viking Roofspec and this Appraisal.
- 21.5 Building owners are responsible for the maintenance of the Viking Enviroclad Roofing and Deck Membrane in accordance with Viking Roofspec's instructions.

Sources of Information

- AS/NZS 2269: 2012 Plywood - Structural.
- AS/NZS 1170: 2002 Structural Design action - general principles.
- BRANZ Good Practice Guide - Membrane Roofing, reprint October 2015.
- BRANZ Bulletin No. 585 Measuring Moisture in Timber and Concrete.
- NZS 3101: 2006 The design of concrete structures.
- 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 Appraised
Appraisal No. 656 [2020]

BRANZ Appraisal
Appraisal No. 656 [2020]
27 May 2020

VIKING ENVIROCLAD ROOFING
AND DECK MEMBRANE



In the opinion of BRANZ, **Viking Enviroclad Roofing and Deck Membrane** 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 **Viking Roofspec**, 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. **Viking Roofspec**:
 - 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 **Viking Roofspec**.
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 **Viking Roofspec** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

27 May 2020

- Ensure concrete substrate has been allowed to fully cure – at least 28 days from pour
- If the concrete is less than 28 days old and a concrete surface sealer has been used or a rapid curing compound, you must identify the product and verify correct curing has taken place prior to laying
- Relative humidity of concrete substrates must be 75% or less before application. (This can be verified with the use of hygrometer). Viking Roofspec recommends the use of two coats of **Viking Surface Sealer** to control moisture within the substrate prior to the waterproofing membrane installation
- Fill hollows or holes with a cement plaster, or FLC
- Surface to be smooth, clean, dry and free of debris or release agents
- Venting installed as required. Contact Viking Roofspec if a venting specification has not been provided
- Use minimum 50mm bond-breaker tapes over expansion joints
- Minimum 20mm triangular fillets required at the base of upstands for Butylclad and Epiclاد. Not required for Enviroclad
- All drains and outlets are membrane compatible. Confirm with Viking Roofspec if required
- Ensure minimum required falls are met. E2/AS1 2011 states **2° for roofs** (1:30 or **34mm/mt**), **1.5° for decks** (1:40 or **25mm/mt**)* and **1:100 (10mm/mt) for internal gutters**
* a minimum of 2° is required in Auckland
- Please ensure you have ordered the correct membrane, colour and thickness for your project

NOTES:

- Cover the substrate to keep it dry, ensuring the waterproofing membrane can be installed when needed. Communicate early with your Viking Approved Applicator on the project scheduling to ensure weather exposure is kept to a minimum. Consider the use of the Viking Surface Sealer for shower protection
- Correct substrate installation is critical to durability and performance of the membrane. Failure to strictly comply with substrate specification may affect product warranty
- All constructions should comply with the New Zealand Building Code. Contact your local council for further advice
- Communication between the Applicator and Construction Company will assist to ensure specification is met
- Information regarding our products, specifications and warranties is available at **www.vikingroofspec.co.nz** If you have a query regarding this substrate specification please call Viking on **0800 729 799**

- Framing supports at 400mm centres (in one direction). All plywood edges must also be supported. **Do not use tongue and groove plywood.** Viking Roofs spec can accept the maximum support spacing provided in Table 15C of CCH Ecoply Specification Guide
- Minimum thickness 17mm, F8, CCA H3.2 treated, structural plywood (not LOSP treated)
- Minimum CD grade with the sanded C face upwards
- Plywood laid with face grain at right angles to supports
- Plywood is to be laid with staggered joints in a brick-bond pattern with a 3mm expansion gap between sheets. 25mm bond-break tape is recommended over ply sheet joints prior to membrane application. **If roof is visual consider using the Viking Dec-K-ing substrate checklist to minimise plywood movement within 50m² areas**
- Plywood screw-fixed with 10g x 50mm S/S counter-sunk screws at 150mm centres at all sheet edges and 200mm centres through the body of the sheet. All screws to be counter sunk 1-2mm
- Chamfer all external edges with a minimum radius of 5mm
- Plywood is to be kept dry at all times during construction. Blow/torch drying the plywood surface prior to membrane application does not comply. Plywood and framing supports to be at no more than **20% moisture content**
- For roofs and roof decks over living spaces, all insulated cavities must be ventilated in accordance with E2/AS1 8.5.2. No cavity ventilation is required for a Viking WarmRoof system that meets or exceeds the minimum R-value requirements of the climate zone
- All outlets and overflows are membrane compatible. Note that TPO membranes cannot be welded to stainless steel scuppers or sumps. Outlets/overflows must have clamped grates
- Ensure compliant falls. E2/AS1 8.5.1. limitations state **2° for roofs (1:30 or 34mm/mt), 1.5° for decks (1:40 or 25mm/mt) and 1:100 (10mm/mt)* for internal gutters**
* a minimum of 2° is required in Auckland
- Please ensure you have ordered the correct membrane, colour and thickness for your project

NOTES:

- Cover the substrate to keep it dry, ensuring the waterproofing membrane can be installed when needed. Communicate early with your Viking Approved Applicator on the project scheduling to ensure weather exposure is kept to a minimum
- Correct substrate installation is critical to durability and performance of the membrane
- Failure to strictly comply with substrate specification may affect product warranty
- All constructions should comply with the New Zealand Building Code. Contact your local council for further advice
- Communication between the Applicator and Construction Company will assist to ensure specification is met
- Information regarding our products, specifications and warranties is available at **www.vikingroofs spec.co.nz** If you have a query regarding this substrate specification please call Viking on **0800 729 799**

STRANDSARKING SUBSTRATE CHECKLIST - ENVIROCLAD, EPICLAD, BUTYLCLAD & WARMROOF

- StrandSarking, 3.600 x .800mt x 16.3mm, square edge H3.1 treated substrate, refer BRANZ Appraisal No. 946
- For use as a roof substrate with a minimum slope of 2°. Can be used for internal gutters with 1:100 falls. Not for use under trafficable decks. Not for use as a diaphragm roof structure
- Framing supports at 400mm centres maximum (in one direction). **All sheet edges must also be supported**
- StrandSarking sheets must be laid continuous over at least two spans (three framing members). When used over a single span, then blocking (nogs) must be used under each unsupported edge
- To be laid with staggered joints in a brick-bond pattern with a 3mm expansion gap between all sheet edges. 5mm minimum clearance must be left between StrandSarking panels and any other elements protruding through the roof such as vent pipes. Greater clearances than this may be required around flues and chimneys
- Screw-fixing requirements, 10g x 50mm S/S counter-sunk screws, to be counter-sunk 1-2mm, no closer than 10mm from the sheet edges. **For screw spacings refer to Table 3 of the StrandSarking BRANZ Appraisal No. 946**
 - 'Very-High and Extra-High' wind-zones **100mm centres** throughout body of sheet, 150mm centres at all sheet edges
 - 'High' wind-zone 150mm centres throughout body of sheet, 150mm centres at all sheet edges
- Chamfer all external edges with a minimum radius of 5mm
- For roofs and roof decks over living spaces, all insulated cavities must be ventilated in accordance with E2/AS1 8.5.2. No cavity ventilation is required for a Viking WarmRoof system that meets or exceeds the minimum R-value requirements of the climate zone
- StrandSarking is to be kept dry at all times during construction.** Blow/torch drying the surface prior to membrane application does not comply. Substrate and framing supports to be at maximum **20% moisture content**
- StrandSarking has a maximum exposure period of eight weeks, before being clad with the roofing membrane. It is recommended for the waterproofing membrane to be installed as soon as the StrandSarking is laid
- All outlets and overflows are membrane compatible. Note that TPO membranes cannot be welded to stainless steel scuppers or sumps. Outlets and overflows must have clamped grates
- Please ensure you have ordered the correct membrane, colour and thickness for your project

NOTES:

- Cover the substrate to keep it dry, ensuring the waterproofing membrane can be installed when needed. Communicate early with your Viking Approved Applicator on the project scheduling to ensure weather exposure is kept to a minimum
- Correct substrate installation is critical to durability and performance of the membrane.
- Failure to strictly comply with substrate specification may affect product warranty
- All constructions should comply with the New Zealand Building Code. Contact your local council for further advice
- Communication between the Applicator and Construction Company will assist to ensure specification is met
- Information regarding our products, specifications and warranties is available at www.vikingroofspec.co.nz If you have a query regarding this substrate specification please call Viking on **0800 729 799**

Correct, regular maintenance of your membrane roof or deck will ensure the best, long-term performance of the Viking Enviroclad system.

GENERAL CARE

Following is a list of maintenance recommendations for the Viking Enviroclad system

- a) **Provide proper drainage.** Keep the roof surface clean of debris - leaves, twigs, paper or accumulated dirt - particularly around drains to avoid clogging. Ponding water on the surface of the membrane increases the risk of moisture ingress at membrane laps, or in the event of a puncture or cut in the membrane
- b) **Avoid membrane exposure to chemicals,** petroleum products and solvents, grease and oils (including kitchen fat)
- c) **Foot traffic.** The Viking Enviroclad membrane should be protected from regular foot traffic. Viking Roofspec recommends installing extra protection in those areas. **For more information please contact Viking Roofspec on 0800 729 799 or email info@vikingroofspec.co.nz**
- d) **Exercise care with tools and equipment.** Where it is necessary for workers to be on the roof to service units, care should be taken when placing doors, lids or sharp objects directly onto the membrane surface. When moving units or equipment, avoid damage by using protective boards over the membrane prior to moving equipment
- e) **Remove debris,** such as glass, bolts, nails, screws, metal shavings etc. and any other material that may cause punctures or cuts to the membrane
- f) **Repairs.** Arrange for immediate repair of any damage using a Viking Approved Applicator. **To find a Viking Approved Applicator visit www.vikingroofspec.co.nz/find-an-applicator/** page

CLEANING

Viking Enviroclad membrane roofs should be cleaned at least annually, using a neutral detergent and water. Caustic or acidic cleaners should be avoided. If the roof is highly exposed to organic debris (leaves and branches), it should be cleaned more regularly. Viking Roofspec recommend using **Viking Weathered Membrane Cleaner** for hard to remove stains.

INSPECTIONS

A regular inspection programme should be established. Viking Enviroclad membrane roof inspections should be conducted at least twice a year after installation. Inspections should include high-risk areas such as hatches, drains and around roof top equipment, as well as a general inspection of the entire membrane area. Where possible, inspections should also include the examination from the underside for evidence of leaks, structural issues or movement and other deficiencies. Parapets, flashings and edging should also be examined for evidence of deterioration or moisture infiltration.

Additionally, Viking Enviroclad membrane inspections should also be conducted:

- a) After severe weather conditions; such as strong winds, hail or continued heavy rain, examine the roof for ponding, debris or damage to other building elements
- b) After repair or replacement of roof top equipment (e.g. satellite dish, air conditioning units etc.), or when the roof is exposed to work where damage may occur.

WARRANTIES

Viking Roofspec Enviroclad membrane system is warranted for 20-years. The Viking Approved Applicator named in the Certificate of Workmanship underwrites the workmanship for installation of an Enviroclad system for ten-years. In the event of an issue, these warranties will cover the cost of labour and materials to correct any problem caused by a fault in workmanship or materials supplied by Viking Roofspec.

In some cases the Viking Enviroclad system may be installed in conjunction with other components not manufactured or supplied by Viking Roofspec, or terminated to building components that may cause or contribute to a leak. Materials not supplied by Viking Roofspec are excluded from the Product Warranty.

LEAKS

In order to retain warranty cover, any material or workmanship failure must be advised to Contractor, Approved Applicator or Viking Roofspec within 14 days of the leak or failure being identified. First contact should be to the Viking Approved Applicator who installed the membrane. If the issue is related to workmanship then the Approved Applicator will make good any fault (within the warranty period stated in the Certificate of Workmanship). If the issue is related to the Product Warranty, the Approved Applicator will communicate this to Viking Roofspec or the building owner can contact Viking Roofspec direct. Viking Roofspec will assign a technical representative to the project to assess the damage and plan the appropriate step to rectification.

For any further information relating to membrane maintenance or information regarding our products, specifications and warranties are available at www.vikingroofspec.co.nz call Viking Roofspec on **0800 729 799**

MEMBRANE POST INSTALLATION CHECKLIST

- Substrate checklist has been completed for the specific membrane type to be installed, with any remedial work finished before the membrane is installed
- All Outlets and Overflows are 'membrane-type-compatible' and have been installed correctly
- Membrane has been installed in the correct sequence, starting from the outlets up-to the highest point of the roof/deck or gutter
- All detailing has been installed as per manufacturer specifications and details
- All laps and details have been correctly inspected as per manufacturer specifications.
Note: Torch-on Gussets must be installed in the Base Sheet layer
- Internal Gutters have been flood-tested up-to the height of the overflow for a minimum period overnight, up-to 24 hours. **Note:** Torch-on membranes must be tested on the first (Base Sheet) layer, before the Cap Sheet is installed
- All accessories used are correct and compatible for the membrane type installed
- Vents have been installed as per specification. **Note:** Cavity ventilation is not required for a WarmRoof system that meets or exceeds the minimum R-value requirements
- Membrane and details are free from damage at the time of inspection.
See comments below if anything found

Date Inspected:			
Inspected By:			
Site Address:			
Areas Inspected:			
Approved Applicator Company:			
Names of Licensed Installers:			
Main Contractor:			
Testing method: <i>tick at least one</i>	Seam-Probed	Flood-tested	ILD
Notes or Comments: <i>Was inspection 100% pass or were repairs needed? Any following actions required?</i>			

Print Name:

Signature:

Viking Roofspec Notes:

Specifications, substrate checklists and applicator handbooks can be found on Viking Roofspec Applicators Only page at www.vikingroofspec.co.nz

All construction must comply with the New Zealand Building Code. Contact your local council for further details

Viking Roofspec

Ph: 0800 729 799

Email: info@vikingroofspec.co.nz

Viking Enviroclad System

Product Warranty



Viking Roofspec offers this Warranty for the Viking Membrane System for 20 years from the Warranty Commencement Date ("Warranty Period").

1. Viking Roofspec warrants that the Membrane System will, subject to the terms set out below, retain its waterproofing and weatherproofing for the Warranty Period provided that the Membrane System has been properly installed by a Viking Approved Applicator in accordance with all Viking Roofspec specifications current at the time of installation, including, but not restricted to the technical data and standard details as listed on the Viking Roofspec Website at www.vikingroofspec.co.nz and training provided by Viking Roofspec ("Viking Specifications").
2. This Warranty covers only materials supplied by Viking Roofspec as the Membrane System, including the membrane, proprietary accessories, primers and adhesives; provided materials were new and unused at the time of installation and have not been disturbed thereafter.
3. Warranty Commencement Date: _____
(Date of completion of Membrane System installation)
4. The Membrane System

Membrane Type: _____
Membrane Thickness: _____
Membrane Colour: _____
5. The Building

Project Address: _____

Area of Application: _____

Installed by: _____
6. This Warranty covers only the waterproofing and weatherproofing properties of the Membrane System. Viking Roofspec will not be liable for any failure of the Membrane System or damage resulting from any failure that has been caused in part or in whole by the Membrane System not being installed in accordance with the Viking Specifications. Viking Roofspec does not give any warranty as to the suitability of any installer and will not, in any circumstances be liable for the actions or omission of any installer. Viking Roofspec requires that all Viking Approved Applicators provide a separate Certificate of Workmanship covering any defects in the installation of the Membrane System.
7. The Membrane System is not warranted against, and Viking Roofspec shall not be liable for loss of waterproofing properties or damage caused by:
 - objects penetrating the sheeting, or mechanical damage;
 - chemical or substance (save those specifically approved for use by Viking Roofspec);
 - shifting or altering of the Membrane System after installation;
 - infiltration or condensation of moisture in, around, or above the walls of the Building or the failure of other Building components;
 - the lack of positive drainage (ponded water);
 - the lack of adequate ventilation;
 - environmental factors including dirt, pollutants and biological agents, fungi, bacteria or spores;
 - accident or intentional or negligent acts, misuse, abuse, vandalism or civil disobedience or the like; or
 - Acts of God which include, but are not limited to, acts of nature without human intervention, such as earthquakes, storms, floods, lightning strikes and explosions.
8. In addition to the above limitations, this Warranty will be void and Viking Roofspec will not be liable under it if;
 - any alteration or repair is made on or through the Membrane System (including, but not limited to: structures, fixtures or utilities) without prior written authorisation from Viking Roofspec;
 - any alteration or repair is made to the Membrane System by a person other than a Viking Approved Applicator;
 - the owner of the Building fails to use reasonable care in maintaining the Membrane System, such maintenance to include (but not be limited to) those items listed in the Membrane Care and Maintenance information, as amended and updated from time to time. Current Membrane Care and Maintenance information is available from our website at www.vikingroofspec.co.nz. You acknowledge that Viking Roofspec has no obligation to notify you of changes to the Membrane Care and Maintenance information; or
 - the building is moved from the site at which the Membrane System was originally installed.
9. Change in the aesthetics, colour or finish of the Membrane System, or "Tenting" of the Membrane System due to substrate movement, are not covered by this Warranty.

10. Viking Roofspec shall not be liable under this Warranty (or any implied warranties which are not excluded under clause (16) for any consequential, indirect or special loss or damage of any kind whatsoever, or loss of profits, whether under contract, tort or otherwise.
11. Viking Roofspec's liability is in any circumstances limited to (at the option of Viking Roofspec) either;
 - providing for the repair of the original Membrane System,
 - or providing a credit to be applied towards the purchase of a new Membrane System, calculated pro rata, based upon the number of remaining months of the unexpired Warranty Period, using the current material prices for the Membrane System. The maximum pro rata value allowed by Viking Roofspec for repair or credit shall not exceed the original purchase price of the product supplied.
12. The obligations under this Warranty shall only be enforceable against Viking Roofspec upon completion of the installation of the Membrane System; completion of the installation contract; and once payment in full has been received for the product supplied.
13. Should any defect occur which requires a remedy under the terms of this Warranty, then the defect must be notified to Viking Roofspec in writing within fourteen (14) days of discovery. By notifying Viking Roofspec you authorise Viking Roofspec to investigate the Warranty claim to assess whether it falls within the terms of this Warranty. Should our investigation of the claim find that the cause is outside the terms of this Warranty, then you acknowledge and agree that Viking Roofspec may charge you its reasonable investigation costs. You agree to provide Viking Roofspec free access to the Membrane System in order to investigate or to affect repairs under this Warranty during normal business hours.
14. Any remedial work required under this Warranty shall be as determined by Viking Roofspec and shall be carried out in accordance with the Viking Specifications by a contractor nominated by Viking Roofspec. Viking Roofspec does not accept liability for delay in sourcing or inability to match repair materials exactly to those originally installed.
15. Nothing in this Warranty shall require Viking Roofspec to shift any fixtures, plant, equipment, flashings or other items so as to allow access to part of any Membrane System to be repaired or replaced. Neither shall Viking Roofspec be liable for any costs involved in such shifting or reinstallation.
16. This Warranty represents the limit of Viking Roofspec's liability for the Membrane System. All other warranties, express or implied, are hereby excluded to the maximum extent permitted by applicable law.
17. Notwithstanding any other provisions of this Warranty, nothing in this Warranty is intended to limit any condition, warranty, right or remedy available under or imposed by any applicable legislation (including, for the avoidance of doubt but without limitation, the Building Act 2004, the Fair Trading Act 1986 and the Consumer Guarantees Act 1993) except to the extent permitted by such legislation.
18. This Warranty shall be governed according to the laws of New Zealand and any disputes shall be decided in the courts of New Zealand.

Certificate of Workmanship No.

Viking Warranty No.



John Edwards
For Viking Roofspec

Date Issued