Tŷ-Mawr
sustainable building materials for healthier homes
deunyddiau adeiladu cynaliadwy ar gyfer cartrefi iachach

Keeping you snug wherever you call home...

Application Guidance

WALLS

therma fleece®
British wool insulation

Distribution Unit 12, Brecon Enterprise Park, Brecon, Powys Wales LD3 8BT Tel: 01874 611350 Fax: 01874 622774
Training & Manufacturing Tŷ-Mawr, Llangasty, Brecon, Powys Wales LD3 7PJ Tel: 01874 658000 Fax: 01874 622774

Solid Walls

BRICK / STONE SOLID WALL
Standard VCL

In order to internally insulate solid walls with Thermafleece, the insulation is held in place using a timber stud frame. Thermafleece fits between the timber studs. The tightness of the fit as well as the friction between the insulation and the timber holds the insulation in place and prevents slumping.

Support the thermafleece with noggins running between the studs. Thermafleece can also be stapled to the side of the timber stud if desired. It isn't necessary to level the wall providing the timber studs can be securely fixed and the wall is in good condition.

Ensure that the wall is in good condition and there are no signs of moisture ingress and dampness. If there are you should identify the cause and address any damp issues prior to insulating.
A breathable membrane can be installed against the wall to provide some separation between the insulation and the wall surface.

When using a vapour control and air-tightness layer on the warm side (the side nearest the inside) of the insulation attached across the timber studs, gaps must be property sealed using appropriate tapes and sealants. Refer to the membrane supplier for details.

1. Lining board and plaster
2. Vapour control and airtightness layer
3. Timber studs
4. Thermafleece
5. Breather membrane
6. Solid wall

	Typical U-Value - W/m²K		
	Thermafleece between studs (47mm)		
Insulation	**100mm**	**140mm**	**170mm**
Thermafleece UltraWool	0.35	0.27	0.23
Thermafleece CosyWool Slab	0.37	0.29	0.24
Thermafleece CosyWool Roll	0.37	0.28	0.24

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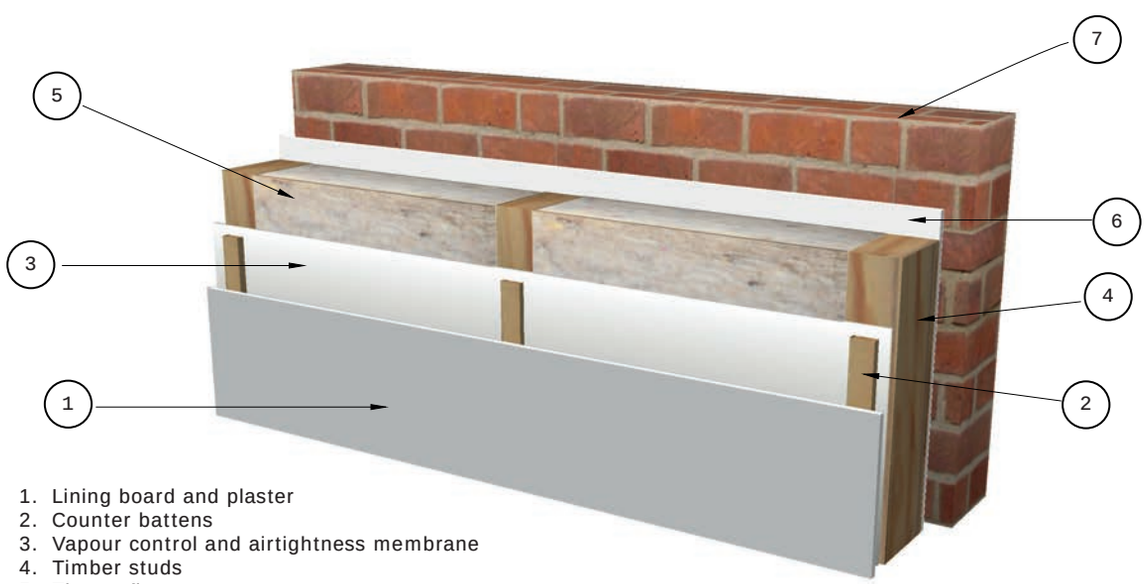
Solid Walls

BRICK / STONE SOLID WALL
Variable surface diffusion membrane

Using natural breathable insulation in conjunction with a variable s.d airtightness and vapour control membrane is an effective way to ensure a healthy moisture balance within the building fabric. The variable surface diffusion (s.d.) membrane works by blocking water vapour ingress in the colder months and allowing moisture to diffuse from the wall into the property in the warmer months.

A counter batten should be fixed between the variable s.d membrane and the lining board to provide an air space on the warm side of the membrane. The void created by the counter battens along the timber frame can be used to carry services. This ensures that the insulation remains undisturbed and airtightness remains intact when services are accessed for maintenance.

A layer of insulation can also be fixed across the timber stud frame to provide additional insulation. This has the advantage of reducing the thermal bridging in the wall system. It may not be possible to add additional insulation if there are space limitations internally.



1. Lining board and plaster
2. Counter battens
3. Vapour control and airtightness membrane
4. Timber studs
5. Thermafleece
6. Breather membrane
7. Solid wall

	Typical U-Value - W/m²K		
	Thermafleece between studs (47mm)		
Insulation	**100mm**	**140mm**	**170mm**
Thermafleece UltraWool	0.35	0.27	0.23
Thermafleece CosyWool Slab	0.37	0.29	0.24
Thermafleece CosyWool Roll	0.37	0.28	0.24

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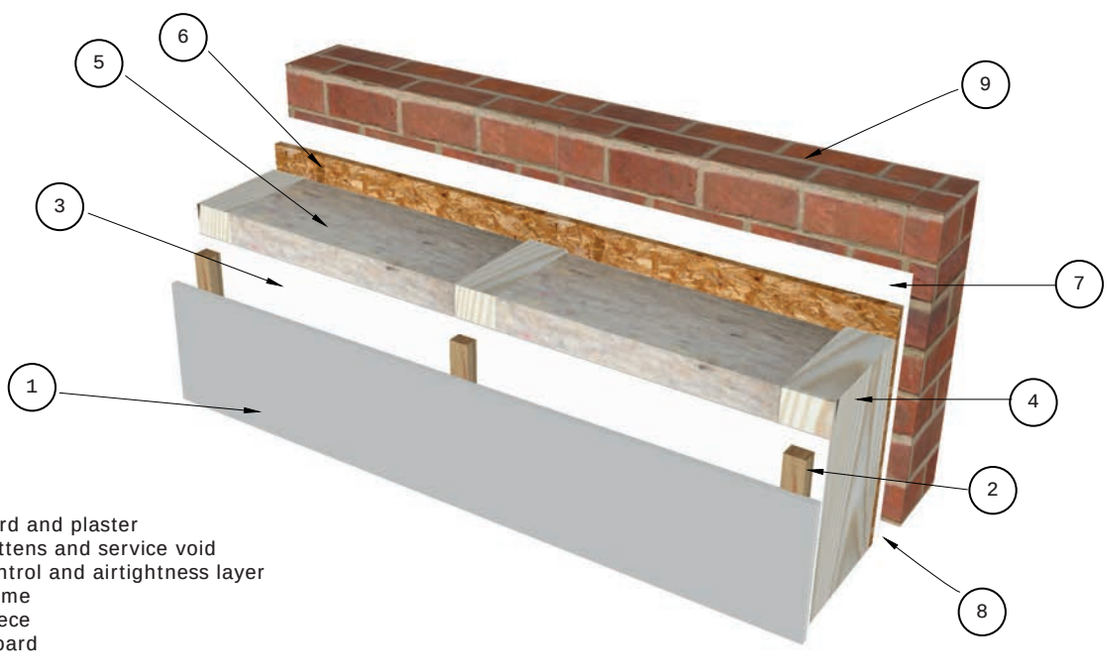
Timber Frame Walls

TIMBER FRAME WALL

Thermafleece can be used to fill the wall void in any type of timber frame wall system. The tightness of the fit as well as the friction between the insulation and the timber holds the insulation in place and prevents slumping.

The bottom of the insulation is usually supported by noggins running between the studs. Thermafleece can also be stapled to the side of the timber stud if desired.

Thermafleece is installed between the frame in the same way regardless of the build-up of the wall. The thickness of insulation required is determined by the target U-value. A layer of insulation can also be fixed across the timber stud frame to provide additional insulation. This has the advantage of reducing the thermal bridging in the wall system.



1. Lining board and plaster
2. Timber battens and service void
3. Vapour control and airtightness layer
4. Timber frame
5. Thermafleece
6. Racking board
7. Breather membrane
8. 50mm Cavity
9. Outer cladding

	Typical U-Value - W/m²K		
	Thermafleece between studs (47mm)		
Insulation Depth	**140mm**	**170mm**	**200mm**
Thermafleece UltraWool	0.26	0.23	0.21
Thermafleece CosyWool Slab	0.27	0.24	0.21
Thermafleece CosyWool Roll	0.28	0.24	0.22

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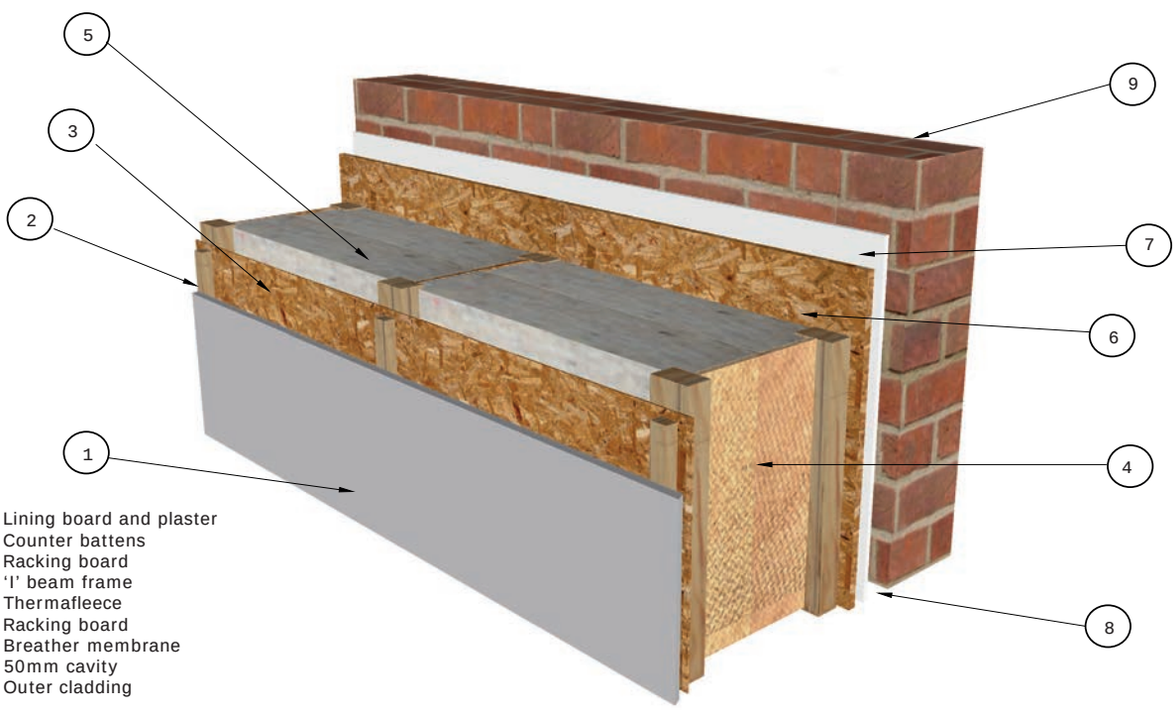
Timber Frame Walls

TIMBER FRAME WALL USING I-BEAM

A timber 'I' beam frame wall system is often used to create a greater depth of timber frame which can be filled with a greater quantity of insulation. The thinner web of the "I" beam also reduces thermal bridging through the timber sections. The structural timber frame 'I' beam section has a racking board attached to the cavity side of the construction to give a high degree of strength.

The system can also be fabricated as a closed panel system, delivered to site in sections that can be pre-insulated with the Thermafleece. A service void can be created by counter battening along the timber frame internal face and fixing the internal finishing board. This ensures that the insulation remains undisturbed and airtightness remains intact when services are accessed for maintenance.



1. Lining board and plaster
2. Counter battens
3. Racking board
4. 'I' beam frame
5. Thermafleece
6. Racking board
7. Breather membrane
8. 50mm cavity
9. Outer cladding

	Typical U-Value - W/m²K			
	Thermafleece between I-beam studs (47mm flange)			
Insulation Depth	**220mm**	**240mm**	**300mm**	**360mm**
Thermafleece UltraWool	0.16	0.15	0.12	0.11
Thermafleece CosyWool Slab	0.17	0.16	0.13	0.11
Thermafleece CosyWool Roll	0.17	0.16	0.13	0.12

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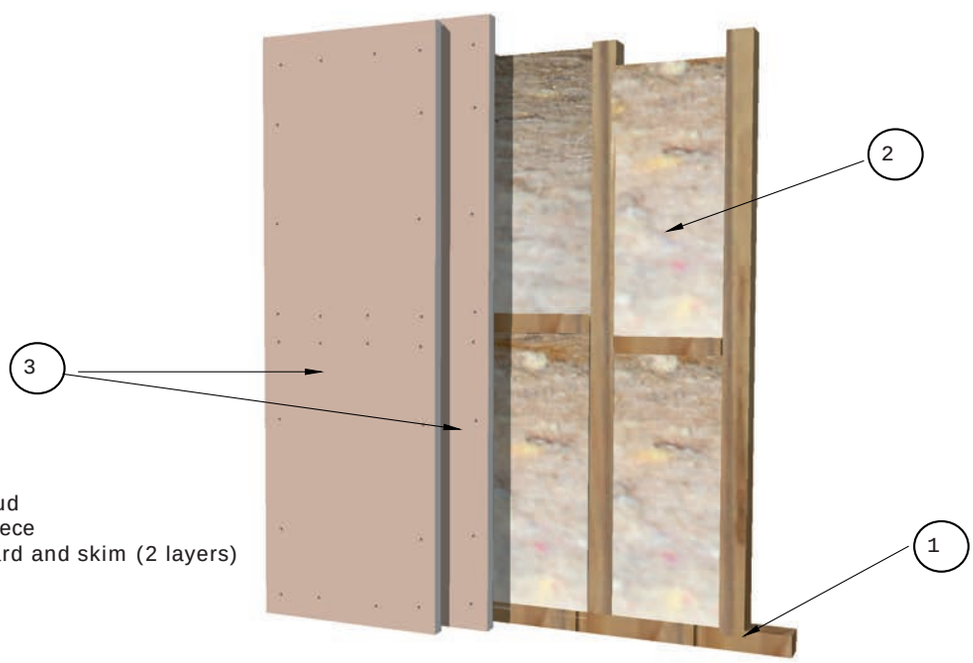
Timber Frame Walls

PARTITION WALLS

The sound absorbent properties and breathability of Thermafleece make it ideal for use in internal partition walls.

Thermafleece fits between the timber studs. The tightness of the fit combined with the friction between the insulation and the timber holds the insulation in place and prevents slumping. The bottom of the insulation is supported by noggins running between the studs. Thermafleece can be stapled to the side of the timber stud if desired.

For improved acoustic performance additional layers of lining board can be fixed to the wall. Ensure that joints between the additional layers are staggered.



1. Timber stud
3. Thermafleece
3. Lining board and skim (2 layers)

Lining Board	Insulation between 70mm Timber Stud	Weighted Sound Reduction Index
Plasterboard 1 layer each side	CosyWool 70mm	R_w40
Plasterboard 1 layer each side	UltraWool 70mm	R_w41
Plasterboard 1 layer plus 2 layers	UltraWool 70mm	R_w45
Plasterboard 2 layers each side	UltraWool 70mm	R_w48
Fermacell 1 layer each side	UltraWool 70mm	R_w47
Fermacell 1 layer plus 2 layers	UltraWool 70mm	R_w52
Fermacell 2 layers each side	UltraWool 70mm	R_w54

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Product Information

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 5.01

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