Keeping you snug wherever you call home...

Application Guidance

WARM ROOF

therma fleece®

British wool insulation

Warm Roof

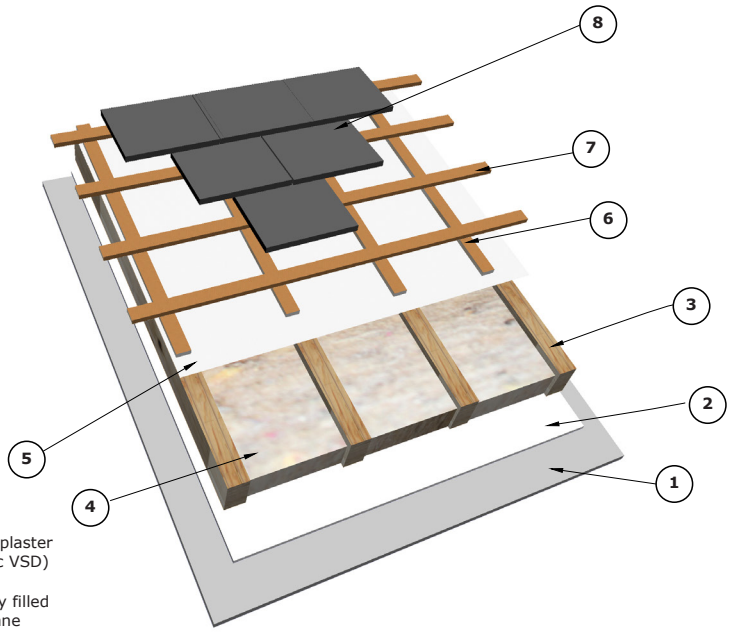
THERMAFLEECE FULL FILL BETWEEN RAFTER
Supported Breather Membrane

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				
UltraWool Under Rafter	100mm	125mm	150mm	175mm	200mm
0mm	0.40	0.33	0.28	0.26	0.23
	CosyWool Slab Between Rafter @ 400mm centres				
CosyWool Slab Under Rafter	100mm	125mm	150mm	175mm	200mm
0mm	0.40	0.33	0.28	0.26	0.23
	CosyWool Roll Between Rafter @ 400mm centres				
CosyWool Roll under Rafter	100mm	125mm	150mm	175mm	200mm
0mm	0.40	0.33	0.28	0.26	0.23

Warm Roof

therma fleece®
British wool insulation

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 slu

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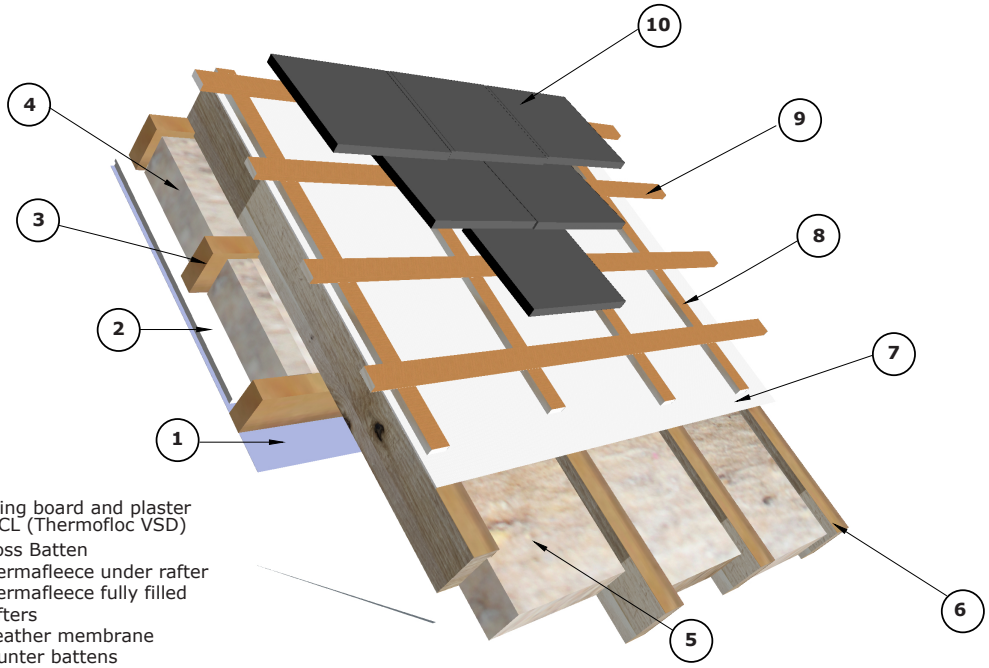


1. Lining board and plaster
2. AVCL (Thermofloc VSD)
3. Cross Batten
4. Thermafleece under rafter
5. Thermafleece fully filled
6. Rafters
7. Breather membrane
8. Counter battens
9. Tiling battens
10. Roof tiles

Typical U-Value - W/m2K							
UltraWool Under Rafter	UltraWool Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.32	0.27	0.23	0.2	0.18	0.17	0.15
100mm	0.23	0.2	0.18	0.17	0.15	0.14	0.13
CosyWool Slab Under Rafter	CosyWool Slab Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.16
100mm	0.25	0.22	0.2	0.18	0.16	0.15	0.14
CosyWool Roll Under Rafter	CosyWool Roll Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.17
100mm	0.25	0.22	0.2	0.18	0.16	0.15	0.14

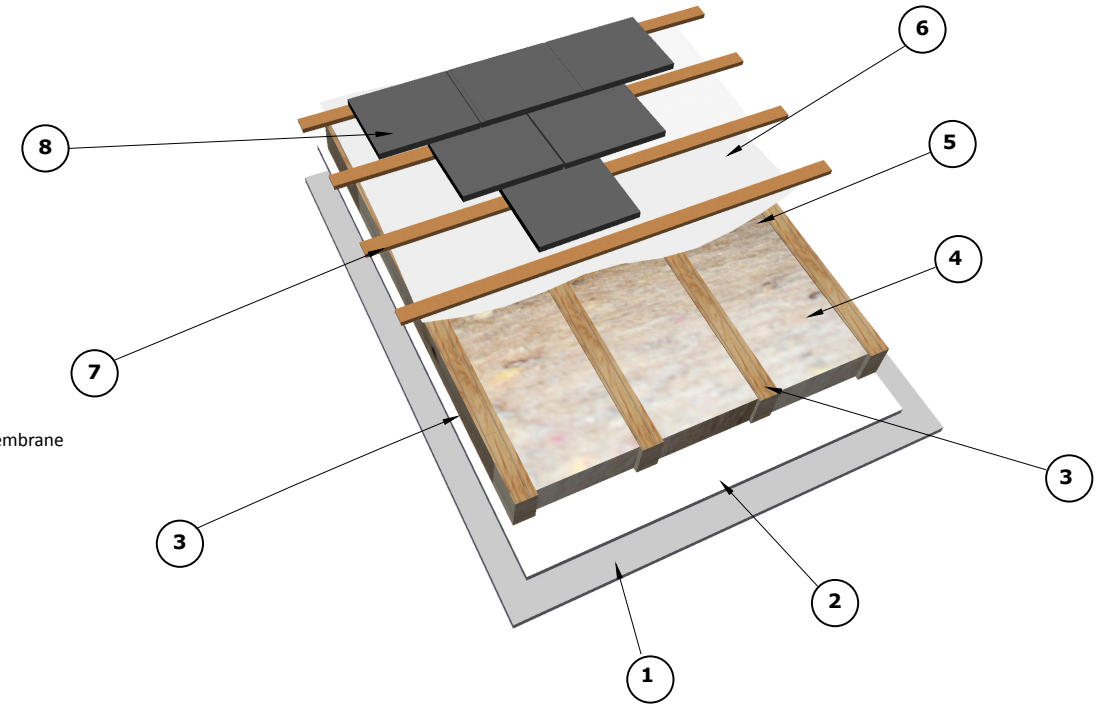
Warm Roof

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 wth joints taped 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. Rafters
4. Thermafleece insulation
5. 20mm space
6. Breather membrane
7. Tiling battens
8. Roofing tiles

Typical U-Value - W/m2K						
UltraWool Under Rafter	UltraWool Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.40	0.33	0.28	0.24	0.21	0.19
CosyWool Slab Under Rafter	CosyWool Slab Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.42	0.35	0.3	0.26	0.23	0.2
CosyWool Roll Under Rafter	CosyWool Roll Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.43	0.35	0.3	0.26	0.23	0.21

Warm Roof

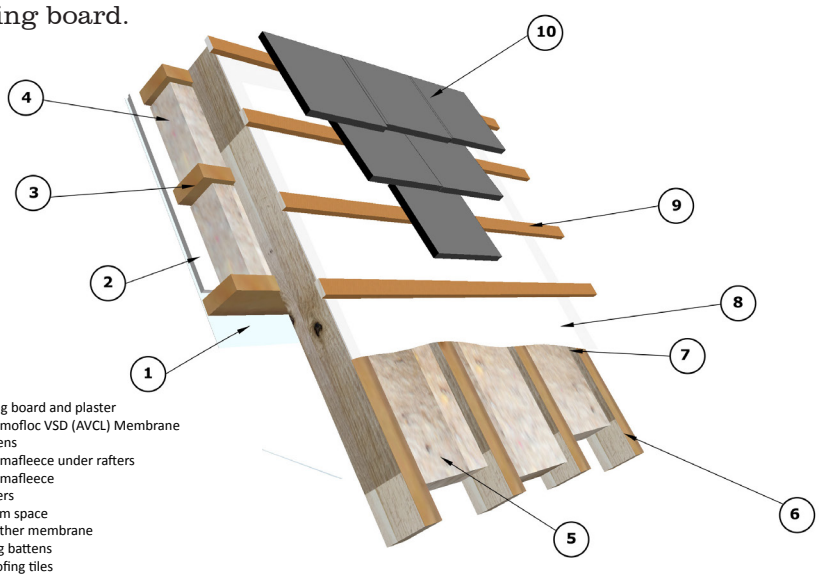
THERMAFLEECE PARTIAL FILL BETWEEN RAFTER AND UNDER RAFTER
Unsupported Breather Membrane

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. 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 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.



1. Lining board and plaster
2. Thermofloc VSD (AVCL) Membrane
3. Battens
4. Thermafleece under rafters
5. Thermafleece
6. Rafters
7. 20mm space
8. Breather membrane
9. Tiling battens
10. Roofing tiles

Typical U-Value - W/m2K							
UltraWool Under Rafter	UltraWool Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.32	0.27	0.23	0.2	0.18	0.17	0.15
100mm	0.23	0.2	0.18	0.17	0.15	0.14	0.13
CosyWool Slab Under Rafter	CosyWool Slab Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.16
100mm	0.25	0.22	0.19	0.18	0.16	0.15	0.14
CosyWool Roll Under Rafter	CosyWool Roll Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.17
100mm	0.25	0.22	0.2	0.18	0.16	0.15	0.14

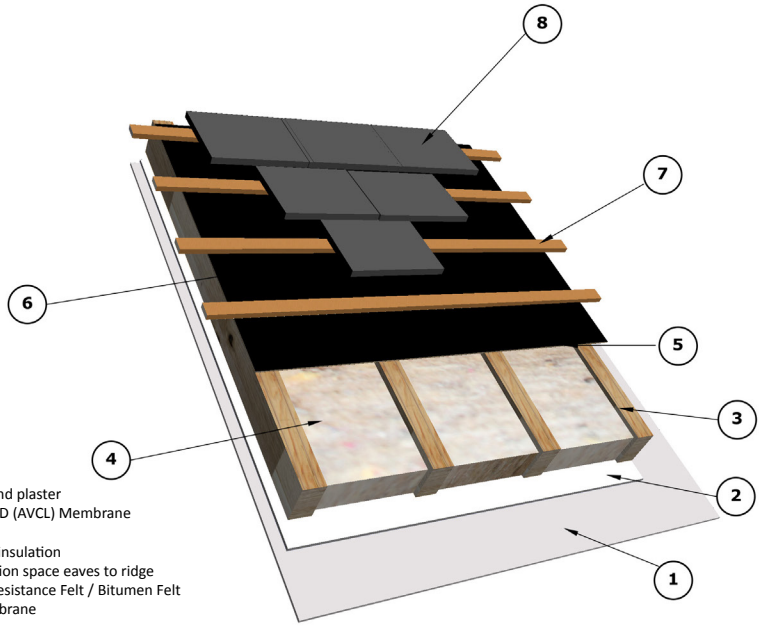
Warm Roof

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.



1. Lining board and plaster
2. Thermofloc VSD (AVCL) Membrane
3. Rafters
4. Thermafleece insulation
5. 50mm ventilation space eaves to ridge
6. High Vapour Resistance Felt / Bitumen Felt
6. Breather membrane
7. Tiling battens
8. Roofing tiles

Typical U-Value - W/m2K						
UltraWool Under Rafter	UltraWool Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.40	0.33	0.28	0.24	0.21	0.19
CosyWool Slab Under Rafter	CosyWool Slab Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.42	0.35	0.3	0.26	0.23	0.2
CosyWool Roll Under Rafter	CosyWool Roll Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.43	0.35	0.3	0.26	0.23	0.21

Warm Roof

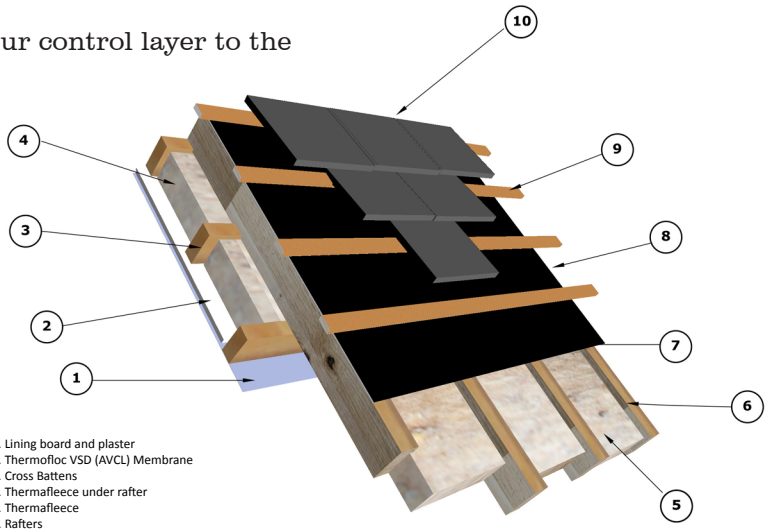
THERMAFLEECE PARTIAL FILL BETWEEN RAFTER AND UNDER RAFTER
High Vapour Resistance Roofing Felt

Traditional bitumen roofing felt is laid over the rafter and secured by tiling battens running across the top of the rafters. 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.

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
6. High Vapour Resistance Felt / Bitumen Felt
6. Breather membrane
7. Tiling battens
8. Roofing tiles

Typical U-Value - W/m2K							
UltraWool Under Rafter	UltraWool Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.32	0.27	0.23	0.2	0.18	0.17	0.15
100mm	0.23	0.2	0.18	0.17	0.15	0.14	0.13
CosyWool Slab Under Rafter	CosyWool Slab Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.16
100mm	0.25	0.22	0.19	0.18	0.16	0.15	0.14
CosyWool Roll Under Rafter	CosyWool Roll Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.17
100mm	0.25	0.22	0.2	0.18	0.16	0.15	0.14

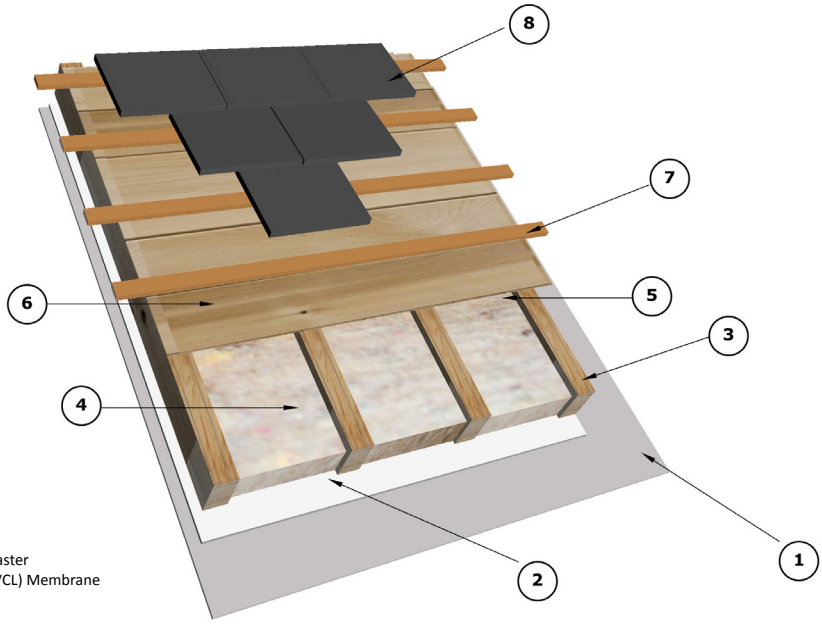
Warm Roof

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.

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. Rafters
4. Thermafleece
7. 50mm ventilation space to ridge
6. High Vapour Resistance Felt / Bitumen Felt
6. Breather membrane
7. Tiling battens
8. Roofing tiles

Typical U-Value - W/m2K						
UltraWool Under Rafter	UltraWool Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.40	0.33	0.28	0.24	0.21	0.19
CosyWool Slab Under Rafter	CosyWool Slab Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.42	0.35	0.3	0.26	0.23	0.2
CosyWool Roll Under Rafter	CosyWool Roll Between Rafters @ 400mm centres					
	100mm	125mm	150mm	175mm	200mm	225mm
0mm	0.43	0.35	0.3	0.26	0.23	0.21

Warm Roof

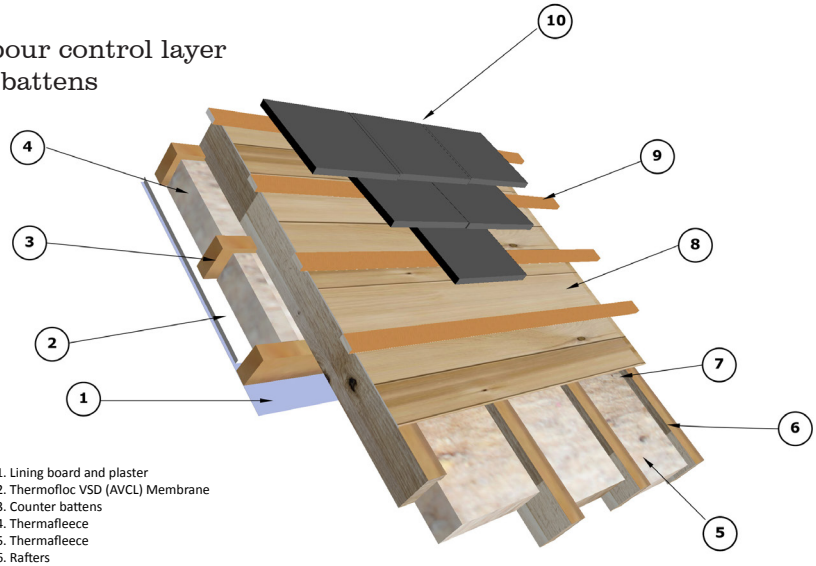
THERMAFLEECE PARTIAL FILL BETWEEN RAFTER AND UNDER RAFTER
Timber Sarking Boards

Timber sarking boards run across the top of the rafter with tiling battens fix 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. 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 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.



1. Lining board and plaster
2. Thermofloc VSD (AVCL) Membrane
3. Counter battens
4. Thermafleece
5. Thermafleece
6. Rafters
7. 50mm ventilation space to ridge
8. Sarking Board
7. Tiling battens
8. Roofing tiles

Typical U-Value - W/m2K							
UltraWool Under Rafter	UltraWool Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.32	0.27	0.23	0.2	0.18	0.17	0.15
100mm	0.23	0.2	0.18	0.17	0.15	0.14	0.13
CosyWool Slab Under Rafter	CosyWool Slab Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.16
100mm	0.25	0.22	0.19	0.18	0.16	0.15	0.14
CosyWool Roll Under Rafter	CosyWool Roll Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
50mm	0.34	0.29	0.25	0.22	0.2	0.18	0.17
100mm	0.25	0.22	0.2	0.18	0.16	0.15	0.14

Warm Roof

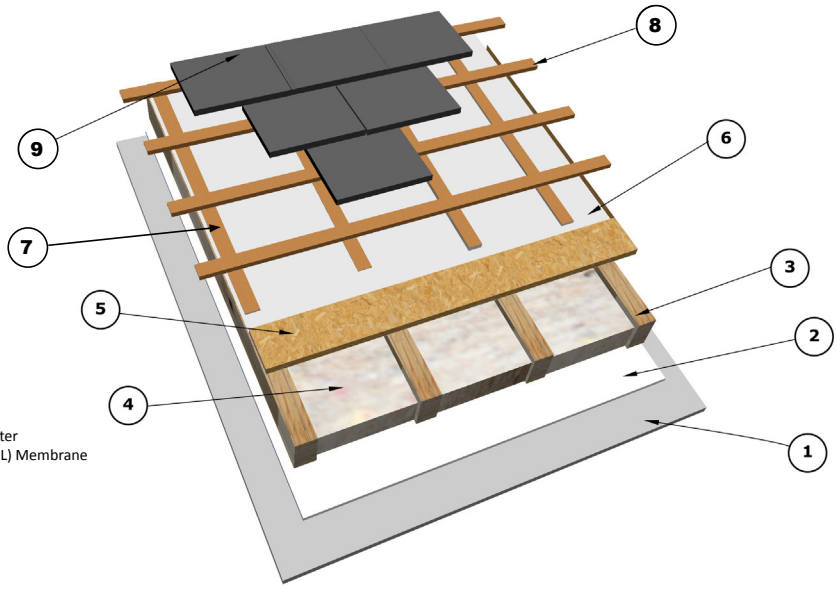
therma fleece®
British wool insulation

THERMAFLEECE FULL FILL BETWEEN RAFTER
Breathable Wood Fibreboard Over Rafter

Breathable wood fibreboards are a popular way of insulating above rafters. This insures that minimal space is lost under the rafters whilst improving thermal and acoustic performance of the roof structure.

The wood fibreboards over the rafter are vapour open and breathable. This means that 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 is important to refer to the installation guidance from the supplier of the wood fibreboard insulation. If necessary, 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. Thermofloc VSD (AVCL) Membrane
3. Rafters
4. Thermafleece
5. Woodfibre board
6. Breather membrane
7. Counter battens
8. Tiling battens
9. Roofing tiles

Typical U-Value - W/m2K							
Woodfibreboard Over Rafter	UltraWool Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
60mm	0.29	0.25	0.22	0.19	0.17	0.16	0.15
80mm	0.25	0.22	0.19	0.17	0.16	0.15	0.14
Woodfibreboard Over Rafter	CosyWool Slab Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
60mm	0.29	0.25	0.22	0.20	0.28	0.17	0.15
80mm	0.26	0.25	0.20	0.18	0.17	0.15	0.14
Woodfibreboard Over Rafter	CosyWool Roll Between Rafter @ 400mm centres						
	75mm	100mm	125mm	150mm	175mm	200mm	225mm
60mm	0.30	0.26	0.23	0.20	0.18	0.17	0.15
80mm	0.26	0.23	0.20	0.18	0.17	0.15	0.14

YOUR NOTES

This information is given in good faith as a general guide to users and specifiers of Thermafleece. This information is not a substitute for any design that may be necessary to determine suitability of the products for your end-use. Since we have no influence over project or site specific issues, Eden Renewable Innovations Ltd makes no warranties or accepts no liability in relation to the use of this information.

Version 7 2024

Eden Renewable Innovations Ltd

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