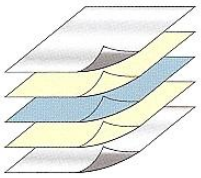
INSULATION & PACKAGING DISTRIBUTORS CC

SPUNSULATION LIGHT INDUSTRIAL

COMMERCIAL / LIGHT INDUSTRIAL



Aluminium	
Bonding Layer	
Spunbond	

Commercial / Light Industrial Spunsulation is utilised in commercial buildings such as offices, shopping centres, schools and community halls which are constructed with a pitched roof.

Area per roll:	50m²
Length:	33.33m
Width:	1.5m
Mass:	9.6kg
Grammage:	172g/m²

INSTALLATION GUIDE

Domestic / Commercial / Light Industrial Installation

The Spunsulation Roofing Radiant Barrier is to be installed by contractors and roof erectors in accordance with the Building Regulations of South Africa.

INSTRUCTIONS

1. The membrane is installed horizontally across the rafters, starting at the eaves and working towards the ridges of the roof (1a), with each subsequent layer overlapping the lower layer by 150 mm (minimum), with the overlapping line of 150 mm facing upwards (1b).

2. Each horizontal run must be installed with a drape of 10 mm between rafters or truss centres. The membrane is tacked to the trusses with corrosion resistant staples or E.P clout nails (2a) to secure the membrane in position until the battens are installed on top of the Spunsulation Roofing Radiant Barrier. The membrane between the trusses must be sufficiently taut, while allowing a shallow trough to facilitate run-off beyond the wall or into the gutter, should rain water penetrate the tiles (2b).

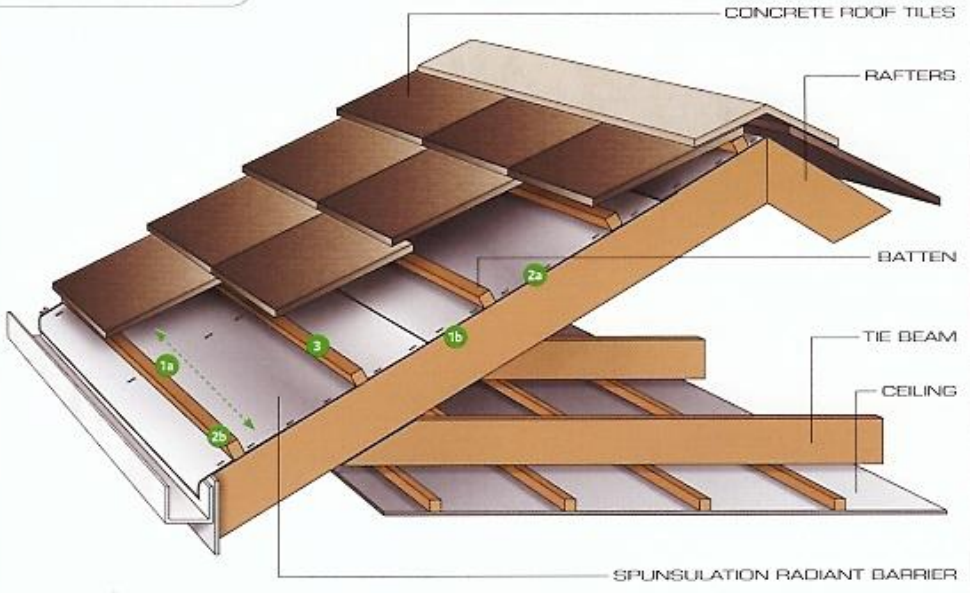
- At ridges and hips, a layer of Damp Proofing Course (DPC) should be installed over the apex on top of the roofing radiant barrier. (See Page 8, Figure 4.3)
- In valleys, a strip of Spunsulation Roofing Radiant Barrier at least 600 mm wide must be laid in each valley, but under the main roof barrier, and be held down by valley battens where used. (See Page 8, Figure 4.6)

3. 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 Roofing Radiant Barrier at penetrations and abutments.

- It must be ensured that the roofing radiant barrier is turned up to less than 50 mm at all abutments to be overlapped by the flashings, and that it overlaps the lining tray by not less than 100 mm at the back face of any abutment.

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

FIGURE 3.1



DIAGRAMATIC REPRESENTATION OF STEPS TO LAYING SPUNSULATION

COMMERCIAL / LIGHT INDUSTRIAL		Tensile Strength:	MD 200 N/50mm (EN12311-1)	Surface Emissivity:	3% (ASTM E 408)
			CD 180 N/50mm (EN12311-1)	Reflectivity:	97% (ASTM E 408)
		Elongation:	MD 60% (EN12311-1)	Water vapour transmission:	-
Building Regulation			CD 60% (EN12311-1)	Fire Performance:	B/B1/2/H Sans 428
Requirements:	A13(1)(a): Materials	Dimensional Stability:	<1.5%		(Sans 10177-9;
Certification:	Agrement 2009/353	Resistance to tearing:	MD 150N (EN12310-1)		Sans 10177-10)
Material:	PP Al Laminate	(nail shank)	CD 150N (EN12310-1)		

THE SCIENCE BEHIND SPUNSULATION

Radiant Barrier

In order to be classed as a radiant barrier, the product should reflect between 95% and 97% of all radiant energy. This means that the radiant barrier would have an emissivity of between 0.05 and 0.03.

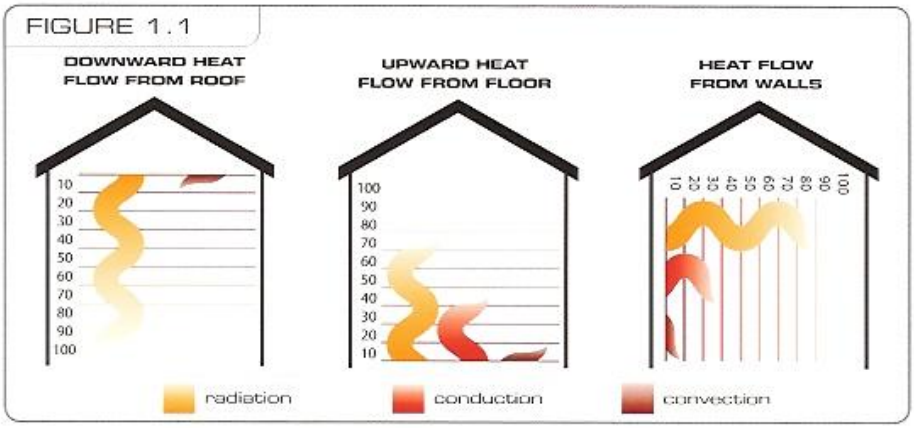
EMISSIVITY OF BUILDING MATERIALS

MATERIAL SURFACE	Asphalt	ALUMINIUM FOIL	Brick	Concrete	Glass	Fibreglass/ Cellulose	Wood	Silver	Enamel Paint (black/white)	Lacquer Paint (black/white)
EMISSIVITY	0.90-0.98	0.03-0.05	0.93	0.85-0.95	0.9%	0.8-1.0	0.90	0.20	0.91	0.80

To understand the relevance of this, we need to look at the different types of heat transfer that occur, namely CONDUCTION, CONVECTION and THERMAL RADIATION.

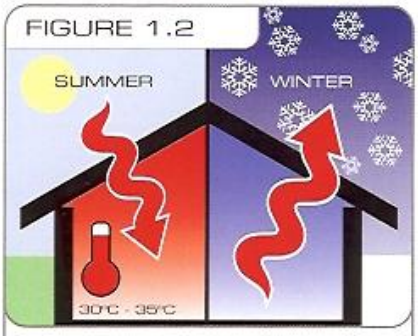
Thermal radiation is responsible for between 90% and 93% of radiant heat that is transferred in a downward flow from the roof, and up to 80% of the heat transfer through side walls of the building, [Fig. 1.1] while conduction and convection play a nominal role.

FIGURE 1.1



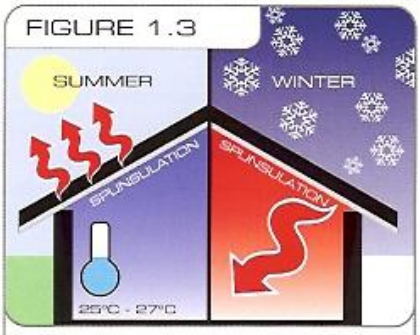
Spunsulation Radiant Barriers reduce energy costs by reflecting radiant heat energy by utilising the amazing reflective properties of aluminium. This works well (but oppositely) in both summer and winter months by keeping the heat from moving through the barrier [Fig. 2.2]. Spunsulation Radiant Barriers are not like bulk insulation, which slows down or resists heat transfer because of its mass.

FIGURE 1.2



A building without radiant barrier will gain heat in summer and lose heat in winter, adding to heating and cooling bills.

FIGURE 1.3



A building with a Spunsulation Radiant Barrier installed prevents heat from entering in summer and keeps in heat during winter, which saves money on heating and cooling bills.