



BRANZ Appraised
Appraisal No. 864 [2019]

VIKING GM MERCURY FC DPM MEMBRANE

Appraisal No. 864 [2019]

This Appraisal Replaces BRANZ
Appraisal No. 864 [2014]



BRANZ Appraisals

Technical Assessments of products
for building and construction.



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Product

- 1.1 Viking GM Mercury FC DPM Membrane is a modified bitumen torch-on damp-proof membrane for basement retaining walls and floors.

Scope

- 2.1 Viking GM Mercury FC DPM Membrane has been appraised as a DPM for use:
 - on buildings subject to non-specific design under floor slabs complying with NZS 3604 and behind concrete masonry basement walls and under floor slabs complying with NZS 4229; and,
 - on buildings subject to specific design with substrates of insitu or precast concrete complying with NZS 3101 or concrete masonry complying with NZS 4230; and,
 - where subsoil drainage and free draining granular backfill has been placed behind basement walls.
- 2.2 Viking GM Mercury FC DPM Membrane must be adequately protected against damage during backfilling and in service.
- 2.3 The product must be installed by Viking Roofspec approved installers.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Viking GM Mercury FC DPM Membrane 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 B2 DURABILITY: Performance B2.3.1 [a] not less than 50 years. Viking GM Mercury FC DPM Membrane meets this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.3. Viking GM Mercury FC DPM Membrane meets this requirement. See Paragraphs 12.1 - 12.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Viking GM Mercury FC DPM

Technical Specification

4.1 Materials supplied by Viking Roofspec are as follows:

- **Viking GM Mercury FC DPM Membrane** - is an APP modified bitumen torch-on membrane for use as a below ground DPM. It is supplied in a roll 4 mm thick x 1.0 m wide x 10 m long.
- **Tanking Primer** - is a fast drying, solvent based contact adhesive. It is supplied in 5 US gallon pails.
- **Tanking Primer WB** - is a fast drying, water based contact adhesive. It is supplied in 5 US gallon pails.

Handling and Storage

5.1 Handling and storage of all materials whether on or off site is under the control of the installer. Dry storage must be provided for all products and the membranes must be protected from sunlight and UV radiation. Rolls of membrane must be stored on end.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Viking GM Mercury FC DPM 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

Substrate Design

Retaining Wall

7.1 Substrate design must be in accordance with the NZBC to a relevant standard, such as NZS 3101 for concrete, and NZS 4229 or NZS 4230 for concrete masonry.

Concrete Slab-on-ground

7.2 The membrane must be laid on a minimum of 75 mm thickness of site concrete for slab-on-ground applications. The structural concrete slab placed over the membranes must be a minimum of 100 mm thick.

General

7.3 The substrate must have a surface finish that is smooth, clean and free from defects or irregularities which may damage the membrane or allow water to be trapped behind the membrane.

Control Joints

8.1 Where control or construction joints are formed in the substrate, Viking Roofspec must be consulted for use of the membrane over these joints.

Backfilling and Drainage

9.1 The membrane must be protected against damage and UV by the placement of a protection material between the membrane and the granular fill.

9.2 The minimum requirement for backfilling is that a granular, free-draining material is used with the top of the backfill capped with an impervious clay fill that may be covered with topsoil if required. The impervious capping and topsoil must slope with a minimum of 1:30 fall away from the wall.

9.3 A subsoil drainage system must be used which includes a minimum of a 100 mm diameter pipe with openings to collect water, a geotextile filter fabric or other filter material to prevent silting of the pipe, an access for cleaning the subsoil pipe, be a minimum of 200 mm below the floor level and have a minimum 1:200 fall to drainage outlet.

9.4 After backfilling, the installation is completed with a flashing in accordance with the details contained within the Technical Literature to protect the upper edge of the membrane.

Durability

Serviceable Life

- 10.1 Viking GM Mercury FC DPM Membrane is a suitable DPM material (Modified bituminous sheet), and is expected to have a serviceable life of at least 50 years provided it is installed and maintained in accordance with this Appraisal and is continually protected from sunlight and ultra-violet (UV) radiation.

Maintenance

- 11.1 Annual inspections must be made of the membrane's top edge seal and protection, the backfill capping, and the drainage pipe to ensure all are functioning as originally designed.
- 11.2 If required, the drainage pipe must be cleared to remove any sediment or silt build-up. The slope of the backfill capping must be maintained at all times.

External Moisture

- 12.1 Viking GM Mercury FC DPM Membrane, when installed in accordance with this Appraisal and the Technical Literature, will prevent water vapour from penetrating to the interior face of basement retaining walls and floors in spaces where moisture may cause damage. The membrane has a vapour flow resistance of not less than 90 MN s/g.
- 12.2 The membrane is a torch-on membrane and can be used to form sealed joints and to seal penetrations. The top edge of the membrane must be finished to the wall as set out in the Technical Literature and protected.
- 12.3 Building designers must ensure junctions with other membranes, such as at the floor/wall junction, form a waterproof joint. These junctions have not been assessed and are outside the scope of this Appraisal.

Installation Information

Installation Skill Level Requirement

- 13.1 Installation of the membranes must be completed by trained applicators approved by Viking Roofspec.
- 13.2 Installation of substrates must always be carried out in accordance with the Viking GM Mercury FC DPM Membrane technical literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant Licence class.

System Installation

Substrate Preparation

- 14.1 All surfaces must be checked to ensure they are dry, clean, smooth and free from sharp edges, loose or foreign materials, oil, grease or other deleterious material that may affect adhesion or may damage the membranes.

Priming

- 14.2 All substrates must be primed before application of the membrane. The supplier of the membrane, Viking Roofspec should be contacted to confirm the most suitable primer. Application instructions for the primers are contained in the technical data sheets.

Membrane Installation - Walls

- 14.3 The membrane must be installed in accordance with the Technical Literature. Sheet edges and ends must be overlapped. Internal and external corners must be reinforced with an extra layer of membrane 300 mm wide. Protection material must be installed before backfilling. Backfilling must commence immediately after the membrane is installed to ensure it is not left exposed to sunlight or UV radiation.

Membrane Installation - Floors

14.4 The membrane must be installed in accordance with the Technical Literature. Sheet edges and ends must be overlapped. The membrane must be inspected for damage and any damage must be repaired. The membrane must not be exposed to UV radiation for any longer than 14 days before the structural concrete slab is placed.

Inspections

14.5 The Technical Literature and the installation company's Quality Control sheets must be referred to during the inspection of the membrane installation.

Health and Safety

15.1 Safe use and handling procedures for the membranes are provided in the Technical Literature.

Basis of Appraisal

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

Tests

16.1 The following testing of Viking GM Mercury FC DPM Membrane has been undertaken by various organisation for elongation, tear resistance (nail shank), low temperature pliability, water vapour transmission, watertightness, dimensional stability, flow resistance at elevated temperature before and after aging, resistance to impact, resistance to static load, tensile strength, shear resistance and watertightness after aging and chemicals.

Test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

17.1 A durability opinion has been given by BRANZ technical experts.

17.2 Practicability of installation has been assessed by BRANZ and found to be satisfactory.

17.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

18.1 The manufacture of the membrane and primers 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 the product certification covering quality aspects associated with the product.

18.2 The quality of materials supplied to the market is the responsibility of Viking Roofspec.

18.3 Quality of installation on site is the responsibility of the Viking Roofspec approved installer.

18.4 Designers are responsible for the building design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of Viking Roofspec.

18.5 Building owners are responsible for the maintenance of the membrane system in accordance with the instructions of Viking Roofspec.



Sources of Information

- NZS 3101: 2006 Concrete structures standard.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 4229: 2013 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230: 2004 Design of reinforced concrete masonry structures.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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In the opinion of BRANZ, **Viking GM Mercury FC DPM 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 Roofspect**, 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 Roofspect**
 - 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 Roofspect**
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 Roofspect** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

9 August 2019