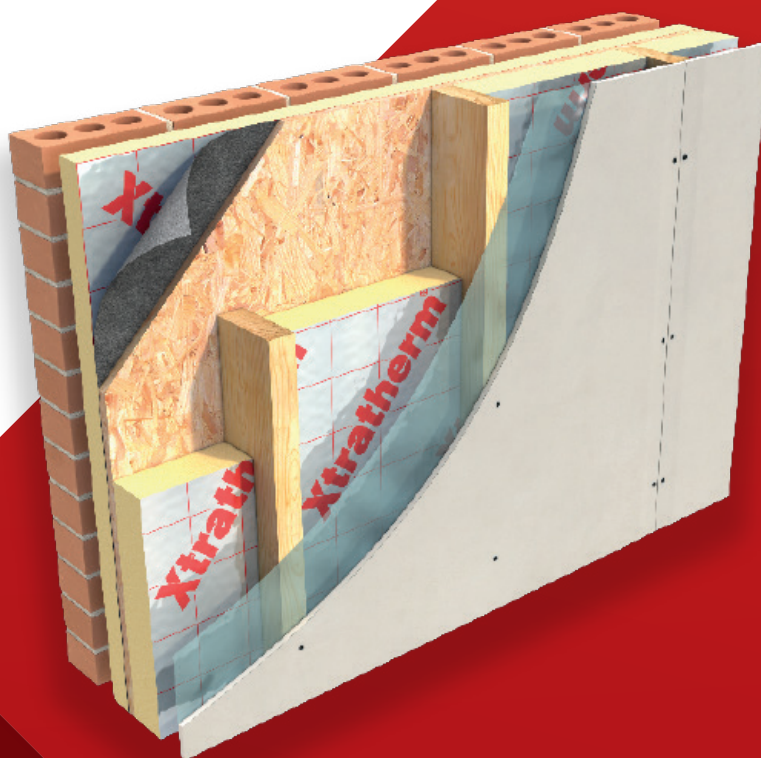
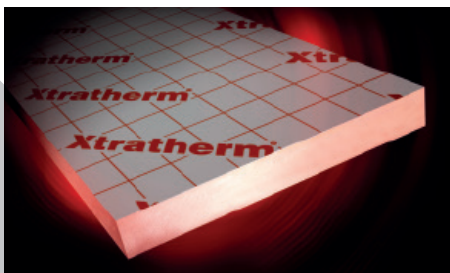


# Thin-R

## PIR Insulation

### Walls

**XT/TF**  
Insulation for  
Timber Framed Walls



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



# Thin-R

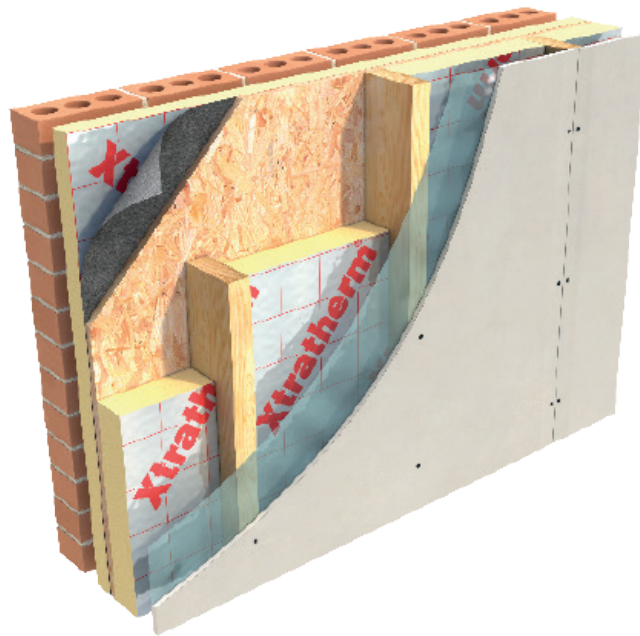
PIR Insulation

# XT/TF

Insulation for  
Timber Framed Walls

**Timber Frame construction is a fast, systematic method that results in high performing buildings with regard to energy efficiency and in environmental terms.**

Xtratherm's Timber Frame Systems bring timber framed wall insulation performance to new levels, surpassing the default values asked for in current building regulations. Using Thin-R Timber Frame XT/TF in timber framed walls helps achieve Zero Carbon Fabric and Passive House Standards.



### Specification Clause

The timber frame wall insulation shall be Xtratherm Thin-R XT/TF manufactured to EN 13165 by Xtratherm, comprising a rigid Polyisocyanurate (PIR) core between low emissivity foil facings. The XT/TF \_\_\_mm with Agrément certified Lambda value of 0.022 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 155, K10 15, K10 205, F30 12, K10 245, K10 25, P10 180, P10 40



### Thermal Resistances

Thickness (mm)	R-Value (m²K/W)
25	1.10
40	1.80
50	2.25
60	2.70
80	3.60
100	4.50
120	5.65

### 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 0.022 W/mk and thickness 50mm -> 0.050/ 0.022 -> R-Value = 2.25. In accordance with EN 13165, R-values should be rounded down to the nearest 0.05 (m²K/W).

Rapid Build System

Approved for use with Fibre in stud

Suitable for Newbuild and Renovation

Reduced Insulation Thickness

Low Emissivity Foil Facings



**Fabric First Approach**

Building Regulations now concentrate on ‘Whole House Performance’. Using XT/TF will improve the efficiency of the building fabric, delivering excellent U-Values. Good detailing and attention to air tightness will also contribute to highly efficient constructions.

**Timber Framing & Lower U-Values**

Because of the restriction that the stud depth presents, the only pragmatic solution to pushing timber frame wall performance towards Zero Carbon and Passive House Levels is to insulate the thermal bridge created by the timber studs. This can be achieved by either insulating internally or externally with XT/TF in a traditional cavity.

**Low Emissivity Foil Facings**

The low emissivity foil facing on XT/TF improves the thermal performance of the wall.

**White Paper**

The BRE, with the support of Xtratherm, have published “SD 7 Insulation of timber-frame construction” . Based on the constructions outlined in this publication, XT/TF can help you achieve U-Values as low as 0.14 W/m<sup>2</sup>K within a traditional timber frame construction. For your copy, please contact our Xtratherm Technical Team.



**XT/TF**

<b>Length (mm)</b>	2400 1200
<b>Width (mm)</b>	1200 600
<b>Thickness (mm)</b>	25, 30, 35, 40, 50, 60, 65, 70, 75, 90, 100, 110, 125, 150

Dimension for sheathing application: 1200mm x 600mm

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

**Property & Units**

<b>Thermal Conductivity</b>	0.022 (W/mK)
<b>Compressive Strength</b>	>140 (kPa)
<b>Reaction to Fire</b>	Euroclass E

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

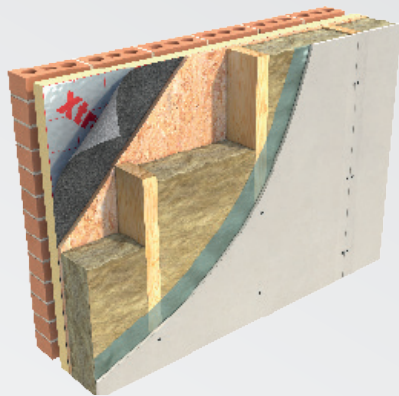
**U-Values**

The calculation of U-Values have been done in accordance with BR443 “Conventions for U-Value calculation”.

Due to large variations of construction methods in timber frame wall systems, please contact our Xtratherm Technical Team for U-Value calculation.

Xtratherm XT/TF can be used either between timber studs or as an external or internal lining that effectively reduces Thermal Bridging and delivers improved U-Values.

**System 1:** Fibre or XT/TF between studs with Xtratherm Sheathing (External) Using a glass fibre material between studs is the most common method of insulating Timber Framed constructions whereby the flexibility of the materials allows the insulation to be squeezed between studs with irregular spacings. Placing a lining of XT/TF as a Sheathing Board into the traditional cavity of the construction, and effectively insulating the thermal bridging caused by the timber studding, improves the insulation value of the walls.

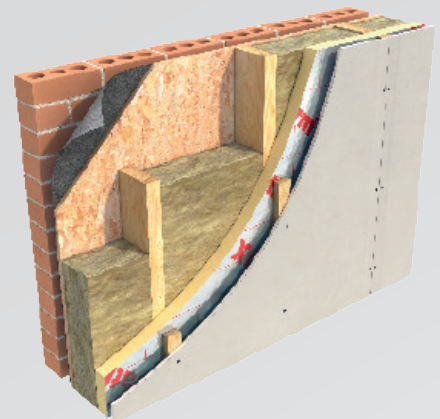


Cut insulation to fit snugly between the timber studding. The full depth of the stud should be filled with insulation.

2. Mechanically fasten OSB to the outside face of the timber frame
3. A breather membrane should be fitted, refer to manufacturer's Agrément certification.
4. Fix the XT/TF sheathing board outside the breather membrane on the external surface and temporarily fix with large headed clout nails. Ensure boards are closely butted and stagger jointed. Do not tape the joints on the outer face.

5. Install cavity barriers into the cavity as per normal practice.
6. Place a sealed vapour control layer (VCL) with lapped and sealed joints over the stud face.
7. Fix plasterboard with drylining screws or large-headed galvanized clout nails. Screw fix every 150mm, 12mm from edge of boards ensuring a minimum 30mm penetration into the frame. Finish wall construction as normal.

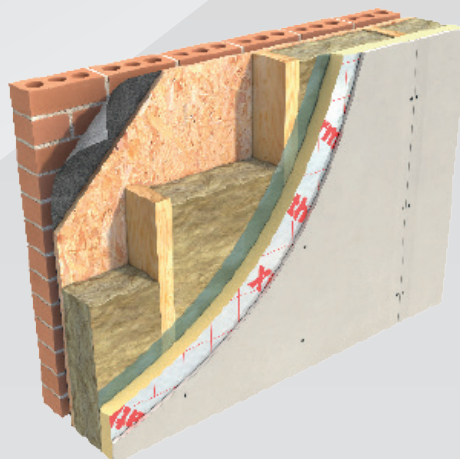
1. **System 2:** Fibre or XT/TF between studs with Xtratherm Sheathing (Internal) As with System 1, using a glass fibre material between the studs allows the insulation to be squeezed snugly between studs with irregular spacings. An alternative to applying a Sheathing Insulation in the cavity is to place a lining of XT/TF over the studding to the inside face of the construction. An insulated service duct can be created by placing counter battens between XT/TF and the plasterboard finish, allowing services to be placed without compromising the integrity of the vapour control layer and enhancing the air tightness.



1. Cut glass fibre insulation to fit snugly between the timber studding. The full depth of the stud should be filled with insulation.
2. Place a sealed vapour control layer (VCL) with lapped and sealed joints over the stud face.
3. Temporarily fix XT/TF to the inner face of the timber studding with large headed clout nails. Ensure boards are closely butted and stagger jointed and that the insulation makes contact, or overlaps with, ceiling and floor insulation.
4. Taping the joints with aluminium tape provides an effective VCL and excellent air permeability barrier. Seal the insulation at all service penetrations.
5. Mark the line of the timber studs on the XT/TF boards to allow fixing of counterbatten
6. Fix counterbatten through the insulation to the timber studding and ensure that battens are continuous along the top and bottom of each sheet and around all openings (doors, windows etc).
7. Fix plasterboard with drylining screws or large-headed galvanized clout nails. Screw fix every 150mm, 12mm from edge of boards ensuring a minimum 30mm penetration into the frame. Finish wall construction as normal.
8. Mechanically fasten OSB to the outside face of the timber frame
9. A breather membrane should be fitted, refer to manufacturer's Agrément certification Finish wall construction as normal.

**System 3:** Fibre or XT/TF between studs with Xtratherm Lining. An alternative insulation lining system is to place a lining of Xtratherm over the studding to the inside face of the construction.

1. Cut insulation to fit snugly between the timber studding. The full depth of the stud should be filled with insulation.
2. Place a sealed vapour control layer (VCL) with lapped and sealed joints over the stud face.
3. Temporarily fix XT/TF to the inner face of the timber studding with large headed clout nails. Ensure boards are closely butted and stagger jointed and that the insulation makes contact, or overlaps with, ceiling and floor insulation.
4. Taping the joints with aluminium tape provides an effective VCL and excellent air permeability barrier. Seal the insulation at all service penetrations.
5. Mark the line of the timber studs on the XT/TF boards to allow fixing of plasterboard.
6. Fix plasterboard with drylining screws. Screw fix every 150mm, 12mm from edge of boards ensuring a minimum 30mm penetration into the frame. Finish wall construction as normal.
7. Mechanically fasten OSB to the outside face of the timber frame
8. A breather membrane should be fitted, refer to manufacturer's Agrément certification Finish wall construction as normal.
9. Alternatively, place Xtratherm XT/TL drylining board over the timber studding, providing insulation and plasterboard in one fixing operation.



## 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.

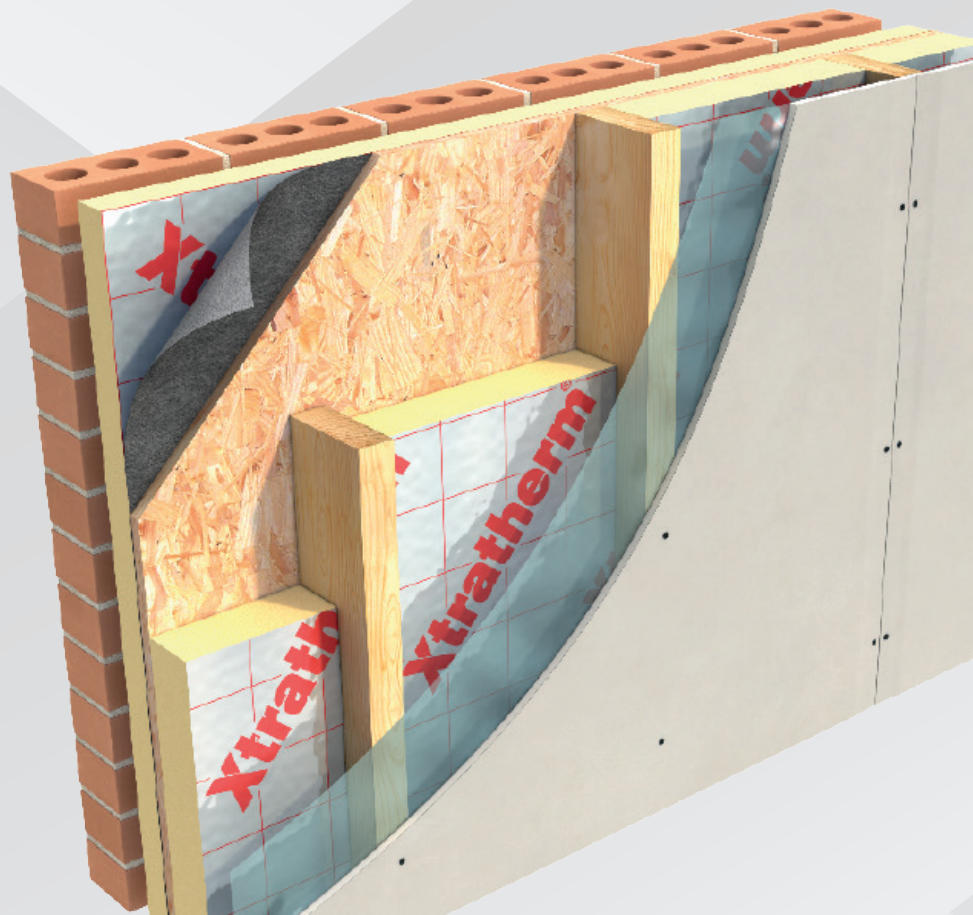
The boards are wrapped in polythene packs and each pack is labelled with details of grade/type, size and number of pieces per pack.

# Xtratherm®



## 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.



## 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  
Technical Team:  
**UK: +44 (0) 371 222 1055**  
**ROI: +353 (0) 46 906 6050**

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

# Xtratherm®

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.

## Xtratherm UK Limited

Park Road Holmewood  
Chesterfield, Derbyshire  
United Kingdom  
S42 5UY

T + 44 (0) 371 222 1033  
F + 44 (0) 371 222 1044

info@xtratherm.com

## xtratherm.com

## Xtratherm Limited

Liscarton Industrial Estate  
Kells Road, Navan  
Co. Meath, Ireland  
C15 NP79

T +353 (0)46 906 6000  
F +353 (0)46 906 6090

info@xtratherm.ie

## xtratherm.ie

ISO 9001 | Quality Management Systems

ISO 14001 | Environmental Management Systems



Xtratherm, part of UNILIN group.