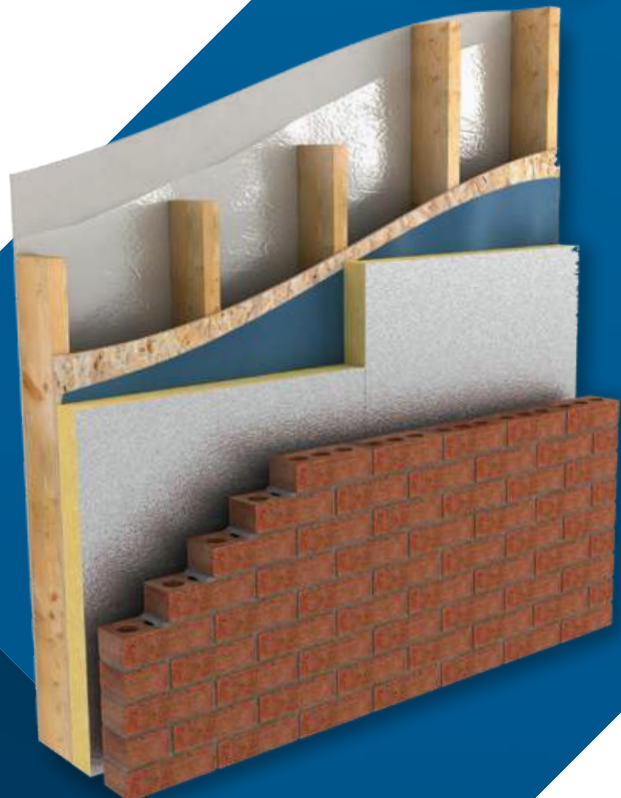
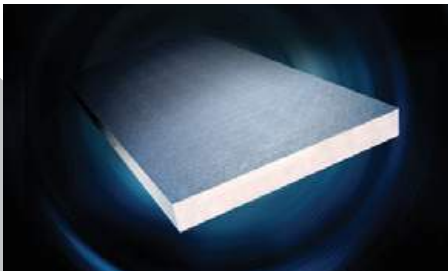


# XtroLiner

Superior  
Performance  
PIR Insulation

## Walls

**XO/FB**  
Insulation for  
Steel & Timber Frame



**Xtratherm**<sup>®</sup>  
More than insulation



# XtroLiner

Superior Performance PIR Insulation

# XO/FB

Insulation for  
Steel and Timber Frame

**XtroLiner Framing Board is designed for use in a wide range of construction including steel or timber frame applications up to 18m in height. The framing board can be used between studs or as an insulated sheathing board.**

**Using XO/FB in this application will reduce the thermal bridging of the steel or timber studs.**



**Specification Clause**

The wall insulation shall be Xtratherm XtroLiner XO/FB manufactured to EN13165 by Xtratherm, comprising a rigid modified Polyisocyanurate (PIR) core with textured robust low emissivity foil facings. XO/FB \_ \_ \_mm with Agrément certified Lambda value of 0.021 W/mK to achieve a U-Value of \_ \_ \_W/m²K for the wall element. To be installed in accordance with instructions issued by Xtratherm.

Xtratherm PIR achieves an A+ rating under the BRE Green Guide.



Refer to NBS clause F30 12, F30 155, K10 15, K10 205



**Thermal Resistances**

Thickness (mm)	R-Value (m² K/W)
50	2.35
60	2.85
75	3.55
80	3.80
100	4.75
120	5.70

**Resistance 'R' Values**

The resistance value of any thickness of Xtratherm insulation can be ascertained by simply dividing the thickness of the material (in metres) by its agrément declared lambda value, for example: Lambda 0.021 W/mk and thickness 80mm -> 0.080/ 0.021 -> R-Value = 3.80. In accordance with EN 13165, R-values should be rounded down to the nearest 0.05 (m²K/W).

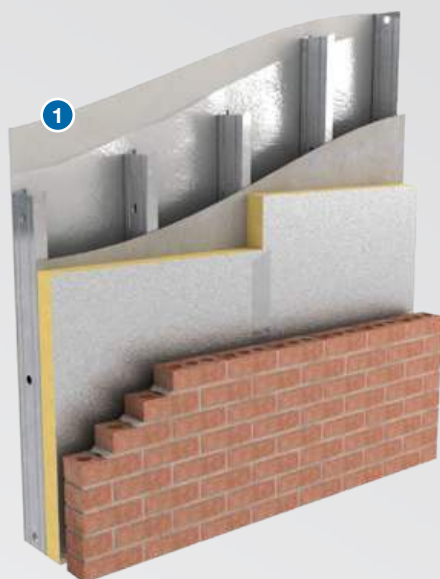
Suitable for use in Steel and Timber Frame Systems

Lower Lambda Value for Improved U-Values

Suitable for Newbuild and Renovation up to 18m in height

Reduced Thermal Bridging

Robust Textured Foil



1

### Steel Framed System

Buildings constructed using a steel framed system are insulated on the outer side of the construction creating a 'Warm Frame', reducing the risk of condensation.



2

2

### Timber Framed System

Placing a lining of XtroLiner Framing Board into the traditional cavity of the construction, and effectively insulating the thermal bridging caused by the timber studding drastically improves the insulation value of the walls over the traditional method of insulating between studs only.

### Ventilated Cladding

The textured robust low emissivity foil facing on the board improves the thermal performance of the wall within an unventilated cavity. The unventilated cavity, or residual cavity, is the most effective method of preventing wind-driven rain penetrating a wall from the outside.

#### XO/FB

Length (mm)	2400
Width (mm)	1200
Thickness (mm)	50, 60, 75, 80, 100, 120

Other thicknesses may be available depending on minimum order quantity and lead time.

#### Property & Units

Thermal Conductivity	0.021 (W/mK)
Compressive Strength	>120 (kPa)
Reaction to Fire	Euroclass C-s2, d0

Xtratherm CE Declaration of Performance (DoP) for this product is available for download from our website.

# Installation Guidelines

## Timber Framed System

1. Cut glass fibre insulation or XtroLiner Framing board to fit snugly between the timber studding. Allow slight oversize of cut to achieve 'friction fit' and seal any gaps with expanding foam.
2. If partially filling, ensure the insulation is securely held in place by treated timber battens in order to prevent framing board moving within the cavity. Ensure boards are closely butted.
3. When using XtroLiner Framing board as a sheathing board, fix the insulation outside of any breather membrane or timber sheathing on the external surface (a second breather membrane may be added at this point for further protection) and temporarily fix with large headed clout nails. Ensure boards are closely butted and stagger jointed.
4. Place a sealed vapour control layer of polythene with lapped and sealed joints over the internal stud face.
5. Install cavity barriers into the cavity as required under building regulations.
6. Apply the internal finish as normal using fixings as recommended by timber frame supplier.

## Steel Framed System

1. As with timber framing, XtroLiner Framing board should be fixed to the outer face of the steel frame ensuring that vertical joints meet over a metal stud. Fixings should be in accordance with the steel system manufacturers recommendations and Agrément approved. Ensure boards are closely butted.
2. Place a sealed vapour control layer with lapped and sealed joints over the inner stud face.
3. Install cavity barriers into the cavity as required under building regulations.
4. Apply the internal finish as normal.
5. Fix wall ties as recommended by steel frame supplier.

## Ventilated Cladding

1. Fix treated battens or propriety framing system vertically to the wall through the insulation layer, ensuring that the system is fixed securely to the substrate.
2. Fixings should be appropriate for the weight of the cladding system, seek advice from the fixing manufacturer.
3. Horizontal tiling battens can be fixed to the vertical battens if the cladding system is to be tile hung, or the cladding fixed directly to the vertical battens.
4. An approved breather membrane may be required as part of the design.
5. Cladding system should be fixed in accordance with the manufacturer's recommendations



## Handling, Cutting and Storage

Xtratherm insulation should be stored off the ground, on a clean flat surface and must be stored under cover. The polythene wrapping is not considered adequate protection for outside exposure. Care should be taken to protect the insulation in storage and during the build process.

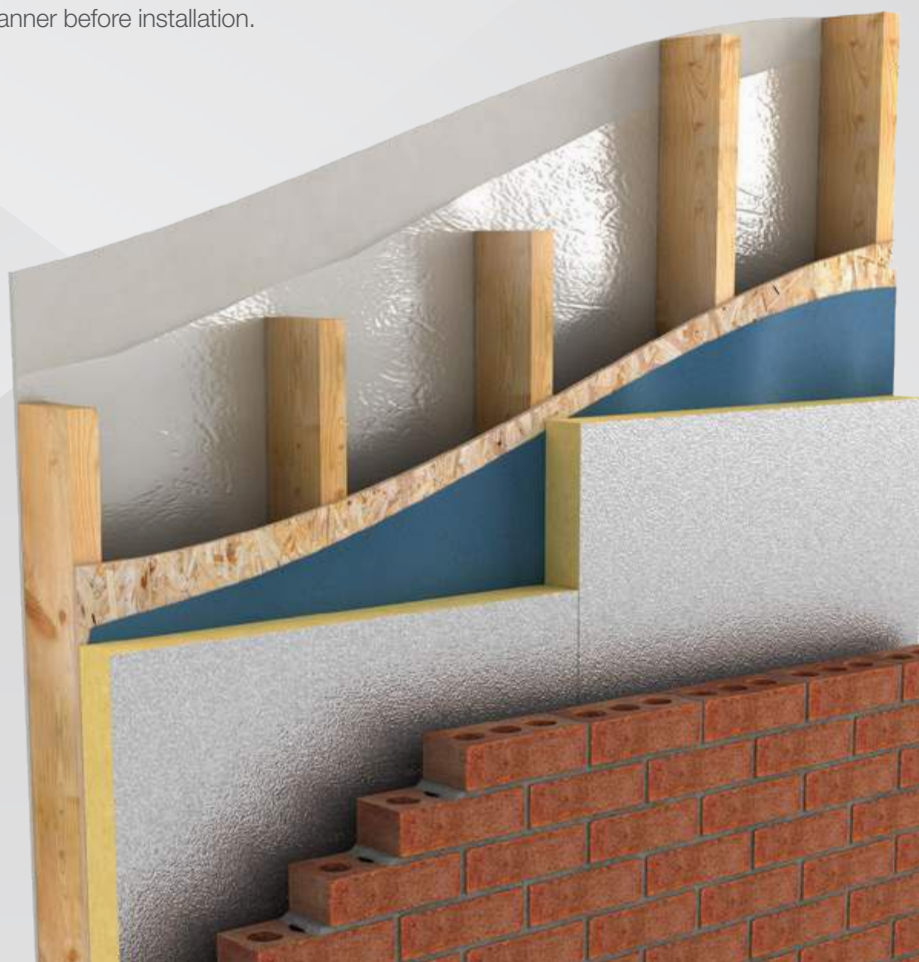
The insulation boards can be readily cut using a sharp knife or fine toothed saw. Ensure tight fitting of the insulation boards to achieve continuity of insulation as asked for within the ACDs. Appropriate PPE should be worn when handling insulation. Please refer to Health & Safety data sheets on our website.

The boards are wrapped in polythene packs and each pack is labelled with details of grade/type, size and number of pieces per pack.



## Durability

Xtratherm products are stable, rot proof and will remain effective for the life span of the building, dependent on specification and installation. Care should be taken to avoid contact with acids, petrol, alkalis and mineral oil, when contact is made, clean materials in a safe manner before installation.



Typical U-Values



Table 1

U-Value calculations to EN ISO:6946  
XO/FB

Timber Frame (Masonry)					
<ul style="list-style-type: none"><li>- Plasterboard</li><li>- Vapour Control Layer</li><li>- XO/FB between Frame</li><li>- XO/FB lining Frame</li><li>- Low emissivity unventilated cavity (0.713 resistance)</li><li>- Masonry</li></ul>					

Timber Frame – Masonry Facing  
Thickness of Sheathing (mm)

Between Studs					
	50	60	80	100	
	60	0.16	0.15	0.13	0.12
	80	0.15	0.14	0.12	0.11
100	0.14	0.13	0.11	0.10	

Breather membrane not included in calculation

Table 2

U-Value calculations to EN ISO:6946  
XO/FB

Timber Frame (Ventilated)					
<ul style="list-style-type: none"><li>- Plasterboard</li><li>- Vapour Control Layer</li><li>- XO/FB between Frame</li><li>- XO/FB lining Frame</li><li>- Well ventilated cavity</li></ul>					

Timber Frame – Ventilated  
Thickness of Sheathing (mm)

Between Studs					
	50	60	80	100	
	60	0.19	0.17	0.15	0.13
	80	0.17	0.15	0.13	0.12
100	0.15	0.14	0.12	0.11	

Breather membrane not included in calculation

Table 3

U-Value calculations to EN ISO:6946  
XO/FB

Steel Frame (Masonry)					
<ul style="list-style-type: none"><li>- Plasterboard</li><li>- Vapour Control Layer</li><li>- XO/FB between Frame</li><li>- XO/FB lining Frame</li><li>- Low emissivity unventilated cavity (0.713 resistance)</li><li>- Masonry</li></ul>					

Steel Frame – Masonry Facing  
Thickness of Sheathing (mm)

Between Studs					
	50	60	80	100	
	60	0.20	0.18	0.16	0.14
	80	0.18	0.17	0.15	0.13
100	0.17	0.16	0.14	0.13	

Breather membrane not included in calculation

Table 4

U-Value calculations to EN ISO:6946  
XO/FB

Steel Frame (Ventilated)					
<ul style="list-style-type: none"><li>- Plasterboard</li><li>- Vapour Control Layer</li><li>- XO/FB between Frame</li><li>- XO/FB lining Frame</li><li>- Well ventilated cavity</li></ul>					

Steel Frame – Ventilated  
Thickness of Sheathing (mm)

Between Studs					
	50	60	80	100	
	60	0.24	0.22	0.18	0.16
	80	0.22	0.20	0.17	0.15
100	0.21	0.19	0.16	0.14	

Breather membrane not included in calculation

# Expect More **KNOWLEDGE**

At Xtratherm we understand the importance of giving our customers the best technical advice.

We have taken the unique industry step of training every one of our technical team that deals directly with our customers, to the highest industry standards of competency in U-value calculation and condensation risk analysis. We have Thermal Bridging covered also under the BRE/NSAI Thermal modelling competency scheme, using the most comprehensive 3D software available.

**Our team and products are certified in the UK and Ireland and through the following certifications bodies:**

- BRE Thermal bridging modelling competency certification
- NSAI Thermal modelling competency scheme
- TIMSA-BBA competency scheme for U-value calculation and condensation risk analysis
- BBA and NSAI certification of the Xtratherm insulation boards
- SAP and DEAP energy assessment

**Our technical team can also provide:**

- Thermal calculations
- Technical advice on building regulations in the UK and Ireland
- Technical papers on a variety of topics
- Certified CPDs
- BIM modelling
- NBS Specifications
- Educational resources for technical secondary and tertiary colleges

**Please refer to the Resources section of our website for more details**



The **Xtratherm** Innovation Centre

The Xtratherm exhibition space and training academy has been developed to assist construction professionals in understanding the principles of specifying and achieving on-site, best practice insulation standards for new dwellings, commercial envelope solutions and refurbishment projects.



**Get in touch**

Dedicated  
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**ROI: 046 906 6050**

Thermal Calculations, Technical  
Advice or to arrange a technical visit:  
**info@xtratherm.com**

Request a CPD:  
**cpd@xtratherm.com**

# Xtratherm<sup>®</sup>

More than insulation

## The Sustainable Solution

Specifying Xtratherm is a real commitment to minimising energy consumption, harmful CO<sup>2</sup> emissions and their impact on the environment. Using our products is one of the most effective ways to reduce energy consumption – in fact, after just eight months the energy they save far outweighs the energy used in their production. In addition, our manufacturing facilities operate to an ISO 14001 certified Environmental Management System.

## The BRE Green Guide

The 2008 Green Guide to Specification produced by the BRE gives Xtratherm Insulation products a rating of A or A+. Green Guide ratings are used to gain credits in BREEAM (BRE Environmental Assessment Method) for non-residential buildings, and under 'Mat 4 – Insulation' the first credit requires the building to have an Insulation Index of 2 or greater – only achievable if the weighted average rating of the insulation is A or A+. This shows that all our products have been made with materials that have been responsibly sourced. The standard sets out organisational governance, supply chain management and environmental and social aspects that are verified and ensure responsible sourcing of materials.

## Responsible Sourcing

Xtratherm has BES 6001 certification for responsible sourcing. The second BREEAM credit under that category is based on responsibly-sourced materials – at least 80% of the total insulation used in roofs, walls, ground floors and services must meet any of tier levels 1 to 6 in the BREEAM table of certification schemes. Our Environmental Management System is certified under EN ISO 14001, and our raw materials come from companies with similarly-certified EMS (copies of all certificates are available for BREEAM assessments). This level of responsible sourcing meets tier level 6 in the BREEAM table.

## Global Warming and Ozone Depletion

All Xtratherm Insulation products use CFC- and HCFC-free materials, and are manufactured using a blowing agent with a low GWP and zero ODP.

Good workmanship and appropriate site procedures are necessary to achieve expected thermal and airtightness performance. Installation should be undertaken by professional tradespersons. The example calculations are indicative only, for specific U-Value calculations contact Xtratherm Technical Support. Xtratherm technical literature, Agrément certifications and Declarations of Performance are available for download on the Xtratherm website. The information contained in this publication is, to the best of our knowledge, true and accurate at the time of publication but any recommendations or suggestions which may be made are without guarantee since the conditions of use are beyond our control. Updated resources may be available on our websites. All images and content within this publication remain the property of Xtratherm.

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**xtratherm.ie**

**ISO 9001** | Quality Management Systems

**ISO 14001** | Environmental Management Systems



Xtratherm, part of UNILIN group.

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