

Sarking metal roofs

RESIDENTIAL PRODUCT GUIDE

There's
only one
opportunity
to install and
that's while
you build.





Sarking under residential metal roofs is popular because of the many benefits it delivers for little additional cost.

Whether it's as reflective thermal insulation, a protective second skin against burning embers in a bushfire area or as a way to control condensation, CSR Bradford has a product solution to suit your application.

The benefits of sarking

- Reflective (foil faced) sarking improves thermal performance by shielding the home from radiant heat when combined with an air-space, helping to resist the transfer of heat and assisting the ceiling insulation to provide a more energy efficient and comfortable home.
- Roof sarking is mandatory in all BAL 12.5 to 40 rated areas to meet the bush fire ember attack requirements in accordance with Australian Standard 3959, where it provides a secondary form of ember protection for the roof space¹.
- Vapour permeable sarking controls the risk of condensation, by allowing water vapour to be effectively managed and safely drained away².

1: In combination with sealing openings greater than 3mm. Full BAL systems include Multitel BAL blanket and other design elements – refer to the Bradford Bushfire Design Guide. 2: All sarkings should be installed with a minimum of 150mm overlap to facilitate drainage.

Design considerations prior to sarking selection

For roof sarking to be effective below metal roofing, the selection of the appropriate type of sarking material must be made with due consideration to condensation risk which can be influenced by the following:

- **Environmental** – the risk of condensation formation under metal roofs increases in colder climates (refer to the climate map on the Bradford website) where the temperature of the metal roof sheet, purlins/rafters and battens can fall below dew point (particularly metal battens). In these regions, the use of vapour permeable sarking or Anticon roofing blanket directly under the roof sheet is recommended to reduce the risk of condensation.
- **Insulation levels** – in cold climates, the use of high levels of ceiling insulation can reduce the temperature of the roof cavity which can allow the metal roof sheet temperature to drop below dew point, increasing the risk of condensation formation. The use of Anticon roofing blanket or vapour permeable sarking directly under the roof sheet is recommended to reduce this risk.
- **Ventilation** – venting moist air from kitchens or bathrooms into roof cavities increases the risk of condensation forming. Ducting of internal moisture out of the roof cavity is always recommended. Where this cannot be done, the use of vapour permeable sarking or Anticon roofing blanket plus the installation of an appropriate number of roof vents can help manage condensation.
- **Building use** – larger families produce more moisture which, unless managed correctly, can increase the risk of condensation formation in cooler climates. Appropriate use of ventilation, Anticon roofing blanket and vapour permeable sarking materials is important in colder climates.
- **High humidity buildings** (such as indoor swimming pools) require specific design solutions to reduce condensation risk and CSR Bradford should be consulted during project design.
- **Very humid and very cold climates** require specific design solutions to control condensation and CSR Bradford should be consulted during project design.

Recommended metal roof sarking solutions

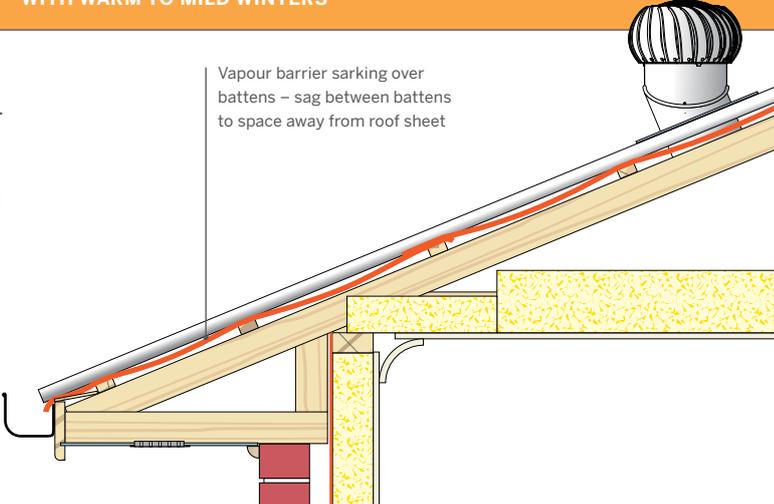
The following product recommendations provide general guidance on the suitability of installing sarking directly below metal residential roofing. Based upon average building use and typical construction methods in accordance with the BCA – for project specific advice please contact CSR Bradford.

Warmer summer climates WITH WARM TO MILD WINTERS

PRODUCT SOLUTION
Thermoseal resiWRAP to provide a radiant heat barrier.

VENTILATION RECOMMENDATION
Edmonds WindMaster natural ventilator in combination with eave vents or Maestro BAL.

NOTE
Vapour barrier sarking is not recommended for applications in regions with cold winters where condensation formation may be a risk.



Vapour barrier sarking over battens – sag between battens to space away from roof sheet

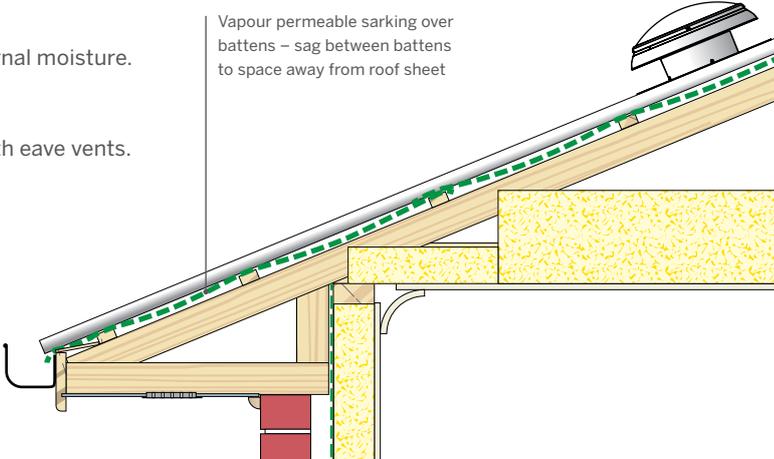



Cold winter climates COLD WINTERS IN COMBINATION WITH HIGHER LEVELS OF INSULATION (>R4.1 ceiling batts)

PRODUCT SOLUTION
Bradford Enviroseal ProctorWrap HTR to manage internal moisture.

VENTILATION RECOMMENDATION
Edmonds AiroMatic power ventilator in combination with eave vents.

BEST PRACTICE
Where possible, it is recommended to provide separation between the underside of the roof sheet and the sarking to create a drainage and drying path. This will allow condensation formation on the underside of the metal roof sheet to drain and dry.



Vapour permeable sarking over battens – sag between battens to space away from roof sheet



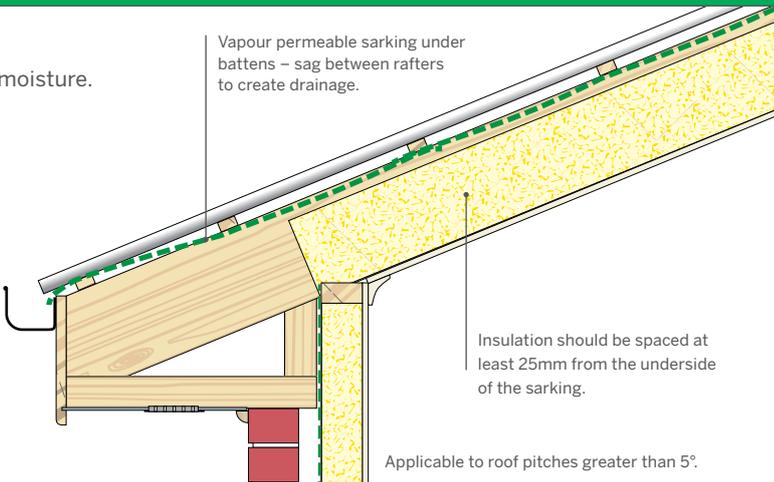


Cathedral ceiling/skillion roof COLD WINTERS IN COMBINATION WITH HIGHER LEVELS OF INSULATION (>R4.1 ceiling batts)

PRODUCT SOLUTION
Bradford Enviroseal ProctorWrap to manage internal moisture.

VENTILATION RECOMMENDATION
Eave vents or special consideration.

BEST PRACTICE
Where possible, it is recommended to provide separation between the underside of the roof sheet and the sarking to create a drainage and drying path. This will allow condensation formation on the underside of the metal roof sheet to drain and dry.



Vapour permeable sarking under battens – sag between rafters to create drainage.

Insulation should be spaced at least 25mm from the underside of the sarking.

Applicable to roof pitches greater than 5°.




Selecting the right product

PRODUCT	APPLICATION	SIZE (WxL)	PART NUMBER	
Thermoseal resiWRAP	Warmer climates Vapour barrier	Extra heavy duty, polymer and reflective foil laminate	1.5 x 30m	120121
			1.35 x 30m	108879
			1.35 x 60m	108004
Enviroseal ProctorWrap HTR	Colder climates Vapour permeable (especially where ceiling batts >R4.1 are used)	Highly vapour permeable, medium duty, reinforced non-woven membrane	1.5 x 50m	114445
Anticon	Anti-condensation roofing blanket for all climates	Bulk insulation roofing blanket bonded to reflective foil sarking for thermal and condensation control	1.2 x 15m	15417

Installation considerations

It is considered good building practice to install roof sarking parallel to the eaves (horizontal roll-out) and affix under the battens to allow water to cascade down the lap joints and provide a drying passage between the sarking and roof sheet. If roof sarking is installed from ridge to gutter (vertical roll-out) over the battens, then the following should be considered:



- Taping of the vertical overlap between roll joints is recommended to seal the side laps to prevent water spillage into the roof cavity and provide draught sealing.
- Sagging of the sarking to facilitate drainage to the gutter is required (but not more than 40mm).
- Sagging of sarking to avoid the sarking contacting the underside of the roof sheet (but not more than 40mm) is recommended to avoid temperature transfer from the roof sheet.
- All joints should be lapped 150mm and to achieve a vapour barrier, all joints, penetrations and discontinuities should be sealed.
- Creation of a continuous air space between the underside of the roof sheet and membrane is recommended to create a drying path when possible.

Please refer to the CSR Bradford installation guidance for sarking under metal roofs which is available on our website. Installation should always be in accordance with AS/NZS4200.2 as a minimum.

Need to know more

CSR Bradford offer a range of technical services including thermal system analysis and condensation modelling for project or climate specific applications, as well as general product and project technical support.

For more information please contact CSR Bradford on **1300 850 305** or **bradfordenquiries@csr.com.au**

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