

EFVM® Warmroof (PIR Insulation roof/balcony/podium)

Product Technical Statement: 107615



EFVM® is a low voltage method of Quality Assuring waterproofing membrane applications

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Level of assurance needed to demonstrate NZ Building Code Compliance

Supporting documentation should include self-assessment and technical information by manufacturer



EFVM® confirms that this minimum level of assurance has been met or exceeded by the following:

International Leak Detection Ltd

[Technical Data](#)

Technical Statement

Product Description

What is EFVM®?

EFVM® is a low voltage test method that creates an electrical potential difference between a non-conductive membrane surface and a conductive substrate, which is earthed or grounded.

By applying water on the membrane surface and using the water as a conductive medium, an electric field is created and a breach in the membrane creates a vector (ground fault connection). The EFVM® technician reads the electric flow travelling across the membrane, mapping the breaches with pin point accuracy.

Advantages of EFVM® testing system

- Accurate pinpointing of membrane breaches
- Non-destructive to the membrane
- Can be performed on sloped substrates
- Membrane defects can be repaired and retested without delay to the construction programme
- Limited use of water required for the EFVM® test
- EFVM® can be performed during inclement weather
- Overburden installation can proceed immediately

Scope of use

Vector Mapping Grid (VMG™)

The VMG™ must be used if any of the following conditions exist:

- in warm roof assemblies that incorporate insulation under the roofing/waterproofing membrane.
- in assemblies that incorporate a non-conductive structural deck such as plywood, unreinforced concrete, hollow core concrete with mesh in topping slab or cellular lightweight concrete.
- when the existing waterproofing material or vapour barrier will remain in place.
- when the new waterproofing system includes a vapour barrier over the structural deck.

EFVM® is used to find defective workmanship and damage to the waterproofing membrane (caused during the construction phase). This then allows the applicator to repair the highlighted breaches on the spot and handover a watertight membrane.

EFVM® is an approved testing as stated by Waterproofing Membrane Association Incorporated Torch on Code of Practise.

EFVM® tests **ALL** membranes apart from Butyl rubber membranes because of the Carbon contained in the make up of the product. (carbon absorbs electricity, not an isolator).

New Zealand Building Code (NZBC)

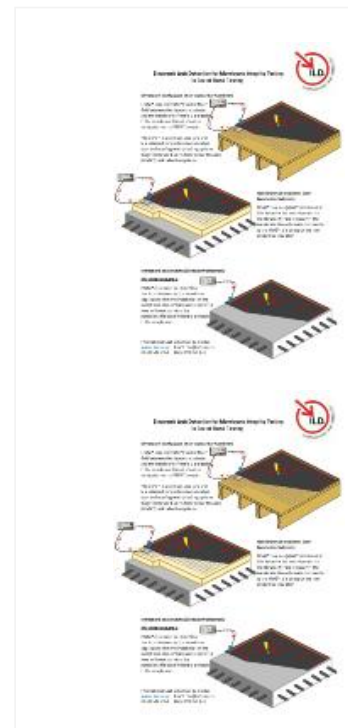
The product will, if employed in accordance with the supplier's installation and maintenance requirements, assist with meeting the following provisions of the building code:

- **Clause E2 External moisture:** Performance E2.3.7(a), E2.3.7(b), E2.3.7(c)

Evidence

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

EFVM® complies with E2 by ensuring the integrity waterproofing membrane is installed in accordance with NZBC.



masterspec partner

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Waterproofing Membrane Association Incorporated Torch on Code of Practice

6.5 Testing There are two methods of testing the integrity of a torch-on membrane after installation, either flood testing or electronic field testing. In both cases, after the testing has been carried out a written report confirming the integrity of the membrane must be supplied to the Main Contractor.

6.5.2 Electronic Field Testing Electric field testing works by passing a controlled electric current through the membrane with either a thin water film applied over the membrane or a pre-installed non-obtrusive metal grid under the membrane being the conductive medium. Any point of electric current leakage will indicate the location of a fault in the membrane system. This testing must be carried out by a trained technician.

Supporting Evidence

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

International Leak Detection Ltd

[Technical Data](#)

Product Criteria

Design requirements

Non-Conductive - Plywood

EFVM® requires Vector Mesh Grid between the plywood substrate and the membrane and this allows an electrical connection to be created if there is a breach in the membrane on a plywood substrate.

Installation requirements

Membrane Application to Non-Conductive substrate

Vector Mesh Grid Installation

1. The Vector Grid is laced directly onto the plywood substrate.
2. The Vector Grid must cover the total area that is to receive membrane. This includes parapets, plinths, up stands and gutters.
3. The Vector Grid Must be terminated 50mm from membrane termination points, penetrations, outlets and projections.
4. Vector Grid sheets must overlap at least one full square, at both edges and ends.
5. The Vector Grid must be fixed with sufficient stainless steel staples to hold the grid against the substrate.
6. The connection plate (supplied) must be securely clamped onto the edge of the Vector Grid at the location agreed by an ILD technician.
7. A prefabricated cable (supplied) will be connected to the connection plate and terminated at a location agreed by an ILD technician.

Company Product Information

Videos

[Electronic Warmroof Leak Detection](#)



Date last validated: **03 February 2017**



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