Info Sheet

GREENFORM ENERGY RATING

Sarking

What is good practice when it comes to sarking? GreenForm has put together some common misconceptions and construction examples to highlight correct uses of sarking.

Why use sarking?

Sarking protects buildings from the elements (wind, rain, dust, fire), helps with air tightness and stops draughts, and improves thermal performance by controlling radiant heat and offering increased R-values. There are two main types.

The Two Types:

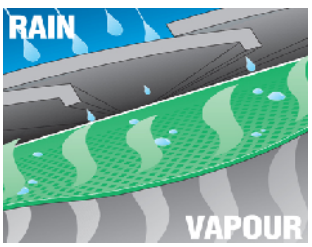
1) Non-Permeable Sarking

- Non-breathable
- Does not allow air or water to pass

2) Permeable Sarking

- Breathable
- Allows air to pass, stops water

Eg. Permeable Sarking:



The diagram illustrates sarking allowing air to pass, and resisting the water droplets.

Condensation Theory:

Many of the mistakes made with sarking come from not fully understanding how condensation works. Here is an example of the condensation theory that everyone can relate to. When a cold drink is poured what happens to the outside of the glass? → It gets wet.

The glass gets wet because the warm air around it condenses onto the relatively cold surface. The same applies to buildings - where a non-permeable sarking layer divides two spaces of different temperatures, the warm air will condense on the cooler surface.

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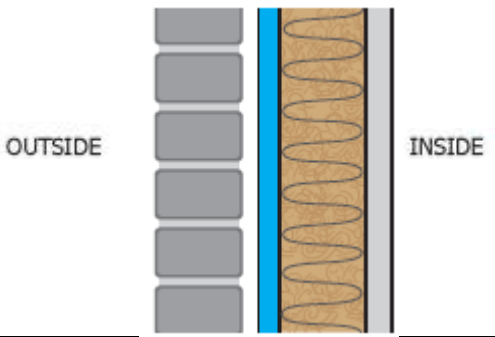
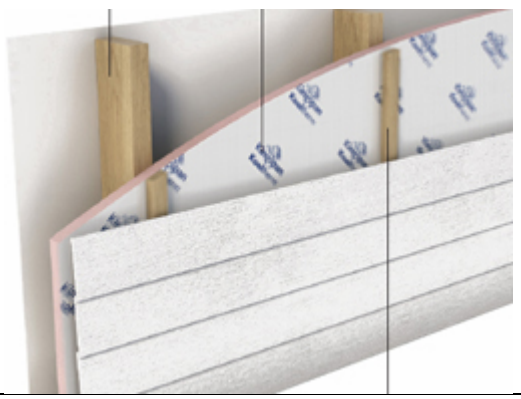
Wall Sarking:

The following are TEMPERATE CLIMATE EXAMPLES (ie. Can apply to BCA climate zones 4-7, includes majority of coastal and inland NSW)

1) Brick Veneer Construction	Sarking (the blue line) Common mistake: Non-permeable Sarking **Correct Type**: Permeable Sarking Explanation: Using non-permeable sarking risks creating condensation problems during winter where the warm air inside the house would condense on the cold sarking. This will wet the inside of the wall frame, insulation and plasterboard resulting in mould, damp marks, and reduced insulation performance. Permeable sarking allows this moisture to escape outside and keeps the walls dry during winter and summer.
	

2) Lightweight Construction	Common mistake: Non-permeable Bubble Wrap **Correct Type**: Permeable Bubble Wrap Explanation: Once again, in temperate climates, permeable bubble wrap prevents moisture being trapped inside the wall frame and condensing. This is true for Timber and Metal frames. Bubble wrap should be battened out to optimise its thermal performance and allow cladding to dry out after wet weather. (Note- sarking does not need to be battened out). If these two examples above were in HOT climates, they could use non-permeable products.
	

→ Designers/Specifiers It is worth specifically detailing on plans exactly what type of sarking is to be used. For example- write on plans "permeable sarking to be used".

Non-permeable sarking can be effectively used in alpine or hot/humid climates, and sometimes in temperate climates for windy locations or for extreme energy efficiency targets.

Manufacturers will generally claim their products are suitable for a certain construction type; however they do not consider the climate which is perhaps the most important factor. Therefore following what they recommend is not always best practice.

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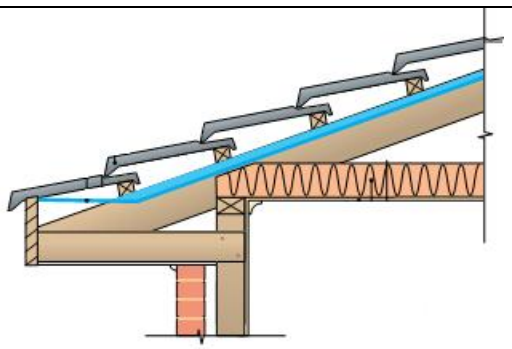
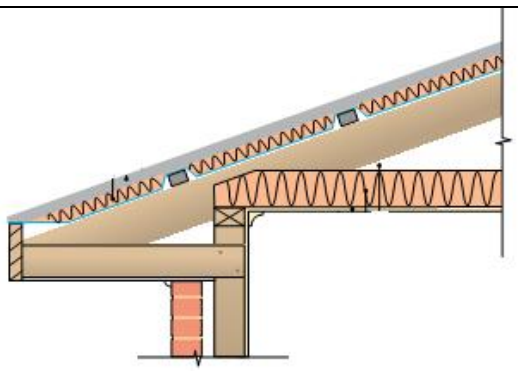
Roof Sarking:

The requirements for roof sarking involve more factors than wall sarking, however there are a few basic points worth knowing shown in the examples below for tiled and metal deck roofs.

Tiled Roof	Metal Deck Roof
	
Correct Type **Temperate and Cold climates**: - Permeable is preferable for non-ventilated roof spaces. - Non-permeable can be used for ventilated roof spaces with minimal steam being exhausted from the house. **Hot climates**: - Non-permeable sarking should be used.	**Correct Type** **Temperate and Cold climates**: - Foil backed blanket is correctly installed as shown. - Permeable sarking/bubble wrap can often be a better choice than non-permeable if the roof space is not ventilated. **Hot climates**: - Non-permeable sarking should be used and foil backed blankets are reversed (i.e. foil up).

For high performing 10-star energy efficient dwellings, the use of non-permeable sarking may be desirable. For example, in cold climates, place non-permeable sarking directly behind interior linings (eg. wall/ceiling plasterboard) and permeable towards the outside (eg. behind wall/roof cladding).

REMEMBER - When it comes to sarking, it is important to consider the CLIMATE. Think of the condensation theory and the path of moisture run off and then design the sarking/wraps requirements as appropriate.

If you require any further details, you liked our info sheet or have suggestions, we'd be happy to hear from you. Please feel free to contact us either by email or visit our webpage.

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