

Tapered Roof Solutions

High performance
PIR Tapered Roof
Insulation



Tapered Insulation for Mechanically Fixed Single Ply Waterproofing Systems **TR/ALU**

Key Features

High Performance Rigid Insulation

Thermal Conductivity 0.022W/mK

Practical Solution to Water Ponding
with Insulation and Drainage in
a Single System

LPC/FM Approved

Compatible with Single Ply
Waterproofing Systems

Non-deleterious Material

Manufactured without the use
of CFC's/HCFC's

Zero ODP and Low GWP

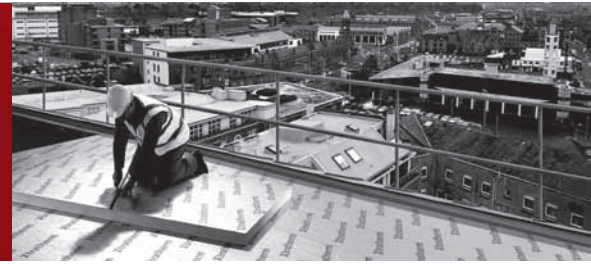
Suitable for New Build and
Refurbishment Projects



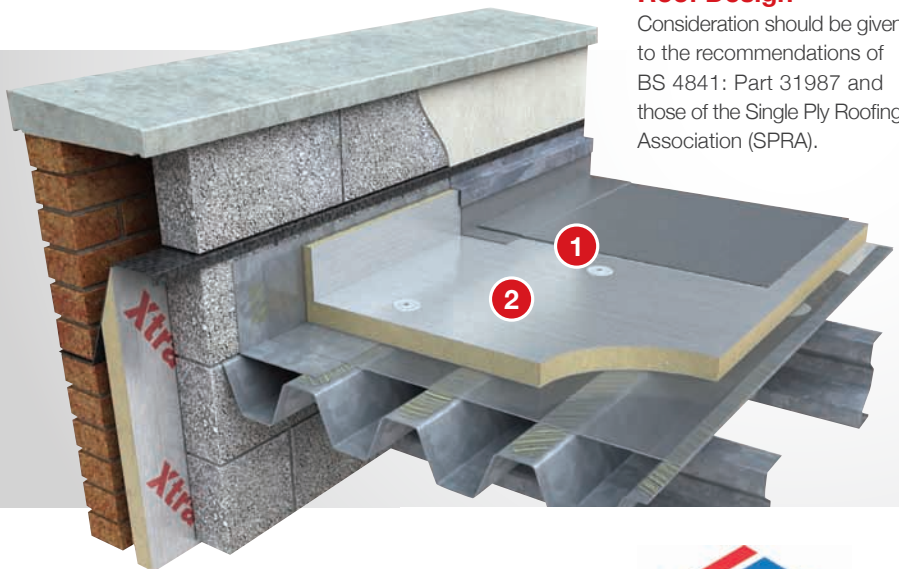
Xtratherm[®]
More than insulation

Tapered Roof Board TR/ALU

Tapered Insulation for Mechanically Fixed Single Ply Waterproofing Systems



Xtratherm TR/ALU is a high performance Polyisocyanurate tapered roof insulation with vapour-tight aluminium foil facings suitable for use with single ply membranes. TR/ALU is part of the comprehensive range of Xtratherm's high performance tapered roof boards providing total solutions for tapered roof projects.



Roof Design

Consideration should be given to the recommendations of BS 4841: Part 31987 and those of the Single Ply Roofing Association (SPRA).

1
Xtratherm TR/ALU is faced with a gas-tight foil face.
Xtratherm TR/ALU foil faced roof boards are suitable for use below single ply mechanically fixed roof membranes.

Note:
TR/ALU is not recommended for applications with built-up bitumen based roofing or mastic asphalt systems.

2
Xtratherm TR/ALU foil faced insulation boards are suitable for use on roof decks that are subject to maintenance traffic only. Walkways should be provided on roofs requiring regular pedestrian access. When the roof is complete, protective boarding should be laid if additional site work is to be carried out. The completed roof should not be used for storage of heavy materials or air conditioning plant.

Heat Loss/Condensation Risk

A U-value calculation should be carried out at design for minimum or average U-values depending on requirements. In addition, a condensation risk analysis must be calculated within the guidance provided in BS 5250:2002 code of practice for control of condensation in buildings.

Fire Performance

The fire rating when tested to BS 476 Part 3: 2004 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified.

Xtratherm TR/ALU Sheet Size (mm)

Length

1200

Width

1200

Thickness

30 (minimum)

Other sizes are available subject to quantity and lead time.

TR/ALU Tapered 1:60

1200 x 1200

Flat

A60	B60	C60	D60	2400 X 1200
30-50	50-70	70-90	90-110	80mm

TR/ALU Tapered 1:80

1200 x 1200

Flat

A80	B80	C80	D80	2400 X 1200
30-45	45-60	60-75	75-90	60mm

TR/ALU Tapered 1:120

1200 x 1200

Flat

A120	B120	C120	D120	2400 X 1200
30-40	40-50	50-60	60-70	40mm

Xtratherm TR/ALU tapered insulation should be laid over a separate vapour control layer. The requirements for this vapour control layer should be assessed in accordance with BS6229 1982. Typically a 1000 gauge polythene should be used with all joints lapped and sealed.

The joints should be butted and care taken to ensure that all joints are supported by the deck. Mechanical fixings with washers are normally used to secure both the insulation and waterproof membranes. Fixings that penetrate the vapour control layer must be of the self sealing type.

Xtratherm tapered roof insulation TR/ALU is suitable for use under single ply mechanically fixed roof membranes.

Xtratherm TR/ALU tapered insulation systems have been designed to provide solutions to design issues that arise in new and refurbishment roofs. Xtratherm TR/ALU systems address most flat roof failures i.e. ponding of rainwater caused by an inability to shed rainwater on the surface whilst providing a high level of thermal insulation performance.



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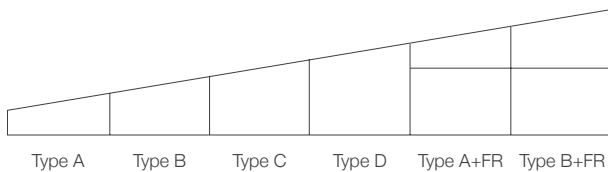
Product Description

Xtratherm TR/ALU is the tapered version of FR/ALU. It is faced on both sides with composite gas-tight foil facings adhesively bonded to a Polyisocyanurate (PIR) core during manufacture. Xtratherm tapered boards are manufactured without the use of CFC's/HCFC's, have zero ozone depletion potential and PIR achieves a BRE Green Guide A+ Rating.

Fixing

The specification for fixing Xtratherm roof boards will vary with the location, roof height/width and topographical data. Architectural specification should be consulted.

Typical Layout 1:60



Laying over Concrete Deck

Xtratherm TR/ALU tapered boards should be fitted over the vapour control layer that has been laid on a prepared deck that is clear, dry and level without gaps. The TR/ALU boards are secured by mechanical fixings with washers. The waterproofing is also mechanically fixed in accordance with the specific manufacturer's instructions.

Daily Working Practice

The facing of Xtratherm TR/ALU should not be considered as temporary waterproofing, when work is interrupted or at the end of each day, a night joint must be made to prevent water penetration. Xtratherm tapered boards should be waterproofed as soon as possible after fixing.

Laying over Metal Deck

Xtratherm TR/ALU tapered boards should be laid over the vapour control layer with all joints fully supported by the deck. The TR/ALU boards are secured by mechanical fixings with washers. The waterproofing is also mechanically fixed in accordance with the specific manufacturer's instructions.

Typical Physical Characteristics

Property	Units
Density (Foam Core)	32kg/m ³
Compressive Strength	>150kPa @ 10% Compression
Water Vapour Resistivity	>100MN/gm
Thermal Conductivity	0.022W/mK

Typical R-values

TR/ALU Over Concrete Deck

TR/ALU (mm)	R-value (W/mK)
80	3.63
90	4.09
100	4.54
110	5.00
120	5.45
130	5.90
140	6.36

Spanning

Xtratherm TR/ALU insulation boards laid over metal decks should be in accordance with BS 4841: Part 3

TR/ALU	Trough Openings
25	≤ 75
30	76-100
35	101-125
40	126-150
45	151-175
50	176-200

On tapered roof systems, the insulation thickness and thus the U-value varies across the whole roof and the average U-value for the entire roof can only be calculated fully designed. Please contact Xtratherm Technical Support for more information.

The given U-values are indicative only. The effect of fixings has been assumed to have had no effect on the U-value. For comprehensive calculations on all deck types, please contact Xtratherm Technical Support. *Thermal conductivity is dependent on facings and product thickness.



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management
OHSAS 18000 | Occupational Health & Safety

Xtratherm® | Flat Roof Solutions

High performance PIR Flat Roof Insulation

The Xtratherm range of high performance flat roof boards provides the complete solution for new build and refurbishment.

TAPERED ROOF INSULATION

Tapered Insulation for Mechanically Fixed Single Ply Waterproofing Systems

TR/ALU



- High Performance Rigid Insulation
- Thermal Conductivity 0.022W/mK
- Practical Solution to Water Ponding with Insulation and Drainage in a Single System
- LPC/FM Approved
- Compatible with Single Ply Waterproofing Systems
- Non-deleterious Material
- Manufactured without the use of CFC's/HCFC's
- Zero ODP and Low GWP
- Suitable for New Build and Refurbishment Projects

Tapered Insulation for Single Ply Fully Adhered

TR/MG



- High Performance Rigid Insulation
- Thermal Conductivity as Low as 0.024W/mK
- Suitable for Fully Bonding with Approved Adhesive Systems
- Compatible with Adhesively Bonded Single Ply Roofing Membranes laid on Mechanically Fixed Boards
- Practical Solution to Water Ponding with Insulation and Drainage in a Single System
- LPC/FM Approved
- Non-deleterious Material
- Manufactured without the use of CFC's/HCFC's
- Zero ODP and Low GWP
- Suitable for New Build and Refurbishment Projects

Tapered Insulation for Partially Bonded, Torched-on, Built-up Bituminous Felt Systems

TR/BGM



- High Performance Rigid Insulation
- Thermal Conductivity as Low as 0.024W/mK
- Compatible with most Bituminous Based Roofing Systems
- Practical Solution to Water Ponding with Insulation and Drainage in a Single System
- Non-deleterious Material
- Manufactured without the use of CFC's/HCFC's
- Zero ODP and Low GWP
- Suitable for New Build and Refurbishment Projects

Rigid Insulation Flat Roof Solutions

FLAT ROOF INSULATION

Single Ply Mechanically Fixed

FR/ALU



- High Performance Rigid Insulation
- Thermal Conductivity 0.022W/mK
- LPC/FM Approved
- Compatible with Single Ply Waterproofing Systems
- Non-deleterious Material
- Manufactured without the use of CFC's/HCFC's
- Zero ODP and Low GWP
- Suitable for New Build and Refurbishment Projects

Insulation for Single Ply Fully Adhered

FR/MG



- High Performance Rigid Insulation
- Thermal Conductivity as low as 0.024W/mK
- Suitable for Fully Bonding with Approved Adhesive Systems
- Compatible with Adhesively Bonded Single Ply Roofing Membranes laid on Mechanically Fixed Boards
- LPC/FM Approved
- Non-deleterious Material
- Manufactured without the use of CFC's/HCFC's
- Zero ODP and Low GWP
- Suitable for New Build and Refurbishment Projects

Insulation for Partially Bonded, Torched-on, Built-up Bituminous Felt Systems

FR/BGM



- High Performance Rigid Insulation
- Thermal Conductivity as Low as 0.024W/mK
- Compatible with most Bituminous Based Roofing Systems
- Non-deleterious Material
- Manufactured without the use of CFC's/HCFC's
- Zero ODP and Low GWP
- Suitable for New Build and Refurbishment Projects

Thermal Ply

FR/TP



- High Performance Rigid Insulation
- Thermal Conductivity 0.022W/mK
- Insulation and Decking in a Single Fix
- Compatible with most Waterproofing Systems
- Non-deleterious Material
- Manufactured without the use of CFC's/HCFC's
- Zero ODP and Low GWP
- Suitable for New Build and Refurbishment Projects

Standards

Xtratherm Flat Roof 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 insulation boards must be protected from weather conditions, (preferably in dry storage) on the site and during installation. The polythene wrapping on packs is not a suitable weather protection. If internal storage is not possible, boards must be protected by secured waterproof sheeting vented to the underside to avoid condensation build-up.

Cutting

Xtratherm TR/ALU 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 in accredited details.

Packaging

Xtratherm TR/ALU 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 contact Xtratherm.

CFC/HCFC Free

Xtratherm TR/ALU is manufactured without the use of CFC's or HCFC's and has Zero Ozone Depletion Potential.

Durability

Xtratherm PIR Flat Roof insulation products are stable, rot proof and will remain effective for the life span of the building, depending on specification and installation. Care should be taken to avoid contact with acids, petrol, alkalis and mineral oil. Should contact be made, clean materials in a safe manner before installation. Solvent based adhesive containing methyl ethyl ketone should not be used.

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Good workmanship and appropriate site procedures are necessary to achieve expected thermal and airtightness performances. The example calculations are indicative only. Default values for components and cavities have been used. For specific U-value calculations please contact Xtratherm Technical Support. Comprehensive guidance on installation should be consulted. Xtratherm technical literature and Agrément certification is 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.