

scotframe

Valutherm⁺

High performance insulated timber frames





Valutherm⁺ is Scotframe's unique factory injected, closed panel, solution for wall, roof and floor systems with high thermal performance built in.

Timber frame is one of the most widely used structural building methods in the world. Scotframe uses Valutherm⁺ to build upon this established technology, injecting high performance insulation into the building's structure to create an insulated frame that will deliver outstanding thermal performance.

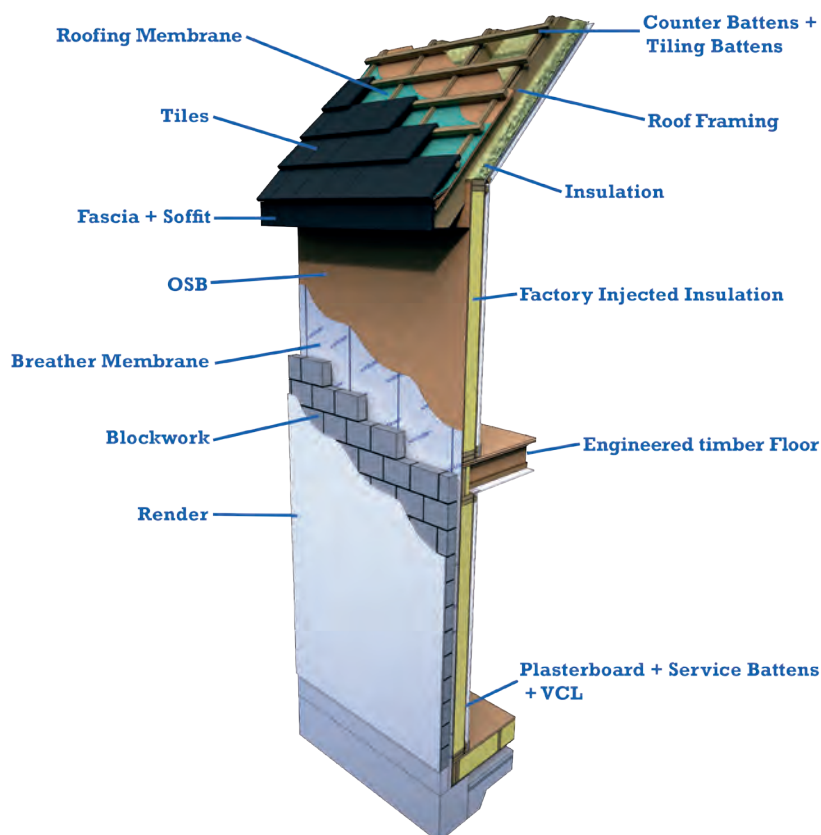
This is known as a Fabric First approach, using insulation, detailing and manufacturing expertise to deliver a thermally efficient timber frame structure. The thermal performance of the system in turn reduces the heating requirements for the home, reducing the energy used over the lifetime of the building.

Why choose Scotframe's Valutherm⁺ system?

- **Exceptional thermal performance**
- **Factory controlled build quality**
- **Reduced energy use over the lifetime of your home**

The thermal performance that Valutherm⁺ achieves will help you to meet the standards that you have set for your project. Valutherm⁺ offers a practical, cost-effective solution to not only meeting but often surpassing building regulation requirements, and has been used to achieve 'A' rated Energy Performance Certificates, and PassivHaus standards.

Valutherm⁺ Wall Section



U Values of standard Valutherm⁺ wall panels with block work outer leaf.

Stud size	Unit W/m ² K
140mm	0.15
184mm	0.13
235mm	0.11

Wall panels are available in 140mm, 184mm and 235mm stud sizes and provide an array of thermal performance options which achieve U values ranging from 0.09mm unit W/m²K to 0.17mm unit W/m²K depending on final wall specification and individual customer requirements.



Thermal Performance Benefits

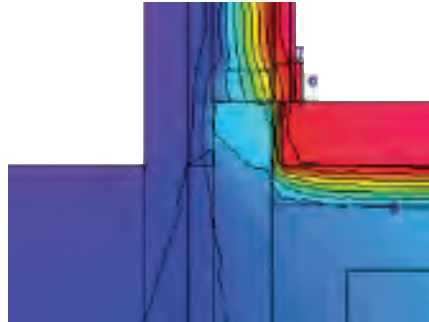
Through continued testing both internally and using an independent third party, the declared lambda value of Valutherm+ insulation has been shown as 0.022 W/m²K based upon 140mm insulation and 0.023 W/m²K for panels at 184mm and above.

During the quality controlled production process, Valutherm+ injected polyurethane insulation fully fills the voids in the panel. This complete coverage helps to give the panel it's uniform thermal performance.

Thermal Bridging

Approximately 25% of heat loss in a traditional home can be through poorly controlled thermal bridging. Our thermally modelled design details help to reduce the impact of thermal bridging, further improving energy efficiency when compared to traditional building solutions.

To support your project, a range of bespoke calculated PSI values are available. Please speak to our technical team for further details.



No gaps or voids left to reduce the thermal performance of the panel.

Reducing Environmental Impact

Over the life of a building, there are a number of factors that impact it's environmental impact, which can only be accurately quantified by life-cycle analysis. What can be said is that due to the thermal performance of a Valutherm+ system, it is likely that a building produced by Scotframe will have a reduced energy demand compared to lower performing building systems.

There are supplementary savings in emissions during the construction phase due to reduced deliveries to site, faster build times, and a reduction in the requirement on site equipment. The electricity used at our production sites is also certified as being from renewable sources, reducing the carbon impact of the manufacturing process.

Supporting Sustainable Forestry Management

All the timber used in Scotframe's systems, including panels that integrate Valutherm+ insulation, is procured from responsible and certified controlled sources.

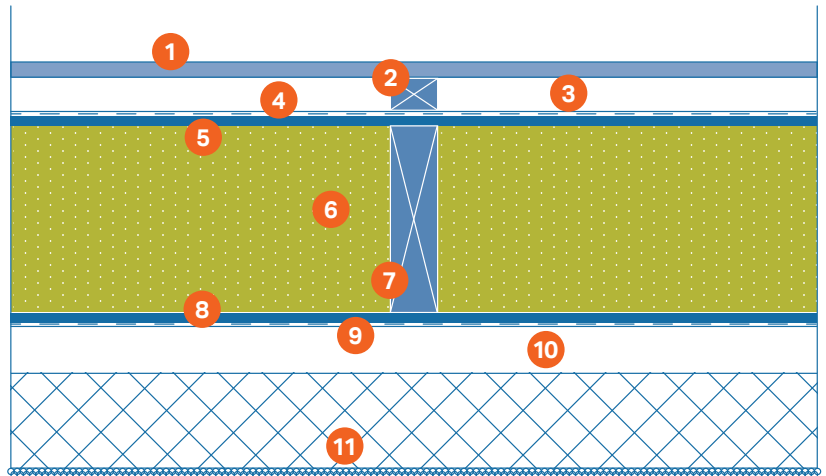


Thermal Solutions

U Value Options for Walls

Option 1

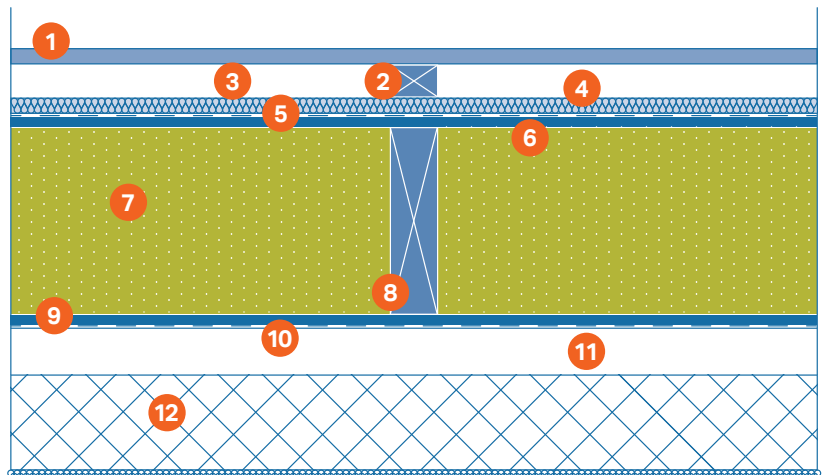
1. Plasterboard
2. Service Batten
3. Service Void
4. Reflective VCL
5. OSB
6. Injected Insulation
7. Stud
8. OSB
9. Breather Membrane
10. 50mm Cavity
11. External Facade (some restrictions apply)



Option 1		V140			V184			V235		
		Block/Brick	Timber Cladding	RS & T/S	Block/Brick	Timber Linings	RS & T/S	Block/Brick	Timber Linings	RS & T/S
a	SBM - RVCL - U-Value (W/m²K)	0.16	0.16	0.16	0.13	0.14	0.14	0.11	0.11	0.11
b	RBM - RVCL - U-Value (W/m²K)	0.15	0.16	0.16	0.12	0.13	0.13	0.10	0.11	0.11

Option 3

1. Plasterboard
2. Service Batten
3. Service Void
4. Insulation
5. Standard VCL
6. OSB
7. Injected Insulation
8. Stud
9. OSB
10. Breather Membrane
11. 50mm Cavity
12. External Facade (some restrictions apply)



Option 3		V140			V184			V235		
		Block/Brick	Timber Linings	RS & T/S	Block/Brick	Timber Linings	RS & T/S	Block/Brick	Timber Linings	RS & T/S
a	SBM - SVCL - 25mm PIR Cont + foil facer - U-Value (W/m²K)	0.14	0.14	0.14	0.12	0.12	0.12	0.10	0.10	0.10
b	RBM - SVCL - 25mm PIR Cont + foil facer - U-Value (W/m²K)	0.13	0.14	0.14	0.11	0.12	0.12	0.09	0.10	0.10

Key:

SBM - Standard Breather Membrane
SVCL - Standard Vapour Control Layer

RBM - Reflective Breather Membrane
RVCL - Reflective Vapour Control Layer

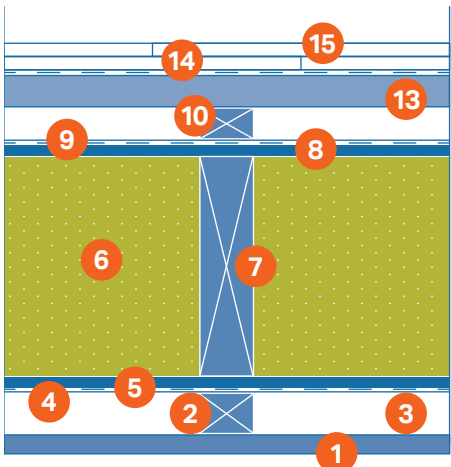
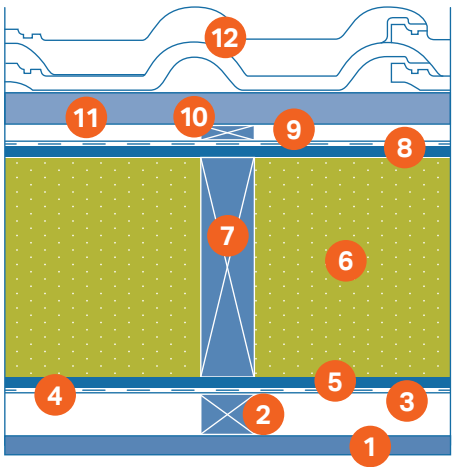
RS - Render System
T/S - Tiles/Slates

U Value Options for Tiled Roofs

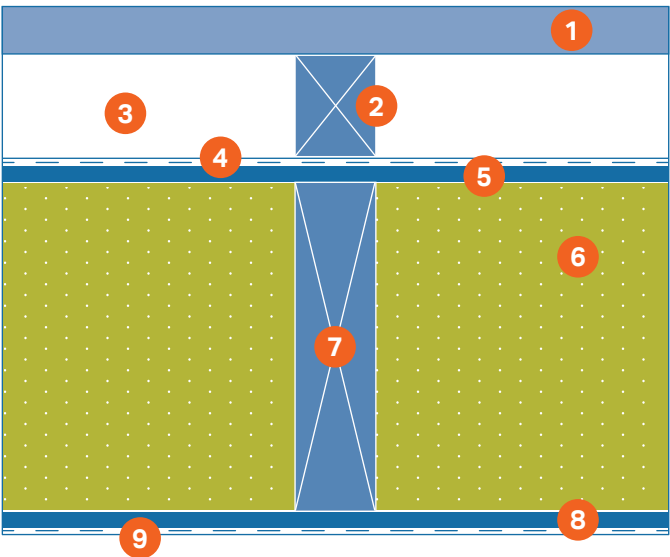
U Value Options for Slated Roofs

Solid timber rafter

1. Plasterboard
 2. Service Battens
 3. Service Void
 4. Reflective VCL
 5. OSB
 6. Injected Insulation
 7. Rafter
 8. OSB
 9. Roofing Membrane
 10. Counter Battens
 11. Tiling Battens
 12. Tiles
-
13. Softwood Sarking/Battens
 14. Roofing Membrane (Where sarking is used)
 15. Slates



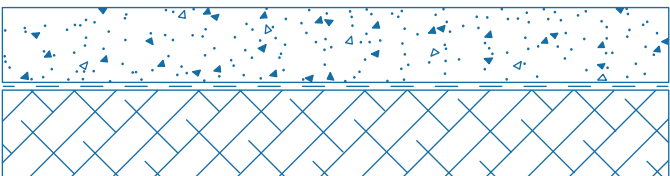
	Solid timber rafter with tiles (RT)				Solid timber rafter with slates (RS)			
	V140RT	V184RT	V220RT	V235RT	V140RS	V184RS	V220RS	V235RS
Rafter Size (mm)	140	184	220	235	140	184	220	235
U-Value (W/m²K)	0.18	0.15	0.13	0.12	0.18	0.15	0.13	0.12



U Value Options for Floors

Joist (J)

1. Chipboard Flooring
2. Service Battens
3. Service Void
4. Reflective VCL
5. OSB
6. Injected Insulation
7. Joist
8. OSB
9. Breather Membrane
10. Ventilated Void
11. Solum



	Joist (J)		
	V145J	V195IRS	V220IRS
U-Value (W/m²K)	0.13	0.10	0.10

Fire Test Results

Valutherm⁺ has been fire tested in line with industry standards. The example wall structures, and their test performance, can be found on this page. This information is provided for illustration only and does not replace specific project advice from a qualified party. Please contact our technical team for further information in support of your project.

Valutherm⁺ 140mm – 30 minutes

- Valutherm⁺ 140mm frame with additional elements as per illustrations 1 and 2
- 30 minutes fire test: Reference EUI-19-B-000114
- Tested to the general requirements of BS 476-20:1987 and the specific requirements of BS 476- 21:1987
- Tested Fire Performance – over 30min In to Out

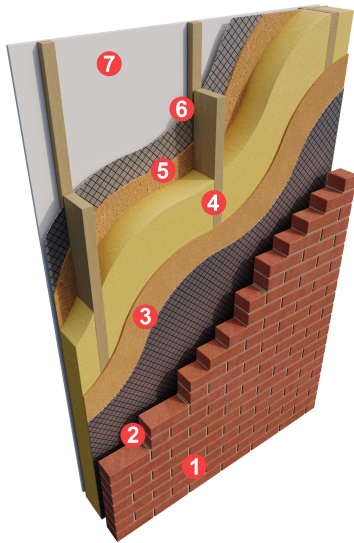


Illustration 1:

1. Brickwork
2. 50mm cavity
3. 9mm OSB
4. 140mm stud & installation
5. 9mm OSB
6. 35mm service zone
7. 15mm plasterboard

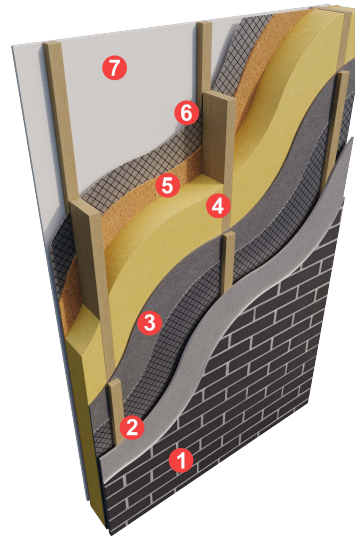


Illustration 2:

1. Lightweight cladding system
2. 25mm cavity
3. 9mm WSE* / 9mm OSB
4. 140mm stud & installation
5. 9mm OSB
6. 35mm service zone
7. 15mm plasterboard

Valutherm⁺ 140mm – 60 minutes

- Valutherm⁺ 140mm frame with additional elements as per illustrations 3 and 4
- 60 minutes fire test: Reference EUI-19-B-000129
- Tested to the general requirements of BS 476-20:1987 and the specific requirements of BS 476- 21:1987
- Tested Fire Performance – over 60min In to Out

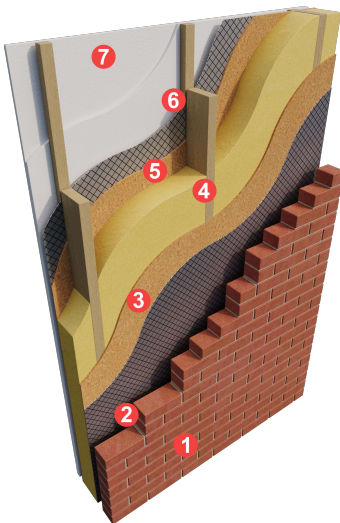


Illustration 3:

1. Brickwork
2. 50mm cavity
3. 9mm OSB
4. 140mm stud & installation
5. 9mm OSB
6. 35mm service zone
7. 2 x 15mm plasterboard

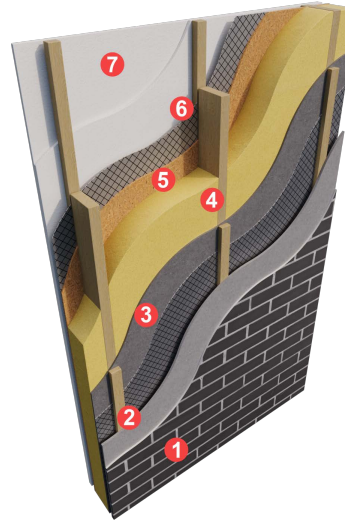


Illustration 4:

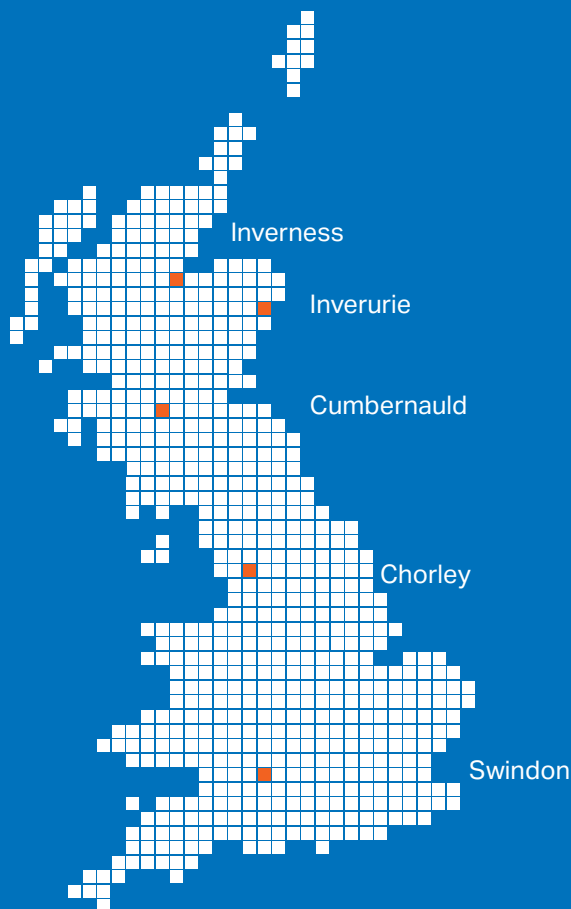
1. Lightweight cladding system
2. 25mm cavity
3. 9mm WSE* / 9mm OSB
4. 140mm stud & installation
5. 9mm OSB
6. 35mm service zone
7. 2 x 15mm plasterboard

Please note: Fire Assessment Report EUI-19-000254 is available to demonstrate 30 and 60-minute performance of Valutherm⁺ at 184mm and 235mm frame depth.

*WSE refers to Swisspearl Windstopper Extreme sheathing board.

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“ At Scotframe, our priority is to ensure we provide our valued customers with a timber frame package which offers an unbeatable range and choice of products that are tailor made to meet individual requirements and manufactured to the very highest standards and quality. ”



Our sales and manufacturing facilities based at Inverurie in Aberdeenshire and Cumbernauld near Glasgow enable us to supply to customers right across the UK.

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Industry Leading • High Thermal Performance

Factory Insulated • Energy Efficient • Closed Panel Timber Frame System

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www.scotframe.co.uk



The mark of
responsible forestry
FSC® C044027



STA | STRUCTURAL
TIMBER
ASSOCIATION