

Viking  
**WarmRoof**

Superior  
insulation for  
greater energy  
efficiency

Roofspec  
**Viking**  
Taking care of detail

[www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)



## **Viking WarmRoof:** **keeping you insulated from the top down**

### **There has never been a better time to invest in a Warm Roof**

In 2007, the Department of Building and Housing introduced H1 to the building code, to facilitate the efficient use of energy and decrease the amount of energy required to achieve healthy indoor temperatures by 30%.

Research indicates that at the end of 2018 more than 830,000 New Zealand homes did not have insulation that would meet the standard of a new home today. Over 53% would benefit from a retrofitted warm roof.

#### **What is a Warm Roof?**

The most widely accepted definition of a warm roof is, a roof where the insulation is installed on top of the roof structure i.e. on the outside of the building.

One of the benefits of a thermally efficient warm roof is the transfer of a building's dew point to the outside. This prevents internal dampness of structural materials and negates the need for vents that would normally allow air to escape.

#### **With a correctly designed warm roof:**

- The dew point is on the outside of the building, no damp or rotten materials inside
- The roof cavity is clear for wiring (not stuffed with insulation)
- Rigid insulation sheets add further structural integrity to the roof
- Air conditioning and heating costs are reduced
- Significantly higher R-values are achieved across the entire roof, not just in parts
- No ventilation of the ceiling cavity is required
- Thermal bridging can be avoided
- It is easily retrofitted onto an existing building

#### **Components of a Viking WarmRoof system:**

- Vapour barrier (for cool stores and regions with extreme climatic variances)
- Kingspan Polyiso insulation panel (including tapered)
- Any of Viking's sheet membrane systems

Viking's WarmRoof includes rigid Kingspan Polyisocyanurate (closed-cell foam) sheets, waterproofed on top with one of Viking's membrane systems.



### Why a Viking WarmRoof system?

- BRANZ appraised to ensure it meets New Zealand building code requirements
- Thermal performance of the system helps towards achieving green star points for the building
- Highest possible fire performance rating (Group 1-S)
- Highest R-Value - maximum ROI
- Polysio board supplied by world leading rigid insulation manufacturer Kingspan Insulation
- Rigid insulation sheets for dimensional stability
- F.A.S.T. adhesive to secure panels to substrate (avoids mechanical fasteners and thermal bridging)
- Any Viking membrane system can be installed
- Torchable surface for Viking Torch-On system
- Full System Warranty option\*
- Environmentally friendly insulation – no CFCs (Chlorofluorocarbons) in manufacture
- Tapered option to maximise watershed
- Perfect as an overlay option on existing roofs

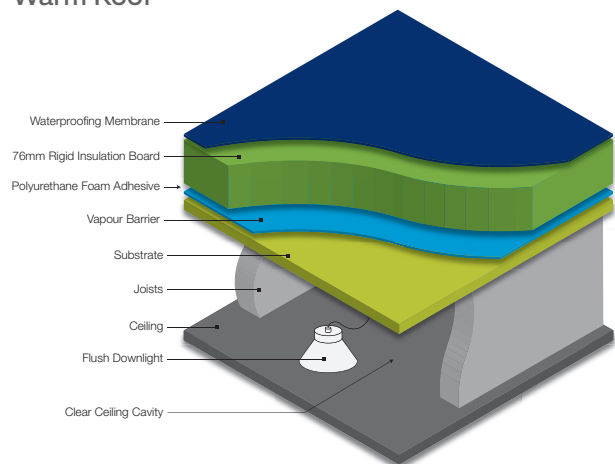
### Cold Roof Method

In contrast to a warm roof, the mainstream method of insulating roofs in New Zealand is the cold roof method where insulation (often glass wool), is stuffed between rafters/joists in the ceiling cavity.

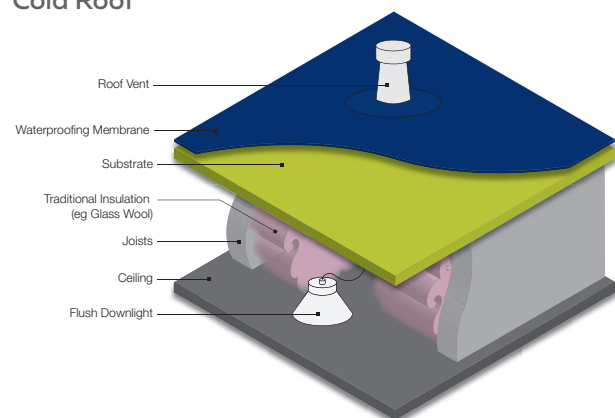
With internal moisture levels in modern buildings higher than ever before, excess moisture rises up through gaps such as downlights, into the roof cavity. If the roof is insufficiently vented, the moist air will find the dew point when it meets the underside of the roof's substrate. This condensation can lead to rotting of roof substrates, damp ceilings and wet insulation that will eventually become ineffective.

Even if the roof cavity is sufficiently vented a great deal of heat can be lost in the process.

### Warm Roof



### Cold Roof



\*Conditions Apply – for more information on Viking's Full System Warranty visit: [www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)



## Product Features

### Overlay Option

Thermal efficiency aside, a Viking WarmRoof is also a practical solution for overlaying an existing low-slope roof with weather-tightness or UV resistance issues. Virtually any existing roofing material, including metal can be overlaid. The benefit for building owners is the existing roof does not need to be removed, minimising the disruption for inhabitants and ensuring the building's intended purpose is maintained while the roof integrity is improved; for example hospitals, aged care facilities, schools, supermarkets, manufacturing and residential homes.

A Viking WarmRoof system can also avoid the expense of shrink-wrapping the building in some instances and the environmental cost of disposing of uplifted roofing materials in New Zealand's landfills.

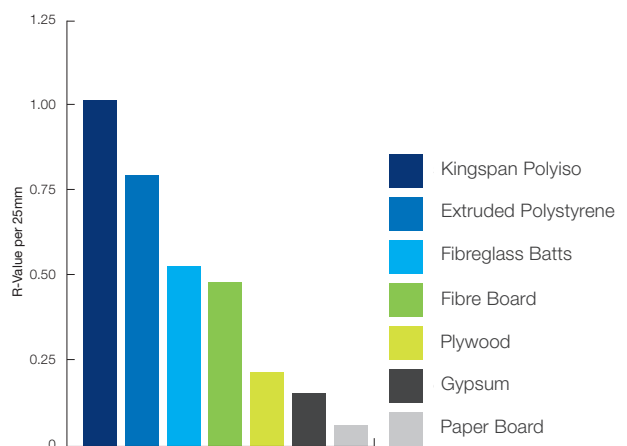
For existing low-slope metal roofs, a warm roof overlay can avoid the expensive carpentry involved in re-pitching the roof plane up to the building code minimum 3° slope requirement.

### Energy Efficient

The Viking WarmRoof system does not use mechanical fasteners – **on purpose**. Mechanical fasteners penetrate the insulation panels and the vapour barrier resulting in some thermal loss and thermal bridging (reducing the efficiency of the system). Our system uses F.A.S.T. adhesive technology which provides greater strength and wind uplift resistance than mechanical fixings.

**The savings from the building's new energy efficiencies can amortise the entire re-roof cost as soon as eight years after installation, depending on the thickness used.**

### Insulation Efficiency Comparison (R-Value from new)



## Kingspan Polyiso Long Term R-Values\*

THICKNESS	PANEL DIMENSIONS	LTRR
25mm	1.2 x 2.27	0.95
50mm	1.2 x 2.27	1.90
75mm	1.2 x 2.27	2.85

\*'Long Term Thermal Resistance' which is the average R-Value over the life of the product

### Light-weight

Insulation panels and the membrane going on top are purposely designed to be light-weight to reduce the load on the building and ensuring the roof remains well under the 20kg per m<sup>2</sup> threshold required by NZS3604 in order to be classified as a 'light-weight roof'.

### Group 1S Fire Rating

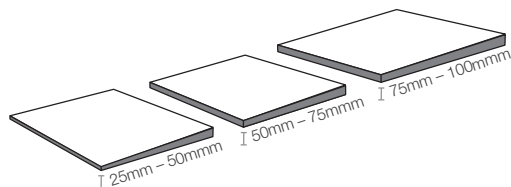
The Viking WarmRoof system has achieved a Group 1S Fire Rating from testing to ISO9705 standard, the highest possible fire rating in New Zealand.

### Tapered Service

Using tapered polyiso panels can be a practical solution to promote watershed near to roof outlets, or for some projects, to slope a whole roof rather than re-pitch the flat substrate. Viking has two ways of providing tapered insulation:

#### Proprietary Tapered Sheets

Viking currently stocks four sizes of tapered polyiso insulation panels; three at 1.4° and one at 2.3°, that can be placed together to create slope.



TAPERED POLYISO DETAILS		
25mm – 50mm	1.4 degrees	1.2m x 1.2m
50mm – 75mm	1.4 degrees	1.2m x 1.2m
75mm – 100mm	1.4 degrees	1.2m x 1.2m
25mm – 75mm	2.3 degrees	1.2m x 1.2m

### Bespoke Tapered Service

Kingspan offers a premium service where a building's plans can be supplied to their head office in the United Kingdom. With the specific slope specified along with the positioning of the hips and valleys, the tapered insulation can be custom manufactured with required falls for simple site-assembly.

A minimum lead-time of 14 weeks will be required after confirmation of order.

## Compatible with any Viking Membrane System

A Viking WarmRoof is designed specifically for any of Viking's membrane systems. Two have been featured in this brochure. For more information on Viking's products and solutions visit: [www.vikingroofspect.co.nz](http://www.vikingroofspect.co.nz)

### Viking Enviroclad

Enviroclad is a mesh-reinforced, wide sheet (3.0m) thermoplastic membrane with heat-welded seams that create stronger, flatter laps. This technology allows for quicker installation time while assuring long-term watertight integrity.

Viking Enviroclad is both CodeMark certified and BRANZ appraised and is available in seven colours:

White, Dove Grey, Mansard Brown, Medium Bronze, Rock Brown, Slate Grey and Patina Green



### Viking Torch-On

Viking offers four fit-for-purpose torch-on solutions. A plasticised (APP), rubberised (SBS), hybrid (APAO) and Anti-Root membrane system, all that can be applied directly on to the Kingspan Therma insulation boards.

The Viking Gemini APP, Lybra SBS and Phoenix Super APAO are CodeMark certified and BRANZ appraised.

## World Leading Insulation Manufacturer

The Viking WarmRoof system uses Kingspan Therma insulation panels. Kingspan is a pioneer of building envelope technologies, with over 50 years of experience, Kingspan is one of the world's leading suppliers of panel-based insulation systems. Extensive testing of Kingspan Therma insulation panels has been undertaken to ensure performance quality, backed by a manufacturer guarantee.

### Kingspan Physical Properties

PROPERTY	
Compressive Strength	1.5kPa @ 10% compression (BS EN 826)
Water Vapour Resistance	>300MN s/g-m (BS EN 12086)
Fire Performance Rating	Group 1-S (ISO9705)



## Product Assurance

Certain areas of New Zealand can be subjected to some of the toughest climatic conditions in the civilised world. This calls for construction materials to stand the test of time. At Viking Roofspec we offer quality assurance from CodeMark certifications and BRANZ appraisals, two of the highest possible forms of product assurance. Viking Roofspec has invested more funds into the appraisal and certification of our waterproofing materials than any of our competitors.



### CodeMark

CodeMark Product Certification is the highest form of product assurance in the New Zealand, Australia, and Pacific Islands construction sectors. CodeMark provides a rigorous platform for construction products to be tested against compliance with building code requirements.

A CodeMark certified membrane system offers peace of mind and surety to building owners as compliance for consent is guaranteed if the materials have been used in accordance with the stringent criteria of the certificate.

Viking Enviroclad and the Viking Torch-On membrane systems are CodeMark certified



### BRANZ Appraised

BRANZ is a nationally recognised body providing product appraisals through independent testing and verification of international lab reports for products being distributed in New Zealand. BRANZ appraises construction products to ensure they will withstand the New Zealand climate and conditions.



### Proven Record

Viking Roofspec has a combination of:

- 50 years' experience successfully supply roofing and decking materials to New Zealand and the Pacific Islands
- alignment to a nationwide network of licensed and approved applicators
- installing only world-class membrane systems that have been certified and appraised by nationally and/or internationally recognised product accreditation bodies

This has been instrumental in ensuring Viking Roofspec has one of, if not the lowest remedial rate in the waterproofing membrane industry.

### Comprehensive Quality Assurance

A Viking WarmRoof installed with one of Viking's Membrane systems is supported by a 20-year product warranty backed by the Tiri Group ([www.tiri.co.nz](http://www.tiri.co.nz)). Projects that represent 'absolute risk minimisation' in design, may also be eligible for Viking's comprehensive Full System Warranty\* (also backed by the Tiri Group), that covers both the materials and the approved applicator's installation in one document for the building owner.

\* Conditions Apply – for more information on Viking's Full System Warranty, visit: [www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)



### Quality of Installation

#### - Viking's Licensing Programme

To ensure installation quality of Polyiso insulation panels and absolute watertight finish of the membrane system, only Viking Approved Applicators are eligible to install Viking materials.

Viking Roofspec provides a professional membrane licensing programme. This three stage course includes a full curriculum with both practical application and an all-important theoretical component on the principles of waterproofing. This licensing programme has been designed to ensure a professional standard of installation of Viking systems.

**Viking**  
**Approved**  
**Applicator**



## Creating Chemistry on University Roof

### THE CHALLENGE

The redevelopment of the 45-year-old science precinct building at the University of Otago was way overdue, with the roof in desperate need of some attention.

The existing building had a zero degree concrete slab roof with a leaking bitumous membrane. Weight concerns and significant plant and ventilation requirements meant the options were limited as to what could be installed.

The roofing system needed to be robust and possess the design flexibility to successfully waterproof the 200-plus penetrations of various sizes made by the significant extraction systems used to ventilate the faculty's precious equipment. Alternative cementitious screed systems were considered for creating the required falls, but they would have been too heavy and were considered less practical in terms of the application required in these circumstances.

Using clause E2/AS1 of the Building Code as a benchmark, the architect specified that the dead flat (zero-degree) concrete slab roof substrate be clad with a roofing system sloped to a minimum of 2°.

### THE SOLUTION

The Viking WarmRoof system provided the University of Otago with a fully-tapered scheme, specifically 'shaped' for this 1400m<sup>2</sup> roof using Kingspan's custom-tapered service from the UK.

Viking Enviroclad's heat-weldable accessory range; with particular reference to its pipe seals and other penetration sealing system called 'pourable pockets', made Enviroclad the clear membrane choice for this challenging roof. The puncture resistance qualities of the Viking Enviroclad system protected the Kingspan Polyiso insulation panels from the unavoidable large amount of foot traffic from other trades during the construction phase.

### THE RESULT

Key to the success of the project was the experience, skill and professionalism of the Viking Approved Applicator installing the tapered warm roof system. Construction materials only look and perform as well as their installation. As a materials supplier, Viking Roofspec aligns itself with New Zealand's best contractors, with a firm commitment to improving the waterproofing industry standards by investing in a three-staged licensing programme to ensure its materials are installed with pride and to specification.

The project itself was complex with multiple stakeholders involved including the University, architect, construction management company, Council, Viking Roofspec, Kingspan NZ and the UK, international logistics and the approved applicator. Establishing clear communication lines and regular updates on progress and hold points was a critical element of the project. This collaboration resulted in successful delivery of materials onsite and quality of installation. The University, architect and Council were extremely pleased with the overall finished product.



**Contact us here  
to meet your needs**

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