

Complies with E2 as an Alternative Solution. CodeMark 30058 and BRANZ Appraisal No. 656

Viking Enviroclad (TPO) Waterproofing Membrane



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 Roofspe 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 warranties 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%	(85%)	
- Grey: 32.7%	- Grey: 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 Roofspect 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 Roofspect 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.vikingroofspect.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 ppm, 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 kJ/m 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.