

Thin-R

High Performance PIR

Robust Performance

Thermal Conductivity

Extensive Range

High Performance PIR Roof Insulation Board

Roofs

XT/PR

Insulation for
Pitched Roofs

Key Features

High Thermal Performance

Certified Thermal Conductivity
as Low as 0.022W/mK

Low Emissivity Foil Facings

HCFC/CFC free, GWP <5

BRE Green Guide A+ Rated



www.xtratherm.com

Xtratherm[®]

More than insulation

Thin-R | XT/PR Insulation for Pitched Roofs

Using Xtratherm Thin-R XT/PR on sloped roofs, whether Warm, Hybrid or Vented can provide the most efficient U-values with minimal intrusion into valuable living space. Warm Roof construction is a particularly effective way of insulating complex roofs. Insulating above and between the roof timbers ensures that the structure is kept at, or near the internal environmental conditions, reducing thermal stress and condensation risk.

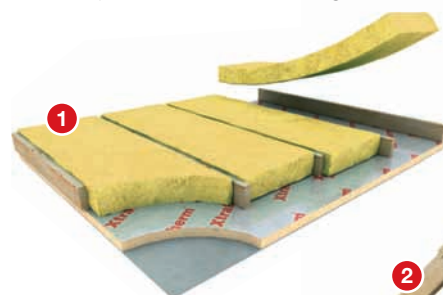
Pitched Roofs

Effective insulation of roof area

Reduces thermal bridging

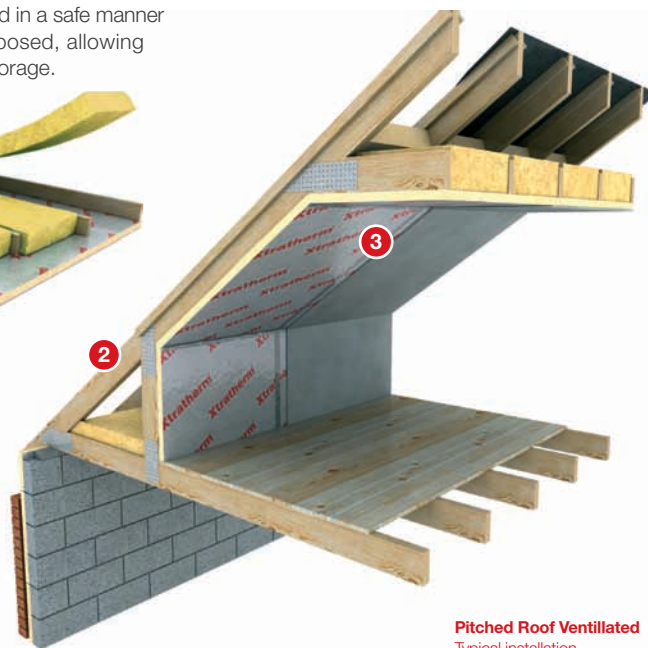
Avoids intrusion into living area

1
In a ceiling, typically fibre glass is placed between AND over the joists – this hides the top of the joist and may lead to health and safety concerns when the roof space is being accessed. An Xtratherm solution to covering the thermal bridge through the joists is to place a layer of Xtratherm to the underside of the joist before the plasterboard is fixed. This allows for the roof space to be accessed in a safe manner leaving the top of the joists exposed, allowing the roof space to be used for storage.



3
Placing a layer of Xtratherm to the underside of the rafter provides a 'Robust Detail' and substantially improves the U-values achieved. Taping the foil face of the Xtratherm with aluminum foil tape results in a very efficient vapour control layer.

2
In a conventional ventilated roof a 50mm clear ventilation gap should be maintained between the insulation and the roofing felt. In certain instances when a vapour permeable membrane is used instead of standard roofing felt, the ventilation gap may be dispensed with (See Hybrid Roof Construction).



Pitched Roof Ventilated
Typical installation

Placing Xtratherm Thin-R between and/or below the rafter creates a **Ventilated Roof**. A continuous 50mm ventilation space is required between the insulation and the roof tile underlay to allow any moisture to be vented out of the construction. The high performance to thickness ratio of Xtratherm gives the maximum insulation values with minimal intrusion into the living area below. The **Hybrid Roof** follows the same construction as the Vented Roof—but an approved Vapour Permeable underlay is

used above the rafter allowing the 50mm ventilation space to be dispensed with. A 25mm unvented void should be maintained; Agrément certification covering the membrane should be consulted. **Warm Roof** construction is a particularly effective way of insulating complex roofs. Insulating above and between the roof timbers ensures that the structure is kept at, or near the internal environmental conditions, reducing thermal stress and condensation risk.

Xtratherm Thin-R is a high performance foil faced Polyisocyanurate (PIR) insulation with a certified thermal conductivity as low as 0.022W/mK. Manufactured to strict EN 13165 standards, the closed cell structure and gas tight facings provides excellent thermal performance and moisture resistance. Xtratherm Thin-R products deliver genuine thermally robust performances and are supported with full third party assurances throughout the range.

Property & Units

Density (Foam Core)
30-32 (Kg/m³)

Compressive Strength
>150 (kPa)

Water Vapour Resistivity
>100 (MNs/gm)

Thermal Conductivity
0.022 (W/mK)

Surface Spread of Flame
Class 1

Xtratherm XT/PR

Length (mm)
2400

Width (mm)
1200

Thickness* (mm)
25, 30, 35, 40, 50, 60, 65,
70, 75, 80, 90, 100, 110*,
120*, 125*, 140*, 150*, 165*

* Availability subject to quantity.

Specification Clause

The pitched roof insulation shall be Xtratherm Thin-R XT/PR_ _mm thick manufactured to EN ISO 9001:2008 by Xtratherm. Comprising a CFC/HCFC free rigid Polyisocyanurate (PIR) core between low emissivity foil facings. The pitched roof insulation shall be installed in accordance with instructions issued by Xtratherm. Refer to NBS clause P10 140, K11 695, K11 55.

Installation Guidelines

Warm Roof

Ensure cavity wall insulation has continued to roof height to engage with roof insulation.
 Fix a timber stop rail to end of rafter at eaves.
 Lay Xtratherm insulation stagger jointed over rafters ensuring joints are supported by rafters.
 Ensure boards are tightly butted fill any gaps with expanding foam.
 A vapour permeable underlay should be fitted; refer to manufacturers BBA certification.
 Providing an unvented void under the membrane can improve the thermal performance.
 Fix counter batten with approved fixings. Ventilation may have to be provided subject to certification.
 A second layer of insulation may be added between the rafters.
 Provide vapour control layer to underside.
 Finish with 12.5mm plasterboard.

Ventilated Roof

Fix positioning battens to inner face of rafters.
 Allow for ventilation gaps normally 50mm. (May be reduced depending on breather membrane certification).
 Cut boards to fit tightly between rafters flush with rafter bottom.
 Additional 2nd layer should be added to the rafter underside.
 Run second layer transverse to the first.
 Temporarily fix with nails.
 Provide vapour control layer (Aluminium tape joints).
 Finish with 12.5mm plasterboard fixed with drylining screws.
 Screw fix every 150mm, 12mm from edge of boards.
 All board edges should be supported.

Standards

Xtratherm Thin-R range is manufactured to EN ISO 13165 under Quality Systems approved to EN ISO 9001:2008 Quality Management, EN ISO 14001:2004 Environmental Management and BS OHSAS 18001 Health and Safety Management System.

Storage

Xtratherm Thin-R 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.

Cutting

Xtratherm Thin-R 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 in accredited details.

Packaging

Xtratherm Thin-R is wrapped in polythene packs and each pack is labelled with details of grade/type, size and number of pieces per pack.

Availability

Xtratherm products are available through builder's merchants and specialist distributors throughout the UK and Ireland. For the location of your nearest stockist please contact Xtratherm.

Environmental

Xtratherm Thin-R is manufactured under ISO 14001:2004 Environmental Management with all major components sourced under 14001 accredited suppliers. It is manufactured without the use of CFC's or HCFC's and has Zero Ozone Depletion Potential with a GWP of less than 5. Thin-R has been awarded an A+ Rating under the BRE Green Guide.

Durability

Xtratherm Thin-R 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. Solvent based adhesive containing methyl ethyl ketone, should not be used.

Resistance 'R' values

The resistance value of any thickness of Xtratherm PIR can be ascertained by simply dividing the thickness of the material (in metres) by its agrément declared lambda value 0.022 W/mk. eg 50mm = 0.050/0.022 = R2.27.

U-value calculations to BS EN ISO:6946
Warm Pitched Roof (XT/PR)

Thickness over rafters
 @ 600mm centres

Thickness between rafters

	40	50	60	70	75	80	90	100	125
0								0.19	0.16
50			0.19	0.17	0.17	0.16	0.15	0.14	0.12
60		0.19	0.18	0.16	0.16	0.15	0.14	0.13	0.12
70	0.20	0.18	0.17	0.16	0.15	0.15	0.14	0.13	0.11
75	0.19	0.18	0.16	0.15	0.15	0.14	0.13	0.13	0.11
90	0.18	0.16	0.15	0.14	0.14	0.13	0.12	0.12	0.10
100	0.17	0.15	0.14	0.13	0.13	0.13	0.12	0.11	0.10
125	0.15	0.14	0.13	0.12	0.12	0.11	0.11	0.10	0.09

Includes minimum 25mm service void below insulation. Fixings not accounted for.

U-value calculations to BS EN ISO:6946
Ventilated Pitched Roof (XT/PR, XT/TL-MF)

Thickness between rafters
 @ 600mm centres

Thickness below rafters

	40	50	60	70	75	80	90	100	125
0								0.28	0.23
25			0.28	0.26	0.25	0.24	0.22	0.21	0.18
30		0.29	0.27	0.24	0.23	0.23	0.21	0.20	0.17
35		0.27	0.25	0.23	0.22	0.21	0.20	0.19	0.16
40	0.28	0.26	0.24	0.22	0.21	0.20	0.19	0.18	0.16
45	0.27	0.24	0.22	0.21	0.20	0.19	0.18	0.17	0.15
50	0.25	0.23	0.21	0.20	0.19	0.19	0.18	0.17	0.15
55	0.24	0.22	0.20	0.19	0.18	0.18	0.17	0.16	0.14
60	0.22	0.21	0.19	0.18	0.18	0.17	0.16	0.15	0.14
65	0.21	0.20	0.19	0.17	0.17	0.16	0.16	0.15	0.13
70	0.20	0.19	0.18	0.17	0.16	0.16	0.15	0.14	0.13
75	0.19	0.18	0.17	0.16	0.16	0.15	0.15	0.14	0.12
80	0.19	0.17	0.16	0.16	0.15	0.15	0.14	0.13	0.12

Thin-R

High Performance PIR

XT/PR 06/12

Xtratherm Technical Services

All the members of our technical team are individually BBA accredited to help you reach your low energy goals. BBA qualified in U-value calculation, condensation risk and also Thermal Bridging 3D analysis backed by BRE accreditation – when you call Xtratherm, you can be assured you're speaking to a qualified person.



XT/CW (T&G)

Walls:

Insulation for Partial Fill Cavity Wall



CT/PIR

Walls:

Full Fill Built-in Insulation for Traditional Build



XT/CWP

Walls:

Insulation with enhanced performance for Partial Fill Cavity Walls



XT/UF

Floors:

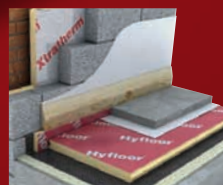
Insulation for Ground Supported and Suspended Floors



XT/TL

Walls:

Insulation for Drylining walls Fixed with Adhesive Dabs



XT/HYF

Floors:

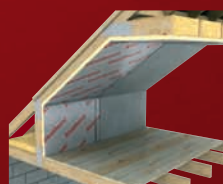
Insulation for Ground Supported and Suspended Floors with Engineered Jointing.



XT/TL-MF

Walls:

Insulation for Drylining walls Mechanically Fixed to Battens



XT/PR

Roofs:

Insulation for Pitched Roofs



XT/TF

Walls:

Insulation for Timber Framed Walls



XT/SK

Roofs:

Insulation for Sarking (Warm Roof) Constructions with Engineered Jointing

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Good workmanship and appropriate site procedures are necessary to achieve expected thermal and airtightness performance. The example calculations are indicative only. Default values for components and cavities have been used, for specific U-value calculations contact Xtratherm Technical Support. Comprehensive guidance on installation should be consulted. Xtratherm technical literature and Agrément certifications are available for download on the Xtratherm website. The information contained in this publication is, to the best of our knowledge, true and accurate but any recommendations or suggestions which may be made are without guarantee since the conditions of use are beyond our control.