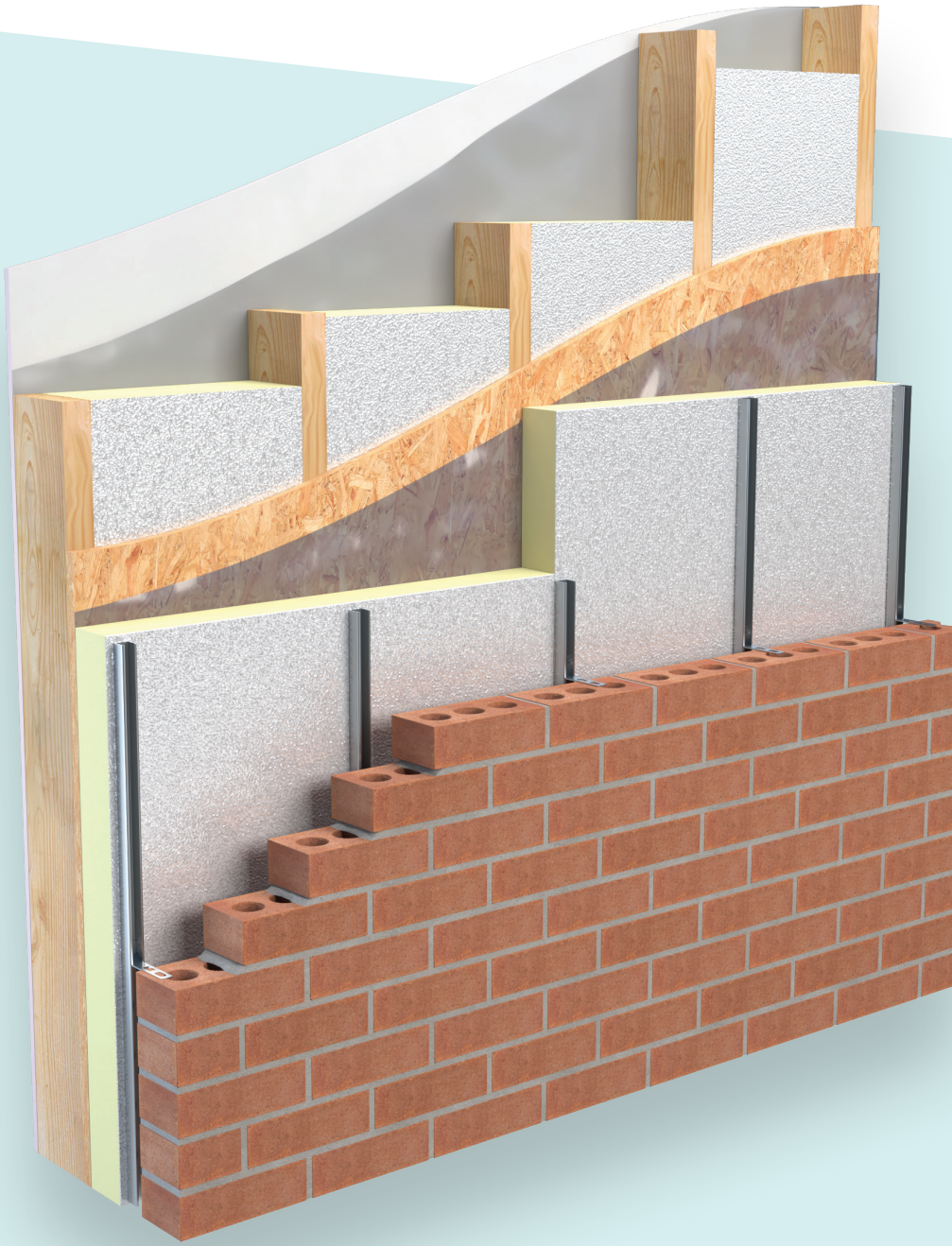
XTROLINER SUPERIOR PERFORMANCE PIR INSULATION

Steel & Timber Frame

XO/FB

- Suitable for use in steel and timber frame systems
- Lower Lambda value for improved U-Values
- Suitable for new build and renovation up to 15m in height
- Reduced Thermal Bridging
- Textured aluminium foil



UNILIN INSULATION

Best thermal performance, minimal wall thickness

XTROLINER SUPERIOR PERFORMANCE PIR INSULATION*

Steel & Timber Frame

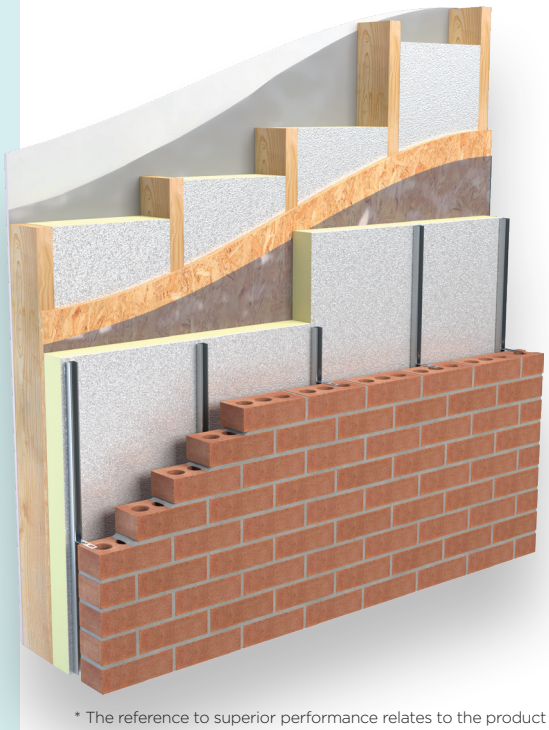
XO/FB

XtroLiner Framing Board is designed for use in a wide range of constructions including steel or timber frame applications up to 15m in height. The framing board can be used between studs or as an insulated sheathing board.

Using XtroLiner Framing Board in this application will reduce the Thermal Bridging of the steel or timber studs.

Benefits

- Suitable for use in steel and timber frame systems
- Lower Lambda value for improved U-Values
- Suitable for new build and renovation up to 15m in height
- Reduced Thermal Bridging
- Textured aluminium foil



* 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.

Specification Clause

The wall insulation shall be XtroLiner XO/FB manufactured to EN 13165:2012 + A2:2016 by Unilin Insulation, comprising of a rigid modified Polyisocyanurate (PIR) core between textured aluminium foil facings. The XtroLiner XO/FB_ _ _mm with a Agrément declared Lambda value of 0.021 W/mK to achieve a U-Value of ___ _ _W/m²K for the wall element. To be installed in accordance with instructions issued by Unilin Insulation.

An Environmental Product Declaration (EPD), certified by IGBC is available for this product. Please contact technical support for further details.

Refer to NBS clause K10 15, K10 205, B15 110, P10 40, P10 190. Uniclass Pr 25 71 63 66.

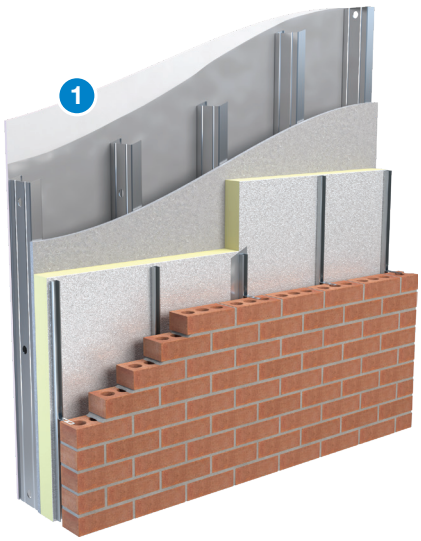
Thermal Resistances

Thickness (mm)	R-Value (m²K/W)
40	1.90
50	2.35
60	2.85
75	3.55
80	3.80
100	4.75
120	5.70
150	7.10

Resistance ‘R’ Values

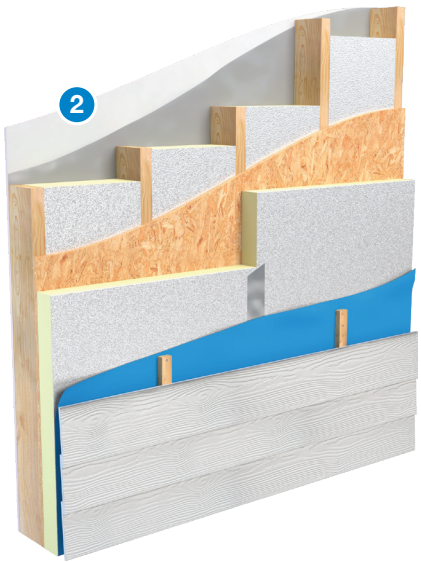
The resistance value of any thickness of Unilin insulation can be ascertained by simply dividing the thickness of the material (in metres) by its Agrément declared Lambda value, for example: Lambda 0.021 W/mK and thickness 80mm -> 0.080/ 0.021 -> R-Value = 3.80. In accordance with EN 13165:2012 + A2:2016, R-Values should be rounded down to the nearest 0.05 (m²K/W).

XO/FB



1. Steel Framed System

Buildings constructed using a steel framed system are insulated on the outer side of the construction creating a 'Warm Frame', reducing the risk of condensation.



2. Timber Framed System

Placing a lining of XtroLiner Framing Board into the traditional cavity of the construction, and effectively insulating the Thermal Bridging caused by the timber studding drastically improves the value of the walls over the traditional method of insulating between studs only.

Note:
The textured aluminium foil facing on XtroLiner Framing Board improves the thermal performance of the wall within an unventilated cavity. The unventilated cavity, or residual cavity, is the most effective method of preventing wind-driven rain penetrating a wall from the outside.

XO/FB

Length (mm)	2400
Width (mm)	1200
Thickness (mm)	40, 50, 60, 75, 80, 100, 120, 140, 150

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

Property & Units

Thermal Conductivity	0.021 (W/mK)
Compressive Strength	150 (kPa)
Reaction to Fire	Euroclass C-s2, d0

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

INSTALLATION GUIDELINES

XO/FB

Timber Framed System

1. Cut glass fibre insulation or XtroLiner Framing Board to fit snugly between the timber studding. Allow slight oversize of cut to achieve 'friction fit' and seal any gaps with expanding foam.
2. If partially filling, ensure the insulation is securely held in place by treated timber battens in order to prevent framing board moving within the cavity. Ensure boards are closely butted.
3. When using XtroLiner Framing Board as a sheathing board, fix the insulation outside of any breather membrane or timber sheathing on the external surface (a second breather membrane may be added at this point for further protection) and temporarily fix with large headed clout nails. Ensure boards are closely butted and stagger jointed.
4. Place a sealed vapour control layer of polythene with lapped and sealed joints over the internal stud face.
5. Install cavity barriers into the cavity as required under building regulations.
6. Apply the internal finish as normal using fixings as recommended by timber frame supplier.

Steel Framed System

1. As with timber framing, XtroLiner Framing Board should be fixed to the outer face of the steel frame ensuring that vertical joints meet over a metal stud. Fixings should be in accordance with the steel system manufacturers recommendations and Agrément approved. Ensure boards are closely butted.
2. Place a sealed vapour control layer with lapped and sealed joints over the inner stud face.
3. Install cavity barriers into the cavity as required under building regulations.
4. Apply the internal finish as normal.
5. Fix wall ties as recommended by steel frame supplier.

Ventilated Cladding

1. Fix treated battens or propriety framing system vertically to the wall through the insulation layer, ensuring that the system is fixed securely to the substrate.
2. Fixings should be appropriate for the weight of the cladding system, seek advice from the fixing manufacturer.
3. Horizontal tiling battens can be fixed to the vertical battens if the cladding system is to be tile hung, or the cladding fixed directly to the vertical battens.
4. An approved breather membrane may be required as part of the design.
5. Cladding system should be fixed in accordance with the manufacturer's recommendations.

Requirement for buildings over 15m in height must meet specific targets under Building Regulations - Xtroliner Framing Board is suitable only for buildings under 15m. Contact Unilin Technical Support for information on insulation requirements for buildings over 15m.

ACDs must be followed to ensure that installation is in accordance with current Building Regulations and accounted for in the energy calculation.

THERMAL PERFORMANCE

XO/FB

Typical U-Values

Table 1
U-Value calculations to EN ISO 6946:2017

Timber Frame (Masonry Facing)
Build up:

- Plasterboard
- Vapour control layer
- XO/FB between 140mm timber studs
- Sheathing board
- XO/FB over studs
- Low E cavity
- Brick

Timber Frame (Masonry Facing)
Thickness of Sheathing (mm)

Between	Over	U-Value
60	50	0.16
60	60	0.15
60	80	0.13
60	100	0.12
80	50	0.15
80	60	0.14
80	80	0.12
80	100	0.11
100	50	0.13
100	60	0.13
100	80	0.11
100	100	0.10

Breather membrane not included in calculation

Table 2
U-Value calculations to EN ISO 6946:2017

Timber Frame (Ventilated)
Build up:

- Plasterboard
- Vapour control layer
- XO/FB between 140mm timber studs
- Sheathing board
- XO/FB over studs
- Ventilated cavity between battens
- Timber cladding

Timber Frame (Ventilated)
Thickness of Sheathing (mm)

Between	Over	U-Value
60	50	0.18
60	60	0.16
60	80	0.14
60	100	0.12
80	50	0.16
80	60	0.15
80	80	0.13
80	100	0.11
100	50	0.15
100	60	0.14
100	80	0.12
100	100	0.11

Breather membrane not included in 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.

UNILIN INSULATION

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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, robust 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.

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 23/6874

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

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