



Flat**Roof** Solutions

High Performance
PIR Flat Roof
Insulation

xtratherm.com
xtratherm.ie

Solutions

Flat Roofing

Tapered Roofing

Xtrafall Roofing System

Total flat roof insulation solutions

The Xtratherm range of high performance insulation boards provides the ideal technically advanced solution for flat roof projects.

Xtratherm[®]
More than insulation

Flat Roof Solutions

Xtratherm manufactures an extensive range of high performance PIR Flat Roof insulation boards that includes tapered insulation providing comprehensive, technically advanced, solutions for all flat roof projects. The XtraFall Roofing System offers a bespoke drainage solution to more complex roofing projects.

Xtratherm insulation materials achieve environmental rating within the 'BRE Green Guide,' and are manufactured under full ISO 9001 Quality Assurance and ISO 14001 Environmental Management Systems. The products are covered by full Agrément certification, LPC and FM approved specifications are available. For specific build ups please refer to Red Book for LPC and Roof Nav for FM.

Flat Roof Insulation

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Flat**Roof**
Solutions

Flat Roof
Insulation



Xtratherm®

Xtratherm®

Flat Roof Board FR/ALU

Insulation for Mechanically Fixed Single Ply Waterproofing Systems

Xtratherm FR/ALU Sheet Size (mm)

Length
2400

Width
1200

Thickness
25, 30, 40, 50, 60, 70, 75, 80, 90, 100,
110, 120, 125, 130, 140, 150

Other sizes are available subject to quantity and lead time.

Note: Xtratherm Ltd. reserves the right to amend product specifications without prior notice

1

Xtratherm FR/ALU is faced with gas-tight foil.

Xtratherm FR/ALU foil faced roof boards are suitable for use below single ply mechanically fixed roof membranes.

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

2

Xtratherm FR/ALU insulation boards should be laid over the vapour control layer in a break bonded pattern. The long edges of the boards should be laid at right angles to the corrugations and all board joints must be fully supported by the deck. The FR/ALU insulation boards are secured by approved mechanical fixings.

The requirement for a separate water vapour control layer should be assessed in accordance with BS 6229. Typically a 1000 gauge polythene should be used with all joints lapped and sealed. Any fixings that penetrate it must be of the self sealing type that fuses to the vapour control layer during application.

3

Xtratherm FR/ALU foil faced insulation boards are suitable for use on roof decks that are subject to maintenance traffic. Walk ways 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.

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

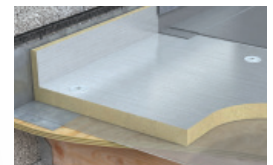
High Thermal Performance

Compatible with mechanically fixed single ply systems. Loose laid ballasted systems

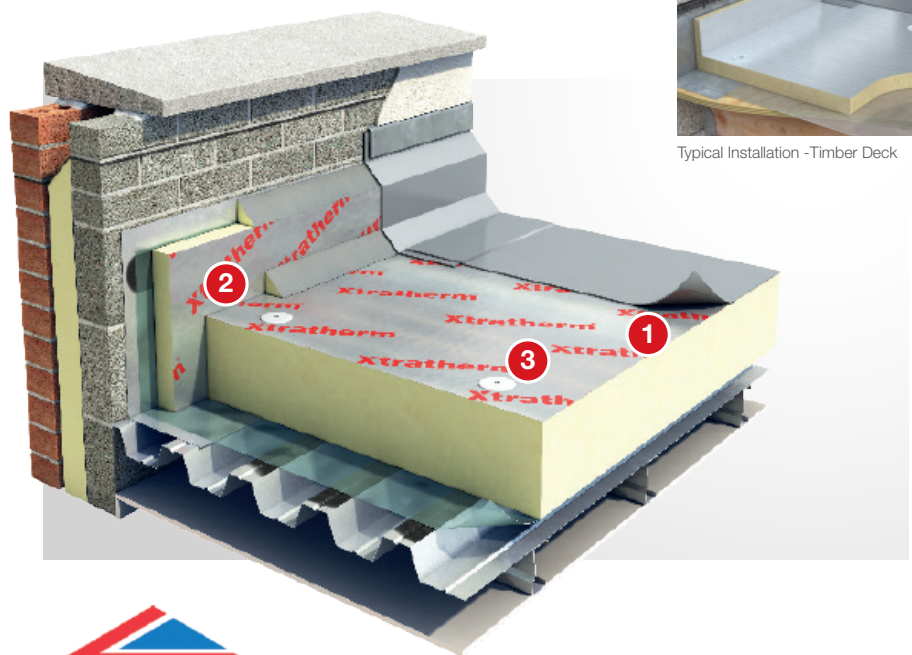
Vapour resistant foil facers



Typical Installation - Concrete Deck



Typical Installation - Timber Deck



Roof Design

Consideration should be given to the recommendations of BS 4841: Part 3 and those of the Single Ply Roofing Association.

Falls

The fall on a flat roof should be constant and steep enough to ensure that rainfall does not pond.

Fire Performance

The fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified

Xtratherm FR/ALU foil faced roof boards are suitable for use below single ply mechanically fixed roof membranes.

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

Flat Roof Insulation

Vapour Control Layer

The water vapour control layer should be laid with 150mm laps, which are turned up at any vertical upstand. When the insulation boards have been positioned the laps are turned over and sealed, prior to the roof finish being completed.

Laying (Metal/Timber Deck)

Xtratherm FR/ALU foil faced boards should be laid over the vapour control layer in a break bonded pattern. The long edges of the boards should be laid at right angles to the corrugations and all board joints must be fully supported by the deck. The FR/ALU insulation boards are generally secured by approved mechanical fixings.

Laying (Concrete Deck)

Xtratherm FR/ALU boards are laid over the vapour control layer in a break bonded pattern and secured with approved mechanical fixings, or secured under a ballasted system.

Care should be taken to ensure that the concrete deck is graded to the correct falls, dry, clean and free from any projections or gaps.

Fixing

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

Generally with 2400mm x 1200mm boards, a minimum of 6 fixings are adequate, located between 50mm and 150mm from all edges, additional fixings may be placed along the centre line. Additional fixings around roof perimeter may be required. 11 fixings per 2400mm x 1200mm sheet is recommended. Counter sunk washers, 50mm in diameter should be used with each fixing. However, BS 6399: Part 2 should always be consulted. During the construction process, the construction should be protected from rain penetration during breaks in the process.

Typical Physical Characteristics

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

Typical U-Values

FR/ALU Over Concrete Deck

FR/ALU (mm)	U-Value (W/m ² K)
80	0.26
90	0.23
100	0.21
120	0.18
140	0.16



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management Systems

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.

Xtratherm®

Flat Roof Board FR/MG

Insulation for Single Ply Fully Adhered / Partially Bonded Built-Up Felt Systems

Xtratherm FR/MG Sheet Size (mm)

Length (IRL sizes)	Length (UK sizes)
1200	1200
Width (IRL sizes)	Width (UK sizes)
1200	600

Thickness

25, 30, 40, 50, 60, 70, 80, 100, 110, 120

Other sizes are available subject to quantity and lead time.

Note: Xtratherm Ltd. reserves the right to amend product specifications without prior notice

Vapour Control Layer

A continuous approved vapour control layer should be used below the insulation. (Unless over a sealed metal deck system). For mechanically fixed boards, a minimum vapour control layer of a 1000 gauge polythene layer lapped and sealed with double-sided tape should be used below the insulation. At vertical upstands and penetrations, the VCL should be turned up and sealed to encapsulate the insulation layer prior to the roof finish being completed. (A comprehensive U-Value calculation and condensation risk analysis should be carried out for all projects).

Bonding boards to the vapour control layer

The minimum vapour control layer should consist of a 3B type felt to BS747 Reinforced bitumen sheets for roofing. Specification or BS8747. Reinforced bitumen membranes (RBMs) for roofing. Guide to selection and specification. Other proprietary systems may be used subject to approval.

Where the vapour control layer is to be bonded separately, sufficient adhesion to the substrate should be made to ensure correct resistance to wind uplift. Contact the system manufacturer for details.

Membrane Systems

Please contact Xtratherm Technical Support for advice on membrane and adhesive system compatibility. Technical guidance from the appropriate waterproofing manufacturer should be sought.

Loadings

Xtratherm FR/MG boards are suitable for use on roof decks that are subject to maintenance traffic. 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.

Xtratherm FR/MG is a high performance Polyisocyanurate with mineral coated glass facers suitable for use below single ply waterproofing systems and partially bonded built-up felt.

High Thermal Performance

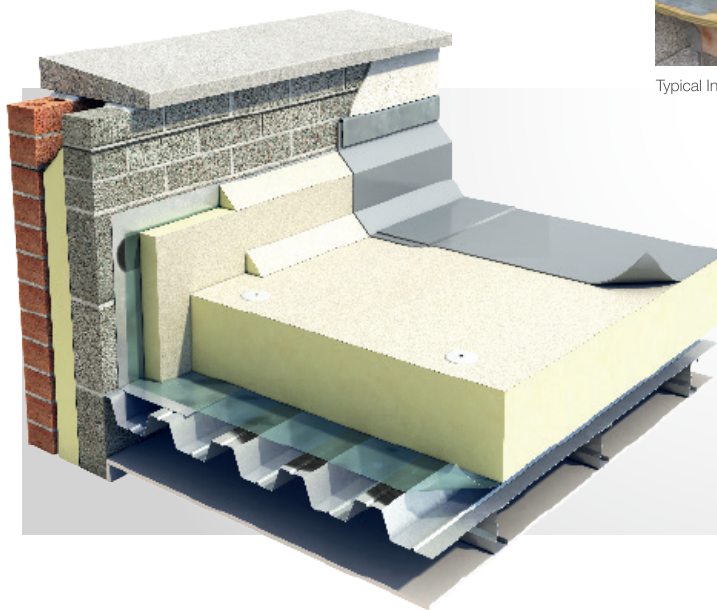
Compatible with adhesively bonded single ply roofing membranes laid on mechanically fixed or adhered boards.



Typical Installation - Concrete Deck



Typical Installation - Timber Deck



Roof Design

Consideration should be given to the recommendations of BS 4841: Part 3 and those of the Single Ply Roofing Association.

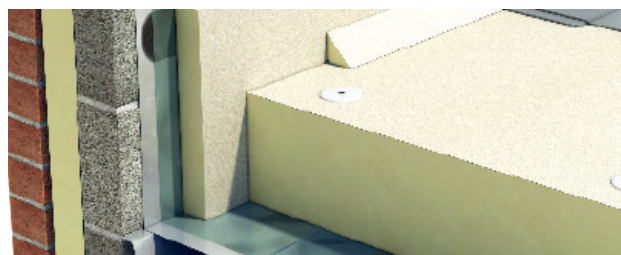
Falls

The fall on a flat roof should be constant and steep enough to ensure that rainfall does not pond.

Fire Performance

The fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified.

Xtratherm's comprehensive range of agrément certified high performance flat and tapered roof insulation boards provide a guaranteed quality solution to flat roof specification.



Flat Roof Insulation

Laying (Metal Deck)

Xtratherm FR/MG boards should be laid over the vapour control layer in a break bonded pattern. The long edges of the boards should be laid at right angles to the corrugations and all board joints must be fully supported by the deck.

Laying (Concrete Deck)

Decks should be dry and clean of debris and laid to correct fall. The boards can be secured using approved mechanical fixings and washers, with boards laid with a break-bonded pattern. Joints should be closely butted.

Alternatively the boards can be adhered to the decking with approved adhesive systems.

Partially Bonded Built Up Systems

Partially bonded built-up felt waterproofing should be laid, where in accordance with BS 8217 (Reinforced bitumen membranes for roofing. Code of practice).

Fully Adhered Systems

Xtratherm FR/MG is suitable for use with most fully adhered single-ply waterproofing membranes. Board joints and abutments should be taped subject to the approved adhesive system being used. A fleeced backed membrane might be required with the system being used, check with the system manufacturer.

Fixings

Depending on the fixings specification chosen, quantity and pattern of fixings will vary with the location, roof height/width and topographical data. Architectural specification should be consulted. Generally with 1200mm x 600mm boards, a minimum of 4 fixings are adequate, located between 50mm and 150mm from all edges, additional fixings may be placed along the centre line. Additional fixings around roof perimeter may be required. Counter sunk washers, 50mm in diameter should be used with each fixing. However, BS 6399 Part 2 should always be consulted. During the construction process, the insulation should be protected from rain penetration during breaks in the process.

Typical Physical Characteristics

Property	Units
Density (Foam Core)	32kg/m ³
Compressive Strength	>150kPa @ 10% Compression
Thermal Conductivity*	0.024 - 0.027 W/mK

Typical U-Values

FR/MG Over Timber Deck

FR/MG (mm)	U-Value (W/m ² K)
80	0.27
90	0.25
100	0.22
120	0.19
60+80 (140)	0.16



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management Systems

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.

Xtratherm®

Flat Roof Board FR/BGM

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

Xtratherm FR/BGM Sheet Size (mm)

Length (IRL sizes)	Length (UK sizes)
1200	1200

Width (IRL sizes)	Width (UK sizes)
1200	600

Thickness

25, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140

Other sizes are available subject to quantity and lead time.

Note: Xtratherm Ltd. reserves the right to amend product specifications without prior notice

Roof Loading

Xtratherm FR/BGM is suitable for use on roof decks that are subject to limited maintenance foot traffic. 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.

Roof Finish

Built up roofing systems should be finished with a suitable reflective layer such as chippings. Advice should be sought from system manufacturer.

Fire Performance

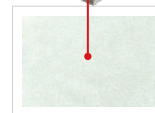
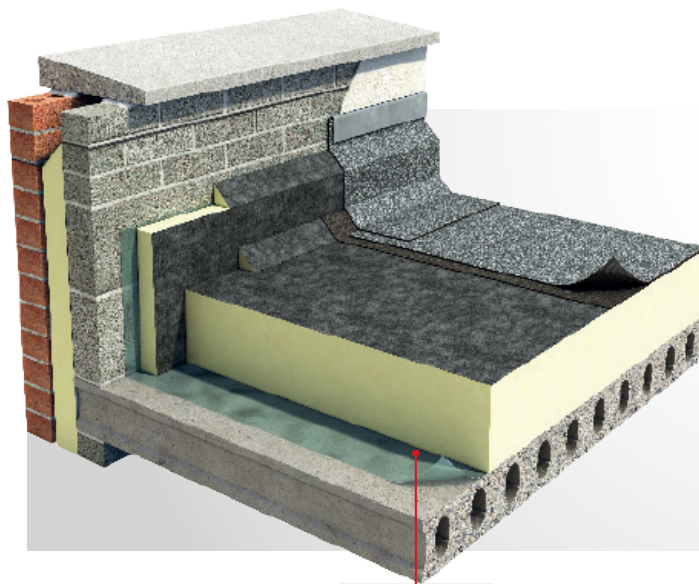
The fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified.

FR/BGM is faced with a polypropylene fleece finished bitumen/glass fibre working surface and a mineral glass facing to the under side. FR/BGM is part of Xtratherm's comprehensive range of high performance flat roof boards providing total solutions for flat roof projects.

High Thermal Performance

Compatible with most bituminous based roofing systems

Fleece finished bitumen/glass fibre facings



Mineral glass facing to the under side of BGM board.

Xtratherm's comprehensive range of Agrément certified high performance flat and tapered roof insulation boards provides a guaranteed quality solution to flat roof specification.

Note: FR/BGM can also be used in mechanically fastened or loose laid ballasted bituminous roofing systems.

Roof Design

Xtratherm FR/BGM is suitable for use with most bitumen based, partially bonded water proofing systems typically including a BS 747 type 3G perforated base layer or proprietary system.

Xtratherm FR/BGM, (Fleece side upper most) may also be fully bonded. Guidance in regard to moisture and condensation should be in accordance with BS 8217 (Reinforced bitumen membranes for roofing).

* During the construction process, the construction should be protected from rain penetration during breaks in the process.

* With fully bonded applications additional care is required to ensure that the construction remains free from moisture. Failure to protect will result in blistering of the waterproof layer.

Falls

The fall on a flat roof should be designed to ensure that rainfall does not pond.

Flat Roof Insulation

Vapour Control Layer

Decks should be primed before the application of the hot bitumen used to bond the vapour control layer. Reference should be made to BS 8217:1994 when applying the vapour control layer. Carry the VCL past the insulation and seal with the parapet wall.

Laying (Metal Deck)

On metal decks, Xtratherm FR/BGM should be laid break bonded into hot bitumen (max temperature 240°C) mopped or poured over the vapour control layer. The board can also be mechanically fixed or adhered with other suitable adhesive. Ensure all edges of the boards are supported.

Laying (Concrete Deck)

Ensure concrete decks are laid to provide correct falls to outlets and are clean, dry, without projections. Primer should be laid in accordance with the manufacturer's instructions. The vapour control layer should be fully bonded to the deck and the Xtratherm FR/BGM should be laid into hot bitumen on the vapour control layer in a break bonded pattern. The boards can also be mechanically fixed or adhered with other suitable adhesive.

Laying (Timber Deck)

On plywood decks, Xtratherm FR/BGM should be fully bedded in hot bitumen over a continuous vapour control layer which has been nailed or bonded to the deck. The boards can also be mechanically fixed or adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

Fixing

The specification for fixing Xtratherm roof boards will vary with the location, roof height/width and topographical data. Architectural specification should be consulted. Generally with 1200mm x 600mm boards, a minimum of 4 fixings per board are adequate, located between 50mm and 150mm from all edges, additional fixings may be placed along the centre line. Counter sunk washers, 50mm in diameter should be used with each fixing. However, BS 6399: Part 2 should always be consulted. In two layer systems, all layers should be fixed in accordance with fixing manufacturers instructions.

Bitumen Based Built Up Roofing Systems

Technical guidance from the appropriate bitumen waterproofing manufacturer should be sought as to assure proper installation of the bonded built up roofing system.

Fire

Each contract should be assessed for suitability of torch on applications. The suitability of materials, substrates and specifications should be assessed before commencement. Application of the torch on system should be undertaken only by fully trained personnel with appropriate fire precautions and fire extinguishing equipment available at hand. All timber roof components, and most insulation materials are combustible, and will be vulnerable to a naked flame. These materials may be hidden from view. Due attention should be given and all precautions taken. This is the responsibility of the operatives.

Typical Physical Characteristics

Property	Units
Density (Foam Core)	32kg/m ³
Compressive Strength	>150kPa @ 10% Compression
Thermal Conductivity*	0.024 - 0.027 W/mK

Typical U-Values

FR/BGM Over Concrete Deck

FR/BGM (mm)	U-Value (W/m ² K)
80	0.29
90	0.26
100	0.24
120	0.20



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management Systems

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.

Xtratherm®

Flat Roof Board FR/TP

Thermal Ply High Performance PIR
and Plywood Composite for Flat Roofs

Xtratherm FR/TP Sheet Size (mm)

Length
2400

Width
1200

Thickness*
56, 76, 86, 96, 106, 116

*Thickness includes 6mm plywood

1

Xtratherm FR/TP is faced to the under side with a gas-tight foil facer, bedding the panel onto a bed of mastic creates a continuous vapour control layer.

2

The Xtratherm FR/TP provides a high level of thermal insulation and decking in one application.

3

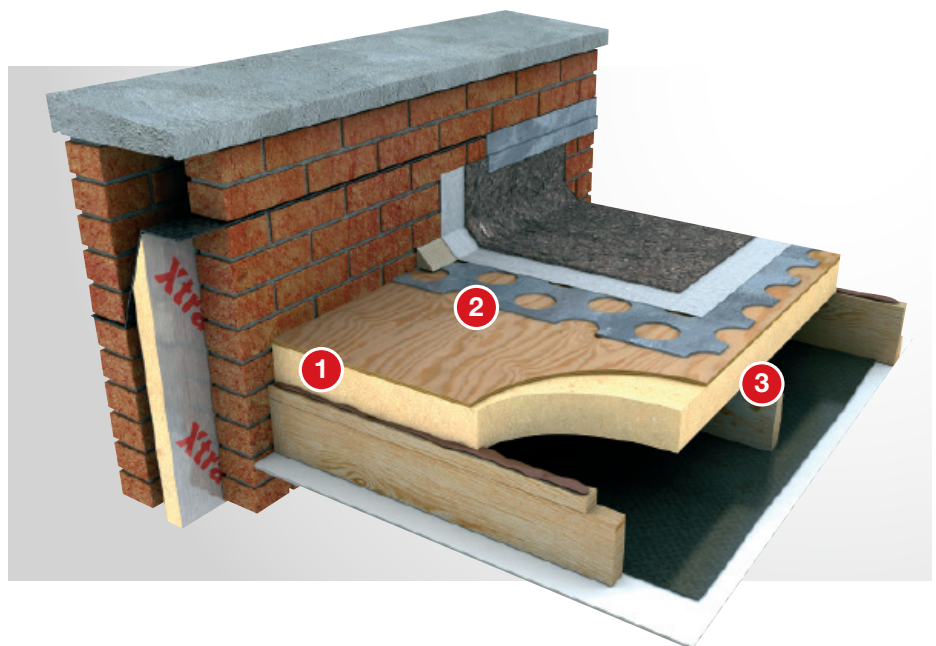
A second layer of Xtratherm may be added between the joists to increase the thermal performance of the roof or to allow a reduction in the thickness of material over the joists. If using insulation between joists the VCL should be placed to the underside of the joists.

Xtratherm FR/TP Thermal Ply is a composite insulated panel of Xtratherm Polyisocyanurate core with a composite foil face, bonded to 6mm WBP grade plywood. FR/TP is designed to provide high levels of thermal insulation and decking in one operation for new and refurbishment flat roof applications.

Insulation & decking in one fix

For new & refurbishment roofs

Rapid weather proofing



Roof Design

Consideration should be given to the recommendations of BS 4841: Part 3 and the certification of the chosen membrane manufacturer.

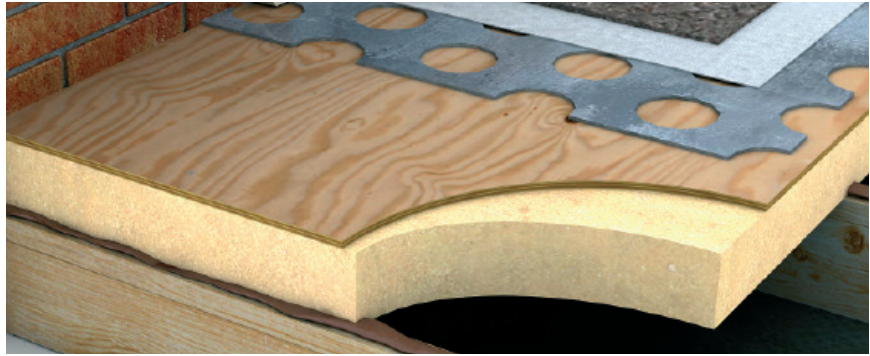
Falls

The fall on a flat roof should be constant and steep enough to ensure that rainfall does not pond.

Fire Performance

The fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified

Xtratherm's comprehensive range of high performance flat and tapered roof insulation boards provide a guaranteed quality solution to flat roof specification.



Flat Roof Insulation

Xtratherm FR/TP should be fixed to a minimum of 50mm thick joists at 400mm (IRL)/600mm (UK) centres max with the plywood uppermost.

Boards should be staggered and butted. Each edge should have a minimum bearing of 20mm on joist.

All edges should be supported - add noggings where necessary. Stagger fixings where boards are butted.

Boards should be embedded in vapour resistant mastic to provide a vapour control layer in conjunction with foil facing.

Mastic should be laid wide enough to facilitate 2 panel edges and be continuous around all edges.

FR/TP should be fixed with low profile screw fixings, placed at 200mm centres around the perimeter of the boards and at 300mm centres along any intermediate supports.

All fixings should penetrate the joists by a minimum of 35mm and be placed 12mm from the edge of the FR/TP, and no further than 50mm from any corners.

Care should be taken to ensure that the heads of any fixings are flush with the plywood surface and not over-driven.

The roof should be fire protected to the underside by plasterboard or other approved material.

FR/TP is suitable for maintenance traffic loadings only.

Typical Physical Characteristics

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

Typical U-Values

FR/TP Over Timber Deck

FR/TP (mm)	U-Value (W/m ² K)
56	0.37
76	0.26
86	0.23
96	0.21
106	0.19
116	0.18



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management Systems

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.

Insulation Fixing Table

Minimum area of stress plate,
number of fixings and layout

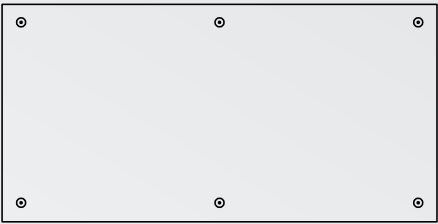
Recommended Fixing Patterns

For comprehensive guidance, please refer and details on fixing patterns, please refer to guidance from the following bodies.

- “SPRA: SINGLE PLY DESIGN GUIDE”
- Insulation Manufacturers Association Information document ID/1/2009, published by IMA
- Liquid Roofing and Waterproofing Association, Technical Guidance

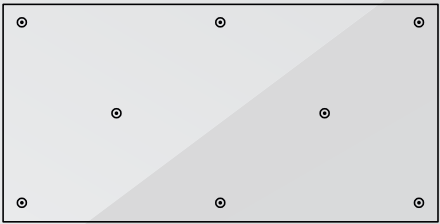
Distribute mechanical fixings evenly across the board, at a minimum of 50mm from the board edge and a maximum of 150mm. Refer to fixing patterns below for indicative purposes.

The required number of fixings shown is the minimum only. Regardless of the membrane attachment method, wind load calculations should be undertaken in order to determine actual fixing requirements in corner, perimeter and field roof areas. These areas should be clearly defined, especially where different numbers of fixings are required for each zone.



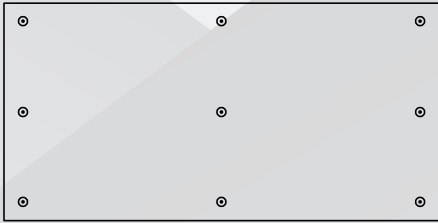
6 fixings per board

Recommended fixing pattern
for 6 fixing per board
(2400m x 1200m board - 2.08 fixings/m²)



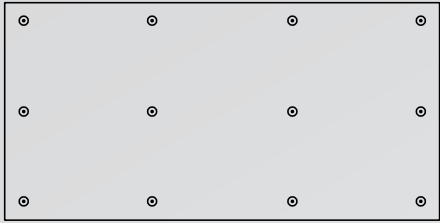
8 fixings per board

Recommended fixing pattern
for 8 fixing per board
(2400m x 1200m board - 2.77 fixings/m²)



9 fixings per board

Recommended fixing pattern
for 9 fixing per board
(2400m x 1200m board - 3.13 fixings/m²)



12 fixings per board

Recommended fixing pattern
for 12 fixing per board
(2400m x 1200m board - 4.16 fixings/m²)

Flat**Roof**
Solutions

Tapered Roof
Insulation



Xtratherm®

Xtratherm®

Xtratherm TR/ALU Sheet Size (mm)

Length

1200

Width

1200

Thickness

30 (minimum)



Other sizes available subject to quantity and lead time.

Note: Xtratherm Ltd. reserves the right to amend product specifications without prior notice

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

Alternative tapers available on request.

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.

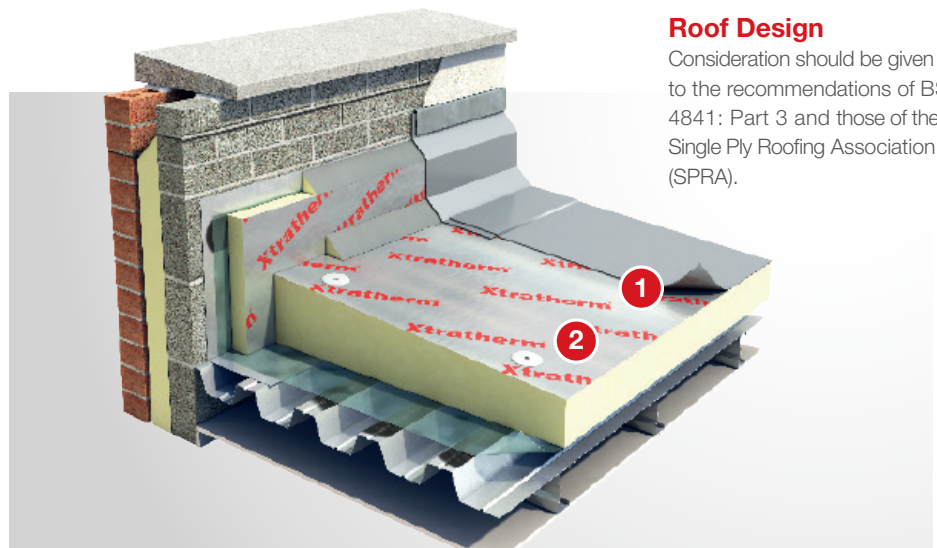
Xtratherm tapered roof insulation TR/ALU is suitable for use under single ply mechanically fixed roof membranes.

Xtratherm TR/ALU tapered roof 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.

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 3 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 suitable 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. Walk ways 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 code of practice for control of condensation in buildings.

Fire Performance

The fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified.

Product Description

Xtratherm TR/ALU is the tapered version of FR/ALU. It is faced on both sides with composite gas tight foil facings autohesively bonded to a Polyisocyanurate (PIR) core during manufacture. ALU achieves a BRE Green Guide A+ Rating.

Fixing

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

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.

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 manufacturers instructions.

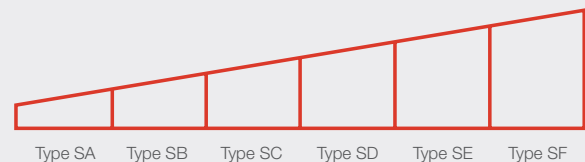
Daily Working Practice

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.

Xtratherm pre-fabricated single layer tapered roofing panels provide the most flexible, cost effective solutions that can be designed to meet a wide range of criteria in new and refurbished flat roofs. Xtratherm can provide bespoke solutions with a range of thickness from 30mm to 400mm, this enables faster installation and reduces site generated waste.

Prefabricated Single Layer Systems

1200 x 600



Note: Fall across 1200mm dimension

Typical Physical Characteristics

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



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management Systems

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.

Xtratherm®

Tapered Roof Board TR/MG

Insulation for Single Ply Fully Adhered/Partially Bonded Built-Up Felt Systems

Xtratherm TR/MG Sheet Size (mm)

Length
1200

Width
1200

Thickness
30 (minimum)

Other sizes are available subject to quantity and lead time.

TR/MG Tapered 1:60

1200 x 1200

A60	B60	C60	D60	Flat
30-50	50-70	70-90	90-110	80mm

**Note: 1:80 subject to quantity & lead time.
As prefabricated only.**

Alternative tapers available on request.

Bonded boards

The insulation boards are embedded in a layer of bitumen on a 3G type felt to BS 747 (Reinforced bitumen sheets for roofing specification) that has been adhered to the deck. (Xtratherm recommend that all systems should have mechanical fixings included or be adhered using other suitable adhesive).

1

Xtratherm TR/MG boards should be laid over the vapour control layer in a break bonded pattern. The long edges of the boards should be laid at right angles to the corrugations and all board joints must be fully supported by the deck. The TR/MG insulation boards are generally secured by approved mechanical fixings or adhered using other suitable adhesive. The requirement for a separate water vapour control layer should be assessed in accordance with BS6229.

2

Xtratherm TR/MG boards are suitable for use on roof decks that are subject to maintenance traffic. Walk-ways 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.

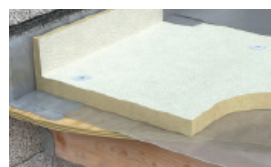
3

Xtratherm TR/MG mineral coated glass faced boards are suitable for use below most single ply fully adhered mechanically fixed roof membrane systems and most partially bonded built-up felt systems.

Xtratherm TR/MG is a high performance Polyisocyanurate with mineral coated glass facers suitable for use below single ply fully adhered roof membranes, single ply waterproofing systems and partially bonded built-up felt.



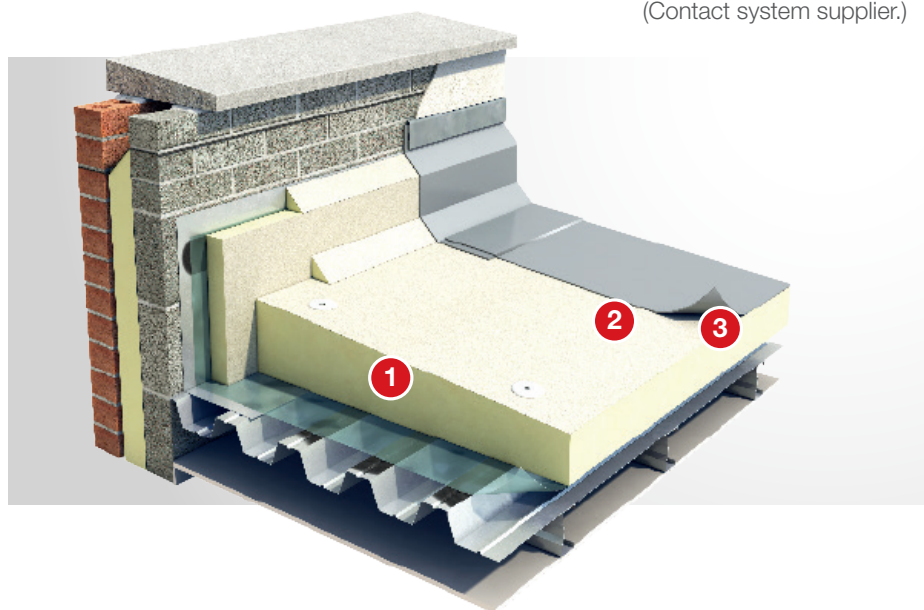
Typical Installation - Concrete Deck



Typical Installation - Timber Deck

Vapour control layer

Mechanically fixed boards. A vapour control layer lapped and sealed with should be used below the insulation. When using fully adhered systems, board joints should be taped subject to adhesive system being used. (Contact system supplier.)



Fire Performance

The fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified.

Available subject to quantity and lead time. Note: Xtratherm Ltd. reserves the right to amend product specifications without prior notice.

Xtratherm's comprehensive range of agrément certified high performance flat and tapered roof insulation boards provide a guaranteed quality solution to tapered roof specification.

Tapered Roof Insulation

Laying (Metal Deck)

Decks should be dry and clean of debris with tapered components laid to achieve the designed falls. The boards can be secured using approved mechanical fixings and washers, with boards laid with a break-bonded pattern or can be adhered using other suitable adhesive. Joints should be closely butted.

Laying (Concrete Deck)

Decks should be dry and clean of debris. The boards can be secured using approved mechanical fixings and washers, with boards laid with a break-bonded pattern. Joints should be closely butted.

Alternatively the boards can be adhered also to the decking with approved adhesive systems.

Partially Bonded Built Up Systems

Partially bonded built-up felt waterproofing should be laid, where in accordance with BS 8217 (Reinforced bitumen membranes for roofing. Code of practice).

Fully Adhered Systems

Xtratherm TR/MG is suitable for use with most fully adhered single-ply waterproofing membranes. Board joints and abutments should be taped subject to the approved adhesive system being used. A fleeced backed membrane might be required with the system being used, check with the system manufacturer.

Daily Working Practice

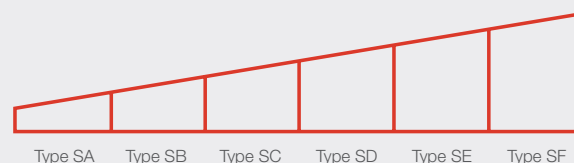
The facing of Xtratherm TR/MG should not be considered as temporary waterproofing, when work is interrupted or at the end of each day, a night joint must be made to prevent water penetration. Xtratherm tapered boards should be waterproofed as soon as possible after fixing.

Fixings

Depending on the fixings specification chosen, quantity and pattern of fixings will vary with the location, roof height/width and topographical data. Architectural specification should be consulted. Generally with 1200mm x 1200mm boards, a minimum of 4 fixings per board are adequate, located between 50mm and 150mm from all edges. If more than one layer of insulation is being used, the flat board packers should be mechanically fixed with a minimum of one fixing before fixing profiled boards as detailed. Additional fixings around roof perimeter of the roof may be required.

Xtratherm pre-fabricated single layer tapered roofing panels provide the most flexible, cost effective solutions that can be designed to meet a wide range of criteria in new and refurbished flat roofs. Xtratherm can provide bespoke solutions with a range of thickness from 30mm to 400mm, this enables faster installation and reduces site generated waste.

Prefabricated Single Layer Systems 1200mm x 600mm



Note: Fall across 1200mm dimension

Typical Physical Characteristics

Property	Units
Density (Foam Core)	32 kg/m ³
Compressive Strength	>150 kPa @ 10% Compression
Thermal Conductivity*	0.024 - 0.027 W/mK



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management Systems

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.

Xtratherm®

Tapered Roof Board TR/BGM

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

Xtratherm TR/BGM Sheet Size (mm)

Length
1200

Width
1200

Other sizes available subject to quantity and lead time.

Note: Xtratherm Ltd. reserves the right to amend product specifications without prior notice.

TR/BGM Tapered 1:60

1200 x 1200

Flat

A60 B60 C60 D60 2400 X 1200



30-50



50-70



70-90



90-110



80mm

Note: 1:80 subject to quantity & lead time.
As prefabricated only.

Alternative tapers available on request.

Roof Loading

Xtratherm TR/BGM is suitable for use on roof decks that are subject to limited maintenance foot traffic. Walkways should be provided on roofs requiring regular pedestrian access. When the roof is complete, protective boarding should be laid if additional sitework is to be carried out.

Roof Finish

Built up roofing systems should be finished with a suitable reflective layer such as chippings. Advice should be sought from system manufacturer.

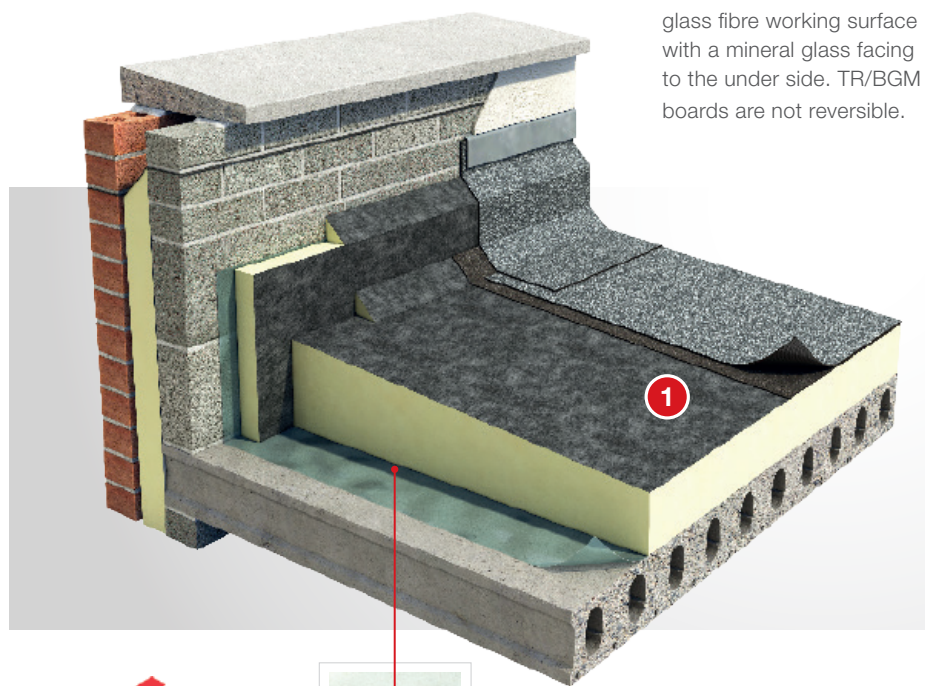
Fire Performance

The fire rating when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test' will be dependent upon waterproofing system specified. external fire exposure roof test.

Xtratherm TR/BGM is a high performance Polyisocyanurate tapered roof insulation with a polypropylene fleece finished bitumen/glass fibre working surface and a mineral glass facing to the under side. (TR/BGM boards are not reversible) TR/BGM is suitable for use below most bitumen based partially bonded built up roofing systems. TR/BGM is part of Xtratherm's comprehensive range of high performance tapered roof boards providing total solutions for tapered roof projects.

1

Xtratherm TR/BGM has a fleece finished bitumen/glass fibre working surface with a mineral glass facing to the under side. TR/BGM boards are not reversible.



Mineral glass facing to the under side of BGM board.

Xtratherm's comprehensive range of agrément certified high performance flat and tapered roof insulation boards provide a guaranteed quality solution to flat roof specification.

Note: TR/BGM can also be used in mechanically fastened or loose laid ballasted bituminous roofing systems.

Roof Design

Xtratherm TR/BGM is suitable for use with most bitumen based water proofing systems including those using a BS747 type 3G perforated base layer. The roof should be laid in accordance with BS 8217 (Reinforced bitumen membranes for roofing. Code of practice). During the construction process, the construction should be protected from rain penetration during breaks in the process.

Falls

The fall on a flat roof should be designed to ensure that rainfall does not pond. TR/BGM provides a practical solution to Water Ponding with insulation and drainage in a single system.

Tapered Roof Insulation

Vapour Control Layer

Decks should be primed before the application of the hot bitumen used to bond the vapour control layer. Reference should be made to BS8217 when applying the vapour control layer. Carry the the VCL past the insulation and seal with the parapet wall. Torch on VCL's also available.

Laying (Metal Deck)

On metal decks, Xtratherm TR/BGM should be laid break bonded into hot bitumen (max temperature 240°C) mopped or poured over the vapour control layer. The board can also be mechanically fixed or adhered using other suitable adhesive. Ensure all edges of the boards are supported.

Laying (Concrete Deck)

Ensure concrete decks are clean, dry, without projections. Primer should be laid in accordance with the manufacturer's instructions. The vapour control layer should be fully bonded to the deck and the Xtratherm TR/BGM should be laid into hot bitumen on the vapour control layer in a break bonded pattern. The boards can also be mechanically fixed or adhered using other suitable adhesive.

Laying (Plywood Deck)

On plywood decks, Xtratherm TR/BGM should be fully bedded in hot bitumen over a continuous vapour control layer which has been nailed or bonded to the deck. The boards can also be mechanically fixed or adhered using other suitable adhesive. Fixing heads should be sealed with bitumen.

Daily Working Practice

The facing of Xtratherm TR/BGM 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.

Fixing

The specification for fixing of Xtratherm roof boards will vary with the location, roof height/width and topographical data, architectural specification should be consulted. Generally with 1200mm x 1200mm boards, a minimum of 4 fixings per board, located between 50mm and 150mm from all edges, additional fixings may be placed along the centre line. Counter sunk washers, 5mm in diameter should be used with each fixing. However, BS6399 Part 2 should always be consulted. In two layer systems, all layers should be fixed in accordance with the contained instructions.

Bitumen Based Built Up Roofing Systems

Technical guidance from the appropriate bitumen waterproofing manufacturer should be sought as to assure proper installation of the bonded built up roof system.

Fire

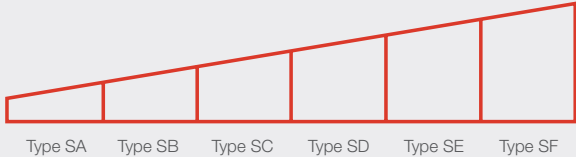
Each contract should be assessed for suitability of torch on applications. The suitability of materials, substrates and specifications should be assessed before commencement. Application of the torch on system should be undertaken only by fully trained personnel with appropriate fire precautions and fire extinguishing equipment available at hand. All timber roof components, and most insulations materials are combustible, and will be vulnerable to naked flame, these materials may be hidden from view. Due attention should be given and all precautions taken. This is the responsibility of the operatives.

Property

Typical Physical Characteristics	Units
Density (Foam Core)	32 kg/m ³
Compressive Strength	>150 kPa @ 10% Compression
Thermal Conductivity*	0.024 - 0.027 W/mK

Xtratherm pre-fabricated single layer tapered roofing panels provide the most flexible, cost effective solutions that can be designed to meet a wide range of criteria in new and refurbished flat roofs. Xtratherm can provide bespoke solutions with a range of thickness from 30mm to 400mm, this enables faster installation and reduces site generated waste.

Prefabricated Single Layer Systems
1200mm x 600mm



Note: Fall across 1200mm dimension



ISO 9001 | Quality Management Systems
ISO 14001 | Environmental Management Systems

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.

Xtratherm® Flat Roof Experts

Our specialist Flat Roofing division will work with you to assess your individual needs. Using our XtraFall system we work to deliver cost-effective roof drainage using the most thermally efficient method possible, backed by accredited calculations for U-Values, condensation and thermal bridging.

Xtratherm's Technical Team are a valuable resource that can be called upon for advice from initial consultation and formulation of design strategies right through to providing comprehensive layout schemes for the contractor to simplify the installation of complex drainage courses, all backed by third party calculation.

Get in touch

Dedicated Technical Team:
Tel +44 (0) 371 222 1055
Tel +353 (0) 46 906 6050

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

Flat**Roof**
Solutions

Xtra**Fall**
Roofing System



Xtratherm®

XtraFall

The XtraFall Taper System provides the designer and contractor with a precise, technically excellent solution to providing thermal insulation and bespoke drainage on flat roofing that avoids water retention and consequent damage in traditional flat roofs.

The factory formed single layer system, manufactured under the highest ISO quality standards provides the quality assurance that is more difficult to achieve with on-site built-up systems.

Designing 'cut-to-fall' schemes to result in a roof that is thermally efficient, manages water drainage and is cost effective may seem daunting, that is where we come in.

XtraFall Benefits

- Flat roof insulation and drainage in a single system
- Labour savings due to factory made quality assured single layer system
- Pre-fabricated elements build to a system: mitred boards, hips, valleys and other accessories
- Cost effective solution for creating drainage falls with certified U-Values
- Less waste due to single layer system
- Available in 3 different facers:
XF/ALU: mechanically fixed
XF/BGM: Bonded, torched on
XF/MG: Fully adhered

XtraFall Features

- Highest Performance Rigid PIR Insulation
- Practical Solution: flat roof insulation and drainage in a single system
- A cost effective solution to creating drainage falls with excellent U-Values
- Factory bonded components manufactured to precision tolerances
- Factory made quality assured single component system
- Quality Assurance of mechanical properties of component bonding
- Pre-mitred, hips, valleys and extensive range of accessory pieces
- Rigid, lightweight material accepting maintenance traffic
- Suitable for new and existing flat roofs
- Green Guide A Rated product
- BBA Assured Technical Team





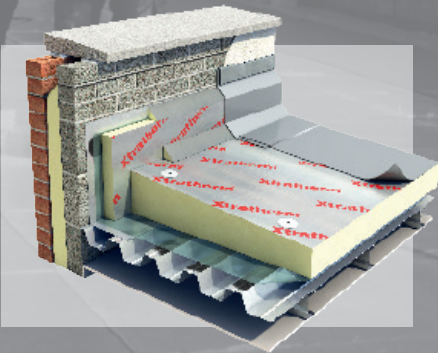
Total flat roof insulation solutions, including the XF range of tapered systems.

Xtratherm offer a comprehensive range of high performance PIR Flat Roof insulation boards that includes the XF range of tapered insulation, providing comprehensive solutions for all flat roof projects whatever the choice of waterproofing system, with environmental scoring within the 'BRE Green Guide'. Our extensive range of high performance PIR foam insulation products with unique performance characteristics has been engineered to meet any project specification.

The XF system is supported by a range of ancillary products, designed to ensure continuous thermal insulation and complete roof drainage. These products are exclusive to the XtraFall system.

XF/ALU

Tapered Insulation for
Mechanically Fixed Single Ply
Waterproofing Systems



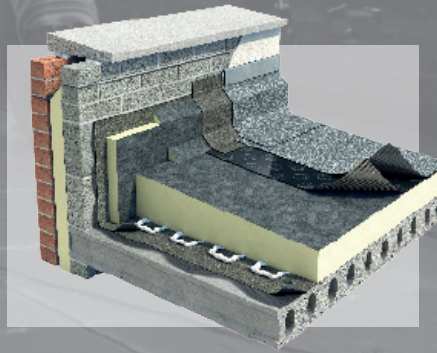
Aluminium faced rigid PIR

Thermal Conductivity 0.022 W/mK

Compatible with Single
Ply Waterproofing Systems

XF/BGM

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



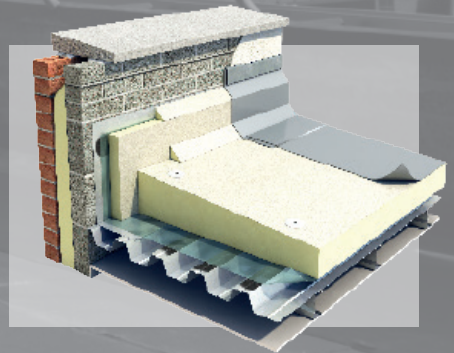
Bituminous faced rigid PIR

Thermal Conductivity as Low
as 0.024 W/mK

Compatible with most Bituminous
based Roofing Systems

XF/MG

Tapered Insulation for Single Ply
Fully Adhered/ Partially Bonded
Built-up Felt Systems



Mineral glass tissue faced rigid PIR

Thermal Conductivity as Low
as 0.024 W/mK

Compatible with Adhesively Bonded/
Mechanically Fixed Single Ply Roofing
Membranes.



Ancillary Product Range

To be used in conjunction with the XtraFall Roofing System

Preformed Crickets

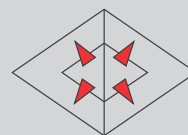
XtraCrickets provide an efficient tool for the management of rainwater drainage on roofs. The pre-cut pyramidal piece allows for directional drainage towards outlets in new or existing roofs where ponding may occur.



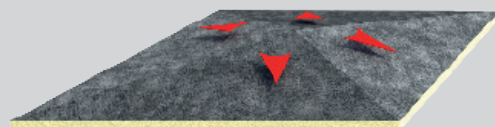
1/4 Diamond XtraCricket



1/2 Diamond XtraCricket

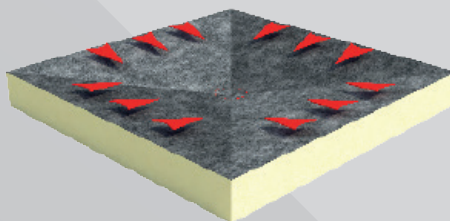


Full Diamond XtraCricket



Only available as part of an XtraFall designed solution and not as separate components.

Sumps



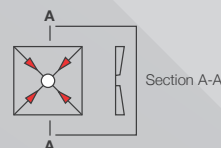
Prefabricated insulated rainwater outlet sumps are available that can be adjusted to suit 4, 3 or 2 sided outlets. The sump tapers in thickness, from 50 to 30mm* in 600 x 600mm modular panels. The sump can be placed at the RWO location, on the roof deck or it can be laid directly on top of a base layer of insulation to give the appropriate insulation thickness.



Corner Sump



Edge Sump



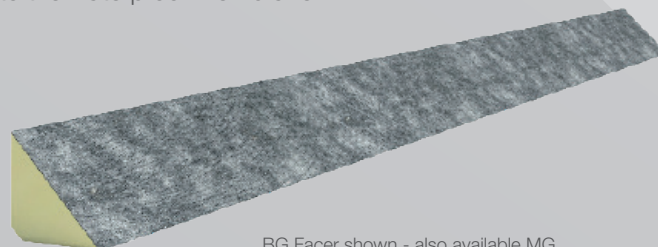
Centred Sump

Section A-A

*Other thicknesses available.

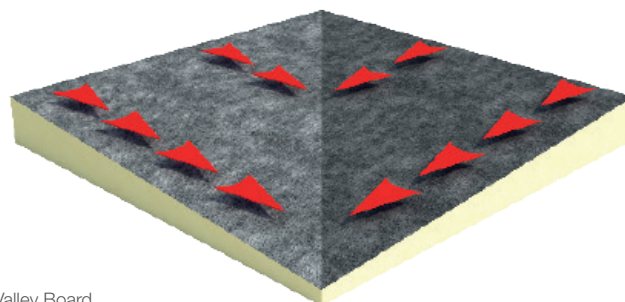
Fillet

An insulated angle fillet, suitable for all applications where acute angle directional changes are required by bituminous roof membranes, to avoid stress-nodes. Each fillet is 1200 long and 50mm in vertical depth. The facing of bituminous glass tissue allows perfect bonding to the waterproof membrane.



BG Facer shown - also available MG.

XtraFall Mitres



Valley Board

Ridge/Valley Boards

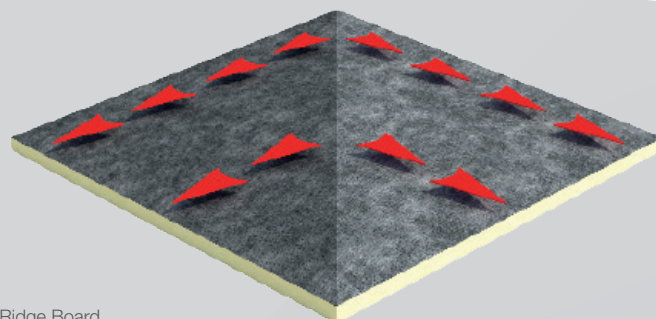
Xtra-mitre Ridge / Valley boards are prefabricated composite falls PIR tapered insulation boards. Xtra-mitre boards are an integral part of the XtraFall tapered roof insulation system. The construction of the Xtra-mitre board is faced PIR insulation with in-built composite falls. Xtra-mitre boards are made to suit the full range of XtraFall board thicknesses. Mitred board size 1200 x 1200.

XtraFall system of tapered insulation boards, due to a graduated thickness, will cause positive drainage falls on flat roofs. Xtra-mitres are prefabricated to allow changes in direction of drainage falls, without on-site cutting of XtraFall insulation boards, with the associated labour and waste costs. Each Xtra-mitre board is clearly identified by board type and the direction of fall.

Xtra-mitre boards are placed in the appropriate location on the roof, then the XtraFall Tapered Insulation boards are placed to suit.

The XtraFall boards are then “laid away” from the Xtra-mitre boards as dictated by the XtraFall Layout drawing and the topography of the roof. Xtra-mitre boards and XtraFall boards are always used in conjunction with roof insulation layout drawings.

It should be noted that correct on-site setting out of the laying pattern, of XtraFall boards, is essential to quick and efficient placing of the insulation. The roofing contractor must ensure that the information/drawing provided is relevant to the on-site works.



Ridge Board

Benefits

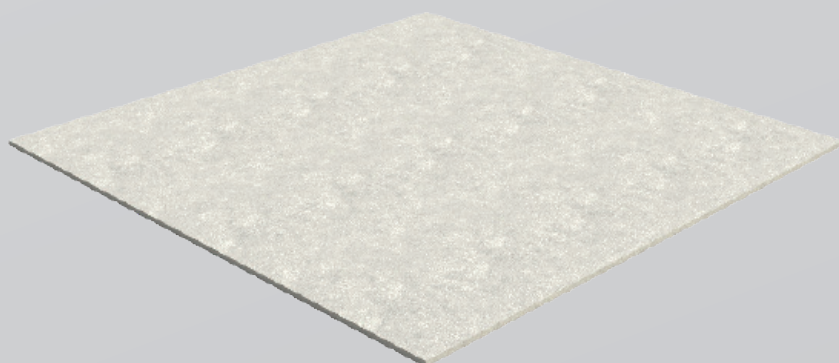
- Good roof drainage
- Quick board laying
- Reduced on-site cutting
- Lower labour costs
- Versatile systems

Features

- Creates multi-directional falls
- Exact dimensions
- Clear board identification
- Easily installed
- Suitable for all roof Specs

CoverPlus Board

High density PIR insulation Roof Protector board, 15mm thick. Faced with mineral coated woven mineral glass tissue on both sides.





Drainage Design

Individually engineered, pre-mapped components providing a high tolerance precision solution to roof drainage.

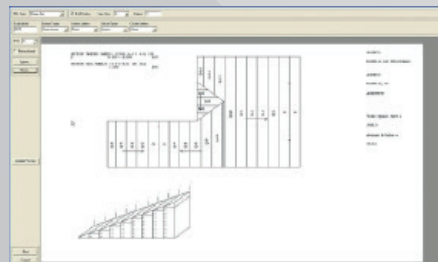
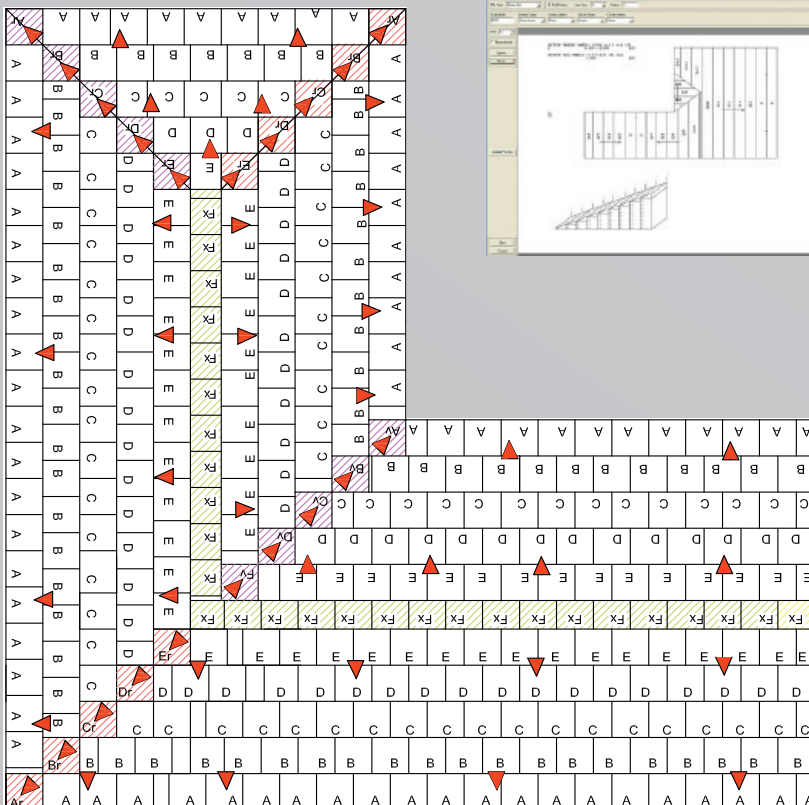


Cut-to-fall schemes designed specific to your requirements

Xtratherm provide individually engineered pieces, when installed in accordance with comprehensive laydown mapping to ensure designed intent is actually achieved on site.

The precision manufacturing of single piece components provide accuracies and fixing surety not achievable when multi-layer systems are formed on site under Irish weather conditions. Complex geometrical patterns are pre-formed under controlled factory conditions to provide a technically excellent, cost effective method of providing effective flat roof insulation and drainage solutions with improved speed of installation.

Working closely with the project design team, experienced Xtratherm Technical staff provide expertise in providing solutions to roof drainage in the most cost effective, thermally efficient method possible, backed by accredited calculations for U-Values, condensation and thermal bridging.



Xtratherm Technical Team members are a valuable resource that can be called upon to advise from the initial consultation to formulate design strategies. They will assist you right through providing comprehensive layout schemes for the contractor to simplify the installation of complex drainage courses, all backed by third party 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

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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 CO² 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 Systems



Xtratherm, part of UNILIN group.

UIGWFR4-1