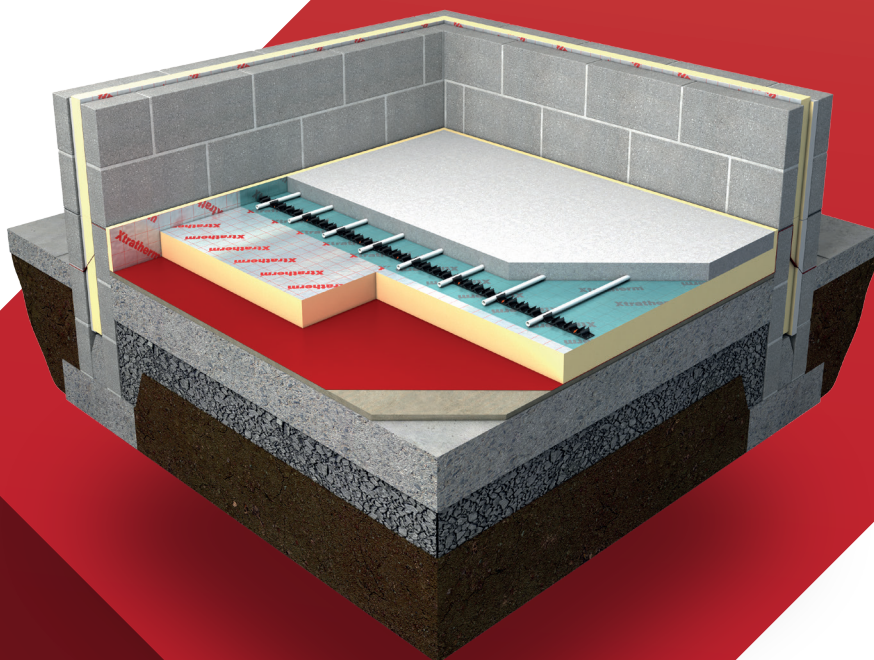
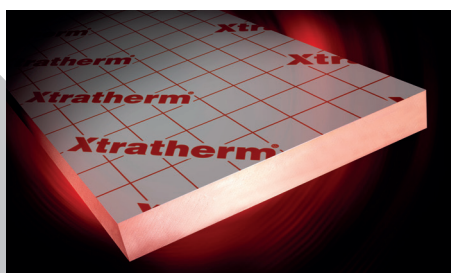


# Thin-R

## PIR Insulation

### Floors

**XT/UF**  
Insulation for  
Ground Supported  
and Suspended Floors



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



08/4613



03/0183

# Thin-R

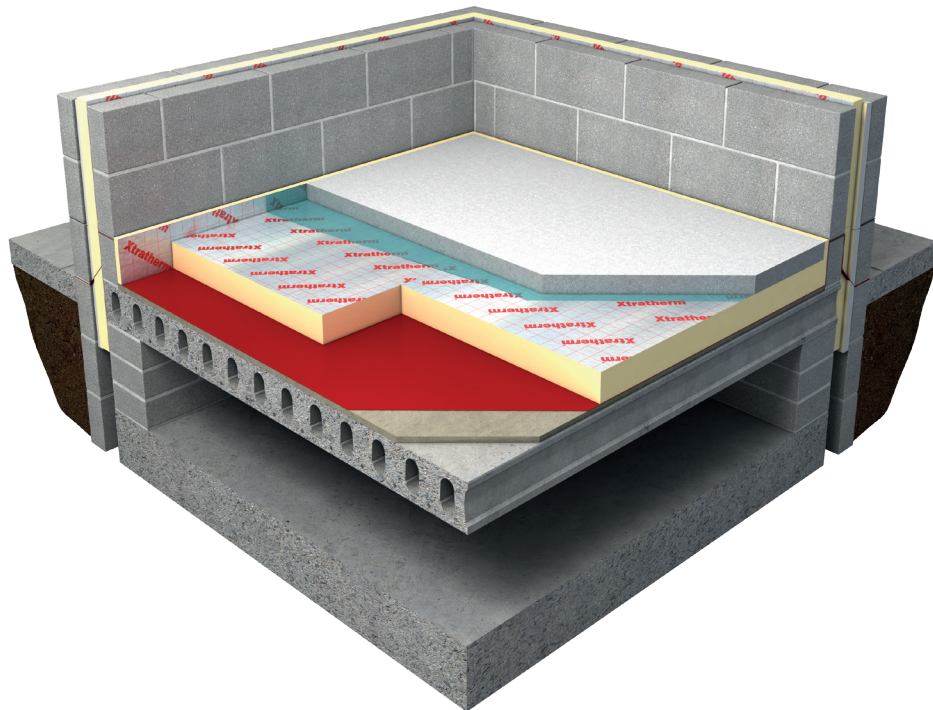
PIR Insulation

# XT/UF

Insulation for  
Ground Supported and Suspended Floors

The floor in any building is an area of considerable downward heat loss when not properly insulated. XT/UF will significantly improve the U-value of new and existing floors.

Thin-R Underfloor XT/UF is lightweight, easy to install and combines high compressive strength with low thermal conductivity, providing a high performance solution for floor insulation.



### Specification Clause

The floor insulation shall be Xtratherm Thin-R XT/UF manufactured to EN 13165 by Xtratherm, comprising a rigid Polyisocyanurate (PIR) core between low emissivity foil facings. The XT/UF\_ \_ \_mm with Agrément certified Lambda value of 0.022 W/mK to achieve a U value of \_ \_ \_W/m²K for the floor 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 M10 290, M10 40, M13 260, M13 40, P10 250, P10 45



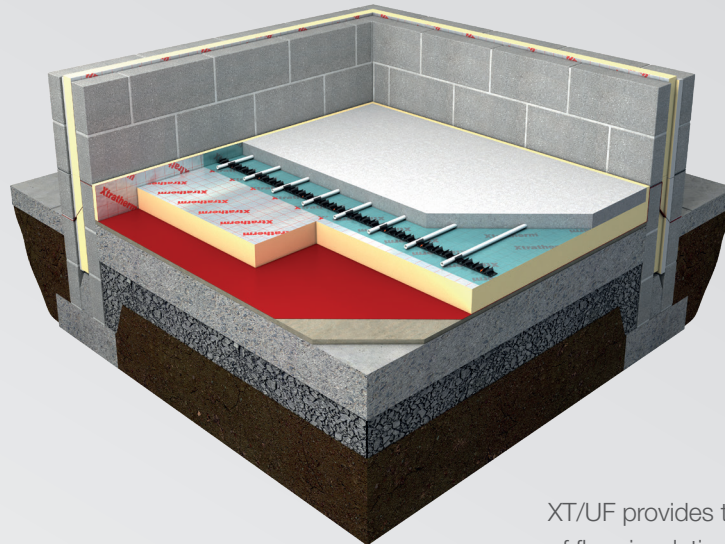
### Thermal Resistances

Thickness (mm)	R-Value (m²K/W)
25	1.10
30	1.35
40	1.80
50	2.25
60	2.70
70	3.15
90	4.05
100	4.50
110	5.00
125	5.65
150	6.80

### Resistance 'R' Values

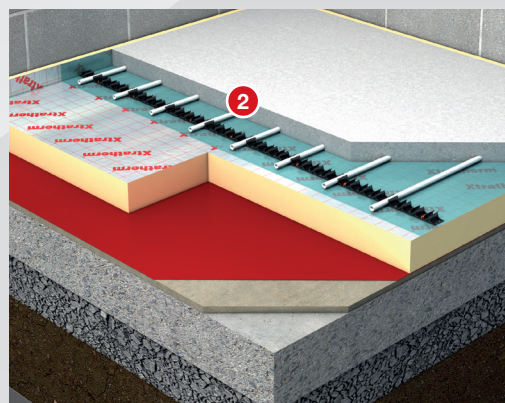
The resistance value of any thickness of Xtratherm insulation can be ascertained by simply dividing the thickness of the material (in metres) by its agrément declared lambda value, for example: Lambda 0.022 W/mk and thickness 50mm -> 0.050/ 0.022 -> R-Value = 2.25. In accordance with EN 13165, R-values should be rounded down to the nearest 0.05 (m² K/W).

- High Compressive Strength
- Suitable for Underfloor Heating
- Perimeter Strips for Robust Detailing
- Reduced Insulation Thickness
- Low Emissivity Foil Facings

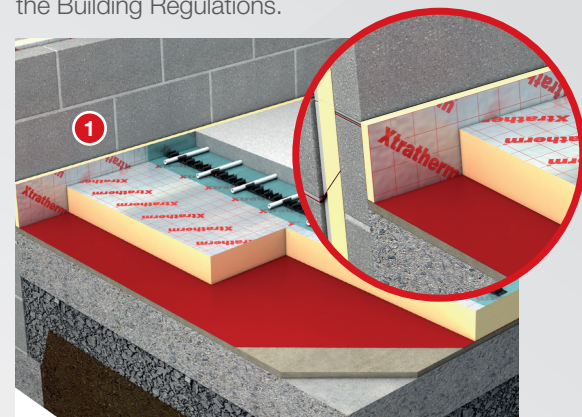


**1** Good detailing at the wall/floor junction is essential to reduce thermal bridging. By placing an upstand of Xtratherm Perimeter strip (XT/STR) insulation 25mm thick around the external and internal wall/floor junctions, a robust detail is created.

**2** XT/UF is lightweight and suitable for use with underfloor heating. Thanks to its thickness to performance ratio, XT/UF allows for reduced insulation thickness. XT/UF should be laid with closely butted joints, laid staggered with a break bonded pattern and fitted tightly at edges and around any service penetrations.



XT/UF provides the most efficient means of floor insulation. It has the strength and thermal properties required to reach the high performance U-values asked for in the Building Regulations.



XT/UF	
Length (mm)	2400
Width (mm)	1200
Thickness (mm)	25, 30, 40, 50, 60, 70, 90, 100, 110, 125, 150

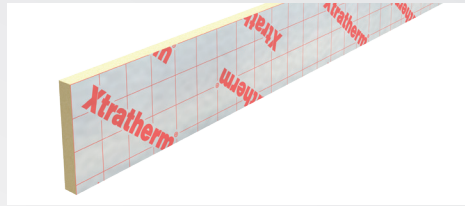
Other thicknesses may be available depending on minimum order quantity and lead time.

Property & Units	
Thermal Conductivity	0.022 (W/mK)
Compressive Strength	>140 (kPa)
Reaction to Fire	No performance declared

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

**Below Concrete Slab**

1. Lay and level the hardcore in layers 150mm min/ 250mm max and compact well.
2. Sand blind base to create a level surface and to protect DPM.
3. The damp proof membrane (DPM), normally 1200g polythene or radon barrier, should be laid over the blinding, tape lapped joints to prevent passage of ground moisture. Carry DPM up to the wall to meet and seal with the DPC course.
4. Lay the XT/UF across the DPM. If two layers are required, lay the boards in a staggered jointed pattern. Closely butt all edges.
5. Place Xtratherm Perimeter Strips (XT/STR) around floor perimeter to provide robust detailing in order to reduce thermal bridging. Ensure top of perimeter strip is level with top of floor finish. Seal around any service penetrations.



6. Lay a thin gauge polythene sheet, to act as a separating layer, over the insulation with 150mm lap joints. VCL should be taped at the joints to ensure a continuous separating layer, as per BRE GBG 45 "Insulating Ground Floors".
7. If underfloor heating is required, lay pipes and clip to XT/UF through the separating layer. Follow UFH manufacturer's guidelines.
8. Pour and compact concrete slab to required finish floor level.

**Below Floor Screed**

1. Lay and level the concrete slab, allowing sufficient time to dry out, as per BS 8203.
2. Beam and block floors may need a levelling screed or grouting to ensure base level. Refer to manufacturer's guidelines.

3. The damp proof membrane (DPM), normally 1200g polythene or radon barrier, should be laid over the blinding, tape lapped joints to prevent passage of ground moisture. Carry DPM up to the wall to meet and seal with the DPC course.
4. Lay the XT/UF boards across the DPM. If two layers are required, lay the boards in a staggered jointed pattern. Closely butt all edges.
5. Place Xtratherm Perimeter Strips (XT/STR) around floor perimeter to provide robust detailing in order to prevent thermal bridging. Ensure top of perimeter strip is level with top of floor finish. Seal around any service penetrations.
6. Lay a thin gauge polythene sheet, to act as a separating layer, over the insulation with 150mm lap joints. Separating layer should be taped at the joints to ensure a continuous separating layer, as per BRE GBG 45 "Insulating Ground Floors".
7. If underfloor heating is required, lay pipes and clip to XT/UF through the separating layer. Follow manufacturer's guidelines.
8. Pour screed according to screed manufacturer's guidelines.

**Suspended Timber Floor**

1. Install joists in the normal manner, ensuring adequate ventilation.
2. Measure gaps between joists and cut XT/UF to size, allowing for variations in joist spacings.
3. Mechanically fasten treated timber battens to the joists, allowing for correct thickness of insulation. Galvanised nails or saddle clips may also be used, ensuring nails are left 40mm proud of the joists.
4. Install XT/UF between joists with joints tightly butted and seal any gaps with expanding foam.
5. If two insulation layers are required, lay the boards in a staggered jointed pattern, also sealing any gaps with expanding foam.
6. Floor boards should be laid directly to the joists.

## 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.

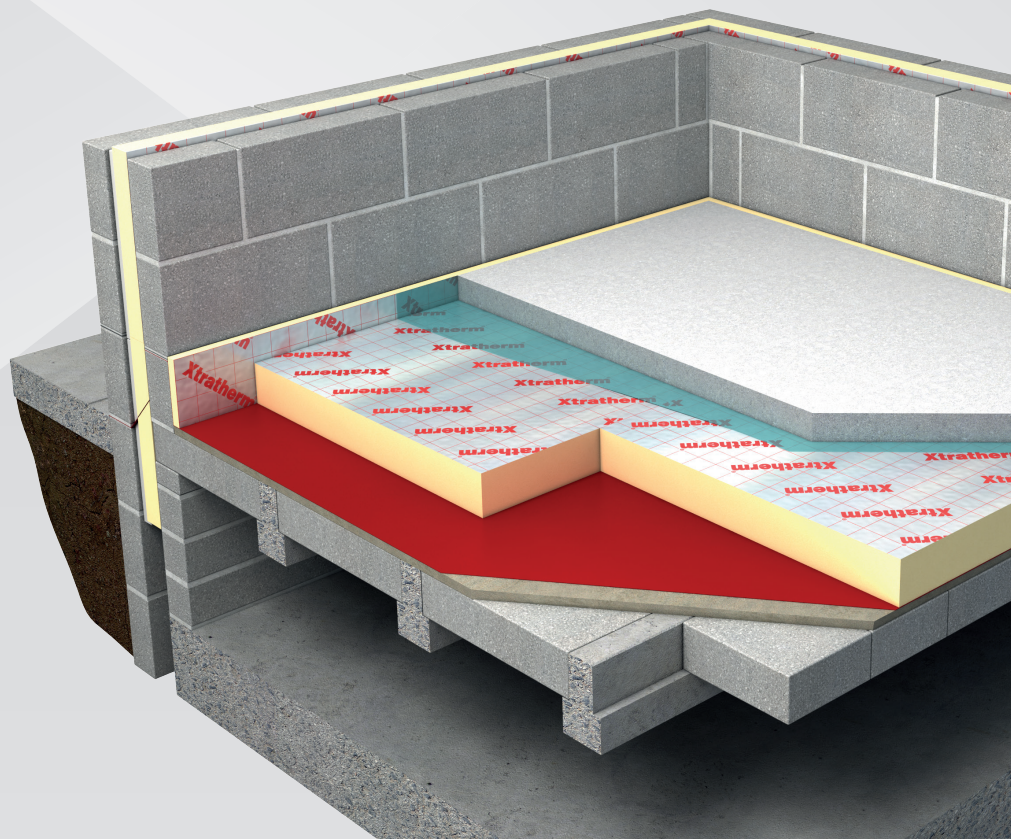
The boards are wrapped in polythene packs and each pack is labelled with details of grade/type, size and number of pieces per pack.

# 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.



## Typical U-Values



**Table 1**

U-Value calculations to EN ISO:6946

**XT/UF** Insulation for Ground Supported Slab

<b>Build-up:</b>	- 65mm Screed
	- Separating layer polythene sheet
	- Insulation with perimeter strips
	- DPM 1200 gauge polythene or radon barrier
	- Concrete Slab

	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	Target U-Value
Thickness (mm)	30	45	50	55	60	60	60	65	65	0.25
Thickness (mm)	40	55	60	65	70	70	75	75	75	0.22
Thickness (mm)	50	65	70	75	80	80	90	90	90	0.20
Thickness (mm)	80	100	110	110	120	120	120	125	125	0.15

**Table 2**

U-Value calculations to EN ISO:6946

**XT/UF** Beam & Block Suspended Floor

<b>Build-up:</b>	- 65mm Screed
	- Separating layer polythene sheet
	- Insulation with perimeter strips
	- DPM 1200 gauge polythene or radon barrier
	- beam and block suspended floor

	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	Target U-Value
Thickness (mm)	40	50	50	60	60	60	60	60	60	0.25
Thickness (mm)	50	60	70	70	70	70	70	75	75	0.22
Thickness (mm)	60	70	75	75	80	80	80	80	90	0.20
Thickness (mm)	90	100	110	110	120	120	120	120	120	0.15

Perimeter/Area Ratio



## 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 : 0371 222 1055**  
**ROI: 046 906 6050**

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

Request a CPD:  
**cpd@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.

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ISO 9001 | Quality Management Systems

ISO 14001 | Environmental Management



Xtratherm, part of UNILIN group.