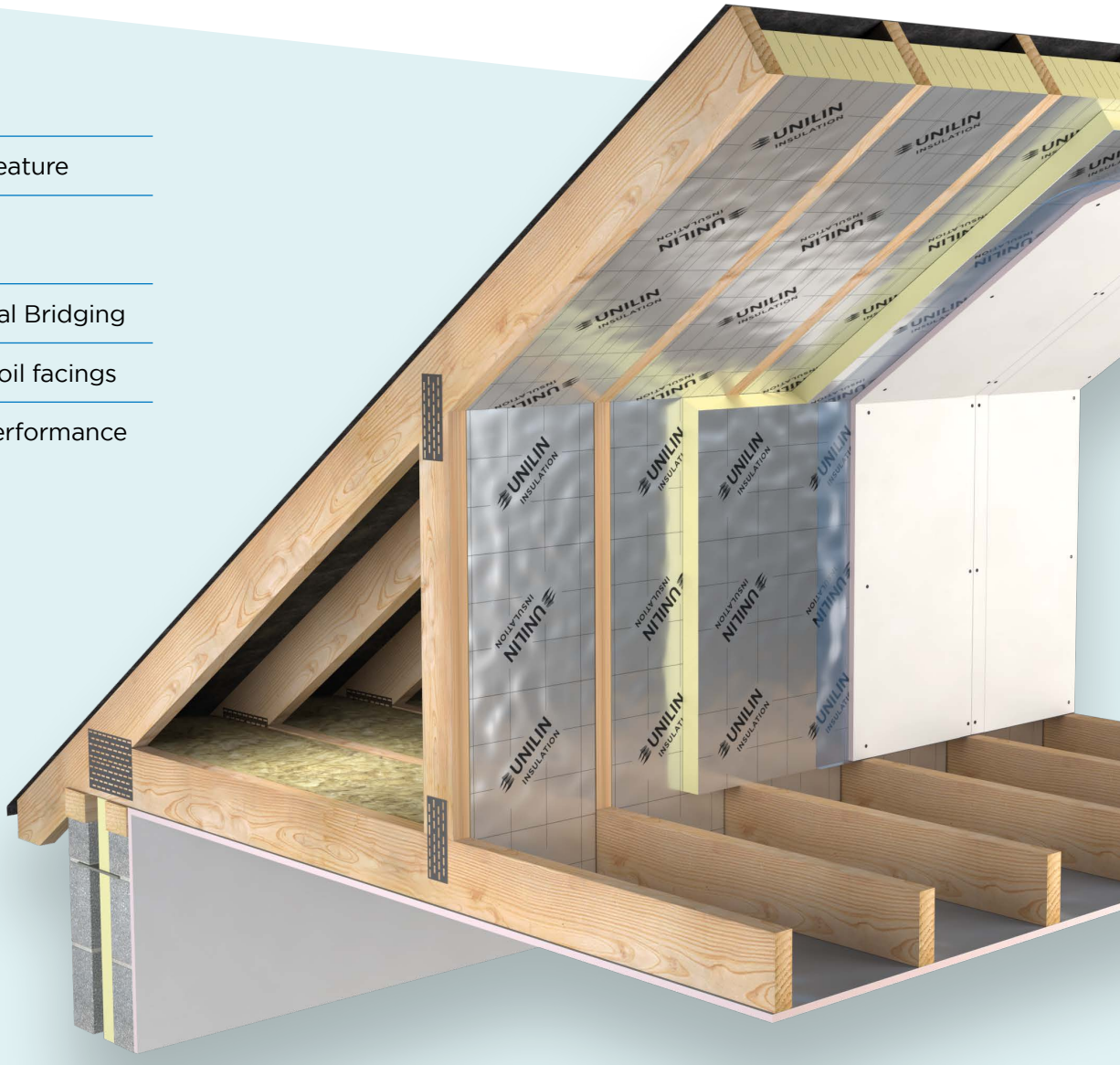
RAFTERLOC

Pitched Roof Board

XT/RLOC

- Variable width feature
- Minimal intrusion into living area
- Reduced Thermal Bridging
- Low emissivity foil facings
- Extra thermal performance



UNILIN INSULATION

Minimal Intrusion Into Living Space

RAFTERLOC
Width Variable Pitched Roof Board

XT/RLOC

Unilin Rafterloc Pitched Roof Insulation has a unique width variation feature offering a 20-30mm adjustment margin to ensure a tight fitting, high performance insulation locked between rafters.

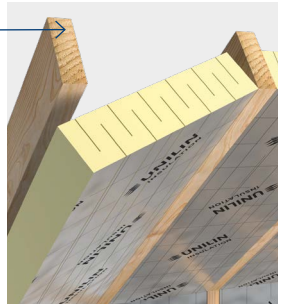
Used in conjunction with a layer of Unilin XT/TL or XT/PR_UF below the rafters, the Rafterloc system provides a robust, cost effective solution to insulating sloped rafters to the most efficient standards with minimal wastage and reduced fitting time.

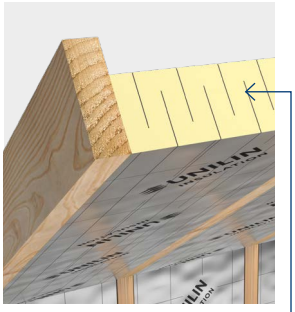
The improvement in energy efficiency standards required by the recent revision of Building Regulations in Ireland has demanded better insulation U-values to be achieved with better detailing to ensure improved performance.

Benefits

- Variable width feature
- Simple to fit
- Time saving
- Reduced waste

Discrepancies in timber widths and spacings can result in excessive cutting and loose fitting insulation when using standard sized boards; Rafterloc ensures that a tight fit is achieved every time, ensuring high performance robust detailing.





Rafterloc features a slotted mechanism that allows the board to lock between the rafters in pitched roof application.

Specification Clause

The pitched roof insulation shall be Unilin Insulation Thin-R XT/RLOC manufactured to EN 13165 by Unilin Insulation, comprising of a rigid Polyisocyanurate (PIR) core between low emissivity foil facings. The Thin-R XT/RLOC_ _ _mm with an Agrément declared Lambda value of 0.023 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 P10 140, K11 695, K11 55, P10 15, P10 50.

Thermal Resistances

Thickness (mm)	R-Value (m^2K/W)
100	4.30
125	5.40
150	6.50

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 0.023 W/mK and thickness 75mm -> 0.075/ 0.023 -> R-Value = 3.25. In accordance with EN 13165, R-Values should be rounded down to the nearest 0.05 (m^2K/W).

XT/RLOC

Pitched Roof

- Unilin Rafterloc boards are for use in pitched roof constructions where the insulation follows the slope of the roof.
- Because of Unilin's high thermal performance, a single layer of Unilin Rafterloc placed between the rafters only may achieve the U-Value requirement. However, with the requirements for very low U-Values, and the fact that Thermal Bridging should be addressed, a two layer solution is generally required. A second layer of Unilin XT/PR_UF Pitched Roof Board should be placed below the rafter to provide a robust solution. Refer to product guides for ventilated roofs in Unilin XT/PR_UF literature for guidance.
- The Unilin Rafterloc features a slotted mechanism that allows the board to lock between the rafters in application. Discrepancies in timber widths and spacings can result in excessive cutting and loose fitting insulation when using standard sized insulation board; Rafterloc ensures that a tight fit is achieved.

XT/RLOC

Length (mm)	1200
Width (mm)	370
Thickness (mm)	100, 125, 150

Property & Units

Thermal Conductivity	0.023 (W/mK)
Density (Foam Core)	30-32 (Kg/m^3)
Water Vapour Resistivity	>100 (MNs/gm)

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

INSTALLATION GUIDELINES

XT/RLOC

Single Layer

Following completion of roof cladding, fix timber battens to the inner face of rafters to provide a ground for fixing the Rafterloc. Position battens at a depth sufficient to allow insulation to sit flush with the underside of the rafters whilst maintaining the ventilation gap. The recommended 50mm airspace between the insulation and sarking felt may be reduced to 25mm when used in conjunction with an approved breather membrane above the rafter. Agrément certification covering the membrane should be consulted. If required, the Unilin Rafterloc can be cut with a trimming knife to fit areas that are closer than the standard spacing. The board should be cut accurately to facilitate tight fitting. Care should be taken to avoid Thermal Bridging at roof-wall junctions at eaves, gable walls and party walls. Complete installation as described to vertical studding and ceiling collars. A suitable vapour control layer should be fixed to the underside of the rafters at this stage. Finish with plasterboard.

Double Layer System Installation

A second layer of insulation should be added beneath the rafters. XT/PR_UF Pitched Roof Board should be butted tightly against adjoining panels and temporarily fixed to the underside of the rafter with large headed clout nails. A suitable vapour control layer should be provided. Finish with plasterboard. Alternatively an additional layer may be added in the form of a Unilin Thin-R Thermal Liner (Mechanically Fixed), which is a ready made PIR insulation board bonded to plasterboard and can be applied in a single fixing operation. The plasterboard joints should be sealed and tape in accordance with standard drylining practice.

THERMAL PERFORMANCE

XT/RLOC

Typical U-Values

CERTIFICATE CS/nnnn-n
U Value Competency Scheme

Table 1
U-Value calculations to EN ISO:6946
XT/RLOC Width Variable Pitched Roof Board

Hybrid Roof build up:

- Tiles
- Battens
- Breather membrane
- Air layer between rafters (Low Emissivity)
- XT/RLOC between rafters
- XT/PR_UF (ROOFS) below rafters
- Vapour control layer
- Plasterboard
- Plaster skim

Thickness Below Rafters

Rafterloc Thickness	30mm	40mm	50mm	60mm	70mm
100mm	0.20	0.18	0.16	0.15	0.14
125mm	0.17	0.16	0.15	0.14	0.13
150mm	0.15	0.14	0.13	0.12	0.12

Unvented sloped roof, rafters at 400mm centres - approved vapour permeable membrane required, maintain 25mm void.
XT/TL Thermal Laminate may be used to underside (Add thickness of plasterboard).

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, dependent on specification and installation. Care should be taken to avoid contact with acids, petrol, alkalis and mineral oil. When contact is made, clean materials in a safe manner before installation.

Expect more Knowledge

Unilin Insulation, formerly Xtratherm, is one of Ireland'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.

FREE
One-to-one advice

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.

Here to support you

- BRE listed Thermal Bridging Detailing
- BRE/NSAI Trained Modelling
- BBA/TIMSA calculation competent
- Warranted Calculations available
- Immediate technical response
- DEAP Qualified
- Insulation systems to deliver real onsite performance

Get in touch

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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 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 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 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, 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.

NSAI bre CE

ASSOCIATE MEMBER SPRA Single Ply Roofing Association

LRWA Liquid Roofing and Waterproofing Association

ISO 9001 Quality Management Systems
ISO 14001 Environmental Management Systems

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