Strandsarking®

Design Guide

CodeMark BRANZ-CM-1005

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strandsarking®

Laminex™ NEW ZEALAND

Strandsarking®
Low Sloped
Membrane Roofs

Design Guide

Design Criteria

The design has been carried out using loads derived from NZS 3604 with the use of design combination factors as specified in AS/NZS 1170 and deflection limits as suggested in AS/NZS 1170. However, it is expected that Strandsarking could deflect up to 10mm under a maintenance footfall point load, particularly where roof framing supports are at 900mm centres. If this is of concern, scaffold planks, or similar, can be used to span across roof framing members whilst working on the roof.

The panel and fixing designs have been carried out to NZS 3603 the New Zealand Timber Structures Standard.

When designing at low pitch (at or below 5°) consideration will need to be given to the possibility of ponding due to plant installations on the roof surface at a later date and/or possible long term sag. If the life of the roofing material being used could be affected if ponding does occur, consideration must be given to increasing the pitch, or increasing the support structure (reduce main supports to 400mm centres).

The design has been carried out on the basis that the maximum temperature and humidity in the roof space is 66°C and 80%RH sustained for up to 24 hours. Further testing on the panel will be required should these values be exceeded.

The characteristic panel strength and stiffness values, as shown below, were derived from tests carried out at the conditions described in the bullet point above, but otherwise in accordance with AS/NZS4063.

Note: The characteristic strength was derived from the 5th percentile value and the characteristic stiffness from the mean value, as defined in AS/NZS 4063.

1.1 Allowable spans

Based on the loadings as outlined in the design criteria Strandsarking panels are capable of spanning the centres as per the table below under the maximum imposed cladding loads as shown.

Table 1

Maximum imposed cladding weight	Span between centres
150kg/m^2	600 mm
50kg/m^2	900 mm

The specified span between centres is the horizontal measurement between centres of the roof framing members supporting the Strandsarking panels.

1.2 Limitations

Strandsarking should not be used:

- On surfaces ***less*** than:
  - Membrane Roofs - less than 2 degrees, decks and trafficable areas.
  - Internal boxed gutters installed with liquid applied membranes.
  - Profiled metal roofs - Trough profile less than 3 degrees.
  - Corrugated profile - 8 degrees.
  - Trapezoidal - 4 degrees where crest height is less than 27mm or; 3 degrees where crest height is more than 27mm.
- Where the permanent load of the roofing products supported on the panel exceeds the loads specified in the allowable imposed loads section. Refer Wind zone & fixing centre table.

- Allowable Imposed Loads: Strandsarking panels are capable of carrying imposed cladding loads of up to 150kg/m^2 when spans in one direction do not exceed 600mm centres and the supporting framing has been designed to take these loads.
- As the substrate for mechanically fastened membranes, and liquid applied membranes that have not been appraised by BRANZ to determine that they are fit for purpose.
- In the following situations, unless specific design has been used:
    - Where the eaves height is more than 10 metres above ground level (3 storeys).
    - At elevations greater than 500 metres above sea level.
    - As a diaphragm.
    - On buildings outside the scope of NZBC Acceptable Solution E2/AS1 paragraph 1.1.
    - In locations where the wind category exceeds Extra High as specified in NZS 3604.

1.3 Masterspec

Find us on Masterspec: 4338LS Laminex New Zealand Strandsarking Roofing Substrate.

1.4 Technical support

Refer to the full technical maunal for further details and technical support or visit laminex.co.nz

Strandsarking®
Pitched Roofs

Design Guide

Design Criteria

The design has been carried out using loads derived from NZS 3604 with the use of design combination factors as specified in AS/NZS 1170 and deflection limits as suggested in AS/NZS 1170. However, it is expected that Strandsarking could deflect up to 10mm under a maintenance footfall point load, particularly where roof framing supports are at 900mm centres. If this is of concern, scaffold planks, or similar, can be used to span across roof framing members whilst working on the roof.

The panel and fixing designs have been carried out to NZS 3603 the New Zealand Timber Structures Standard.

The design has been carried out on the basis that the maximum temperature and humidity in the roof space is 66°C and 80%RH sustained for up to 24 hours. Further testing on the panel will be required should these values be exceeded.

The characteristic panel strength and stiffness values, as shown below, were derived from tests carried out at the conditions described in the bullet point above, but otherwise in accordance with AS/NZS4063.

Characteristic strength 23.9 MPa.

Characteristic stiffness 4150 MPa.

Note: The characteristic strength was derived from the 5th percentile value and the characteristic stiffness from the mean value, as defined in AS/NZS 4063.

1.1 Allowable spans

Based on the loadings as outlined in the design criteria Strandsarking panels are capable of spanning the centres as per the table below under the maximum imposed cladding loads as shown.

Table 5

Maximum imposed cladding weight	Span between centres
150kg/m^2	600 mm
50kg/m^2	900 mm

The specified span between centres is the horizontal measurement between centres of the roof framing members supporting the Strandsarking panels.

1.2 Limitations

Strandsarking should not be used:

- On surfaces less than 2°, decks and trafficable areas.
- Where the permanent load of the roofing products supported on the panel exceeds the loads specified in the allowable spans section (see allowable spans section).
- As the substrate for mechanically fastened membranes and liquid applied membranes that have not been appraised by BRANZ to determine that they are fit for purpose.
- In the following situations, unless specific design has been used:
    - Where the eaves height is more than 10 metres above ground level.
    - At elevations greater than 500 metres above sea level.
    - As a diaphragm.
    - On buildings outside the scope of NZS 3604.
- In locations where the wind category exceeds Extra High as specified in NZS 3604.

1.3 Technical support

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