



How to install Thermafleece

Warm roof

(e.g. pitched roof or attic conversion)

therma
fleece®

Working in harmony with buildings.

Eden Renewable Innovations Ltd

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www.thermafleece.com



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Warm Roof

(e.g. pitched roof or attic conversion)

THERMAFLEECE FULL-FILL BETWEEN RAFTER

Supported Breather Membrane

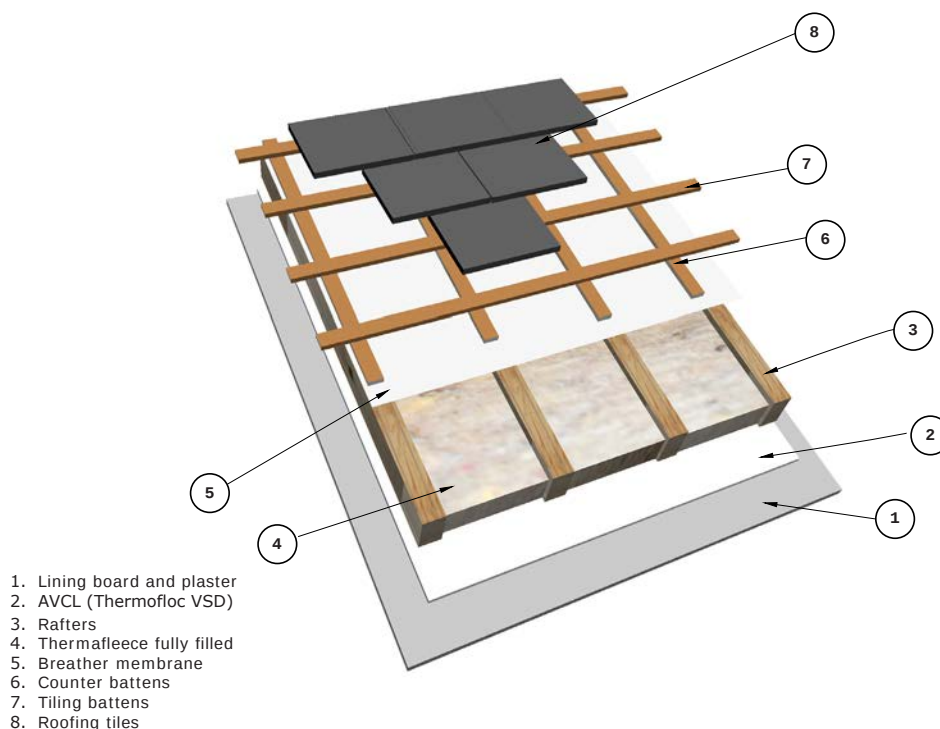
A supported breather membrane is created when the membrane is fitted taut on top of rafters and secured using counter battens that run the length of the rafter. Tiling battens run across the counter batten forming a space under the tiles.

The rafter depth can be fully filled with Thermafleece which fits neatly between rafters. The tightness of the fit combined with the friction against the rafters holds the insulation in place and prevents slumping. Thermafleece can also be stapled to the side of the rafter if desired.

It may be necessary or desirable to add an additional layer of Thermafleece under the rafter. A counter batten can be secured against the underside of the rafter running across or the rafter. Fit Thermafleece between.

Running the second layer of insulation across the rafters is desirable because it creates a thermal break.

Finally install an air-tightness / vapour control layer to the warm side (underside) of the rafters prior to fixing the lining board.



1. Lining board and plaster
2. AVCL (Thermofloc VSD)
3. Rafters
4. Thermafleece fully filled
5. Breather membrane
6. Counter battens
7. Tiling battens
8. Roofing tiles

Typical U-Value - W/m²K

UltraWool between rafters @ 400mm centres

50mm	70mm	90mm	120mm	150mm	170mm	190mm	200mm	240mm
0.62	0.27	0.41	0.32	0.27	0.23	0.22	0.21	0.18

Warm Roof

(e.g. pitched roof or attic conversion)

THERMAFLEECE FULL-FILL BETWEEN AND BELOW RAFTER

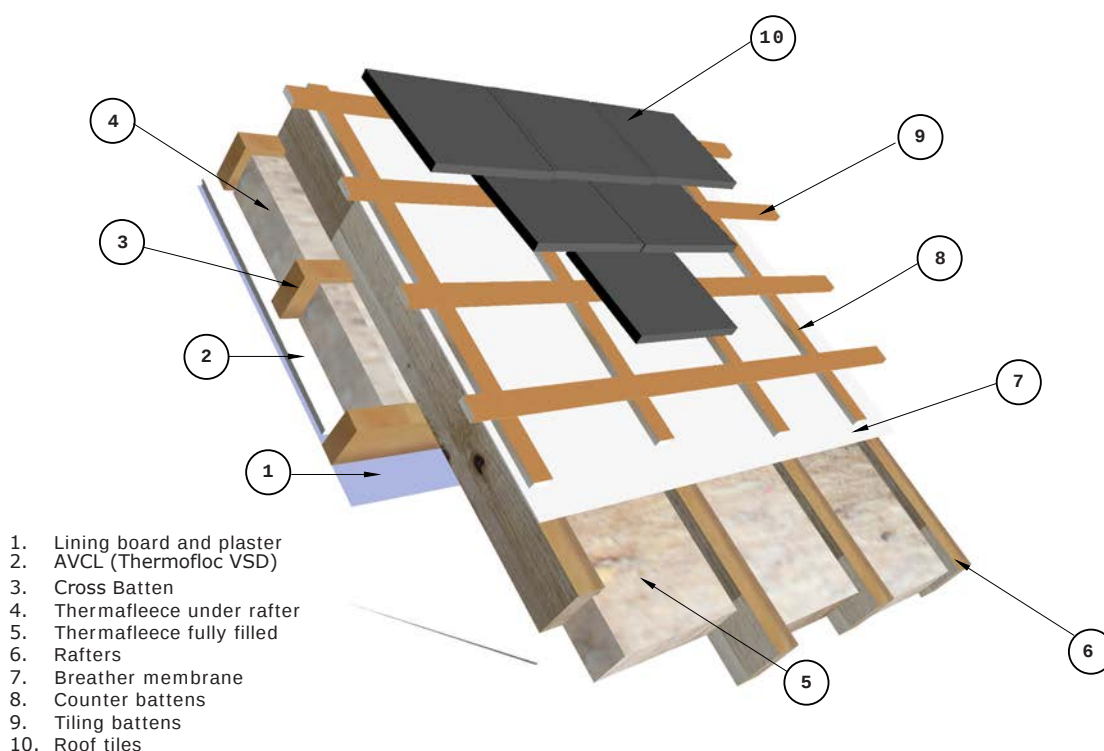
Supported Breather Membrane

A supported breather membrane is created when the membrane is fitted taut on top of rafters and secured using counter battens that run the length of the rafter. Tiling battens run across the counter batten forming a space under the tiles.

The rafter depth can be fully filled with Thermafleece which fits neatly between rafters. The tightness of the fit

combined with the friction against the rafters holds the insulation in place and prevents slumping. Thermafleece can also be stapled to the side of the rafter if desired.

Finally install a Thermofloc VSD (AVCL) layer with joints taped to the warm side (underside) of the battens prior to fixing the lining board.



U-Value - W/m²K									
	UltraWool between rafters @400mm centres								
	50mm	70mm	90mm	120mm	150mm	170mm	190mm	200mm	240mm
25mm CosyWool under rafter @600mm centre	0.44	0.37	0.32	0.26	0.22	0.2	0.19	0.18	0.16
50mm UltraWool under rafter @600mm centre	0.33	0.29	0.25	0.22	0.19	0.17	0.16	0.16	0.14
70mm UltraWool under rafter @600mm centre	0.28	0.25	0.22	0.19	0.17	0.16	0.15	0.14	0.13

Warm Roof

(e.g. pitched roof or attic conversion)

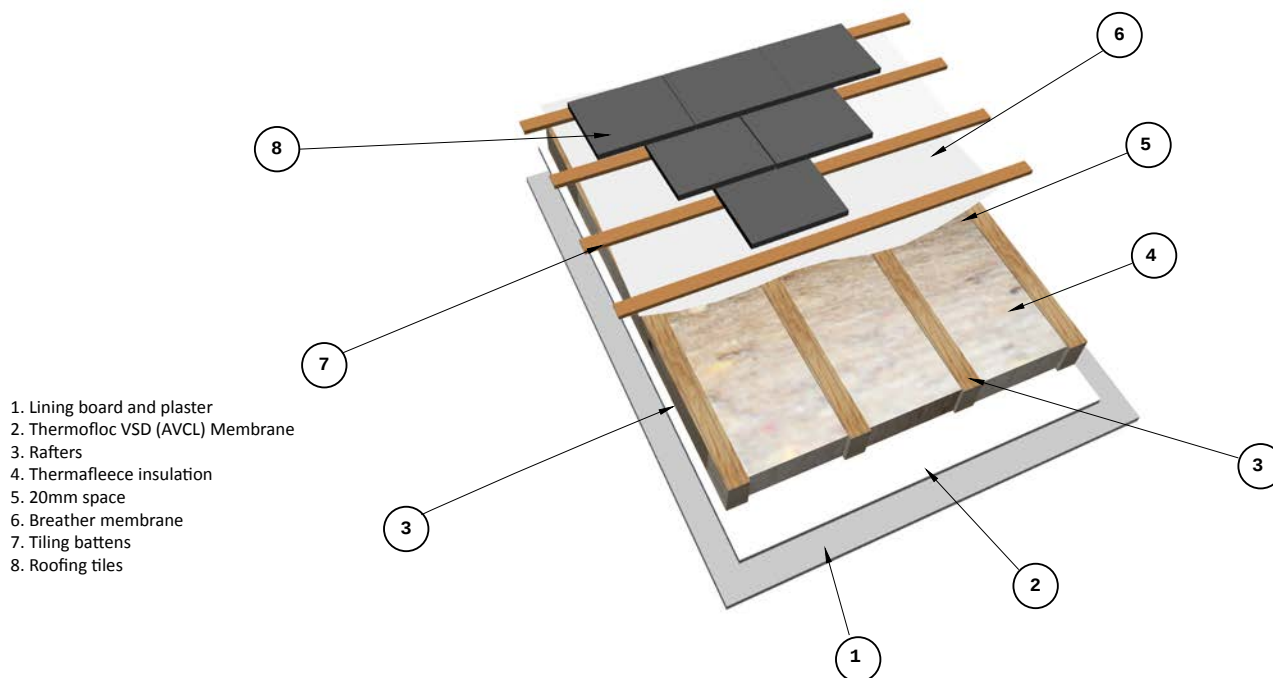
THERMAFLEECE PARTIAL FILL BETWEEN RAFTER Unsupported Breather Membrane

An unsupported breather membrane is when the membrane is fitted over the rafters and secured by tiling battens running across the rafters. A drape of around 10mm is created in the membrane running across the rafter to allow a gap between the breather membrane and the tiling batten above. In this case there is no counter batten installed on top of the rafter.

Fit insulation between the rafters leaving a 20mm space above the insulation to accommodate the drape in the

breather membrane above. Thermafleece fits neatly between rafters. The tightness of the fit combined with the friction against the rafters holds the insulation in place and prevents slumping. Thermafleece can also be stapled to the side of the rafter if desired.

Finally install a Thermofloc VSD (AVCL) layer with joints taped to the warm side (underside) of the battens prior to fixing the lining board.



U-Value - W/m²K							
UltraWool between rafters @400mm centres							
50mm	70mm	90mm	120mm	150mm	170mm	190mm	200mm
0.72	0.55	0.44	0.34	0.28	0.25	0.23	0.22

Warm Roof

(e.g. pitched roof or attic conversion)

THERMAFLEECE PARTIAL FILL BETWEEN AND UNDER RAFTER Unsupported Breather Membrane

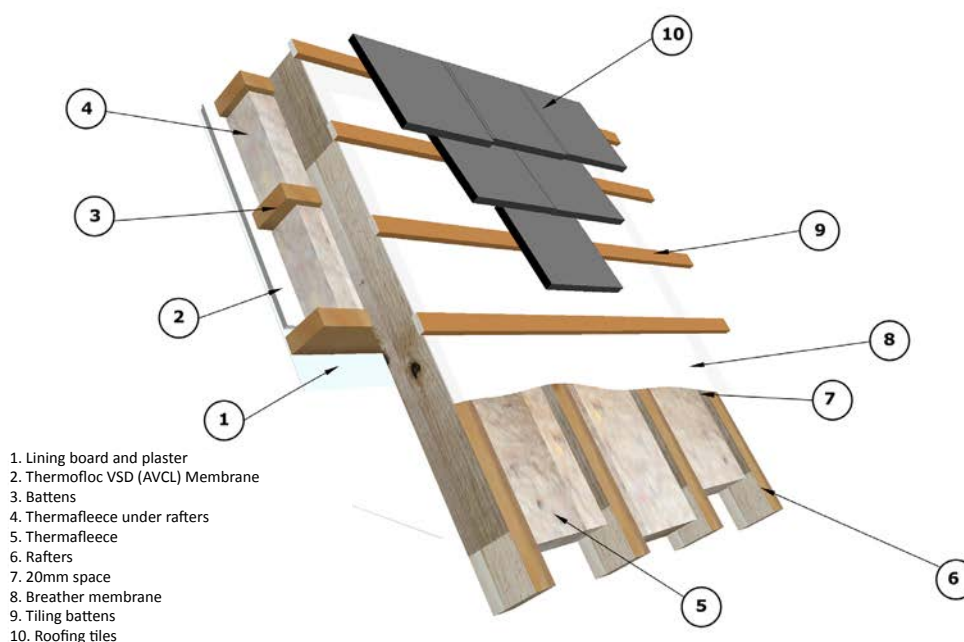
An unsupported breather membrane is when the membrane is fitted over the rafters and secured by tiling battens running across the rafters. A drape of around 10mm is created in the membrane running across the rafter to allow a gap between the breather membrane and the tiling batten above. In this case there is no counter batten installed on top of the rafter.

Fit insulation between the rafters leaving a 20mm space above the insulation to accommodate the drape in the breather membrane above. The tightness of the fit combined with the friction against the rafters holds the insulation in place and prevents slumping. Thermafleece can also

be stapled to the side of the rafter if desired.

It may be necessary or desirable to add an additional layer of Thermafleece under the rafter. A counter batten can be secured against the underside of the rafter running across the rafter. Fit Thermafleece between. Running the second layer of insulation across the rafters is desirable because it creates a thermal break.

Finally, install an air-tightness / vapour control layer to the warm side (underside) of the battens prior to fixing the lining board.



U-Value - W/m²K

	UltraWool between rafters @400mm centres								
	50mm	70mm	90mm	120mm	150mm	170mm	190mm	200mm	240mm
25mm CosyWool under rafter @600mm centre	0.44	0.37	0.32	0.26	0.22	0.2	0.19	0.18	0.16
50mm UltraWool under rafter @600mm centre	0.33	0.29	0.25	0.22	0.19	0.17	0.16	0.16	0.14
70mm UltraWool under rafter @600mm centre	0.28	0.25	0.22	0.19	0.17	0.16	0.15	0.14	0.13

Warm Roof

(e.g. pitched roof or attic conversion)

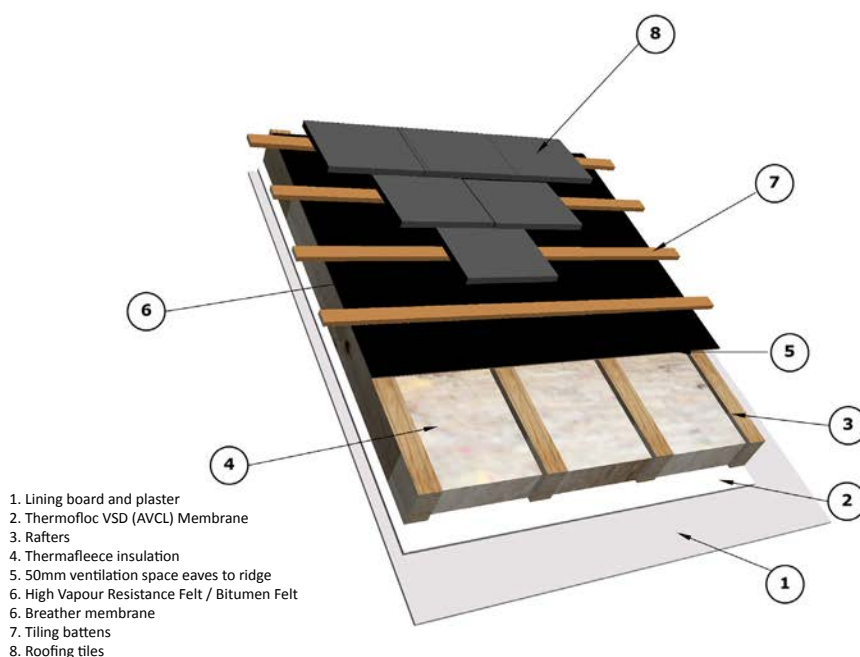
THERMAFLEECE PARTIAL FILL BETWEEN RAFTER High Vapour Resistance Roofing Felt

Traditional bitumen roofing felt is laid over the rafter and secured by tiling battens running across the top of the rafter. Bitumen roofing felt is not breathable and has a high vapour resistance so it is important to create a well ventilated space under the roofing felt to avoid the risk of condensation.

Fit insulation between the rafters leaving a 50mm space between the insulation and roofing felt to provide clear ventilation down to the eaves and up to the ridge.

Thermafleece fits neatly between rafters. The tightness of the fit combined with the friction against the rafters holds the insulation in place and prevents slumping. Thermafleece can also be stapled to the side of the rafter if desired.

Finally, install an air-tightness / vapour control layer to the warm side (underside) of the battens prior to fixing the lining board.



U-Value - W/m²K							
UltraWool between rafters @400mm centres with 50mm ventilation above							
50mm	70mm	90mm	120mm	150mm	170mm	190mm	200mm
0.72	0.55	0.44	0.34	0.28	0.25	0.23	0.22

Warm Roof

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THERMAFLEECE PARTIAL FILL BETWEEN AND UNDER RAFTERS

High Vapour Resistance Roofing Felt

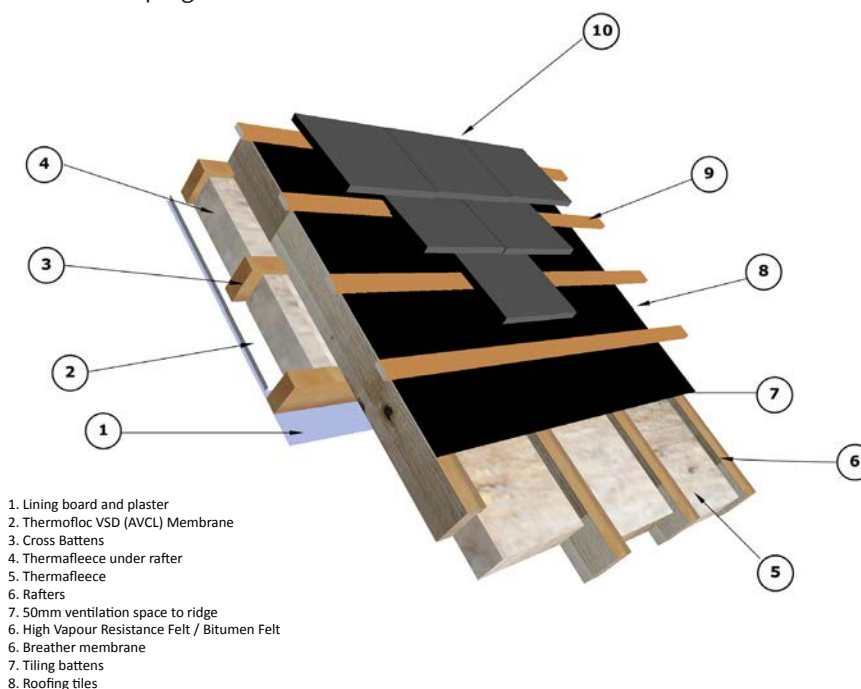
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Fit insulation between the rafters leaving a 50mm space between the insulation and roofing felt to provide clear ventilation down to the eaves and up to the ridge. Thermafleece fits neatly between rafters. The tightness of the fit combined with the friction against the rafters holds the insulation in place and prevents slumping. Thermafleece

can also be stapled to the side of the rafter if desired.

It may be necessary or desirable to add an additional layer of Thermafleece under the rafter. A cross batten can be secured against the underside of the rafter running across the rafter. Fit Thermafleece between the second layer of insulation, across the rafters is desirable because it creates a thermal break.

Finally, install an air-tightness / vapour control layer to the warm side (underside) of the battens prior to fixing the lining board.



1. Lining board and plaster
2. Thermofloc VSD (AVCL) Membrane
3. Cross Battens
4. Thermafleece under rafter
5. Thermafleece
6. Rafters
7. 50mm ventilation space to ridge
8. High Vapour Resistance Felt / Bitumen Felt
9. Breather membrane
10. Tiling battens

U-Value - W/m²K								
	UltraWool between rafters @400mm centres with 50mm ventilation above							
	50mm	70mm	90mm	120mm	150mm	170mm	190mm	200mm
25mm CosyWool under rafter @600mm centre	0.49	0.4	0.34	0.28	0.23	0.21	0.19	0.19
50mm UltraWool under rafter @600mm centre	0.36	0.31	0.27	0.23	0.2	0.18	0.17	0.16
70mm UltraWool under rafter @600mm centre	0.3	0.26	0.23	0.2	0.18	0.16	0.15	0.14

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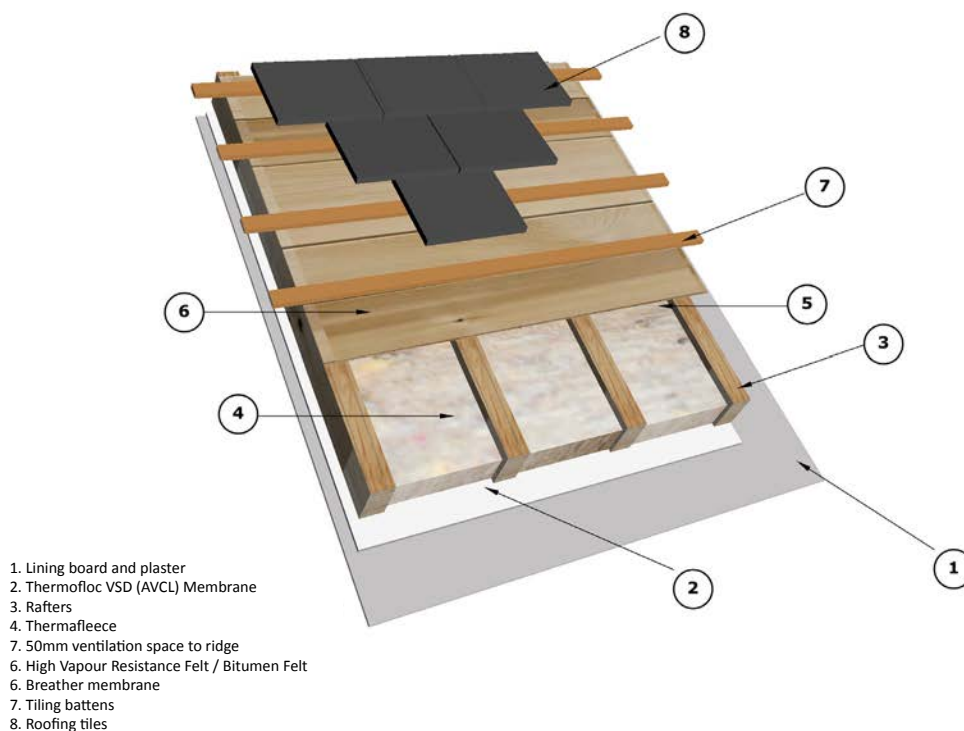
THERMAFLEECE PARTIAL FILL BETWEEN RAFTER Timber Sarking Boards

Timber sarking boards run across the top of the rafter with tiling battens fixed above. Sarking boards are deemed to have a high vapour resistance so it is important to create a well ventilated space under the sarking to avoid the risk of condensation.

Fit insulation between the rafters leaving a 50mm space between the insulation and sarking to provide clear ventilation down to the eaves and up to the ridge. Thermafleece

fits neatly between rafters. The tightness of the fit combined with the friction against the rafters holds the insulation in place and prevents slumping. Thermafleece can also be stapled to the side of the rafter if desired.

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THERMAFLEECE PARTIAL FILL BETWEEN AND UNDER RAFTERS

Timber Sarking Boards

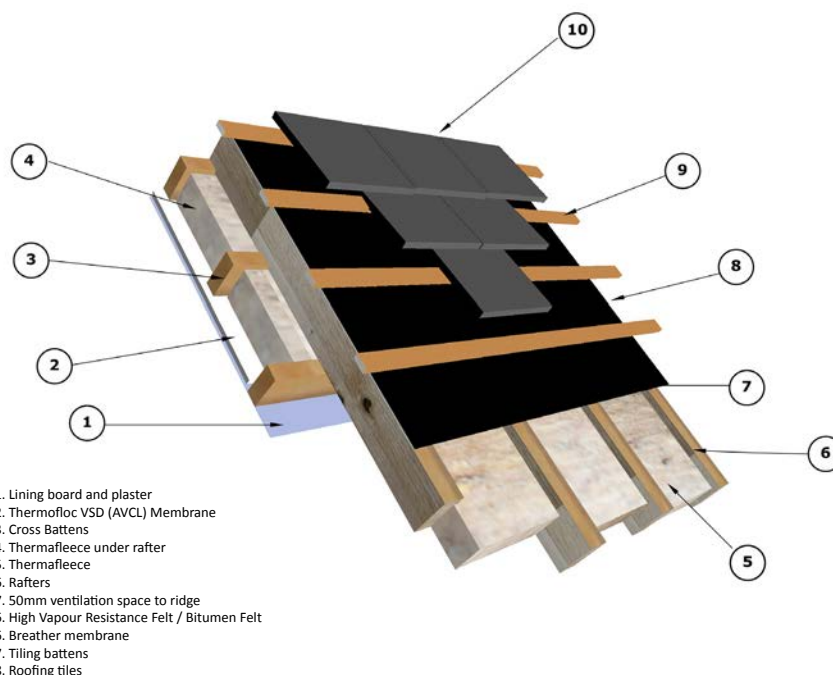
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side of the rafter if desired.

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Finally, install an air-tightness / vapour control layer to the warm side (underside) of the battens prior to fixing the lining board.



1. Lining board and plaster
2. Thermofloc VSD (AVCL) Membrane
3. Cross Battens
4. Thermafleece under rafter
5. Thermafleece
6. Rafters
7. 50mm ventilation space to ridge
8. High Vapour Resistance Felt / Bitumen Felt
9. Breather membrane
10. Tiling battens

U-Value - W/m²K								
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