JUKEN NEW ZEALAND LTD

Superstrand Sarking

1. DESCRIPTION, SCOPE AND APPLICATION

Superstrand Sarking

a. Is an engineered wood panel product specifically designed for use as a roof sarking material under shingles and other similar types of roofing products.
b. Is suitable to be used in residential, commercial and industrial roofing applications with a roof pitch of 10º or greater.
c. Can be fastened to timber roof trusses or framing.
d. Can be used with roof trusses or framing at a maximum of 900mm centres.
e. Can be used with roofing materials weighing up to 150 kg/m² (see section 5).
f. Can be used in wind zones up to and including Very High as specified in NZS 3604.
g. Is nominally 16¼mm thick and has a textured surface to provide a more slip resistant surface than is available with smooth sanded panel products.
h. Has been manufactured using sustainable plantation grown Radiata Pine, a highly durable formaldehyde free resin, wax to improve moisture resistance and non-solvent based organic preservative chemicals.
i. Meets the requirements of NZS 3640:2003 for hazard class H3.1.
j. Meets the E zero classification for formaldehyde emissions when tested in accordance with AS/NZS 4266.16.
k. Is identified by means of the words SUPERSTRAND SARKING 165 64 H3.1 and the NZ Timber Preservation Council's WOODmark® symbol printed on the panel.

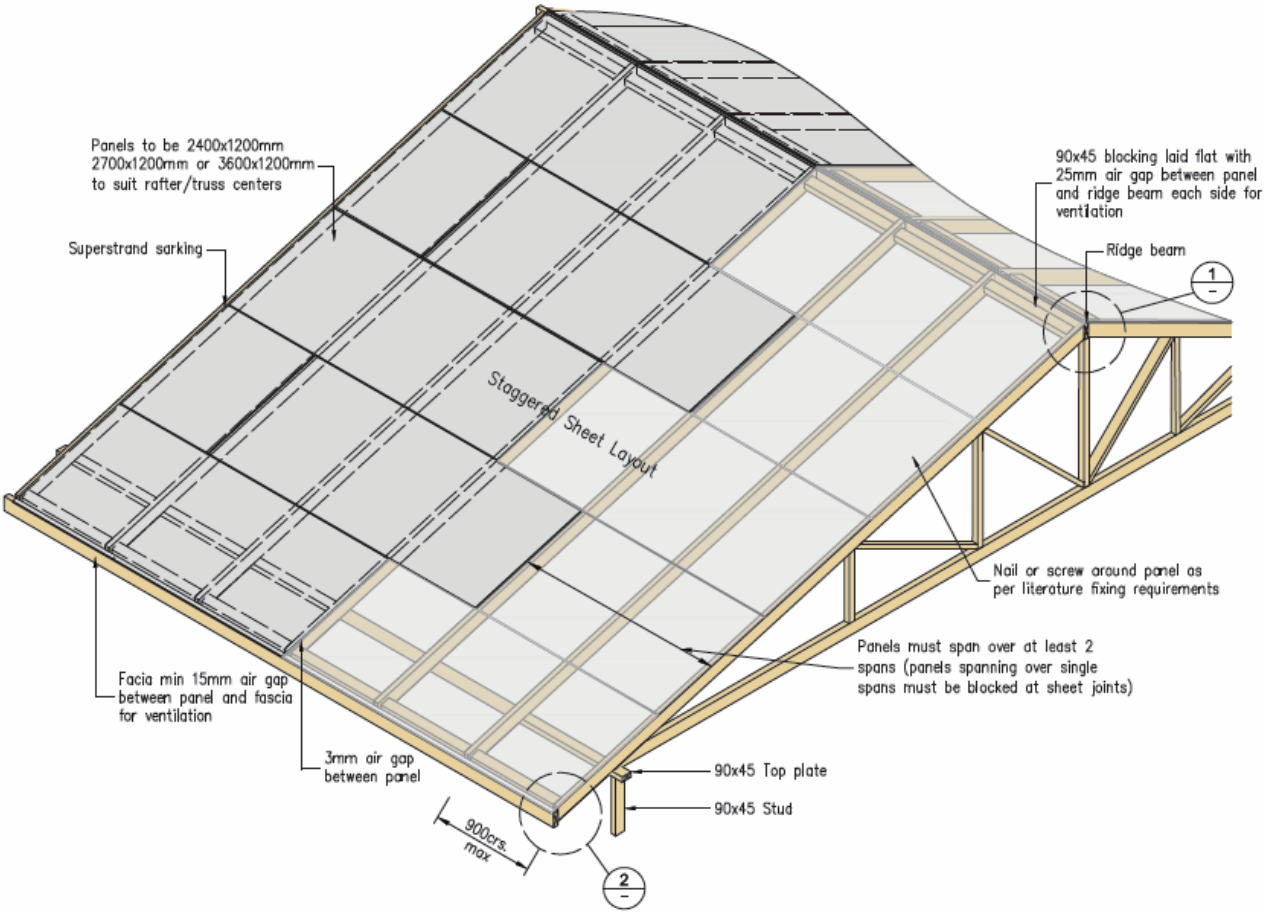
2. LIMITATIONS

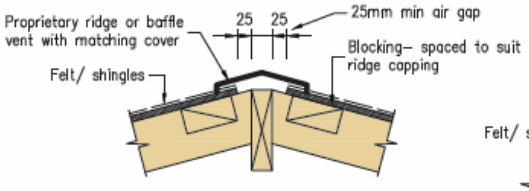
Superstrand Sarking should not be used:-

a. On flat roofs, decks, trafficable areas or roofs with a pitch of less than 10º.
b. Where the permanent load of the roofing shingles, or other similar types of roofing products, supported on the panel exceeds the loads specified in the allowable spans section (see section 5).
c. 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 Very High as specified in NZS 3604.

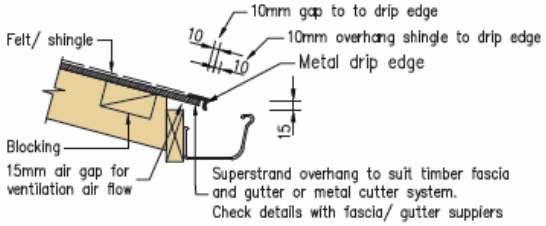
3. INSTALLATION

a. Check that roof trusses or framing provides a level surface for fastening the Superstrand Sarking onto. Trusses or framing should be shimmed as necessary in order to provide a level surface. If top chords of trusses or framing are warped or bowed, install blocking to straighten.
b. Ensure that adequate roof space ventilation is provided (see section 7).
c. Lay the Superstrand Sarking panels onto the trusses or framing in a staggered pattern.
d. Superstrand Sarking panels must be laid continuous over at least two spans (three trusses or framing members). If a Superstrand Sarking panel is used over a single span, then blocking (nogs) must be used under each unsupported edge.
e. The Superstrand Sarking panels should be fastened to the trusses or framing in accordance with section 4.
f. Ensure that there is a 3mm gap all the way around between each Superstrand Sarking panel in order to allow for normal expansion of the panels in service. Failure to provide an adequate gap between panels may result in panels distorting, causing visual impairment to the plane of the roof.
g. Allow 5mm clearance between Superstrand Sarking panel and other elements protruding through the roof such as vent pipes etc. Greater clearances than this may be required around flues and chimneys, see (h) below.
h. Superstrand Sarking must be separated from flues and/or chimneys in accordance with the requirements of NZBC Acceptable Solution C/AS1 part 9 for the protection of combustible materials.
i. Edges of panels at gutters or eaves should be protected by drip edges, flashings, fascia trims or similar (see detail 2 on page 3). This aids in preventing moisture ingress into the Superstrand Sarking in these areas.
j. Where blocking is required, Superstrand Sarking panels must be blocked as close as practical along all free edges, with a maximum 120mm panel cantilever over the blocking (see detail 2 on page 3).
k. Superstrand Sarking panels should be installed such that there is a minimum 100mm air gap between the underside of the panel and any roof insulation material.
l. Cover the installed Superstrand Sarking with an appropriate roofing underlayment as soon as practical in order to minimise the Superstrand Sarking being exposed to the weather unnecessarily.





1 Detail



2 Detail

4. FASTENERS

Superstrand Sarking panels are to be fixed to timber roof framing or trusses with either:-

a. 75mm x 3.15mm diameter spiral rolled hot dipped galvanised flat head nails, or
b. 75mm x 3.15mm diameter stainless steel annular groove flat head nails, or
c. 40mm x 3.45mm diameter (6 gauge) stainless steel screws.

The minimum panel fixing centres required for non-specific design wind-load areas (as per NZS 3604) are as follows:-

Wind zone as per NZS 3604	Fixing centres (mm)	
	Panel ends	Intermediate supports
Up to and including MEDIUM	150	300
HIGH	150	200
VERY HIGH	100	150

Note Fixings along panel edges must be at least 10mm from the panel edge.

5. ALLOWABLE SPANS

Based on the loadings as outlined in the design criteria (section 9) Superstrand Sarking panels are capable of spanning the centres as per the table below under the maximum imposed cladding loads as shown.

Maximum imposed cladding weight	Span between centres
150kg/m²	600 mm
50kg/m²	900 mm

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

6. SIZES AND WEIGHTS

Superstrand Sarking is available in the following panel sizes.

Sheet size (mm)	Nominal mass per panel (kg)	Nominal mass per m² (kg)
3600 x 1200	48	11
2700 x 1200	36	11
2400 x 1200	32	11

7. VENTILATION

A well ventilated roof space is critical to the overall performance of a roof. Good ventilation fulfils two main functions:-

- It reduces moisture build up within the roof space by allowing the moisture to be vented.
- It reduces the temperature of the roof space by allowing a flow of air on the underside of the Superstrand Sarking. It can also reduce the surface temperature of the roofing material.

A general rule of thumb is that a ventilation area of at least 1/300th of the ceiling area is desirable, with the ventilation being adequately distributed throughout the roof area and between the eaves and ridges. Roofing material suppliers should be consulted in order to ascertain the specific venting details and requirements for their particular system.

8. DURABILITY

Exposure to weather during construction and storage

- Superstrand Sarking has a high degree of durability. However, it is not desirable to leave Superstrand Sarking exposed to the weather for longer than is necessary as some discoloration and checking of the surface will appear. Notwithstanding this, the maximum period of exposure to the weather of Superstrand Sarking should not exceed 8 weeks.

Insect resistance

- Superstrand Sarking has been treated to the hazard class H3.1 to provide resistance against insect attack under normal use.

Humidity, solar driven moisture and condensation

- Once the roof covering is installed, Superstrand Sarking should not be allowed to reach a moisture content of more than 18% for prolonged periods of time. This can occur in situations where condensation forms on the Superstrand Sarking and/or where leaks occur in the roof covering and/or where rain soaked roof covering causes moisture to be driven into the Superstrand Sarking by the effect of the sun. Superstrand Sarking has been treated to the hazard class H3.1 to provide resistance from fungal decay; however this should not substitute for proper installation, maintenance or adequate ventilation of the roof space.

9. DESIGN CRITERIA

a. The design has been carried out using loads derived from NZS 3604 with the use of design combination factors as specified in NZS 1170 and deflection limits as suggested in NZS 1170. However, it is expected that Superstrand Sarking 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.

b. The panel and fixing designs have been carried out to the New Zealand timber code NZS 3603.

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

d. The characteristic panel strength and stiffness values, as shown below, were derived from tests carried out at the conditions described in 9c above, but otherwise in accordance with AS/NZS 4063.

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.

10. HANDLING AND STORAGE

- Always stack Superstrand Sarking horizontally, supported by bearers at maximum 1200mm centres and laid on a flat, level and dry surface.
- Avoid damage to Superstrand Sarking faces and edges.
- For prolonged storage on site, protect the Superstrand Sarking panels with tarpaulins or similar. To prevent moisture build up under covers, ensure that there is proper air circulation around the pack.

11. SAFE WORK PRACTICES

- Exposure to wood dust may cause irritation to the eyes, respiratory system and skin. Wood dust may cause sensitisation resulting in asthma, and result in dermatitis by skin contact. Wood dust is classified as a known carcinogen. Repeated exposure to wood dust over many years may cause nasal cancer.
- Work areas must be kept clean and well ventilated. Sawing, sanding and machining equipment must be fitted with dust extractors to ensure dust levels are kept within standards laid down by Occupational Health and Safety New Zealand. If not, a dust mask conforming to AS/NZS1715 and AS/NZS1716 and eye protection conforming to AS/NZS 1337 must be worn.
- Offcuts, shavings and dust must not be burnt in domestic situations. Disposal should be to approved landfills in accordance with the requirements of local waste Authorities, or in industrial incinerators.

Aerial photo of the Juken New Zealand Ltd – Triboard Mill

JUKEN NEW ZEALAND LTD – TRIBOARD MILL

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