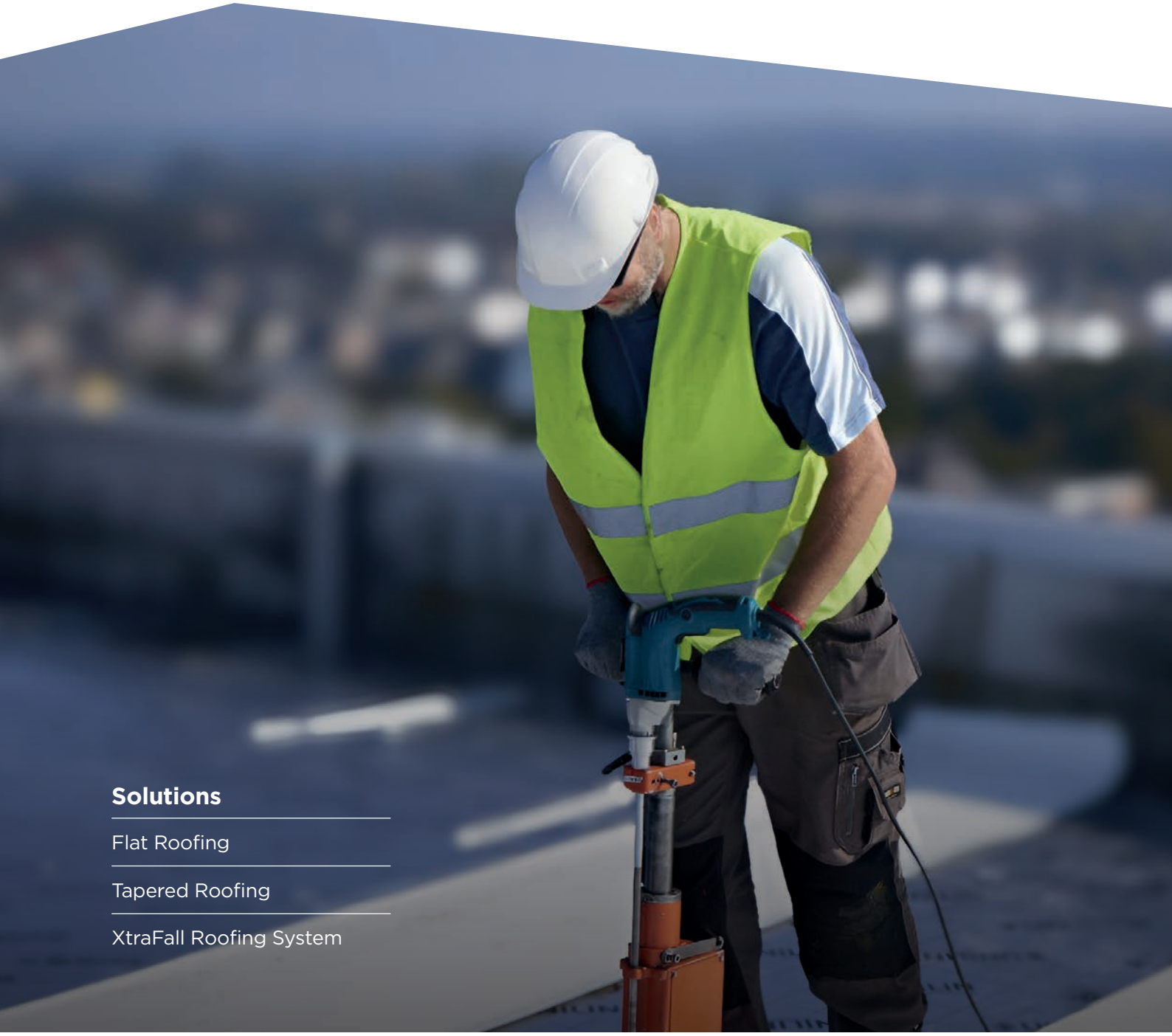
FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

PIR Flat Roof Insulation



Solutions

Flat Roofing

Tapered Roofing

XtraFall Roofing System

UNILIN

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

The Unilin Insulation range of insulation boards provides the ideal technically advanced solution for flat roof projects.

Product Features

- Verified EPDs available

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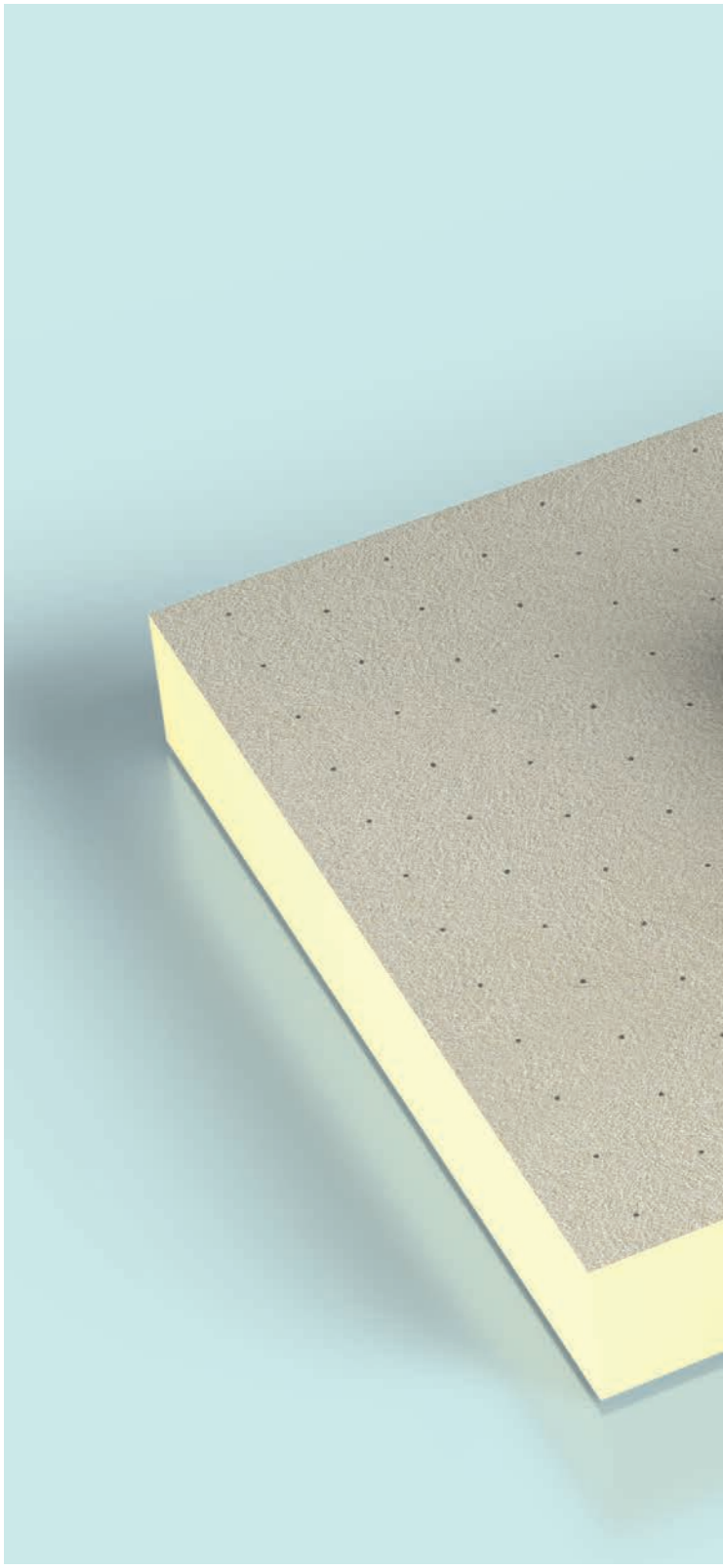

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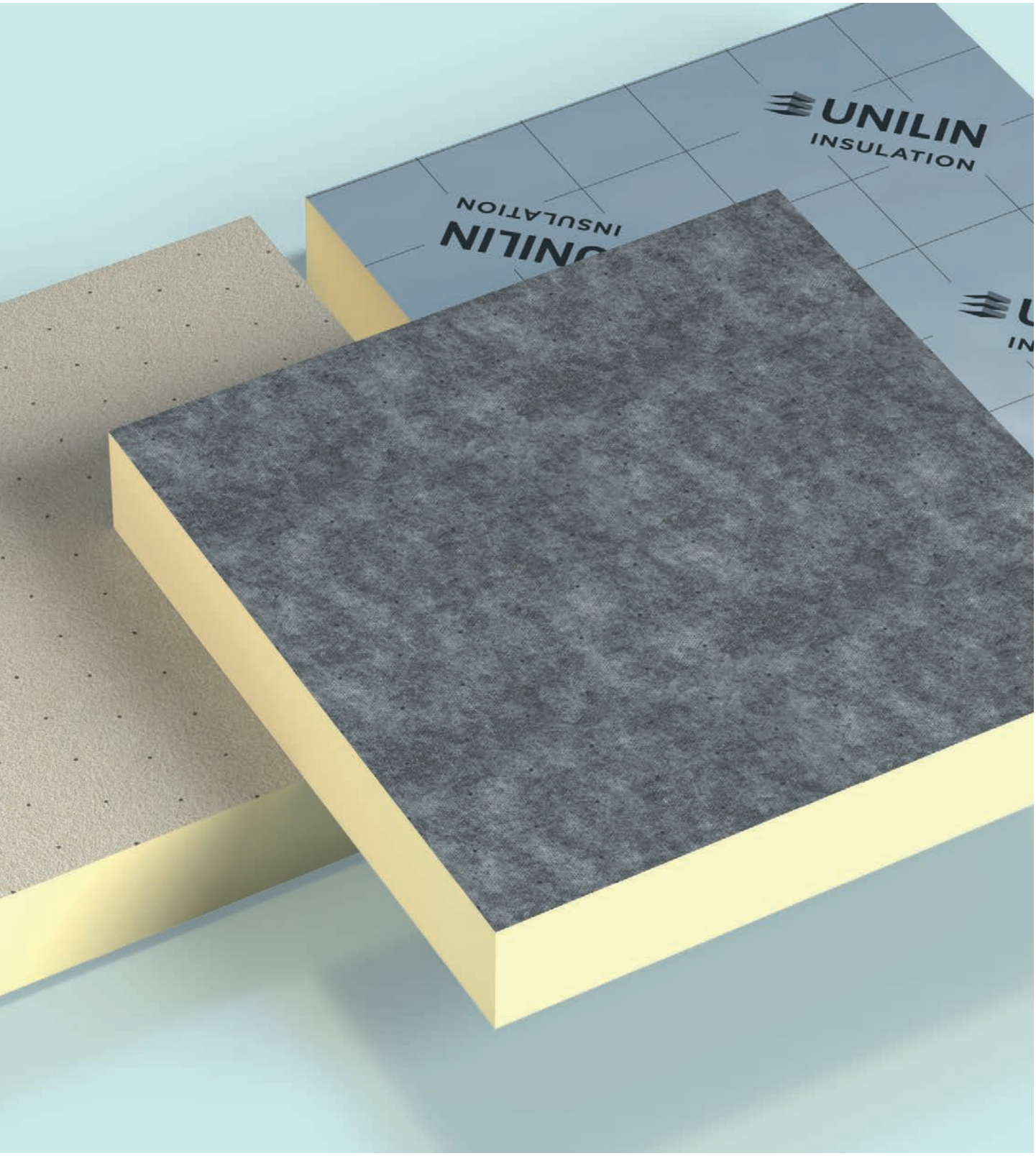


Compatible with mechanically fixed single ply systems and loose laid ballasted systems

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

Mechanically Fixed Single Ply Waterproofing Systems

FR/ALU

Flat Roof ALU is a Polyisocyanurate flat roof insulation with vapour-tight aluminium foil facings suitable for use with single ply membranes. Flat Roof ALU is part of the range of Unilin's flat roof boards providing total solutions for flat roof projects.

Benefits

- Compatible with mechanically fixed single ply systems and loose laid ballasted systems
- Vapour resistant foil facers
- An Environmental Product Declaration (EPD), certified by IGBC is available for this product. Please contact technical support for further details

Roof Design

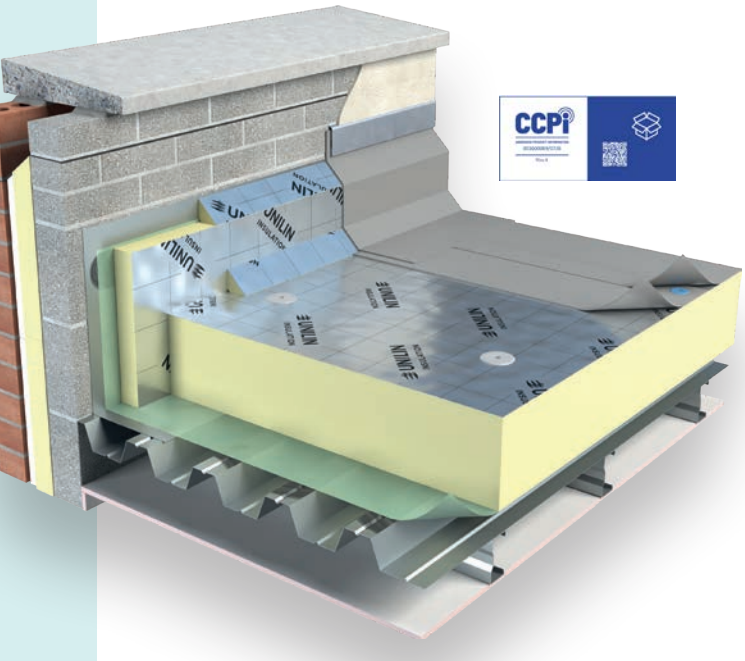
Consideration should be given to the recommendations of the Single Ply Roofing Association (SPRA).

Falls

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

Fire Performance

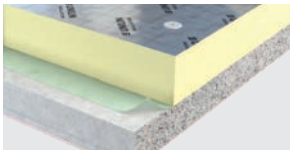
The fire performance, when tested to TS 1187 2012 and classified to EN 13501-5:2016, will be dependent upon the waterproofing system specified.



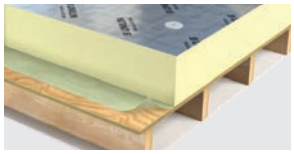
Specification Clause

The flat roof insulation shall be Unilin Insulation Thin-R FR/ALU manufactured to EN 13165:2012+A2:2016 by Unilin Insulation, comprising of a rigid Polyisocyanurate (PIR) core between composite foil facings. The FR-ALU_ _ _mm with a Agrément declared Lambda value of 0.022 W/mK to achieve a U-Value of _ _ _W/m²K for the roof element. To be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J42 420, J42 10, J42 430.
Uniclass 25 71 63 66.



Typical Installation
Concrete Deck



Typical Installation
Timber Deck

Unilin FR/ALU is faced with gas-tight foil and is suitable for use below single ply, mechanically fixed roof membranes. **Note:** This board is not suitable for applications with built-up, bitumen based roofing or mastic asphalt systems.

Vapour Control Layer (VCL)

The 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 insulation boards are secured by approved mechanical fixings.

The requirement for a separate vapour control layer should be assessed in accordance with BS 6229:2018. Typically, a 1000 gauge polythene layer 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.

The 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.

FLAT ROOF

FR/ALU

Loadings
Flat Roof 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. Heavy materials such as air conditioning units, water tanks or mechanical plants, should be supported directly on the roof construction or on a suitably designed support system.

Laying (Metal/Timber Deck)
The Flat Roof 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 boards are generally secured by approved mechanical fixings.

Laying (Concrete Deck)
The Flat Roof 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.

Fixings
The specification for fixing Unilin 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 EN 1991-1-4:2005+A1:2010 (National Annex to Eurocode 1.Actions on structures. General Actions. Wind Actions) should always be consulted. It is recommended to seek advice from the fixing manufacturer for specific guidance. During the construction process, the construction should be protected from rain penetration during breaks in the process.

FR/ALU

Length (mm)	2400
Width (mm)	1200
Thickness (mm)	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: Unilin Insulation UK Ltd. reserves the right to amend product specifications without prior notice.

Property & Units

Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity	0.022 W/mK
Reaction to Fire	Euroclass E

Typical U-Values

Construction	Thickness (mm)	U-Value (W/m²K)
Concrete deck[1]	150mm	0.15
Metal deck[2]	150mm	0.15
Timber deck[3]	140mm	0.15
Concrete deck[1]	120mm	0.18
Metal deck[2]	125mm	0.18
Timber deck[3]	120mm	0.17
Concrete deck[1]	110mm	0.20
Metal deck[2]	110mm	0.20
Timber deck[3]	100mm	0.20

1. 200mm Concrete deck with suspended ceiling below.
2. 0.7mm metal deck with suspended ceiling below.
3. 18mm timber deck with joists and plasterboard below.

The given U-Values are indicative only. Default fixings have been used to calculate the U-Value. For calculations on all deck types, please contact Unilin Technical Support.

For use below single ply waterproofing systems & partially bonded built-up felt

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

Single Ply Fully Adhered or Partially Bonded Built-Up Felt Systems

FR/MG

Flat Roof MG is a Polyisocyanurate flat roof insulation with mineral coated glass facers suitable for use below single ply fully adhered or partially bonded built up felt systems.

Benefits

- Compatible with adhesively bonded single ply roofing membranes laid on mechanically fixed or adhered boards
- Glass fibre facings
- An Environmental Product Declaration (EPD), certified by IGBC is available for this product. Please contact technical support for further details

Roof Design

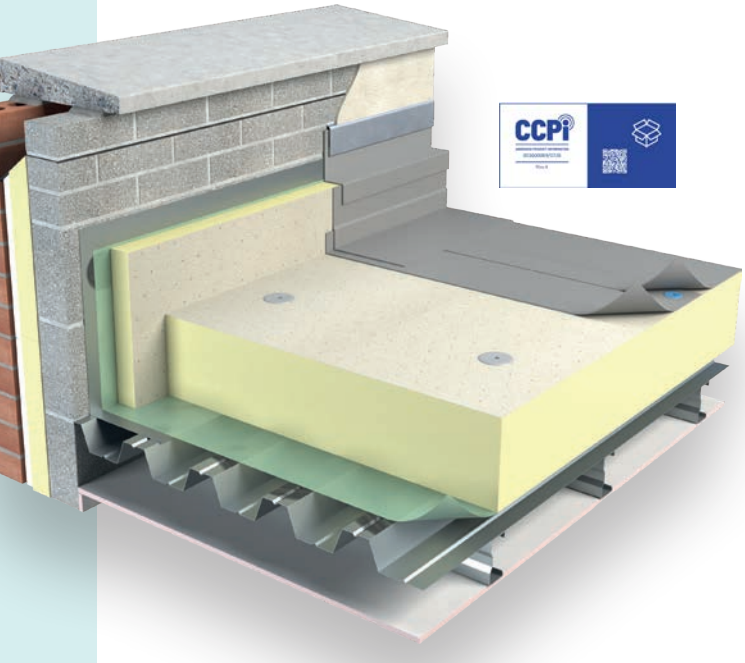
Consideration should be given to the recommendations of the Single Ply Roofing Association (SPRA).

Falls

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

Fire Performance

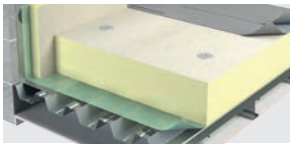
The fire performance, when tested to TS 1187 2012 and classified to EN 13501-5:2016, will be dependent upon the waterproofing system specified.



Specification Clause

The flat roof insulation shall be Thin-R FR-MG _ _ _mm thick manufactured to EN 13165:2012+A2:2016 by Unilin Insulation, comprising of a rigid Polyisocyanurate (PIR) core between glass fibre facings with a Agrément declared Lambda value as low as 0.024 W/mK. The flat roof insulation shall be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J42 420, J42 10.
Uniclass 25 71 63 66.



Typical Installation
Metal Deck

Typical Installation
Timber Deck

Vapour Control Layer (VCL)

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 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 BS EN 13707: 2013 (Flexible sheets for waterproofing. Reinforced bitumen sheets for roof waterproofing). *Specification or BS 8747:2007. 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 Unilin Technical Support for advice on membrane and adhesive system compatibility. Technical guidance from the appropriate waterproofing manufacturer should be sought.

Loadings

The 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. Heavy materials such as air conditioning units, water tanks or mechanical plants, should be supported directly on the roof construction or on a suitably designed support system.

FLAT ROOF

FR/MG

Laying (Timber/Metal Deck)
The 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 8217:2005 (Reinforced bitumen membranes for roofing. Code of practice).

Fully Adhered Systems
The MG boards are 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 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. Counter sunk washers, 50mm in diameter should be used with each fixing. However, BS EN 1991-1-4:2005+A1:2010 (National Annex to Eurocode 1. Actions on structures. General Actions. Wind Actions) should always be consulted. It is recommended to seek advice from the fixing manufacturer for specific guidance. During the construction process, the construction should be protected from rain penetration during breaks in the process.

Fire
Each project 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 applied to the underlay component of this detail, 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.

FR/MG

Length (mm)	1200
Width (mm)	1200
Thickness (mm)	25, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150

Other sizes are available subject to quantity and lead time.
Note: Unilin Insulation UK Ltd. reserves the right to amend product specifications without prior notice.

Property & Units

Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity	0.024 - 0.027 W/mK
Reaction to Fire	Euroclass E

Typical U-Values

Construction	Thickness (mm)	U-Value (W/m²K)
Concrete deck[1]	150mm	0.15
Metal deck[2]	160mm	0.15
Timber deck[3]	150mm	0.15
Concrete deck[1]	125mm	0.18
Metal deck[2]	130mm	0.18
Timber deck[3]	120mm	0.18
Concrete deck[1]	120mm	0.19
Metal deck[2]	120mm	0.20
Timber deck[3]	110mm	0.19

1. 200mm Concrete deck with suspended ceiling below.
2. 0.7mm metal deck with suspended ceiling below.
3. 18mm timber deck with joists and plasterboard below.

The given U-Values are indicative only. Adhered application has been used to calculate the U-Value. For calculations on all deck types, please contact Unilin Technical Support.

Compatible with most bituminous based roofing systems

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

Partially Bonded Torched-on Built-up Bituminous Felt Systems

FR/BGM

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

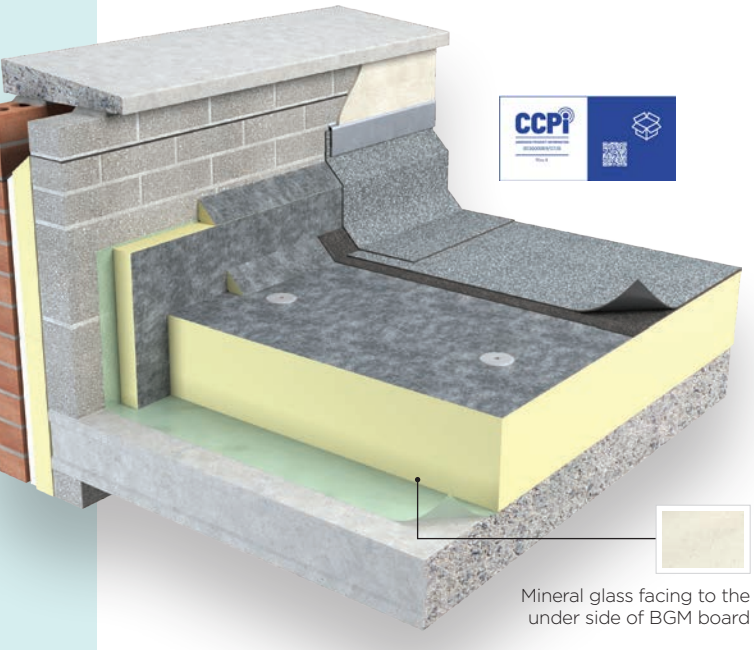
Benefits

- Compatible with most bituminous based roofing systems
- Fleece finished bitumen/glass fibre facings
- An Environmental Product Declaration (EPD), certified by IGBC is available for this product. Please contact technical support for further details

Roof Design

These boards are suitable for use with most bitumen based, partially bonded water proofing systems typically including a BS EN 13707: 2013 (Flexible sheets for waterproofing. Reinforced bitumen sheets for roof waterproofing) type 3G perforated base layer or proprietary system. BGM (Fleece side upper most) may also be fully bonded. Guidance in regard to moisture and condensation should be in accordance with BS 8217:2005 (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.

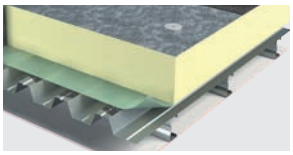


Mineral glass facing to the under side of BGM board

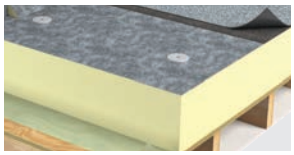
Specification Clause

The flat roof insulation shall be Unilin Insulation Thin-R FR/BGM _ _ _mm thick manufactured to EN 13165:2012+A2:2016 by Unilin Insulation comprising of a rigid Polyisocyanurate (PIR) core between fleece finished bitumen/glass fibre facings with a Agrément declared Lambda value as low as 0.024 W/mK. The flat roof insulation shall be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J41 420, J41 10, J42 10, J42 420, J42 430.
Uniclass 25 71 63 66.



Typical Installation Metal Deck



Typical Installation Timber Deck

Falls

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

Fire Performance

The fire rating, when tested to TS 1187 2012 and classified to EN 13501-5:2016, will be dependent upon the waterproofing system specified.

Loadings

The boards are 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. Heavy materials such as air conditioning units, water tanks or mechanical plants, should be supported directly on the roof construction or on a suitably designed support system.

Roof Finish

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

Vapour Control Layer (VCL)

Decks should be primed before the application of the hot bitumen used to bond the vapour control layer. Reference should be made to BS 8217:2005 when applying the vapour control layer. Carry the VCL past the insulation and seal with the parapet wall.

Laying (Timber Deck)

On plywood decks, Unilin 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 the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

FLAT ROOF

FR/BGM

Laying (Metal Deck)
On metal decks, Unilin FR/BGM should be laid break bonded into hot bitumen (max temperature 240°C) mopped or poured over the vapour control layer. The boards can also be mechanically fixed or the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

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 Unilin 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 the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

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.

Fixings
The specification for fixing Unilin 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 6 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 EN 1991-1-4:2005+A1:2010 (National Annex to Eurocode 1.Actions on structures. General Actions. Wind Actions) should always be consulted. It is recommended to seek advice from the fixing manufacturer for specific guidance. During the construction process, the construction should be protected from rain penetration during breaks in the process.

Fire
Each project 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.

FR/BGM

Length (mm)	1200
Width (mm)	1200
Thickness (mm)	25, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150

Other sizes are available subject to quantity and lead time.
Note: Unilin Insulation UK Ltd. reserves the right to amend product specifications without prior notice.

Property & Units

Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity	0.024 - 0.027 W/mK
Reaction to Fire	Euroclass F

Typical U-Values

Construction	Thickness (mm)	U-Value (W/m²K)
Concrete deck[1]	150mm	0.15
Metal deck[2]	160mm	0.15
Timber deck[3]	150mm	0.15
Concrete deck[1]	125mm	0.18
Metal deck[2]	130mm	0.18
Timber deck[3]	120mm	0.18
Concrete deck[1]	120mm	0.19
Metal deck[2]	120mm	0.20
Timber deck[3]	110mm	0.19

1. 200mm Concrete deck with suspended ceiling below.
2. 0.7mm metal deck with suspended ceiling below.
3. 18mm timber deck with joists and plasterboard below.

The given U-Values are indicative only. Adhered application has been used to calculate the U-Value. For calculations on all deck types, please contact Unilin Technical Support.

Insulation & decking in one fix

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

Thermal Ply PIR and Plywood Composite

FR/TP

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

Benefits

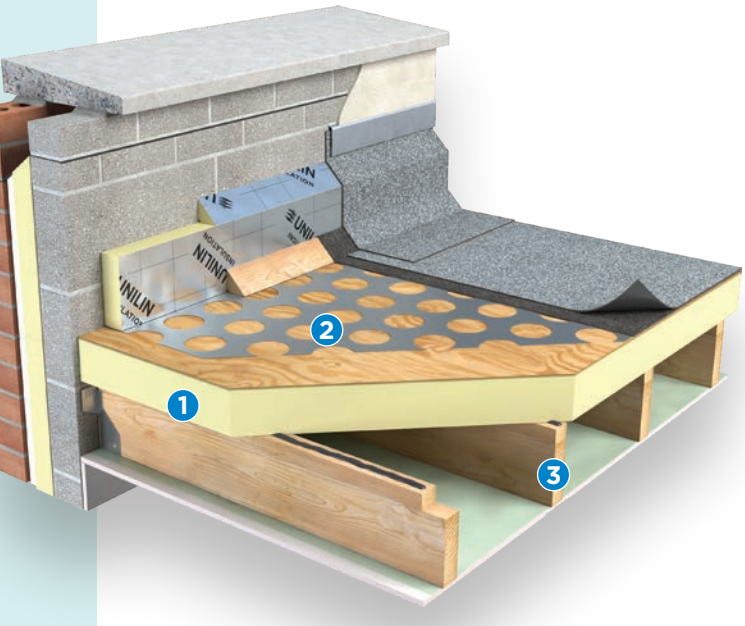
- Insulation & decking in one fix
- For new & refurbishment roofs
- Rapid weather proofing
- An Environmental Product Declaration (EPD), certified by IGBC is available for this product insulation. Please contact technical support for further details

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.



Specification Clause

The flat roof insulation shall be Unilin Insulation Thin-R FR/TP manufactured to EN 13165:2012+A2:2016 by Unilin Insulation, comprising of a rigid Polyisocyanurate (PIR) core between composite foil facings bonded onto 6mm WBP Plywood. To be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J41 10, J41 420, J21 420, J21 10, J21 5, J42 430. Uniclass 25 71 63 66.

Typical Installation - Timber Deck

Unilin Thermal Ply 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. It provides an improved level of thermal insulation and decking in one application.

Vapour Control Layer (VCL)

A second layer 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. Where there is insulation between and over the joists the insulation placed over the joists must have a higher thermal performance than that of the insulation between. If using insulation between joists the VCL should be placed to the underside of the joists. Contact technical support for further guidance.

FLAT ROOF

FR/TP

Fixings

The boards should be fixed to a minimum of 50mm thick joists at 400mm or 600mm 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.

The boards 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 insulation, 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.

Thermal Ply is suitable for maintenance traffic loadings only.

FR/TP

Length (mm)	2400
Width (mm)	1200
Thickness* (mm)	56, 76, 86, 96, 106, 116, 126, 146

*Thickness includes 6mm plywood

Property & Units

Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity	0.022 W/mK

Typical U-Values

Construction	Thickness (mm)	U-Value (W/m²K)
Timber deck	146mm*	0.15
Timber deck	116mm*	0.18
Timber deck	106mm*	0.20

*6mm plywood included in thickness
Installed over joists and plasterboard below - all edges supported.

The given U-Values are indicative only. Default fixings have been used to calculate the U-Value. For comprehensive calculations on all deck types, please contact Unilin Technical Support.

Flat roof thermal performance 0.021 W/mK

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

XtroDeck Partially Bonded or Self Adhered Built-up Bituminous Felt Systems

XO/XD

XtroDeck is faced with an embossed aluminium facing on both sides. XtroDeck is part of Unilin's comprehensive range of flat roof boards providing total solutions for flat roof projects.

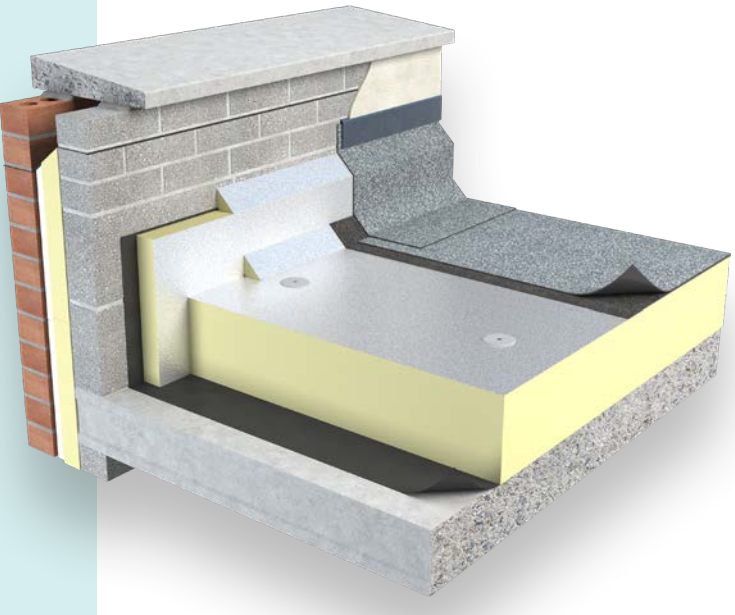
Benefits

- Superior Performance PIR Insulation*
- Compatible with most bituminous based roofing systems containing self adhered underlays with heat activated cap sheets
- Reaction to Fire: C-s2, d0
- An Environmental Product Declaration (EPD), certified by IGBC is available for this product. Please contact technical support for further details

Roof Design

XtroDeck is suitable for use with most bitumen based, partially bonded water proofing systems typically including a BS EN 13707: 2013 (Flexible sheets for waterproofing. Reinforced bitumen sheets for roof waterproofing) self adhered base layer or proprietary system. XtroDeck may also be fully bonded. Guidance in regard to moisture and condensation should be in accordance with BS 8217:2005 (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.
- With used fully bonded applications, testing certification, guidance on installation and system components must be sought from the system provider.
- This product is not suitable for use with torch on underlays.



Specification Clause

The flat roof insulation shall be Unilin Insulation XtroDeck XO/XD _ _ _mm thick manufactured to EN 13165:2012+A2:2016 by Unilin Insulation comprising of a rigid modified Polyisocyanurate (PIR) core between textured foil facings with a declared Lambda of 0.021 W/mK. The flat roof insulation shall be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J41 420, J41 10, J41 430, J42 430.
Uniclass 25 71 63 66.

Falls

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

Fire Performance

The fire rating for the roof system, when tested to CEN/TS 1187:2012 and classified to EN 13501-5, will be dependent upon the system specified.

Vapour Control Layer (VCL)

Decks should be primed before the application of the vapour control layer. Reference should be made to BS 8217:2005 when applying the vapour control layer. Carry the VCL past the insulation and seal with the parapet wall.

Roof Finish

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

Loadings

XtroDeck 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. Heavy materials such as air conditioning units, water tanks or mechanical plants, should be supported directly on the roof construction or on a suitably designed support system.

Laying (Timber Deck)

On plywood decks, XtroDeck should be fully bedded in PU Adhesive over a continuous vapour control layer which has been bonded to the deck. The boards can also be mechanically fixed or adhered with adhesive approved by the system provider. Fixing heads should be sealed.

Laying (Metal Deck)

On metal decks, XtroDeck should be adhered in a PU glue over the vapour control layer. The boards can also be mechanically fixed or adhered with adhesive approved by the system provider. Fixing heads should be sealed.

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

*The reference to superior performance relates to the product or ranges thermal conductivity or fire performance or a combination of both, when compared to our Thin-R range.

FLAT ROOF

XO/XD

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 XtroDeck should be laid into PU adhesive on the vapour control layer in a break bonded pattern. The boards can also be mechanically fixed or adhered with other suitable adhesive approved by the system provider. Fixing heads should be sealed.

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. Not suitable for use with torch on underlays.

Fixings
The specification for fixing Unilin roof boards will vary with the location, roof height/width and topographical data. Architectural specification should be consulted. Generally with 2400mm x 1200mm boards, a minimum of 6 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 6399-21997 or BS EN 1991-1.4: 2005 + A1: 2010 (National Annex to Eurocode 1.Actions on structures. General Actions. Wind Actions) should always be consulted. It is recommended to seek advice from the fixing manufacturer for specific guidance. During the construction process, the construction should be protected from rain penetration during breaks in the process.

Fire
Each project 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 applied to the underlay component of this detail, 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.

XTRODECK

Length (mm)	2400
Width (mm)	1200
Thickness (mm)	25, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140

Other sizes are available subject to quantity and lead time.
Note: Unilin Insulation reserves the right to amend product specifications without prior notice.

Property & Units

Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity*	0.021 W/mK
Reaction to Fire	C-s2, d0

Typical U-Values

Construction	Thickness (mm)	U-Value (W/m²K)
Concrete deck[1]	130mm	0.15
Metal deck[2]	140mm	0.15
Timber deck[3]	125mm	0.15
Concrete deck[1]	110mm	0.18
Metal deck[2]	120mm	0.17
Timber deck[3]	110mm	0.17
Concrete deck[1]	100mm	0.20
Metal deck[2]	110mm	0.19
Timber deck[3]	100mm	0.19

1. 200mm Concrete deck with suspended ceiling below.
2. 0.7mm metal deck with suspended ceiling below.
3. 18mm timber deck with joists and plasterboard below.

The given U-Values are indicative only. Adhered application has been used to calculate the U-Value. For comprehensive calculations on all deck types, please contact Unilin Insulation Technical Support.

INSULATION FIXING TABLE

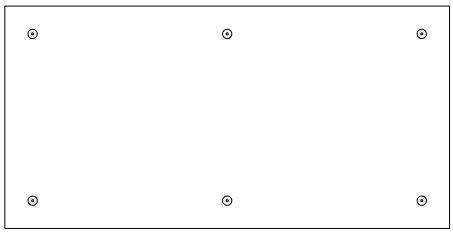
Minimum area of stress plate, number of fixings and layout

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

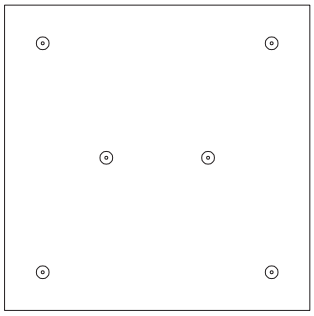
- "SPRA: SINGLE PLY DESIGN GUIDE"
- Insulation Manufacturers Association Information document ID/1/2009, published by IMA
- Liquid Roofing and Waterproofing Association, Technical Guidance

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.

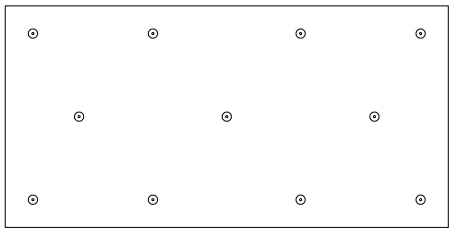
The required number of fixings shown is the minimum only. Regardless of the water proofing system attachment method, wind load calculations should be undertaken in order to determine actual fixing requirements in corner, perimeter and field roof areas. These areas should be clearly defined, especially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



6 fixings per board
Recommended fixing pattern
for 6 fixing per board
(2400mm x 1200mm board - 2.1 fixings/m²)



6 fixings per board
Recommended fixing pattern
for 6 fixing per board
(1200mm x 1200mm board - 4.17 fixings/m²)



11 fixings per board
Recommended fixing pattern
for 11 fixings per board
(2400mm x 1200mm size board - 11/2.88 = 3.82 fixings/m²)

TAPERED ROOF

Thinnest solution for mechanically fixed flat roofs

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

Mechanically Fixed Single Ply Waterproofing Systems

TR/ALU

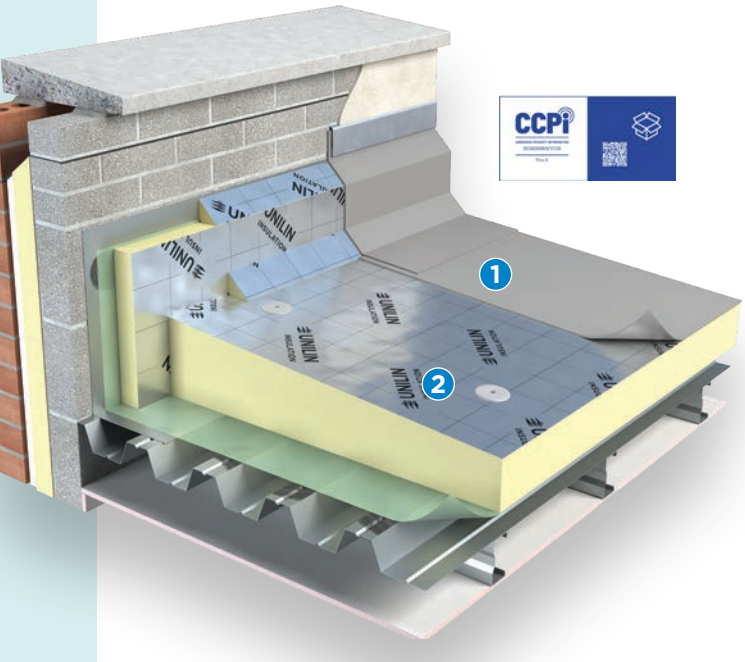
Tapered Roof ALU is the tapered version of Flat Roof ALU. It is faced on both sides with composite gas tight foil facings autohesively bonded to a Polyisocyanurate (PIR) core during manufacture.

Roof Design
Consideration should be given to the recommendations of the Single Ply Roofing Association (SPRA).

Fire Performance
The fire performance, when tested to TS 1187 2012 and classified to EN 13501-5:2016, will be dependent upon the waterproofing system specified.

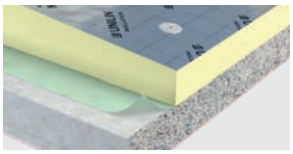
Vapour Control Layer (VCL)
This tapered insulation should be laid over a separate vapour control layer. The requirements for this vapour control layer should be assessed in accordance with BS 6229:2018. Typically a 1000 gauge polythene layer should be used with all joints lapped and sealed.

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.

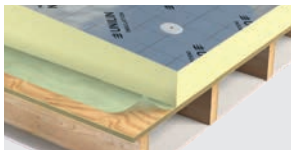


Specification Clause
The tapered roof insulation shall be Unilin Insulation Thin-R TR/ALU manufactured to EN 13165:2012+A2:2016 by Unilin Insulation, comprising of a rigid Polyisocyanurate (PIR) core between composite foil facings. The TR-ALU_ _ _mm with a Agrément declared Lambda value of 0.022 W/mK to achieve a U-Value of _ _ _W/m²K for the roof element. To be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J42 420, J42 10, J42 430. Uniclass 25 71 63 66.



Typical Installation
Concrete Deck



Typical Installation
Timber Deck

The boards are faced with a gas-tight foil face and are suitable for use below single ply mechanically fixed roof membranes. **Note:** This product is not suitable for applications with built-up bitumen based roofing or mastic asphalt systems.

Roof Finish
Tapered Roof ALU is suitable for use under single ply mechanically fixed roof membranes.
Tapered Roof ALU insulation systems have been designed to provide solutions to design issues that arise in new and refurbishment roofs. Tapered Roof ALU systems address most flat roof failures i.e. ponding of rainwater caused by an inability to shed rainwater on the surface whilst providing an improved level of thermal insulation performance.

Loadings
These 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. Heavy materials such as air conditioning units, water tanks or mechanical plants, should be supported directly on the roof construction or on a suitably designed support system.

Laying (Timber Deck)
The tapered boards should be laid over the vapour control layer in a break bonded pattern. The boards are generally secured by approved mechanical fixings. The waterproofing is also mechanically fixed in accordance with the respective manufacturer's instructions.

TAPERED ROOF

TR/ALU

Laying (Over Metal Deck)
These tapered boards should be laid over the vapour control layer with all joints fully supported by the deck. They are secured by mechanical fixings with washers. The waterproofing is also mechanically fixed in accordance with the respective manufacturer's instructions.

Laying (Over Concrete Deck)
The 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. They are secured by mechanical fixings with washers. The waterproofing is also mechanically fixed in accordance with the respective manufacturers instructions.

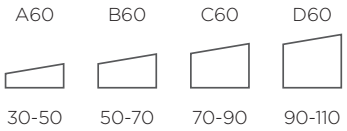
Fixings
The specification for fixing of Unilin roof boards will vary with the location, roof height/width and topographical data, architectural specification should be consulted. Generally with 1200mm x 1200mm boards, a minimum of 6 fixings per board are adequate, located between 50mm and 150mm from 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. Counter sunk washers, 50mm in diameter, should be used with each fixing. However, BS EN 1991-1-4:2005+A1:2010 (National Annex to Eurocode 1.Actions on structures. General Actions. Wind Actions) should always be consulted. It is recommended to seek advice from the fixing manufacturer for specific guidance. During the construction process, the construction should be protected from rain penetration during breaks in the process.

Daily Working Practice
The facing of these boards 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. Unilin tapered boards should be waterproofed as soon as possible after fixing.

The Unilin XtraFall pre-fabricated system
Unilin pre-fabricated single layer tapered roofing panels provide the most flexible solution that can be designed to meet a wide range of criteria in new and refurbished flat roofs. Unilin offers bespoke solutions with a range of thickness from 30mm to 400mm, which enables faster installation and reduces site generated waste (see XtraFall brochure).

SCAN HERE TO VIEW XTRAFALL BROCHURE

TR/ALU Tapered 1:60
1200 x 1200



Flat
2400 x 1200

Note: 1:40 and 1:80 subject to quantity & lead time.
As prefabricated only.

Alternative tapers available on request.

TR/ALU

Length (mm)	1200
Width (mm)	1200
Thickness (mm)	30 (minimum)

Other sizes are available subject to quantity and lead time.

Note: Unilin Insulation UK Ltd. reserves the right to amend product specifications without prior notice.

Property & Units

Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity	0.022 W/mK
Reaction to Fire	Euroclass E

Contact our Technical Team
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For use below single ply waterproofing systems & partially bonded built-up felt

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

Single Ply Fully Adhered or Partially Bonded Built-Up Felt Systems

TR/MG

Tapered Roof MG is a Polyisocyanurate Tapered Roof insulation with mineral coated glass facers suitable for use below single ply fully adhered or partially bonded built up felt systems.

Fire Performance

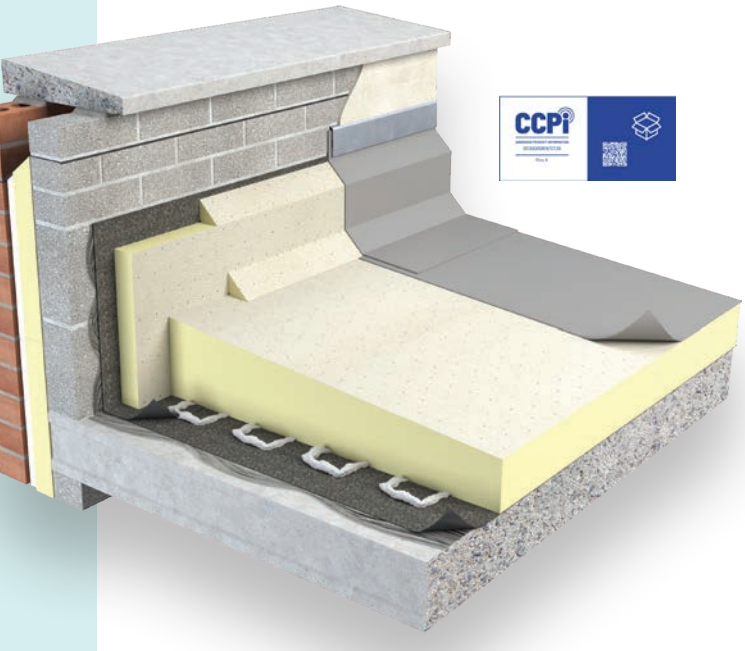
The fire performance, when tested to TS 1187 2012 and classified to EN 13501-5:2016, will be dependent upon the waterproofing system specified.

Vapour Control Layer (VCL)

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.

Bonding boards to the vapour control layer

The insulation boards are embedded in a layer of bitumen on a 3G type felt to BS EN 13707: 2013 (Flexible sheets for waterproofing. Reinforced bitumen sheets for roof waterproofing) that has been adhered to the deck. (Unilin recommend that all systems should have mechanical fixings included or be adhered using other suitable adhesive).



Specification Clause

The tapered roof insulation shall be Unilin Insulation Thin-R TR/MG _ _ _mm thick manufactured to EN 13165:2012+A2:2016 by Unilin Insulation comprising of a rigid Polyisocyanurate (PIR) core between glass fibre facings with a Agrément declared Lambda value as low as 0.024 W/mK. The tapered roof insulation shall be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J42 420, J42 10, J42 430. Uniclass 25 71 63 66.

Typical Installation
Metal Deck

Typical Installation
Timber Deck

Loading

Tapered Roof MG is 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. Heavy materials such as air conditioning units, water tanks or mechanical plants, should be supported directly on the roof construction or on a suitably designed support system.

These MG boards are suitable for use below most single ply fully adhered mechanically fixed roof membrane systems and most partially bonded built-up felt systems.

Laying (Timber Deck)

The tapered boards should be laid over the vapour control layer in a break bonded pattern. The boards are generally secured by approved mechanical fixings. The waterproofing is also mechanically fixed in accordance with the specific manufacturer's instructions.

Laying (Metal Deck)

Decks should be dry and clear 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 clear 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 to the decking with approved adhesive systems.

TAPERED ROOF

TR/MG

Partially Bonded Built Up Systems
Partially bonded built-up felt waterproofing should be laid, where in accordance with BS 8217 2005 (Reinforced bitumen membranes for roofing code of practice).

Fully Adhered Systems
The boards are 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.

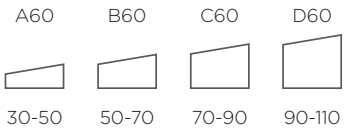
Fixings
Depending on the fixings specification chosen, quantity and pattern of fixings will vary with the location, roof height/width and topographical data. Architectural specification should be consulted. Generally with 1200mm x 1200mm boards, a minimum of 6 fixings per board are adequate, located 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. Counter sunk washers, 50mm in diameter should be used with each fixing. However, BS EN 1991-1-4:2005+A1:2010 (National Annex to Eurocode 1.Actions on structures. General Actions. Wind Actions) should always be consulted. It is recommended to seek advice from the fixing manufacturer for specific guidance. During the construction process, the construction should be protected from rain penetration during breaks in the process.

Daily Working Practice
The facing of these boards 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. Unilin tapered boards should be waterproofed as soon as possible after fixing.

Fire
Each project 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 applied to the underlay component of this detail, 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.

The Unilin XtraFall pre-fabricated system
Unilin pre-fabricated single layer tapered roofing panels provide the most flexible solution that can be designed to meet a wide range of criteria in new and refurbished flat roofs. Unilin offers bespoke solutions with a range of thickness from 30mm to 400mm, which enables faster installation and reduces site generated waste (see XtraFall brochure).

TR/MG Tapered 1:60
1200 x 1200



Flat
1200x1200mm

80mm

Note: 1:40 and 1:80 subject to quantity & lead time. As prefabricated only.

Alternative tapers available on request.

TR/MG

Length (mm)	1200
Width (mm)	1200
Thickness (mm)	30 (minimum)

Other sizes are available subject to quantity and lead time.

Note: Unilin Insulation UK Ltd. reserves the right to amend product specifications without prior notice.

Property & Units

Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity	0.024 - 0.027 W/mK
Reaction to Fire	Euroclass E

Contact our Technical Team
UK: +44 (0) 371 222 1055
E: tech.ui@unilin.com

Compatible with most bituminous based roofing systems

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

Partially Bonded Torched-on Built-up Bituminous Felt Systems

TR/BGM

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

Roof Design

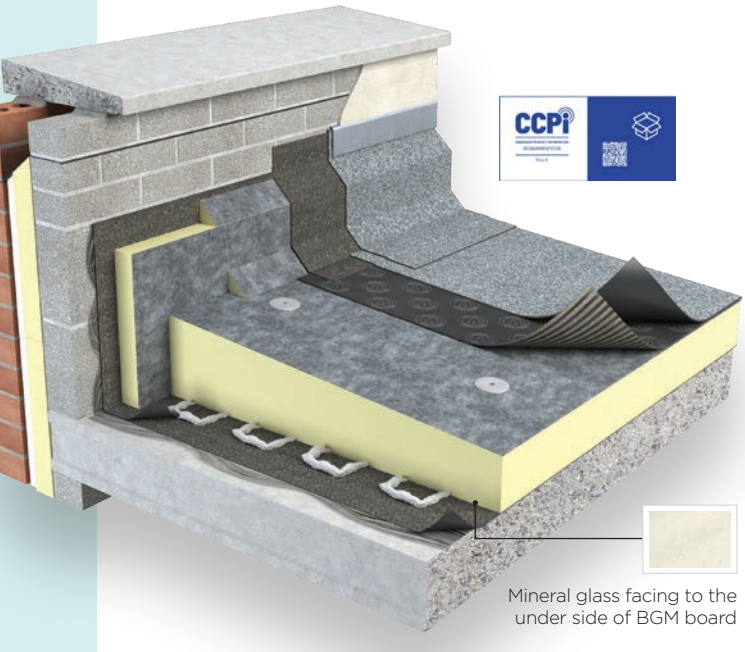
The BGM boards are suitable for use with most bitumen based water proofing systems including those using a BS EN 13707: 2013 (Flexible sheets for waterproofing. Reinforced bitumen sheets for roof waterproofing) type 3G perforated base layer. The roof should be laid in accordance with BS 8217:2005 (Reinforced 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. These boards provide a practical solution to Water Ponding with insulation and drainage in a single system.

Fire Performance

The fire rating, when tested to TS 1187 and classified to EN 13501-5:2016, will be dependent upon the waterproofing system specified.



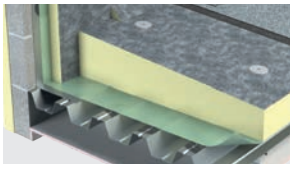
Mineral glass facing to the under side of BGM board

Specification Clause

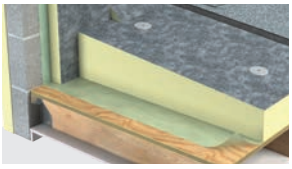
The tapered roof insulation shall be Unilin Insulation Thin-R TR/BGM _ _ _mm thick manufactured to EN 13165:2012+A2:2016 by Unilin Insulation comprising of a rigid Polyisocyanurate (PIR) core between fleece finished bitumen/glass fibre facings with a Agrément declared Lambda value as low as 0.024 W/mK. The tapered roof insulation shall be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J41 420, J42 10, J42 430, J42 420, J41 10.
Uniclass 25 71 63 66.

NBS Plus



Typical Installation Metal Deck



Typical Installation Timber Deck

Vapour Control Layer (VCL)

Decks should be primed before the application of the hot bitumen used to bond the vapour control layer. Reference should be made to BS 8217:2005 when applying the vapour control layer. Carry the VCL past the insulation and seal with the parapet wall. Torch on VCL's also available.

Roof Finish

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

Loadings

These boards are 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. Heavy materials such as air conditioning units, water tanks or mechanical plants, should be supported directly on the roof construction or on a suitably designed support system.

Laying (Timber Deck)

On plywood decks, Unilin 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 the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

Laying (Metal Deck)

On metal decks, Unilin TR/BGM should be laid break bonded into hot bitumen (max temperature 240°C) mopped or poured over the vapour control layer. The boards can also be mechanically fixed or the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

TAPERED ROOF

TR/BGM

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 Unilin 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 the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

Daily Working Practice
The facing of these boards 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. Unilin tapered boards should be waterproofed as soon as possible after fixing.

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.

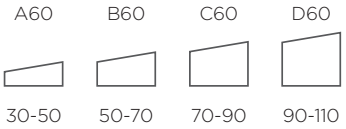
Fixings
The specification for fixing of Unilin roof boards will vary with the location, roof height/width and topographical data, architectural specification should be consulted. Generally with 1200mm x 1200mm boards, a minimum of 6 fixings per board, located between 50mm and 150mm from all edges, additional fixings may be placed along the centre line. Counter sunk washers, 5mm in diameter should be used with each fixing. However, BS EN 1991-1-4:2005+A1:2010 (National Annex to Eurocode 1.Actions on structures. General Actions. Wind Actions) should always be consulted. It is recommended to seek advice from the fixing manufacturer for specific guidance. During the construction process, the construction should be protected from rain penetration during breaks in the process.

Fire
Each project 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.

The Unilin XtraFall pre-fabricated system
Unilin pre-fabricated single layer tapered roofing panels provide the most flexible solution that can be designed to meet a wide range of criteria in new and refurbished flat roofs. Unilin offers bespoke solutions with a range of thickness from 30mm to 400mm, which enables faster installation and reduces site generated waste (see XtraFall brochure).

SCAN HERE TO VIEW XTRAFALL BROCHURE

TR/BGM Tapered 1:60
1200 x 1200



Flat
1200x1200mm

80mm

Note: 1:40 and 1:80 subject to quantity & lead time. As prefabricated only.

Alternative tapers available on request.

TR/BGM

Length (mm)	1200
Width (mm)	1200
Thickness (mm)	30 (minimum)

Other sizes are available subject to quantity and lead time.

Note: Unilin Insulation UK Ltd. reserves the right to amend product specifications without prior notice.

Property & Units

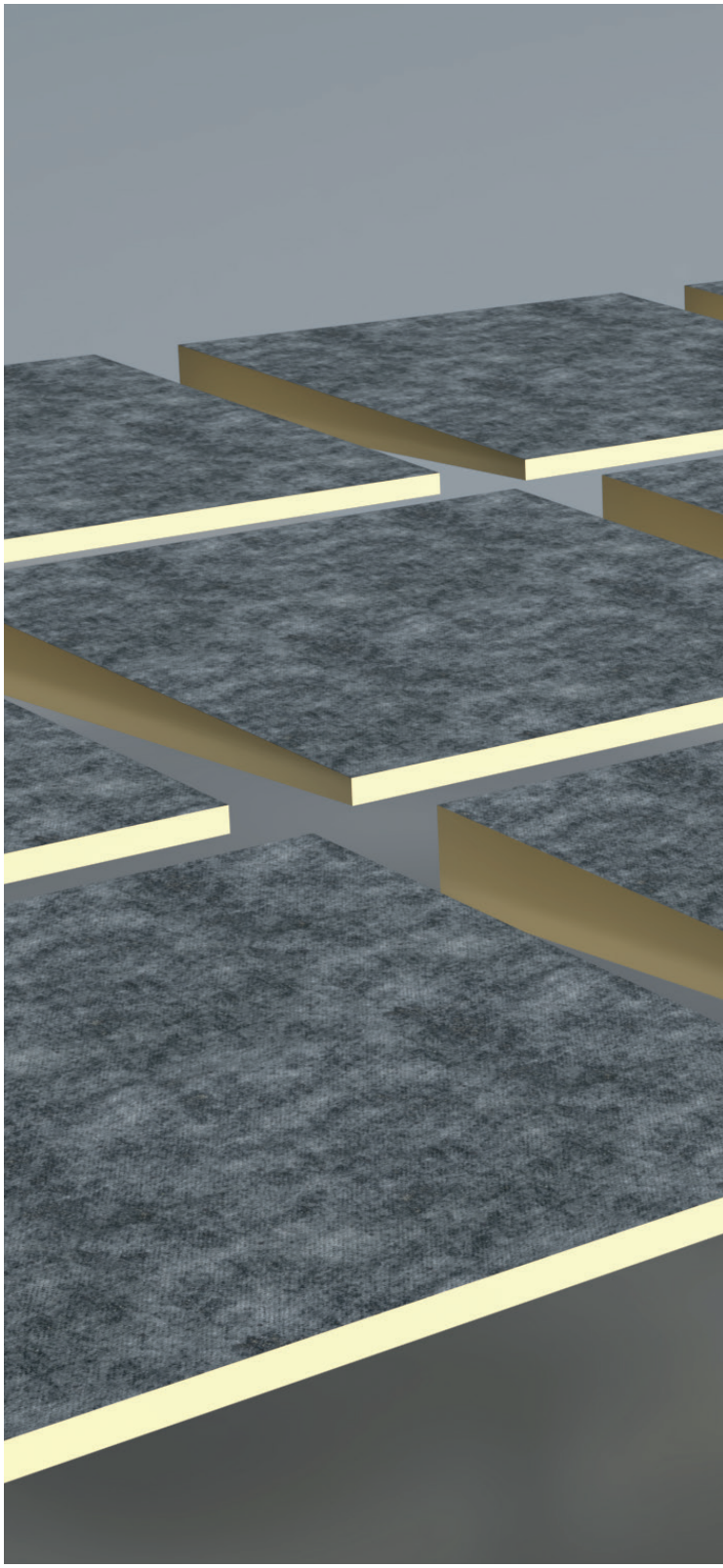
Compressive Strength	150kPa @ 10% Compression
Thermal Conductivity	0.024 - 0.027 W/mK
Reaction to Fire	Euroclass F

Note: The boards can also be used in mechanically fastened or loose laid ballasted bituminous roofing systems.

Contact our Technical Team
UK: +44 (0) 371 222 1055
E: tech.ui@unilin.com

XTRAFALL TAPERED ROOFING SYSTEM

The XtraFall system provides a precision solution to thermal insulation and water drainage on flat roofs.



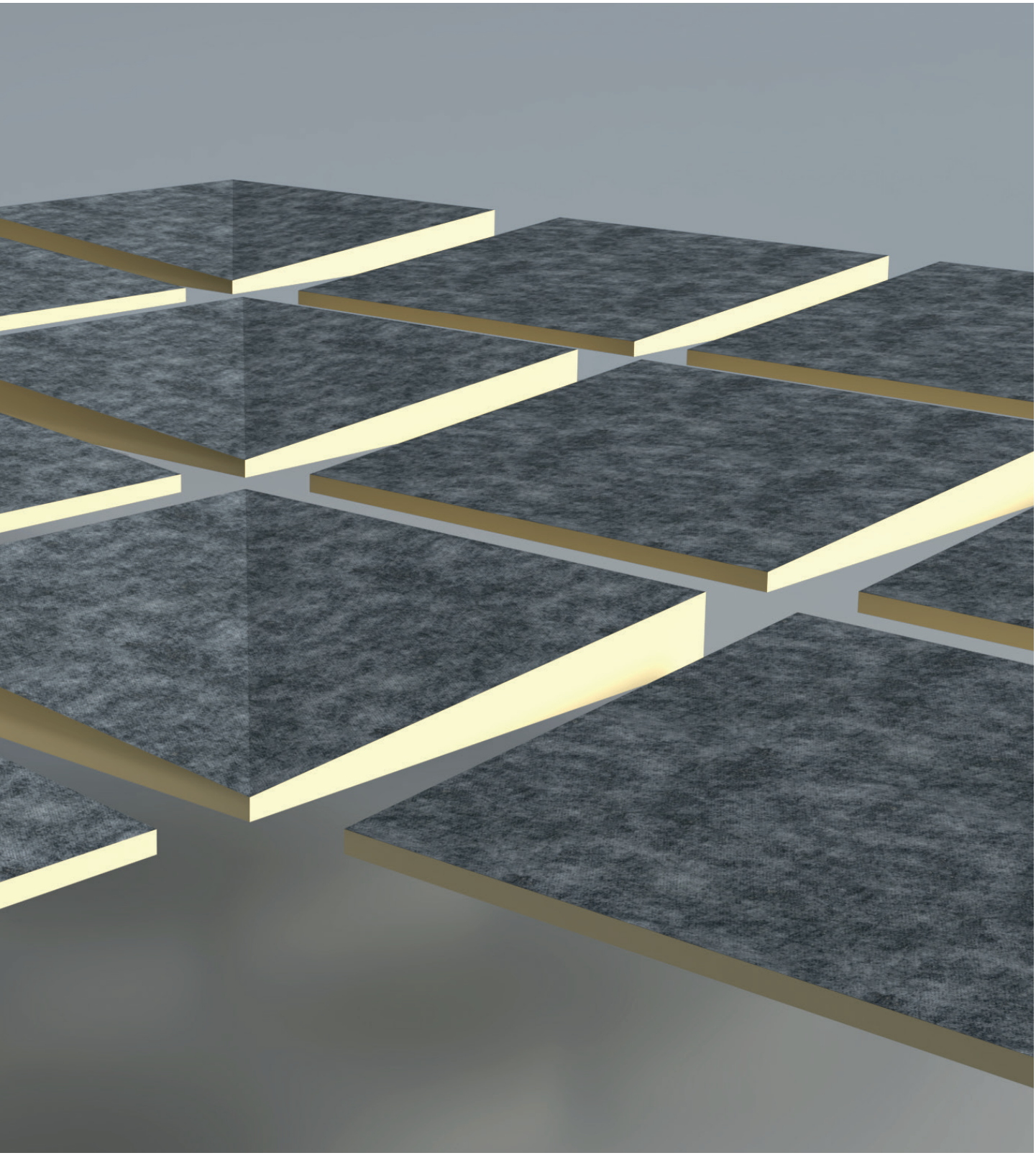
Product Features

- 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
- 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

Contents

24 XtraFall
Tapered Roofing System

TAPERED
ROOF

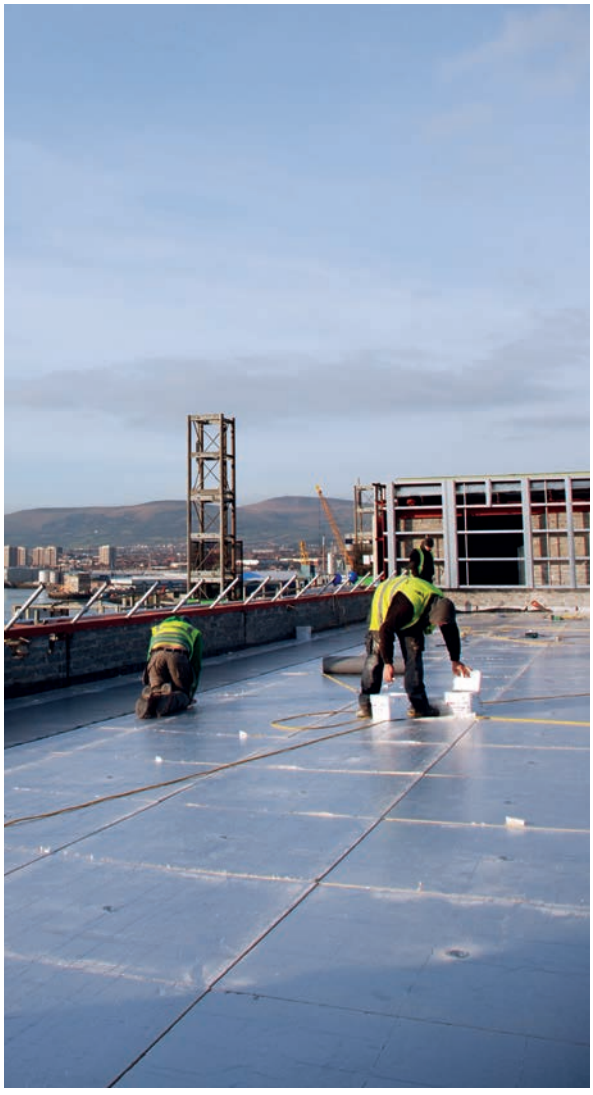


XTRAFALL TAPERED ROOFING SYSTEM

The XtraFall Tapered System provides a solution for both 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 and manages water drainage may seem daunting, that is where we come in.



Unilin offer a comprehensive range of PIR Flat Roof insulation boards that includes the XF range of tapered insulation, providing solutions for all flat roof projects, whatever the choice of waterproofing system. Our extensive range of PIR foam insulation products have 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. The products are exclusive to the XtraFall system.

Features

- Flat roof insulation and drainage in a single system
- A 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 material, accepting maintenance traffic
- Suitable for new and existing flat roofs

IGBC IRISH GREEN BUILDING COUNCIL

NFRC LEADING ROOFING EXCELLENCE

ASSOCIATE MEMBER SPRA Single Ply Roofing Association

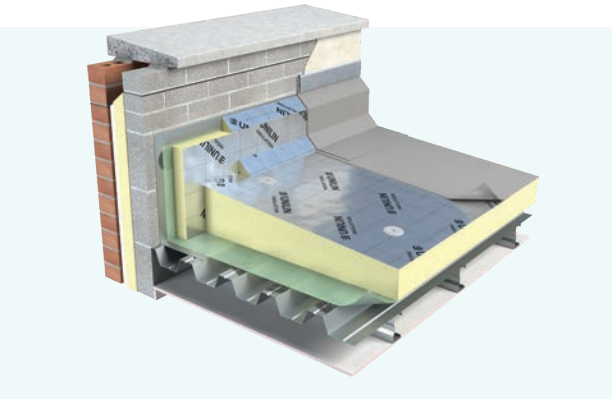
TAPERED ROOF

XtraFall Tapered Boards

XF/ALU

Tapered Insulation for Mechanically Fixed Single Ply Waterproofing Systems

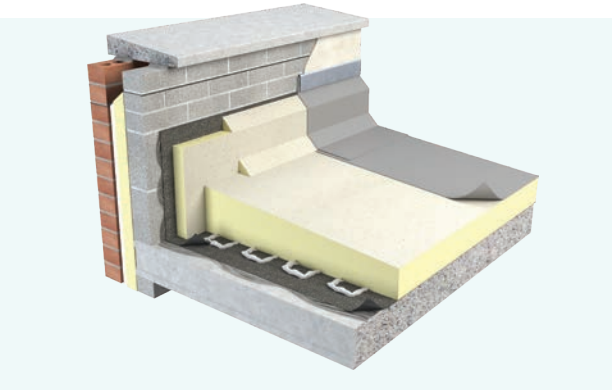
- Aluminium faced rigid PIR
- Thermal Conductivity 0.022 W/mK
- Compatible with Single Ply Waterproofing Systems



XF/MG

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

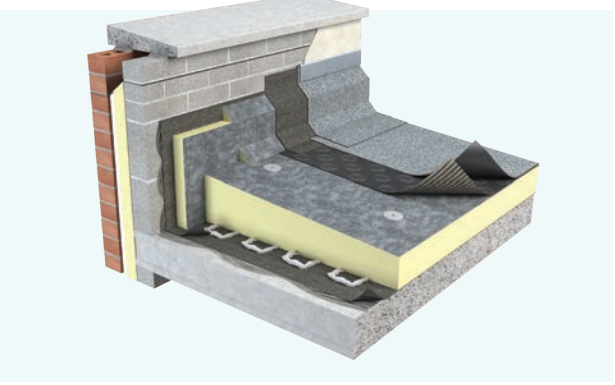
- Mineral glass tissue faced rigid PIR
- Thermal Conductivity as low as 0.024 W/mK
- Compatible with Adhesively Bonded/Mechanically Fixed Single Ply Roofing Membranes



XF/BGM

Tapered Insulation for Bonded, Torched-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



XTRAFALL MITRES

Prefabricated composite falls PIR tapered insulation boards

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. Each Xtra-mitre board is clearly identified by board type and the direction of fall.

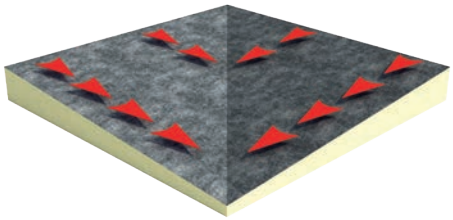
Xtra-mitre boards are placed in the appropriate location on the roof, then the XtraFall Tapered Insulation boards are placed to suit.

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.

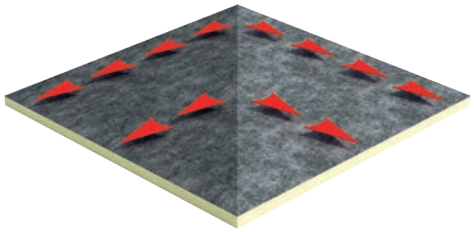
It should be noted that correct, on site, setting out of the laying pattern, of XtraFall boards, is essential to quick and efficient placing of the insulation. The roofing contractor must ensure that the information/drawing provided is relevant to the on site works.

Benefits
- Good roof drainage
- Quick board laying
- Reduced on site cutting
- Versatile systems

Features
- Creates multi-directional falls
- Exact dimensions
- Clear board identification
- Suitable for all roof specs



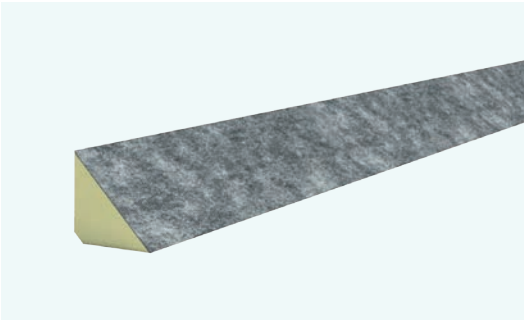
Valley Board



Ridge Board

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 bonding to the waterproof membrane.



BG Facer shown - also available MG

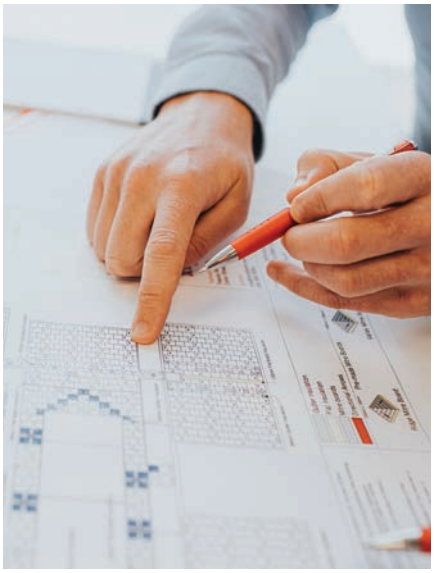
DRAINAGE DESIGN

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

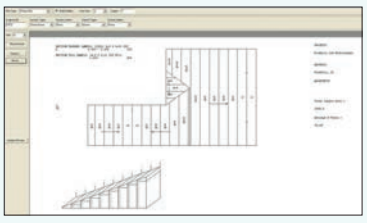
Cut-to-fall schemes designed specific to your requirements
Unilin provide individually engineered pieces, when installed in accordance with comprehensive laydown mapping to ensure designed intent is actually achieved on site.

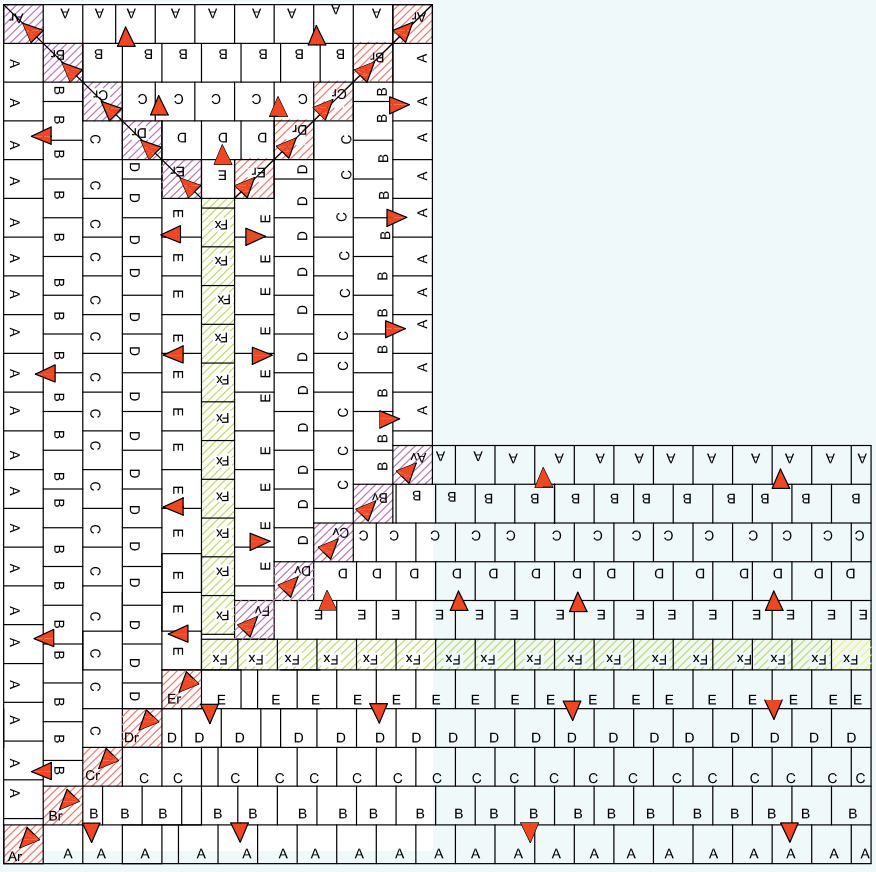
The precision manufacturing of single piece components provide accuracies and fixing surety not achievable when multi-layer systems are formed on site under our often challenging weather conditions. Complex, geometrical patterns are pre-formed under controlled factory conditions providing effective flat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

Working closely with the project design team, experienced Unilin 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.



Unilin 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.





HANDLING, CUTTING & STORAGE

Unilin 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.

Durability

Unilin Insulation products are stable, rot proof, provide no food value to vermin and will remain effective for the lifetime of the building, depending on specification and installation. Care should be taken to avoid contact with acids, petrol, alkalis and mineral oil. When contact is made, clean materials in a safe manner before installation.

Expect more Knowledge

Unilin Insulation is one of UK's largest manufacturers and suppliers of insulation. We have a 30 plus year history of working in partnership with construction professionals to close the gap between design and as-built performance.

Higher standards of fabric performance call for greater adherence to best practice detailing. To achieve this and to 'close the gap' between design and build, we provide a dedicated Technical Team, all qualified to the highest standards of competency in U-Value calculation and condensation risk analysis.

FREE
One-to-one advice

Here to support you

- BRE listed Thermal Bridging Detailing
- BRE Trained Modelling
- Warranted Calculations available
- Immediate technical response
- SAP Qualified
- Insulation systems to deliver real onsite performance

Get in touch

T: +44 (0) 371 222 1055 **E:** tech.ui@unilin.com **unilininsulation.co.uk**

UNILIN

Notes

XTRAFALL TAPERED ROOFING SYSTEM

The XtraFall system provides a precision solution to water drainage and thermal insulation on flat roofs.

- A precision solution to thermal insulation and water drainage on flat roofs
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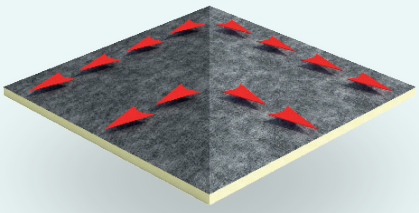
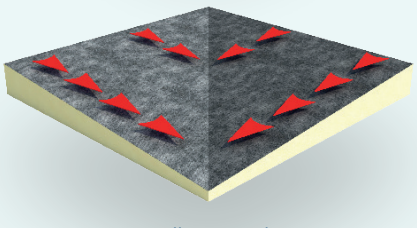
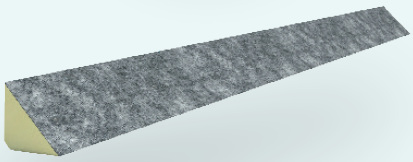


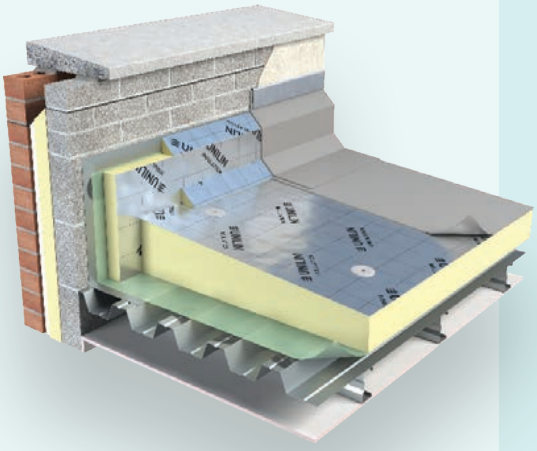
Ridge Board



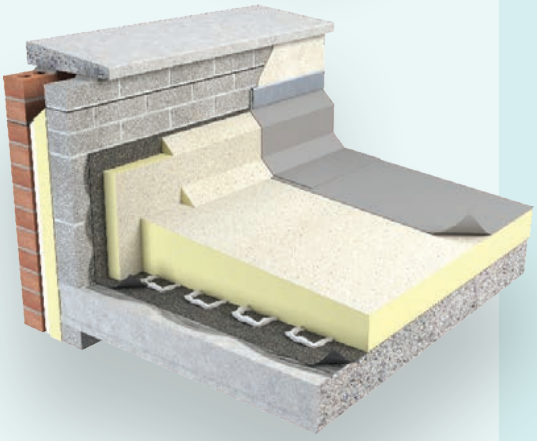
Valley Board



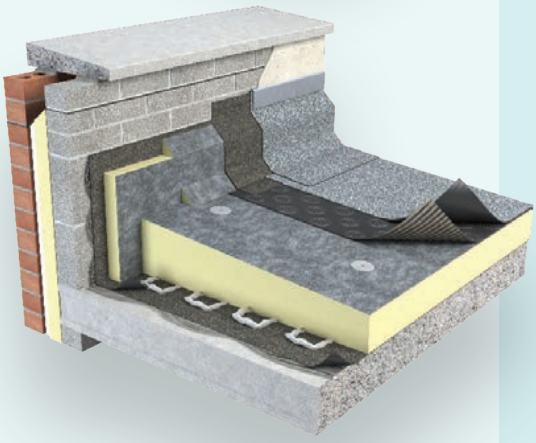
Fillet



XF/ALU



XF/MG



XF/BGM

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unilininsulation.co.uk

Agrément Certifcate 24/7235
Agrément Certifcate 24/7307

ISO 9001:2015+A1:2024 Quality Management Systems
ISO 14001:2015+A1:2024 Environmental Management Systems

The Sustainable Solution

Specifying Unilin Insulation is a real commitment to minimising energy consumption, harmful CO_2 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 14001:2015+A1:2024 certified Environmental Management System.

Environmental Product Declaration (EPD)

An Environmental Product Declaration or EPD for a construction product indicates a transparent and credible step in the pursuit and achievement of real sustainability in practice, it is a public declaration of the environmental impacts associated with specified life cycle stages of that product. Unilin EPDs have been independently verified in accordance with EN 15804+A2:2019 and ISO 14025:2010 accounting for stages of the LCA from A1 to A3, with options A4-A5 and modules C1-C4 and D included. The process of creating an EPD allows us to improve performance and reduce resource wastage through improvements in product design and manufacturing efficiency. They play a crucial role in manufacturing and construction and are increasingly asked for by industry.

EPDs and BREEAM

BREEAM is primarily trying to encourage designers to take EPDs into consideration when specifying products. BREEAM requires EPDs to be verified by a third-party. For the Mat 02 category, points are awarded based on whether EPDs are generic, manufacturer-specific, or product-specific. Non 3rd party verified EPDs to EN 15804:2012+A2:2019 cannot be accepted. All of Unilin EPDs are externally verified.

Responsible Sourcing

Unilin 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 14001:2015+A1:2024, 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.

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 Unilin Insulation Technical Support. Unilin technical literature, Agrément certifications and Declarations of Performance are available for download on the Unilin Insulation 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 Unilin Insulation.