Neuchâtel Mastic Asphalt Inverted Roof System (PMR)

Product Technical Statement: 113726

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An inverted roof or protected membrane roof that protects and insulates the building below.
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Level of assurance needed to demonstrate NZ Building Code Compliance

HIGH

Supporting documentation should include technical information by manufacturer and either a BRANZ or independent Appraisal or CodeMark

Neuchâtel Mastic Asphalt confirms that this minimum level of assurance has been met or exceeded by the following:
CodeMark
CMNZ70012

Company Contact Details

neuchâtel

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Technical Statement

Product Description

With over a century of successful use in New Zealand, the fully CodeMark certified Neuchâtel Mastic Asphalt System has proven its reliability, safeguarding numerous prestigious and historic buildings in our country. Neuchâtel Polymer Modified Mastic Asphalt, a cohesive and impermeable mass composed of suitable graded mineral matter and asphaltic cement, is highly regarded for its durability and effectiveness as a waterproofing system.In March 2018, the Neuchatel Mastic Asphalt System initially received CodeMark certification, becoming New Zealand's first zero-degree certified system for inverted, flat roof, and podium deck roofs. This certification assures designers that the system can be applied even on completely flat surfaces (less than 1:80 slope) or nominally zero pitch. Moreover, it is suitable for potable water use and can be finished in a range of architectural colours upon request.

The CodeMark certification offers reassurance to designers that the system can be employed even on completely flat surfaces (less than 1:80 gradient), including nominally zero pitch.Its remarkable durability and seamless application set it apart as one of the rare membranes capable of handling continuous heavy foot and vehicular traffic, including Heavy Goods Vehicles, while preserving its waterproof integrity. Additionally, it is easily repairable in case of alterations or damage.

Scope of use

The inverted system or protected membrane roof (PMR) is applied on flat to moderately sloped roofs.

It is suitable in new or existing commercial buildings. It can be laid on a range of substrates but mainly concrete due to the weight loading of the system.

Due to its durability and seamless nature mastic asphalt can be laid to minimal falls including Zero and has been applied on many New Zealand buildings. Neuchâtel Mastic Asphalt is laid 20 mm thick and is monolithic therefore it cannot be penetrated by roots and is suitable for potable water.

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 B1 Structure:** Performance B1.3.1, B1.3.2, B1.3.3, B1.3.3(b), B1.3.3(c), B1.3.3(f), B1.3.3(h), B1.3.3(m), B1.3.3(q), B1.3.4
  B1 Structure B1.3.1; B1.3.2; B1.3.3 (b), (c), (f), (h), (m), (q); B1.3.4
- **Clause B2 Durability:** Performance B2.3.1(a), B2.3.1(b), B2.3.2(a)
  B2 Durability - B2.3.1 (a), (When Concealed) or B2.3.1 (b) (not concealed).B2.3.2(a)*concealed when used as a substrate incorporated in a green warm or inverted roof.
- **Clause C6 Structural stability:** Performance C6.2
  n/a
- **Clause D1 Access routes:** Performance D1.3.3(d)
  D1 Access Routes D1.3.3 (d)
- **Clause E1 Surface water:** Performance E1.3.1, E1.3.3(a), E1.3.3(b), E1.3.3(c), E1.3.3(d), E1.3.3(e), E1.3.3(f)
  n/a
- **Clause E2 External moisture:** Performance E2.3.1, E2.3.2, E2.3.7
  E2 External Moisture - E2.3.1; E2.3.2; E2.3.7
- **Clause F2 Hazardous building materials:** Performance F2.3.1
  F2 Hazardous Building Materials - F2.3.1 And will contribute to compliance with; B1 Structure - B1.3.3 (d); (n)

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Notes

Complies with the Building Code of New Zealand: If installed and maintained in accordance with the conditions of this certificate, the Asphaltech Mastic Asphalt Roof Waterproofing and Paving System will comply with;

B1 Structure B1.3.1; B1.3.2; B1.3.3 (b), (c), (f), (h), (m), (q); B1.3.4

B2 Durability - B2.3.1 (a), (When Concealed) or B2.3.1 (b) (not concealed).B2.3.2(a)

*concealed when used as a substrate incorporated in a green warm or inverted roof.

D1 Access Routes D1.3.3 (d)

E2 External Moisture - E2.3.1; E2.3.2; E2.3.7

F2 Hazardous Building Materials - F2.3.1 And will contribute to compliance with; B1 Structure - B1.3.3 (d); (n)

Evidence

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

CodeMark CMNZ70012

BBA, IKO Roof Waterproofing systems Pacoflex Approval Inspection Testing Certification 17/5449 07/09/2017.

BSI Quality Management System !SO 9001;2008

BS: 8218:1998 Code of practice for mastic asphalt roofing. UKAS Tested in relation to fire.

BS: 6229: 2003 Flat roofs with continuously supported coverings. Code of practice

In accordance to European standard: BS EN 13108-6:2006 Accepted as New Zealand Standard Bituminous mixtures. Material specifications. Mastic asphalt

BRE Digest 144: 1972 (Durability) Pacoflex life serviceability up to 50 years

Moisture resistance tested to UK National Building Regulation Section C.2 UKAS Accredited

Not toxic once cured see IKO Product Safety Sheet

Supporting Evidence

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

CodeMark
CMNZ70012

Use in Service History

Neuchâtel Mastic Asphalt is the oldest waterproofing in the world. Successfully used in New Zealand for over 100 years, the latest polymer systems have more durability, flexibility and ease of application than old varieties of mastic asphalt. From Mansion House on Kawau Island, to the Beehive in Wellington, to Auckland's War Memorial Museum, Neuchatel Mastic Asphalt has been used on many of New Zealand's most historic and prestigious structures for over a century. It has also been used on a number of modern buildings, including appartments, car parks and shopping centres. Recent projects include Newmarket's Westfield Mall, The Greenhouse in Ponsonby, Victoria Lane Residences in Remuera and Fabric Apartments in Onehunga.

Product Criteria

Design requirements

This covers the use of the Neuchâtel Mastic Asphalt Roof Waterproofing and Paving System as a waterproof roofing membrane and as a waterproofing and paving system for elevated decks and car parks for cars, light commercial and heavy goods vehicles.
The Neuchâtel Mastic Asphalt Roof Waterproofing and Paving System may be used where the minimum gradient of the substrate structure is completely flat (less than 1:80) including nominally zero pitch.

The system can be configured to be:

- Suitable for direct foot traffic ·
- A suitable substrate external pavers, tiles or concrete for pedestrian traffic, and for pavers or tiles on paver supports, for use on terraces, balconies or podium.
- A car park trafficable surface.
- Part of a green roof system.
- Part of an insulated roof system.

Installation requirements

The Neuchâtel Mastic Asphalt Roof Waterproofing and Paving System must be installed using the traditional techniques for mastic asphalt described in the relevant Clauses of BS 8218: 1998, and in accordance with the Neuchâtel Technical Manual and Details

Timber substrate structures may be designed in accordance with NZS3604 as a heavy roof, provided the mastic asphalt membrane does not exceed 22 mm. All plywood sheets must be CCA treated to H3.2. The plywood must be a minimum of 17mm thickness complying with AS/NZS 2269.0

Concrete and other specifically designed substrates must be designed in accordance with verification method B1/VM1 using the structural design actions in AS/NZS1170

A separation layer is required between the substrate and mastic asphalt topping

The substrate must be dry, with no sharp projections.

All work must be carried out by Neuchâtel Waterproofing Ltd approved applicators.

Maintenance requirements

All maintenance surveys should be carried out yearly and in the Autumn.
• It is important to check that roof outlets are functioning and gratings are not blocked. Remove debris from the roof but do not flush silt or dead leaves down outlets. In areas where taller trees are adjacent to the roof, inspections may be required more frequently.

• Note the general condition of the waterproofing finishes and report any damaged areas immediately.

• Check waterproofing to roof light kerbs.

• Check roof light domes for signs of damage or deflection.

• Check perimeter details and up stands, ensuring that the metal capping, flashing's, edge trims and mortar pointing to chase details are secure.

• Check flashings to expansion joints and that the all components are secure.

• Check the up stand flashings to plant support legs/up stands.

• Check the up stands and flashings to pipe penetrations.

• Examine all mastic seals and repair/replace as necessary.

• Check walkways and around access

Warrantees

https://neuchatel.co.nz/architectural-info/

Company Product Information

Environmental

Mastic asphalt 100% Recyclable, zero waste packaging and no product expiry date.

Mastic Asphalt industry was the first in gain carbon neutral rating.

As mastic asphalt has a longer life cycle than most products it is therefore more sustainable.

Quality Assurance

ISO 9001 (Quality Management)

Videos

mastic asphalt roofing

Date last validated: **27 June 2024**

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