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Validity

Users of any Agrément certificate should check its status: all currently valid certificates are listed on the website. In addition, check whether the certificate is [Active](#) or [Inactive](#).

The certificate holder is in possession of a confirmation certificate attesting to its status.

Quick guide

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Subject:
Spunsulation 3 Roofing Radiant Barrier

Certificate holder:
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Description and use

The top layer of Spunsulation 3 Roofing Radiant Barrier is manufactured from green pigmented ultraviolet light resistant and non-toxic flame retarded non-woven spunbond polypropylene. The layers are laminated by means of homogenous polyolefin based film web to the aluminium foil bottom layer. The membrane has a nominal mass of 140 g/m² with a thickness of between 0,31 mm to 0,35 mm. It is supplied in rolls 30 m long and 1,5 m wide.

Spunsulation 3 Roofing Radiant Barrier is suitable for installation in all tiled-roof buildings with timber roof construction. It was not evaluated for metal roof construction and side-wall cladding. It can be used in all regions of South Africa. When used in the conventional manner it can:

- reduce air movement between tiles, since the membrane can contribute to maintaining a balanced air pressure on both sides of the roof tiles
- reduce ingress to the roof space of wind-driven rain and dust.

This certificate and Agrément South Africa's assessment apply only to the Spunsulation 3 Roofing Radiant Barrier that is manufactured by Spunchem International (Pty) Ltd. It is installed in accordance with the certificate holder's installation brochure and as described and illustrated in this certificate, and where the terms and conditions of certification are complied with.

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PREAMBLE

This certificate is issued by Agrément South Africa in terms of the powers granted to it by the Minister of Public Works. This certificate:

- has been granted after a technical appraisal of the performance of the Spunsulation 3 Roofing Radiant Barrier for the [uses](#) covered by the certificate,
- is independent of any patent rights that may or may not subsist in the subject of the certificate, and
- does not relieve the user from the obligation to obtain the prior approval of the building authority concerned for the use of the subject.

Agrément South Africa considers that the quality and performance of the Spunsulation 3 Roofing Radiant Barrier will be satisfactory, provided that the requirements stipulated in this certificate are adhered to. However, Agrément South Africa does not on behalf of itself, or the State, or any of its employees or agents guarantee such quality or performance.

Responsibility for compliance with the requirements of this certificate and the quality of the finished product resides with the certificate holder.

No action for damages, or any other claim whatsoever, lies against Agrément South Africa, its members, the State or any of its employees should the said material fail to comply with the standard set out in this certificate.

Interested parties or users who are in any doubt about any detail or variation should contact [Agrément South Africa](#).

The validity of this certificate is reviewed every three years. The certificate shall remain valid as long as Agrément South Africa is satisfied that:

- the certificate holder complies with the general and specific conditions of certification and the technical requirements stipulated in the certificate
- the performance-in-use of the subject is acceptable
- any changes in building legislation, regulations, relevant standards or Agrément performance criteria have not invalidated the technical assessment which formed the basis of certification.

Agrément South Africa reserves the right to withdraw the certificate at any time, should reasonable cause exist.

Notices affecting the validity of this certificate will be published in the *Government Gazette*.

PART 1: CONDITIONS OF CERTIFICATION

Good building practice as discussed in:

- the supplement to certificates, by [Agrément South Africa](#)
- The *Home building manual parts 1, 2 & 3* issued by the National Home Builders Registration Council (NHBRC)

The Spunsulation 3 Roofing Radiant Barrier as described in this certificate must be:

- manufactured by the certificate holder
- installed in accordance with:
 - the technical description set out in [Part 3](#)
 - the certificate holder's installation manual
 - good building practice.

Any change to the material formulation, the production process, or the installation techniques set out in the certificate holder's brochure could result in various aspects of the performance of this product no longer complying with Agrément South Africa's performance criteria. Any change not authorised by Agrément South Africa in writing prior to its implementation will invalidate this certificate and the certificate can then not be used to demonstrate compliance with the National Building Regulations.

General conditions

Marking

The top layer of Spunsulation 3 Roofing Radiant Barrier is marked with:

- the trade name printed on the roll
- the batch number
- the date
- Agrément identification logo and certificate number as illustrated in this certificate
- 150 mm side-overlap dotted lines.

The packaged rolls are marked with:

- the works order number
- the roll number
- Agrément identification logo and certificate number as illustrated in this certificate
- storage recommendations.

Validity

The continued validity of this certificate is subject to a satisfactory review by Agrément South Africa every three years.

Quality monitoring

The certificate holder is required to participate in Agrément South Africa's post-certification quality-management scheme, which requires:

- that the certificate holder shall continue to implement and manage the quality management system approved

Spunsulation 3 Roofing Radiant Barrier

Tested and approved fit for purpose for use as a roof radiant barrier when used as specified in

CERTIFICATE 2009/366



by Agrément South Africa in the assessment of the Spunsulation 3 Roofing Radiant Barrier

- the co-operation of the certificate holder in facilitating post-certification quality monitoring by Agrément South Africa or its authorised agents.

Reappraisal

- must be requested by the certificate holder prior to implementing changes to the product
- will be required by Agrément South Africa if there are changes to the National Building Regulations or to Agrément criteria.

This certificate may be withdrawn if the certificate holder or a registered licensee fails to comply with these requirements.

On behalf of the Board of Agrément South Africa

Chairperson
25 November 2009

PART 2: ASSESSMENT

Scope of assessment

This assessment applies to the innovative aspects of the Spunsulation 3 Roofing Radiant Barrier. These aspects have been assessed as an integral part of a product that comprises both innovative and conventional aspects. The innovative aspects are:

- green pigmented ultraviolet light-resistant and non-toxic flame retarded non-woven polypropylene top layer
- polyolefin laminating layer
- the use of the aluminium foil as a bottom layer
- the laminating of the three layers into a waterproof membrane.

Assessment

In the opinion of Agrément South Africa, the Spunsulation 3 Roofing Radiant Barrier as described in the certificate is suitable for the use specified (see page 1).

The performance-in-use of the product will be such that the membrane will satisfy:

- the requirements of the National Building Regulations stated in Table 1. Any regulation not specifically referred to is considered to be outside the scope of this certificate and must be applied by the local authority in the normal manner.
- Agrément South Africa's performance criteria.

Agrément South Africa's detailed comments on the assessment are set out in Table 1, 2 and 3 below. Each aspect of performance was assessed by experts in that field.

Republic of South Africa. *National Building Regulations*, Government Notice R. 2378, Government Gazette No 12780, Pretoria, South Africa, 12 October 1990

Table 1: Compliance with National Building Regulations

Aspects of performance	Opinion of Agrément South Africa	National Building Regulations satisfied
Materials	The quality and suitability of the materials are satisfactory.	The materials used in the Spunsulation 3 Roofing Radiant Barrier are deemed to satisfy the requirements of Regulation A13 (1) (a): Materials.

Table 2: Performance

Aspects of performance	Opinion of Agrément South Africa	Explanatory notes
Membrane thickness	Satisfactory	Samples tested indicate that the specified film thickness is achieved.
Breaking strength and elongation at break	Satisfactory. EN12311-1: Flexible sheets for waterproofing, Part 1: Bitumen sheets for roof waterproofing – Determination of tensile properties	Tested in accordance with the requirements of EN12311-1. The performance is affected by heat ageing, however, the effect by heat is not considered to be as detrimental to the performance of the undertile membrane in practice as to negate fitness-for-purpose.
Puncture resistance	Satisfactory. SANS952. Polyolefin film for damp and waterproofing in buildings.	Tested in accordance with the requirement of SANS 952 as amended.
Resistance to tearing	Satisfactory. EN12310-1 Flexible sheets for waterproofing, Part 1: Bitumen sheets for roof waterproofing – Determination of resistance to tearing (nail shank)	Tested in accordance with the requirements of EN12310-1.
Water permeability and vapour transmission rate	Satisfactory.	Meets the requirements of SANS 952, as amended.

Table 2: Performance (continued)

Performance in fire	Satisfactory.	<p>The membrane is classified as combustible. It is suitable for installation in all tiled-roof buildings with timber roof construction. It was not evaluated for metal roof construction and side-wall cladding.</p> <p>Tested in accordance with the requirements of SANS 10177-5, SANS 10177-9 and SANS 10177-10.</p>
<p>SANS 10177-5, Fire testing of materials, components and elements used in buildings Part 5: Non-combustibility at 750 °C of building materials</p>		
<p>SANS 10177-9, Fire testing of materials, components and elements used in buildings- Part 9: Small-scale burning characteristics of building materials: ignition, flame spread and heat contribution.</p>		
<p>SANS 10177-10, Fire testing of materials, components and elements used in buildings- Part 10: Surface burning characteristics of building materials using the inverted channel tunnel test.</p>		
Durability	Satisfactory.	Agrément South Africa's opinion is based on test results.

Table 3: Quality management system

Aspects of performance	Opinion of Agrément South Africa	Explanatory notes
Quality management system	Satisfactory. The certificate holder's quality management system complies with Agrément South Africa's requirements. Properly applied, the quality management system will ensure that acceptable standards are maintained in the manufacture and installation of the membrane.	<p>Agrément South Africa's requirements, based on SANS 9001.</p>
<p>SANS 9001. Quality management systems- Requirements</p>		

PART 3: TECHNICAL DESCRIPTION

General description

The top layer of Spunsulation 3 Roofing Radiant Barrier is manufactured from green-pigmented, ultraviolet light- resistant and non-toxic flame retarded non- woven spunbond polypropylene .The layers are laminated by means of homogenous polyolefin based film web to the aluminium foil bottom layer. The membrane has a nominal mass of 140 g/m² with a thickness of between 0, 31 mm to 0, 35 mm. It is supplied in rolls 30 m long and 1, 5 m wide.

Manufacture

The top layer of Spunsulation 3 Roofing Radiant Barrier is manufactured from green-pigmented, ultraviolet light- resistant and non-toxic flame retardant non- woven spunbond polypropylene. The top layer is laminated by means of homogenous polyolefin based film web to the aluminium foil bottom layer.

The polypropylene homopolymer granules are mixed with the Green UV fire retardant masterbatch and extruded into fibres which are then laid onto a moving porous belt and transported through a heated calendar to form the non-woven spunbond. This fabric is then transferred to the lamination line where it is laminated to the aluminium foil via a polyolefin extruded film web.

These rolls are taken to a secondary process where printing and trimming takes place and wound into 30 m rolls. The rolls are marked as follows:

- the trade name printed on the roll
- the batch number
- the date
- Agrément identification logo and certificate number as illustrated in this certificate
- 150 mm side-overlap dotted lines.

Delivery and Handling

The rolls are supplied in a sealed, clear protective sleeve, together with an insert detailing the roll specifications and storage, handling and installation requirements. All rolls are supplied on wooden pallets, stretch-wrapped and labelled.

Installation

The Spunsulation 3 Roofing Radiant Barrier is installed by contractors and roof erectors in accordance with the certificate, Spunchem International (Pty) Ltd's installation brochure and good building practice.

The membrane is installed horizontally across the rafters, starting at the eaves and working towards the ridges of the roof, with each subsequent layer overlapping the lower layer

by 150 mm (minimum), with the overlapping line of 150 mm facing upwards. Each horizontal run must be installed with a drape of 10 mm between rafters at 600mm centres. The membrane is tacked to the trusses with corrosion resistant staples or E.P clout nails to secure the membrane in position until the battens are installed on top of the Spunsulation 3 Roofing Radiant Barrier membrane.

The membrane between the trusses must be sufficiently taut, while allowing a shallow trough to facilitate run-off should rainwater penetrate the tiles (see Figure 1). At the eaves it is important that the membrane is taken from under the second-last tiling batten over the tilting batten to prevent ponding of water (see Figure 2a & 2b).

At ridges and hips, a layer of DPC should be applied over the apex on top of the roofing radiant barrier (see Figure 3). In valleys, a strip of Spunsulation 3 Roofing Radiant Barrier at least 600mm wide must be laid under the main roof barrier and held down by valley battens, where used.

Tiling battens should be installed as soon as possible to prevent damage to the membrane by wind, and roof tiles placed to minimise exposure to the sun.

Standard methods of workmanship should be used to apply Spunsulation 3 Roofing Radiant Barrier at penetrations and abutments. It must be ensured that the roofing radiant barrier is turned up to less than 50mm at all abutments to be overlapped by the flashings, and that it overlaps the lining tray by not less than 100mm at the back face of any abutment.

Any damage to the membrane should be sealed as recommended by the manufacturer.

Protection of the membrane

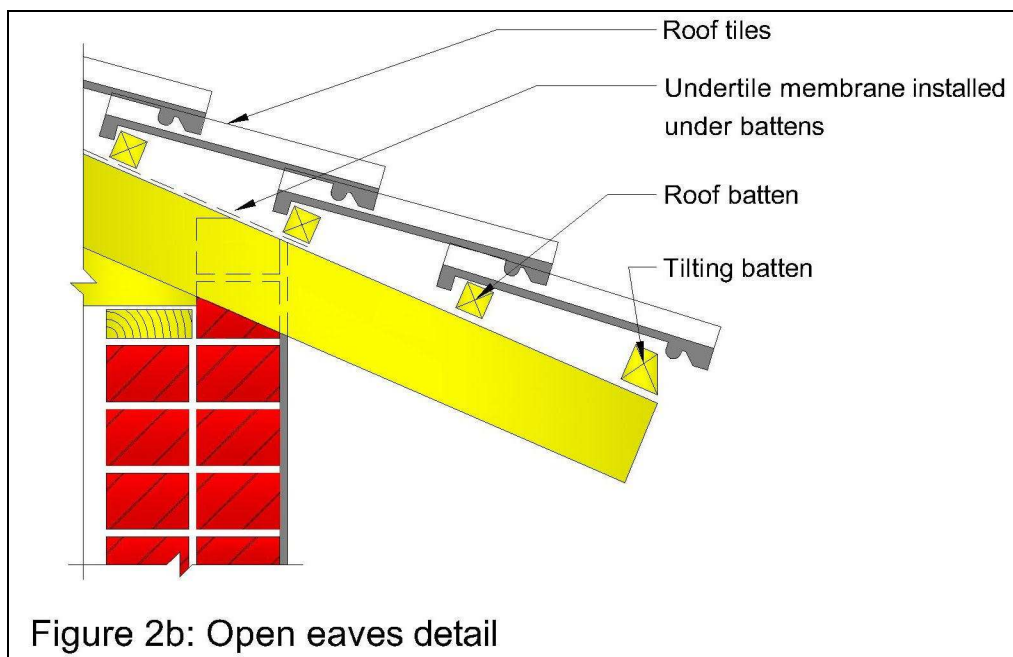
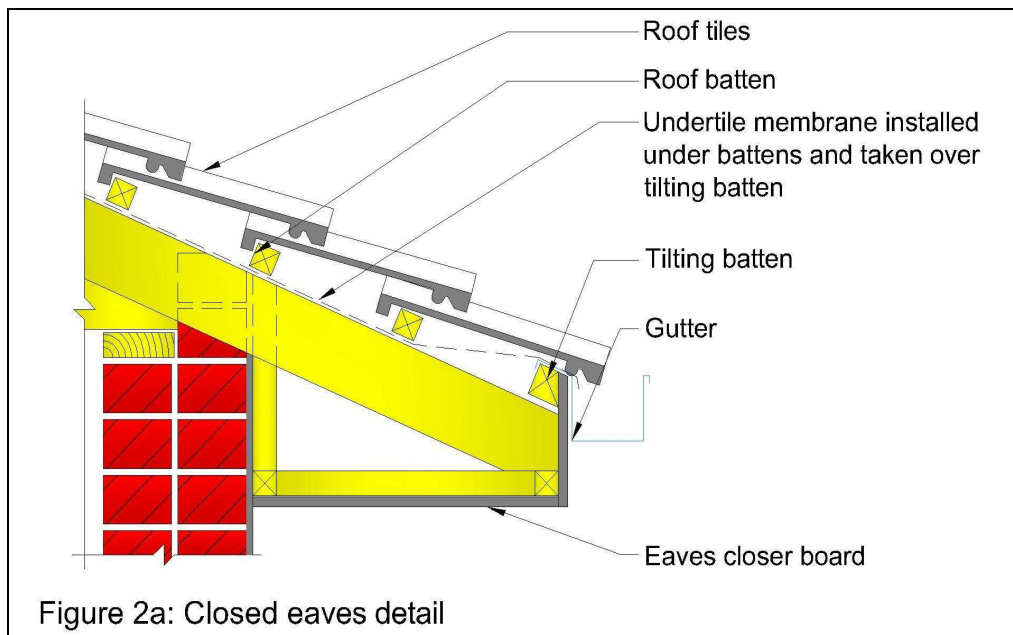
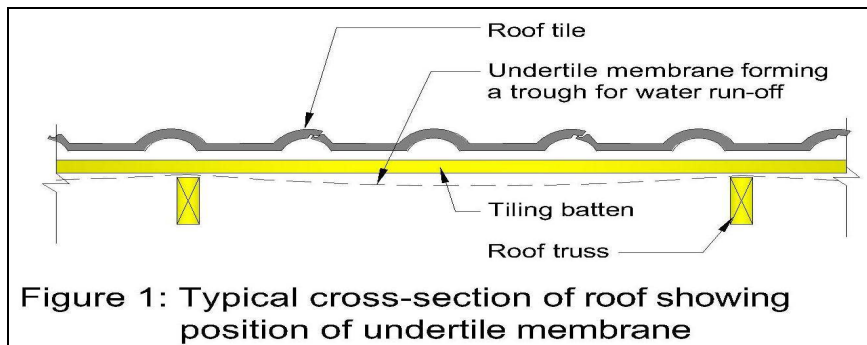
The rolls must be stored under cover and when removed from the packaging, the membrane must be installed as soon as possible and the tiles packed as soon as practicable.

Protection is also required against traffic on the ground, during storage, during the installation process and once installed.

Storage

On site the Spunsulation 3 Roofing Radiant Barrier should be kept out of direct sunlight and stored on a raised, flat surface free of sharp protrusions.

Drawings



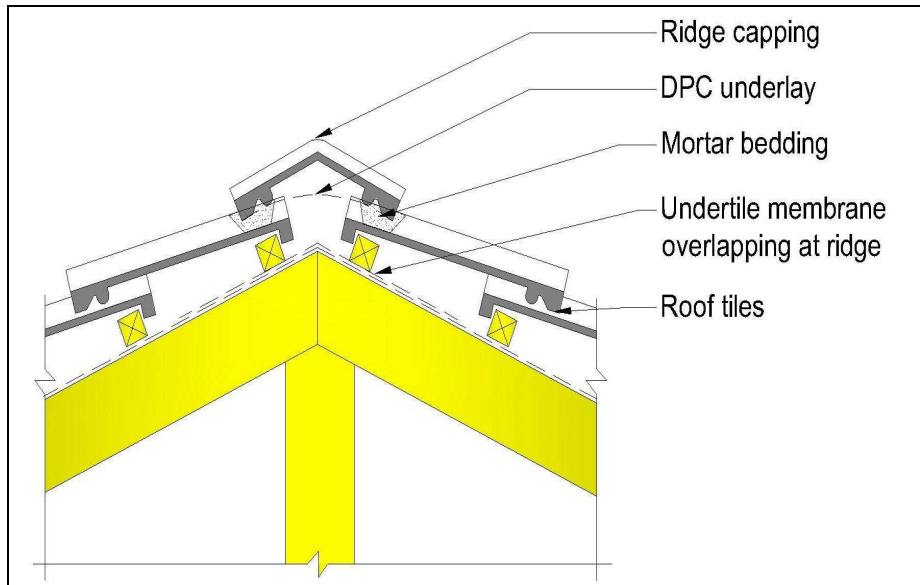


Figure 3: Ridge detail

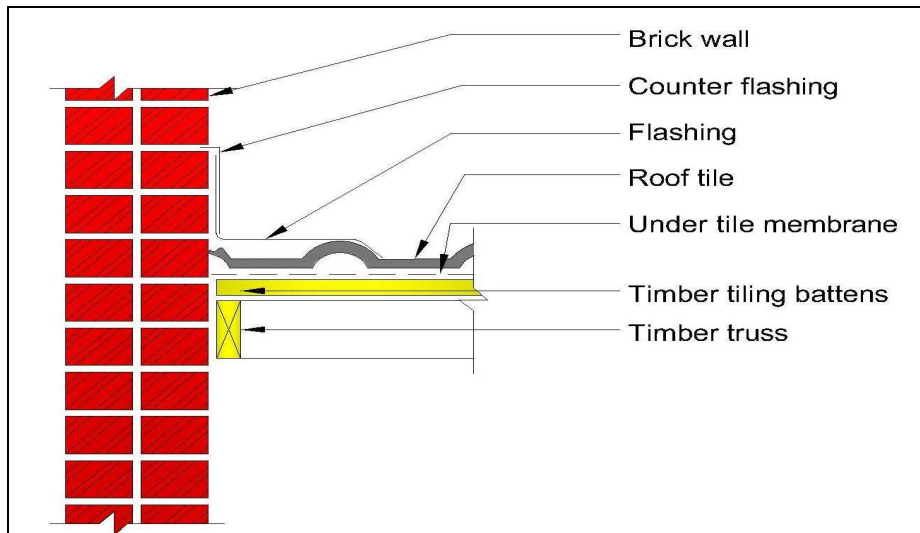


Figure 4: Typical parapet wall detail

