QUINN therm

PRODUCT GUIDE

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Introduction
Quinn Therm

Quinn Therm Ltd specialises in the manufacture and distribution of zero ODP Polyisocyanurate (PIR) insulation to the Irish and UK markets.
Quinn Therm Ltd is located in Scotchtown, Ballyconnell Co. Cavan and is part of the insulation division of the Quinn Group.
Due to continual investment and the ethos of the Quinn Group, Quinn Therm Ltd is able to provide product flexibility, energy saving products, technically innovative solutions while maintaining the highest quality standard at all times.

All Quinn Therm Ltd products are manufactured to exceed the performance criteria as required by the current building regulations. Products are put through a rigorous testing regime, carried out with the assistance of the latest technology in our in house laboratory. All products are manufactured to meet and exceed the demands of the following standard IS EN ISO 9001:2000. Additionally our products have BBA and IAB accreditation, confirming Quinn Therms undoubted commitment to quality and to its customers. We are also proud to be an environmentally committed company both in production and in raw material consumption.

Quinn Therm understands the need to meet the economic aspect of heat conservation and the ever increasing trend towards low energy buildings and in regards to this manufactures products with low thermal values.

This brochure seeks to provide our customers with detailed technical description, performance data, design guidance and site work instructions. Additionally thanks to our experienced technical department, we are able to advise personally all our customers on the most effective way to meet the current Building Regulations.


QUINN therm

DELIVERY, STORAGE AND MARKETING

Quinn Therm Rigid PIR Insulation Systems are shrink-wrapped in clear polyethylene for delivery to site. Each pack is labelled with the product description, product characteristics, manufacturers name and brand name, quantity per pack, and any identification marks.

The boards should be stored in a dry environment, preferably indoors. However if they must be stored outdoors, the boards should be covered with weatherproof tarpaulin, and be elevated so they are clear of the ground.

PRODUCT QUALITY

Quinn Therm Rigid PIR Insulation Systems are manufactured to the highest standards, using the most up to date manufacturing equipment. Testing on the finished product is carried on a daily basis in our own laboratory facilities, to ensure compliance with the product standard EN 13165:2001.

HEALTH AND SAFETY

Quinn Therm Rigid PIR Insulation Systems are chemically inert, and pose no threat to anyone using it. Our boards are not designed to support the weight of a person unless the board is fully supported by a load bearing surface.

DIMENSIONAL STABILITY

Initial type testing was carried out to determine the dimensional stability of Quinn Therm Rigid PIR Insulation systems as per EN 1604:1996 ‘Thermal insulating products for building applications. Determination of dimensional stability under specified temperature and humidity conditions‘, and it performs to a level DS(TH) 11, in accordance with EN 13165:2001 ‘Thermal insulation products for buildings. Factory made rigid polyurethane foam (PUR) products. Specification‘.

BOARD THICKNESS AND RELATIVE THERMAL RESISTANCE VALUES

Thickness (mm)	Thermal resistance (R value)
25	1.05
30	1.30
35	1.52
40	1.70
50	2.15
60	2.60
75	3.25
80	3.45
90	3.90
100	4.30

REQUIREMENTS

Quinn Therm is manufactured under an IS EN ISO 9001 certified system.

Quinn Therm is covered by BBA and IAB certificates:

- BBA 05/4255 Quinn Therm QW insulation in built-in cavity wall applications.
- BBA 05/4271 Quinn Therm QW insulation in Insulated Dry Lining, Quinn Therm QF insulation in flooring and Quinn Therm QR insulation in pitched roof applications.
- BBA 07/4444 Quinn Therm QL insulation with plasterboard laminate.
- The hemispherical emissivity ($E\eta$) of Quinn Therm foil faces is 0.07 ± 0.02 as stated by BBA test report no. 2270.
- IAB 05/0223 Quinn Therm QW, QF & QR rigid PIR insulated product.
- IAB 07/0273 Quinn Therm Plydeck & FRI rigid PIR insulated product.

Quinn Therm insulation products are manufactured in accordance with EN 13165:2001 ‘Thermal insulation products for buildings. Factory made rigid polyurethane foam (PUR) products. Specification‘.

FIXINGS

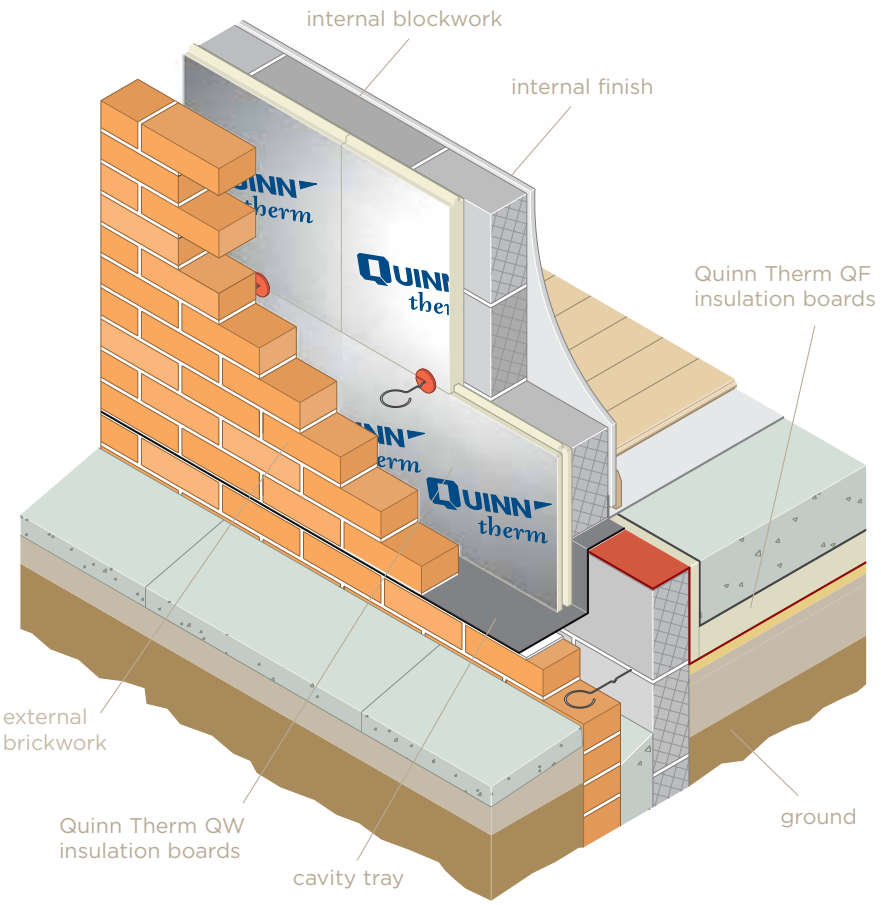
The selection and specification of fixings are key considerations in achieving efficient insulation systems with Quinn Therm. Designers must consider both the thermal and mechanical performance of the fixings.

According to the latest guidance (BRE 443 Conventions for U-value calculations) U-value calculations must take account of the thermal bridging effect of high conductivity fixings which penetrate thermal insulation; consequently it is important to select fixings which will minimise bridging.

In cavity wall constructions Quinn recommends the use of stainless steel double triangle ties. Where Quinn Therm boards are being fixed internally, for example behind plasterboard linings or beneath rafters, stainless steel clout headed nails should be used to restrain the boards.Specialist fixing systems designed to minimise thermal bridging, such as those with plastic shafted washers, may be used where the required fixing density will significantly reduce thermal performance.

Where boards will be subject to wind-uplift forces, on flat or pitched roofs, the fixing requirement should be determined by the calculation methods in BS 6399-2:1997 ‘Loading for buildings. Code of practice for wind loads‘. The fixing density should then be determined in consultation with the fixing manufacturer. For boards installed above the rafters on warm pitched roofs consult BS 5534:2003 ‘Code of practice for slating and tiling (including shingles)‘ - Annex B for guidance on calculation methods and fixings.

Quinn Therm
Partial fill cavity walls



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QW for different blocks

U-value (W/m²K)	Thickness of Quinn Therm QW (mm)					
0.37	40	35	35	30	30	25
0.35	45	40	35	35	30	30
0.30	55	50	45	45	45	40
0.27	60	60	55	55	50	45
0.25	70	65	60	60	60	55
Conductivity (W/mK)	1.33	0.45	0.30	0.19	0.17	0.12
	Dense block	Others		Quinn Lite		

Results based upon wall construction of:
103mm brick outer leaf, 40 - 50mm low emissivity residual cavity, Quinn Therm QW, 100mm concrete block (conductivity as shown), 12mm plaster. Brick and block leaves with 10mm nominal mortar joints.
Calculations performed to BS EN ISO 6946:1997, taking account of repeating thermal bridges.

DESIGN NOTES

- to prevent moisture transferring to the inner leaf, a clear cavity must be maintained. In most situations a 40 - 50mm clear cavity will be required, but some locations and constructions may allow that to be reduced.
- wall ties should be double triangle, vertical twist or to DD140-2 and spaced at 750mm horizontal centres and 450mm vertical centres. Additional ties will be required around openings.
- wall insulation must extend 150mm below upper edge of floor insulation to prevent thermal bridging.

INTRODUCTION

Quinn Therm QW (Quinn Wall) is a PIR (polyisocyanurate) insulation board intended for use in masonry walls with partial fill cavity insulation.

Quinn Therm consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

The thermal performance of masonry cavity walls depends largely upon the insulation used within the cavity. It is becoming increasingly difficult for designers to achieve the lower U-values imposed by regulations while maintaining the nominal 40 - 50mm clear cavity needed to prevent moisture reaching the inner leaf of the wall.

Thanks to its low thermal conductivity, Quinn Therm QW minimises the thickness of insulation needed within the cavity to give the required thermal performance, in most cases avoiding the need to have a cavity greater than 100mm wide.

INSTALLATION GUIDANCE

1. Set the first row of wall ties at 750mm centres, build up the inner leaf by 450mm; all cavities to be kept clean.
2. Set the second row of ties at 450mm centres.
3. Fit Quinn Therm QW boards between the ties, so each board is supported on two ties. Butt the boards together tightly.
4. Clip discs or collars onto the ties to hold the boards tight against the inner leaf.
5. Raise the outer leaf by 450mm: use a cavity board to protect the cavity from mortar droppings.
6. Repeat the sequence to the top of the wall.

If the cavity includes a radon barrier the foot of the first run of boards will be supported on the cavity tray.

NOTES

- At corners butt boards tightly together.
- Butt Quinn Therm QW boards neatly to the backs of frames, cills, cavity closers and lintels.
- Ensure wall ties slope down from the inner leaf to shed water into the cavity.

HANDLING AND STORAGE

Quinn Therm QW boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat. When handling Quinn Therm QW do not knock corners and edges.

Cut Quinn Therm QW with a fine tooth saw or trimming knife.

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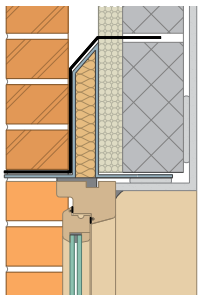

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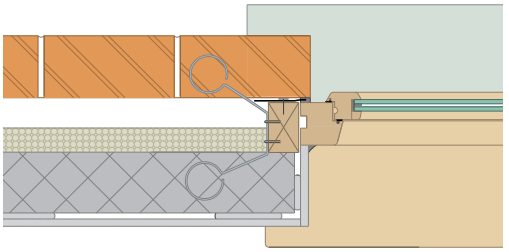
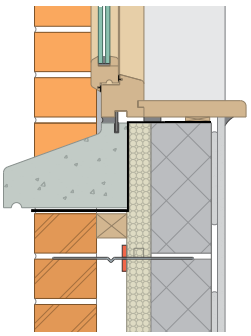
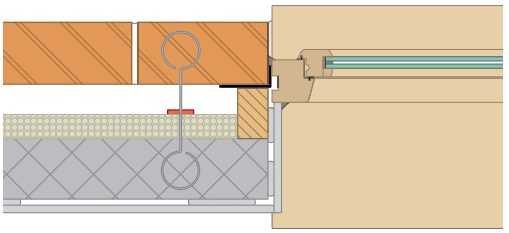


Jamb - rebated frame



Cill - rebated frame



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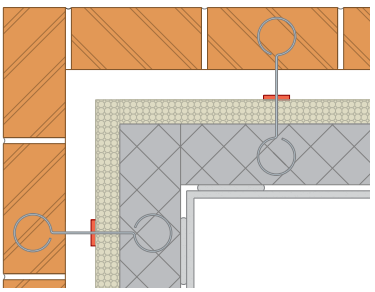
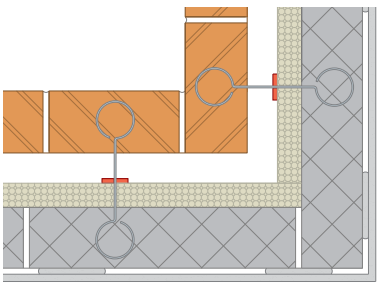


External corner



Internal corner

	Properties	Value	Quinn Therm QW
PRODUCT DATA	Board width x length	mm	450 x 1200**
	Board thickness	mm	20 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	0.54
	Edge profiles available		Butt edged / T&G

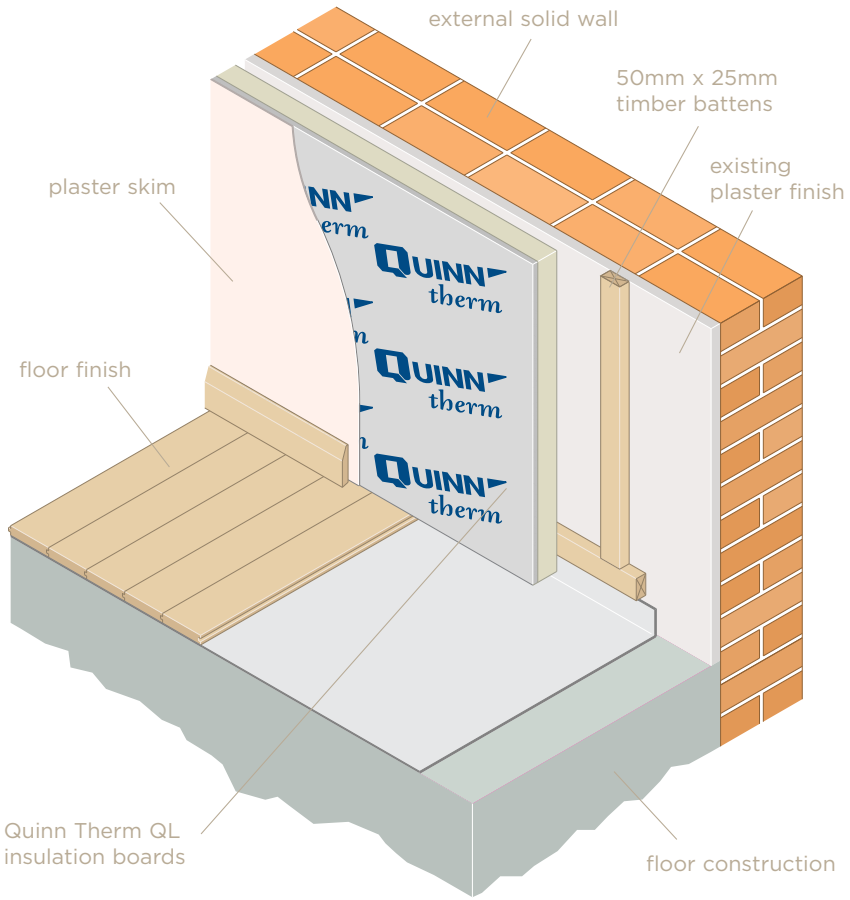
	Properties	Value	QuinnTherm QW
PERFORMANCE DATA	Thermal conductivity*	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	≃ 400
	Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Quinn Therm

Internal insulation of masonry walls with plasterboard laminate



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QL for different wall constructions

U-value (W/m²K)	Thickness of Quinn Therm QL* (mm)			
0.37	35	40	40	25
0.35	40	40	45	25
0.30	50	50	55	35
0.27	60	60	60	40
0.25	65	65	70	50
Masonry	215mm Brick	500mm Natural stone	215mm Dense block	215mm Quinn Lite (B5)

* Thickness of insulation only: allow 12.5mm for thickness of plasterboard.

Results based upon wall construction of:
masonry (see table), 15mm plaster, Quinn Therm QL, 25mm cavity, 12.5mm plasterboard.

Calculations performed to BS EN ISO 6946:1997, taking account of repeating thermal bridges.

DESIGN NOTES

- Quinn Therm QL shown fixed to battens using specified plasterboard fixings. On uneven walls battens may have to be packed out.
- Quinn Therm QL can also be installed on dabs of drywall adhesive with secondary mechanical fixings.
- Quinn Therm QL boards supplied in 2.4m lengths to match storey height and minimise cutting.
- a VCL may be required in some constructions: contact Quinn Technical Services for advice.

INTRODUCTION

Quinn Therm QL (Quinn Laminate) is a PIR (polyisocyanurate) insulation and plasterboard laminate for improving the thermal performance of walls in new build and refurbishment projects by internal lining.

Quinn Therm consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

Adding an insulation to the inner face of a masonry wall is a straightforward and cost-effective way of improving the thermal performance. Using an insulation/plasterboard laminate makes the process more efficient by allowing the insulation and surface finish to be installed in one operation.

Because the addition of insulation and new surface finish will affect the usable space in the room it is vital to specify high performance insulation. Quinn Therm, which is incorporated in Quinn Therm QL boards offers a high thermal resistance, minimising the volume lost in the upgrade.

INSTALLATION GUIDANCE

1. Prepare the wall surface: ensure it is true; remove existing skirting, picture rails and projecting window boards; remove any wall coverings with a high vapour resistance (e.g. vinyl wallpaper or gloss paint).
2. Cut Quinn Therm QL boards to size - ideally to floor-ceiling height.
3. Fix Quinn Therm QL boards in place with suitable mechanical fixings. Seal junctions.
4. Apply plasterers scrim to all joints and apply a skim coat of plaster.

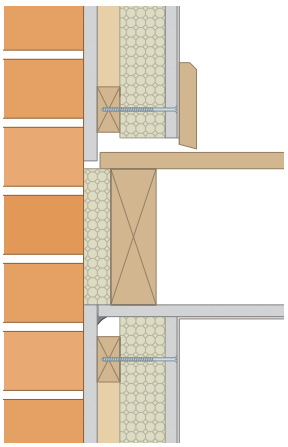
NOTES

- Line window reveals with Quinn Therm QL to avoid thermal bridging. Trim insulation from the board at junctions to give a continuous finish of plasterboard.
- Fix heavy items such as cupboards and sanitary units back to the wall.
- Chase services into the wall, not the insulation board.

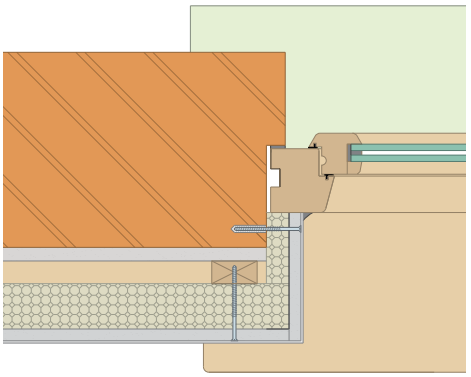
HANDLING AND STORAGE

Quinn Therm QL boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat.

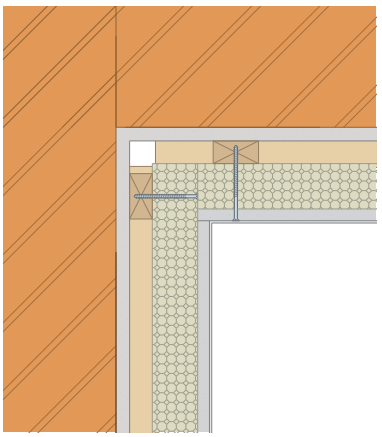
When handling Quinn Therm QL do not knock corners and edges. Cut Quinn Therm QL with a fine tooth saw or trimming knife.



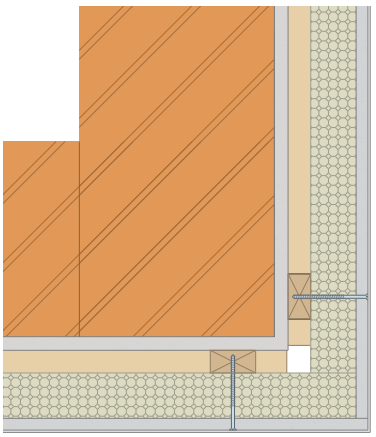
Wall/ceiling junction



Jamb - rebated frame



Internal corner



External corner

	Properties	Value	Quinn Therm QL
PRODUCT DATA	Board width x length	mm	1200 x 2400***
	Board thickness*	mm	20 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	2.88
	Edge profiles available		Butt edged

	Properties	Value	QuinnTherm QL
PERFORMANCE DATA	Thermal conductivity**	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	≃ 400
	Compressive strength	kPa	> 120

* insulation thickness - add 12.5mm for plasterboard

** quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

*** other sizes may be available upon request.

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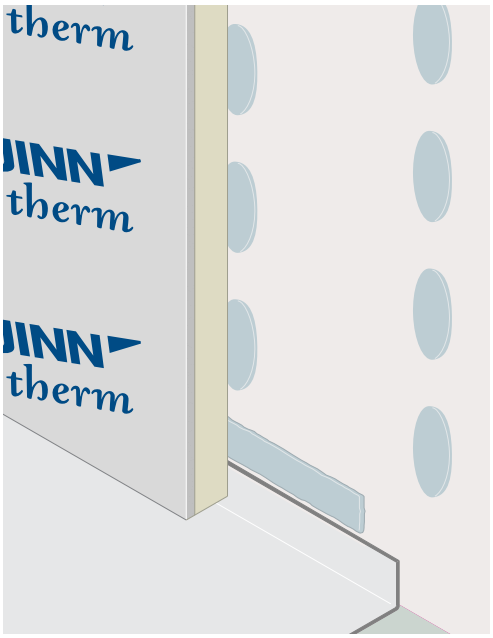
INSTALLATION GUIDANCE

When fixing Quinn Therm QL boards with drywall adhesive apply a continuous strip of adhesive to seal the perimeter then use mechanical fixings for secondary restraint. Alternatively, use treated timber battens to form the perimeter seal: trim the Quinn Therm QL board to achieve a tight fit. Use plasterboard nails at 300mm centres to fix the boards to the perimeter battens.



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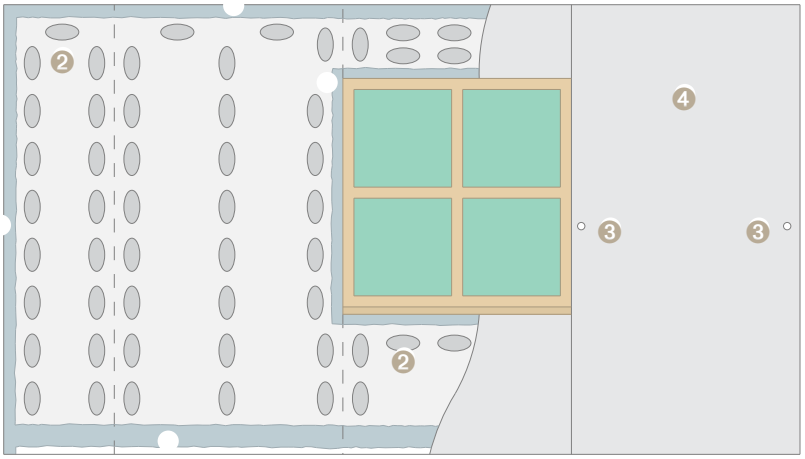
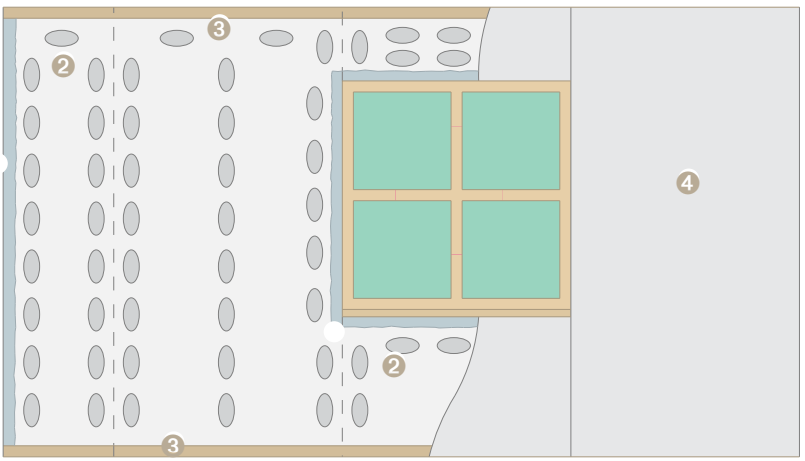


Typical detail for plasterboard incorporating insulation

After boards have been positioned on dabs and left to set, fit two secondary fixings per board along horizontal centreline 15mm in from vertical edges

1. Continuous drywall adhesive perimeter seal
2. Drywall adhesive dabs
3. Suitably approved mechanical fixings at mid-height
4. Plasterboard incorporating insulation



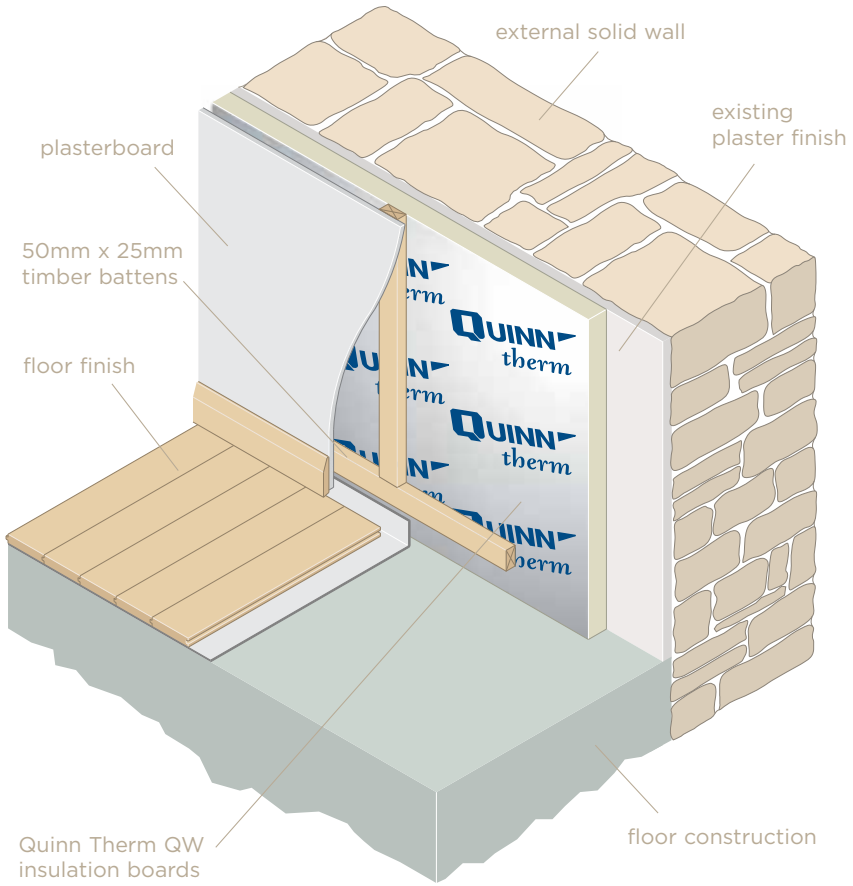
Alternative detail for plasterboard incorporating insulation

As an alternative to continuous drywall adhesive at perimeters, treated battens mechanically fixed to the masonry can be used. The plasterboard is fixed to the battens at 300mm centres. Insulation can be notched around the battens to ensure a neat fixing.

1. Continuous drywall adhesive perimeter seal
2. Drywall adhesive dabs
3. Continuous treated fire stop batten
4. Plasterboard incorporating insulation mechanically fixed top and bottom to the treated fire stop battens

Quinn Therm

Internal insulation of masonry walls



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QW for different wall constructions

U-value (W/m²K)	Thickness of Quinn Therm QW (mm)			
0.37	35	40	40	25
0.35	40	40	45	25
0.30	50	50	55	35
0.27	60	60	60	40
0.25	65	65	70	50
Masonry	215mm Brick	500mm Natural stone	215mm Dense block	215mm Quinn Lite (B5)

Results based upon wall construction of:
masonry (see table), 15mm plaster, Quinn Therm QW, 25mm cavity, 12.5mm plasterboard.
Calculations performed to BS EN ISO 6946:1997, taking account of repeating thermal bridges.

DESIGN NOTES

- Quinn Therm QW shown fixed by battens. With uneven walls Quinn Therm QW should be fixed to battens packed true.
- the battens and metalised facing of the Quinn Therm QW boards form a low emissivity cavity; improving the thermal performance of the wall.
- Quinn Therm QW board edges taped with metalised tape to form VCL.
- Quinn Therm QW boards supplied in 2.4m lengths to match storey height and minimise cutting.

INTRODUCTION

Quinn Therm QW (Quinn Wall) is a PIR (polyisocyanurate) insulation board intended for insulating masonry walls from the inside of the building.

Quinn Therm consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

The thermal performance of existing masonry walls may be improved by fitting insulation to the inner face of the wall and then drylining over the insulation; a solution which is also suitable for new build projects. Because the insulation and finish will reduce the usable volume of the room it is important to select an insulant which will give maximum benefit for the selected thickness.

The low thermal conductivity of Quinn Therm QW makes it easy to improve insulation levels without losing too much space to insulation. The aluminium laminate facing on the boards acts as a vapour control layer, reducing the risk of harmful condensation forming within the existing structure.

INSTALLATION GUIDANCE

1. Prepare the wall surface: ensure it is true; remove existing skirting, picture rails and projecting window boards; remove any wall coverings with a high vapour resistance (e.g. vinyl wallpaper or gloss paint).
2. Cut Quinn Therm QW boards to size - ideally to ceiling height.
3. Fix timber battens horizontally to the top, centre and bottom of the boards.
4. Seal board joints with metalised tape.
5. Fix vertical battens and install plasterboard.

NOTES

- Line window reveals with 25mm thick Quinn Therm QW board to avoid thermal bridging.
- To avoid cold spots and thermal bridging between storeys, insulate the perimeter of the floor structure with Quinn Therm QW (see diagram of wall/ceiling junction).
- Fix additional battens to support heavy horizontal items.

HANDLING AND STORAGE

Quinn Therm QW boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat.

When handling Quinn Therm QW do not knock corners and edges. Cut Quinn Therm QW with a fine tooth saw or trimming knife.

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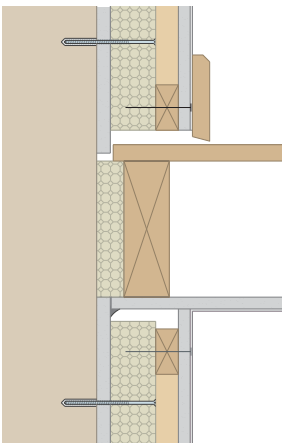
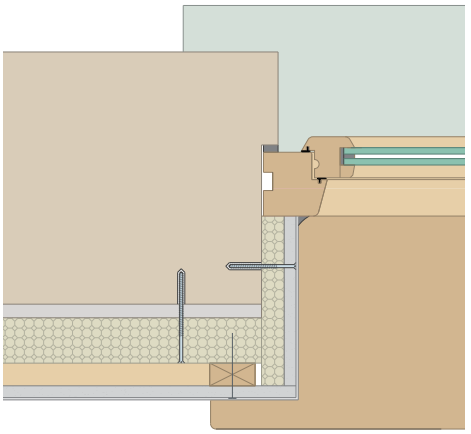
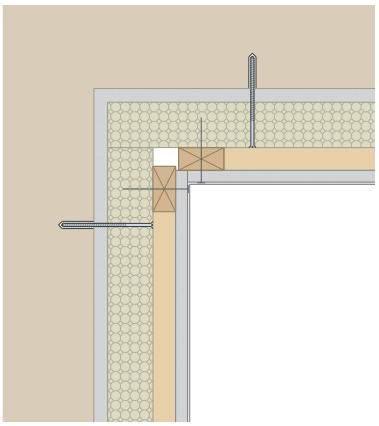


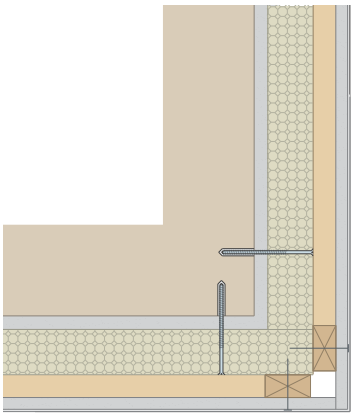
Wall/ceiling junction



Jamb - rebated frame



Internal corner



External corner

PRODUCT DATA	Properties	Value	Quinn Therm QW
	Board width x length	mm	1200 x 2400**
	Board thickness	mm	20 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	2.88
	Edge profiles available		Butt edged

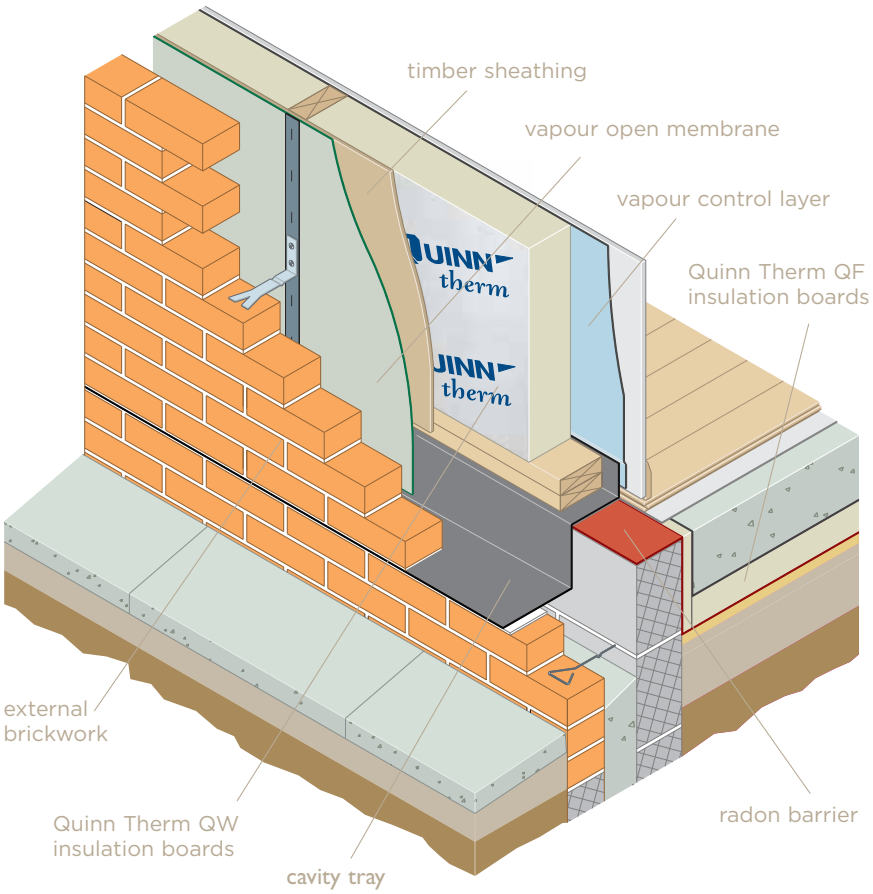
PERFORMANCE DATA	Properties	Value	QuinnTherm QW
	Thermal conductivity*	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	~ 400
	Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Quinn Therm

Insulating timber and steel framed walls



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QW (mm)

U-value (W/m²K)	140mm deep studs	89mm deep studs	
	Between stud	Between studs	Between stud & over sheathing
0.37	55	75	25 + 25
0.35	60	80	25 + 25
0.30	80	-	30 + 25
0.27	95	-	45 + 30
0.25	105	-	55 + 30

Results based upon wall construction of:

brick outer leaf, 40 - 50mm residual cavity, 12mm plywood sheathing, 89 or 140 mm timber studs at 600mm centres (15% timber fraction), polyethylene VCL, 12mm plasterboard.

Calculations performed to BS EN ISO 6946:1997, taking account of repeating thermal bridges.

DESIGN NOTES

- to meet some conditions with standard 89mm studs a layer of Quinn Therm insulation will be required on the outside of the sheathing.
- instead of brick, the outer face of the wall may be formed with rendered blockwork, tile-hanging, timber boarding or lightweight cladding systems.
- a VCL is required on the inside of the wall to prevent condensation forming within the structure.

INTRODUCTION

Quinn Therm QW (Quinn Wall) is a PIR (polyisocyanurate) insulation board intended for use in timber framed walls.

Quinn Therm consists of a core of PIR (polyisocyanurate) foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

Timber framed construction combines the structural frame with the thermal insulation enabling the formation of walls which meet the energy efficiency requirements of building regulations without excessive thickness.

Using Quinn Therm QW high performance insulation between standard 89mm studs can give a thermal performance which matches the requirements for England and Wales. Lower U-values may be achieved either by increasing the stud depth or by adding insulation to the outside of the sheathing board.

INSTALLATION GUIDANCE

Between studs

1. Cut Quinn Therm QW boards to fit snugly between the studs.
2. Push Quinn Therm QW into the gap between the studs.
3. Fix VCL and internal finish.

Over sheathing

1. Fix Quinn Therm boards to the studwork, through the sheathing with galvanised clout nails at 300mm centres. Butt boards tightly together.
2. Fix wall ties for outer leaf of brickwork, or battens for tile-hanging.

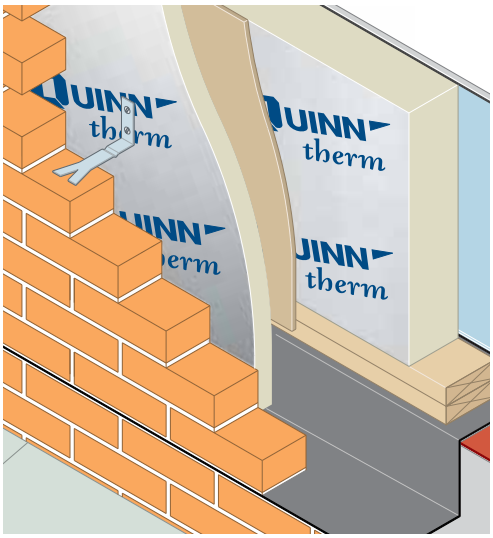
NOTES

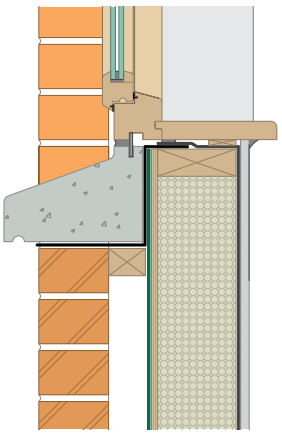
- At corners butt boards tightly together.
- Cut Quinn Therm QW boards to fit tightly to door and window framing.

HANDLING AND STORAGE

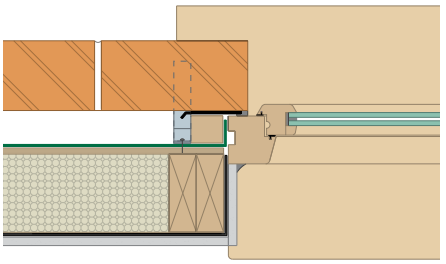
Quinn Therm QW boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat.

When handling Quinn Therm QW do not knock corners and edges. Cut Quinn Therm QW with a fine tooth saw or trimming knife.

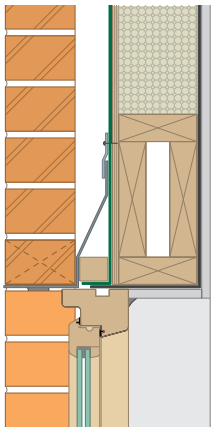




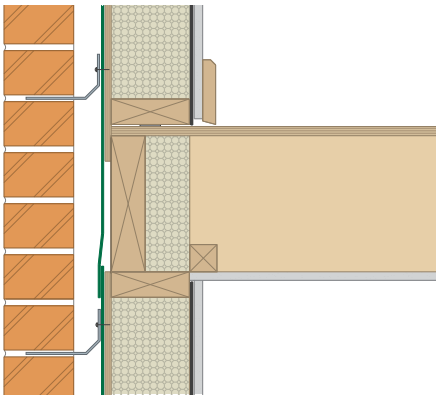
Cill - rebated frame



Jamb - rebated frame



Head - rebated frame



Intermediate floor

PRODUCT DATA	Properties	Value	Quinn Therm QW
	Board width x length	mm	450 x 1200**
	Board thickness	mm	20 - 200
	Board density	kg/m³	26 - 32
	Area per board	m²	0.54
	Edge profiles available		Butt edged

PERFORMANCE DATA	Properties	Value	QuinnTherm QW
	Thermal conductivity*	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	~ 400
	Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

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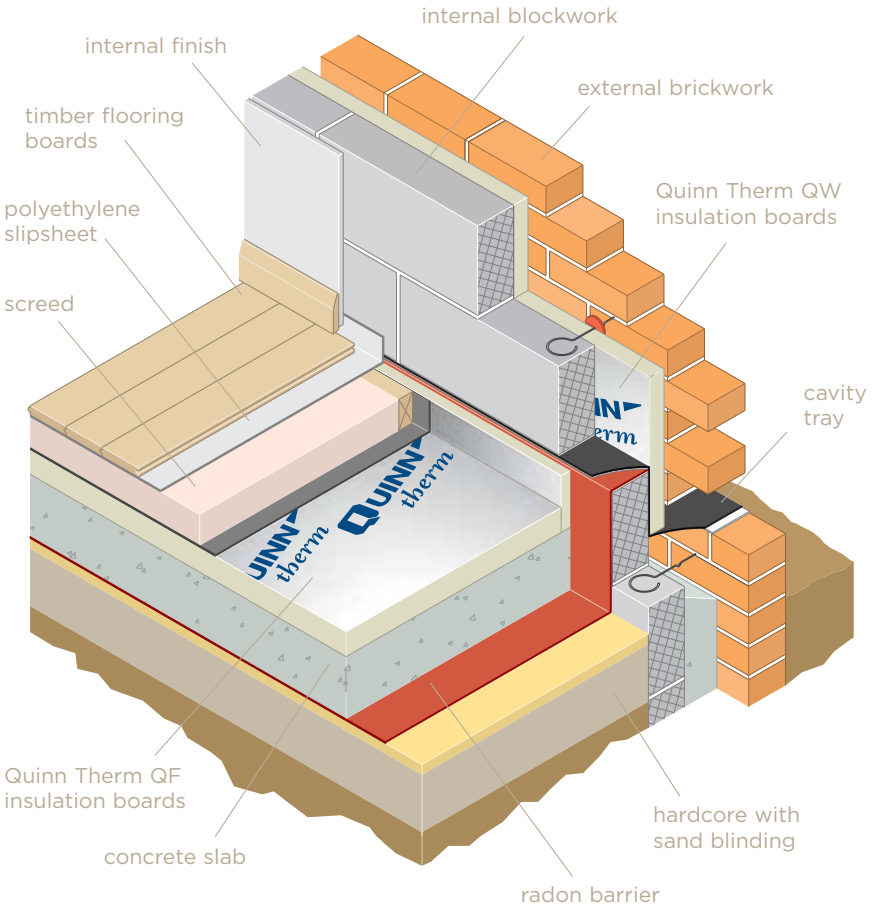
Quinn Therm

Insulating floors above groundbearing concrete slab



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QF (mm)

U-value (W/m²K)	P (exposed perimeter, m) / A (floor area, m²)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.37	25	25	25	25	25	30	30	30	35	35
0.25	25	25	35	45	50	55	60	60	60	65
0.22	25	30	50	60	65	70	75	75	75	75
0.20	25	40	60	65	75	75	80	85	85	85

* The above table is a guideline - contact Quinn Technical Services department for more information.

Results based upon floor construction of:
150mm concrete, Quinn Therm QF, 60mm cement:sand screed (floor finish omitted).
Calculations performed to BS EN ISO 13770.

DESIGN NOTES

- the DPM can act as a Radon barrier if an appropriate material is specified and the membrane extended across the wall cavity to the outer leaf.
- cavity wall insulation should end at least 150mm below the top of the floor insulation to reduce thermal bridging at the wall/floor junction.
- a timber batten at the edge of the screed allows easy fixing of floorboards.
- lay a polyethylene separating layer over Quinn Therm boards to prevent moisture from the screed penetrating board junctions and causing movement.
- whilst a screeded floor is illustrated, timber flooring may be laid directly onto Quinn Therm QF.

INTRODUCTION

Quinn Therm QF (Quinn Floor) is a PIR (polyisocyanurate) insulation board suitable for insulating groundbearing floors above the concrete slab.

Quinn Therm consists of a core of PIR foam bonded on both faces to composite metalised facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

Applying insulation to a groundbearing floor between the slab and the screed or finish minimises thermal bridging at the wall junction in timber framed construction and creates a floor with a rapid thermal response, which matches that of the rest of the building.

Quinn Therm QF is ideal for insulating floors above the slab: it is strong enough to withstand the dead and imposed loads of domestic and light commercial applications and it has a very low rate of moisture absorption. The low thermal conductivity of Quinn Therm minimises the thickness required for the floor to meet the heat loss standards of building regulations.

Hot water and electric underfloor heating systems should be installed over a layer of rigid thermal insulation in order to minimise heat loss through the floor and improve the response time. Quinn Therm is ideal for use with underfloor heating. Pipes, cables or mats may be laid directly onto the insulation, or over a separating layer, and clipped in place, before being covered by a screed. Consult the heating system manufacturer for further details.

INSTALLATION GUIDANCE

1. Ensure the surface of the floor slab is level (no more than 35mm deflection over 3m).
2. Lay the damp-proof membrane (DPM) with joints lapped 300mm and sealed: seal to the damp-proof course (DPC).
3. Fit Quinn Therm against floor perimeter to form edge insulation. The insulation should be deep enough to reach the top of the screed.
4. Lay Quinn Therm QF boards in broken bond; butt tightly together and to the edge insulation. Pour screed.

NOTES

- Cut Quinn Therm QF to fit neatly round penetrations.
- Ensure Quinn Therm QW wall insulation extends below the level of floor insulation to prevent thermal bridging.
- When flooring is installed directly onto Quinn Therm QF build partition walls directly off the structural floor or timber battens: do not build walls off Quinn Therm QF.
- Install battens at thresholds, foot of stairs and beneath kitchen and sanitary fittings to prevent deformation by high point loadings.

Every effort has been taken in the preparation of this sheet to ensure the accuracy of representations contained herein. Recommendations as to the use of materials, construction details and methods of installation are given in good faith and relate to typical situations. However, every site has different characteristics and reliance should not be placed upon the foregoing recommendations. Advice can be given as to specific applications of the products, upon request to Quinn Therm.

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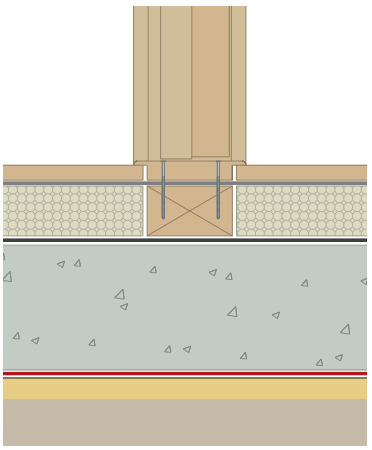
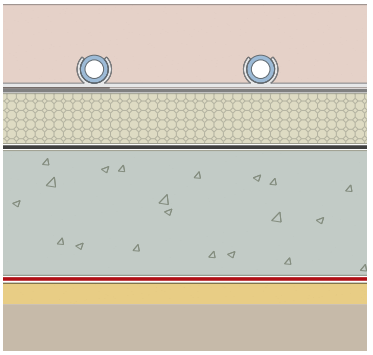
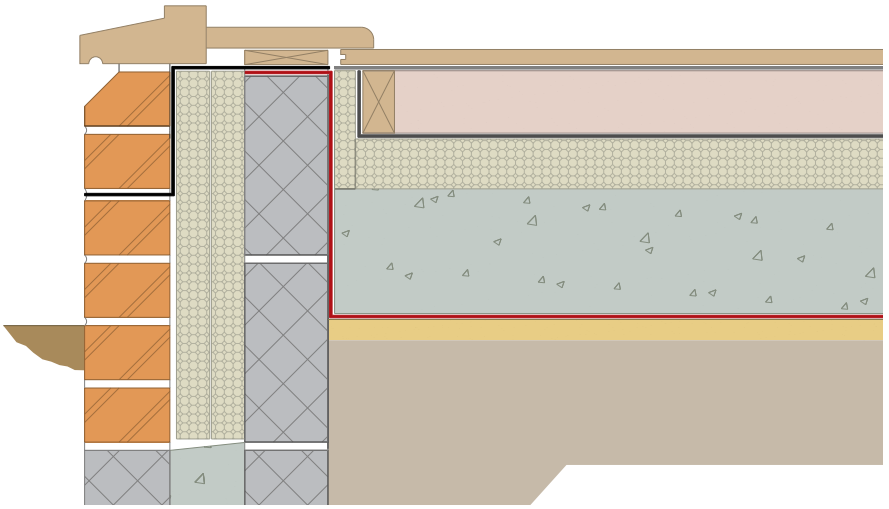


Internal door threshold



Floor heating elements



External door threshold

PRODUCT DATA	Properties	Value	Quinn Therm QF
	Board width x length	mm	2400 x 1200**
	Board thickness	mm	20 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	2.88
	Edge profiles available		Butt edged

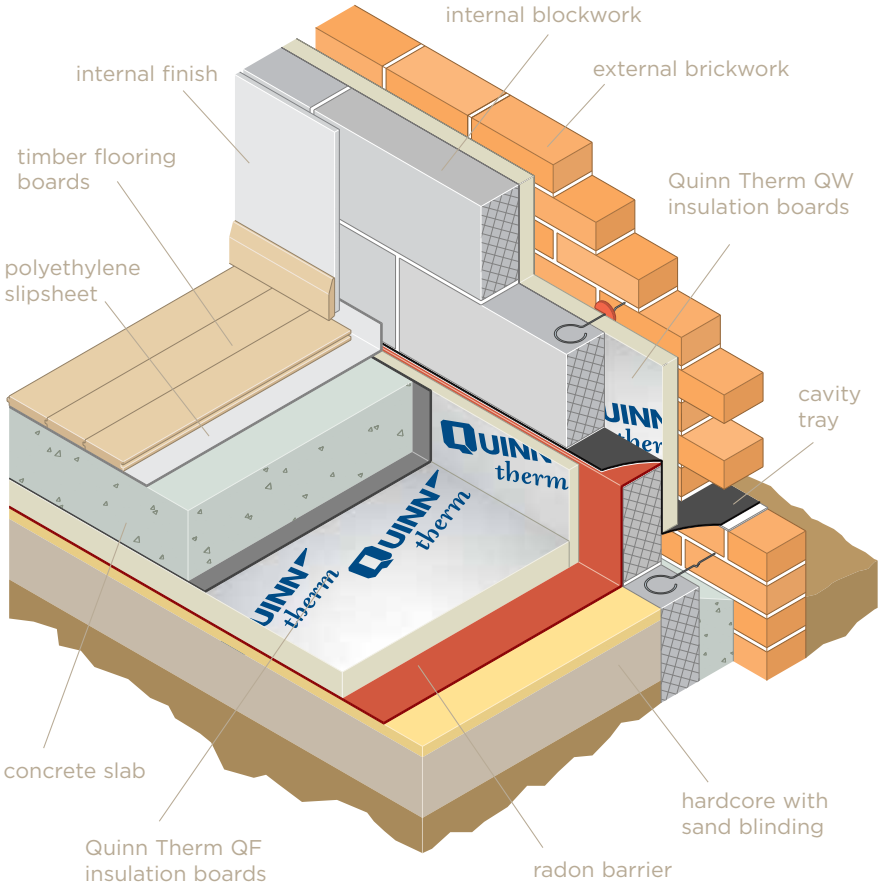
PERFORMANCE DATA	Properties	Value	QuinnTherm QF
	Thermal conductivity*	W/mK	0.023
	Water vapour resistivity	MNs/gm	~ 400
	Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Quinn Therm

Insulating floors beneath groundbearing concrete slab



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QF (mm)

U-value (W/m²K)	P (exposed perimeter, m) / A (floor area, m²)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.37	25	25	25	25	25	30	30	30	35	35
0.25	25	25	40	45	50	55	60	60	65	65
0.22	25	30	50	60	65	70	70	75	75	75
0.20	25	40	60	65	75	80	80	85	85	90

* The above table is a guideline - contact Quinn Technical Services department for more information.

Results based upon floor construction of:

Quinn Therm QF, 150mm concrete, 19mm timber boarding (floor finish omitted).

150mm depth of Quinn Therm QF vertical edge insulation.

Calculations performed to BS EN ISO 13770.

DESIGN NOTES

- the DPM can act as a Radon barrier if an appropriate material is specified and the membrane extended across the wall cavity to the outer leaf.
- set Quinn Therm QF boards on edge around the floor perimeter and extend cavity wall insulation at least 150mm below the top of the slab to reduce thermal bridging at the wall/floor junction.
- a VCL/slipsheet may be laid above the insulation to protect it from the concrete and to prevent condensation forming at interface of the slab and insulation.

INTRODUCTION

Quinn Therm QF (Quinn Floor) is a PIR (polyisocyanurate) insulation board intended for use beneath groundbearing concrete slabs.

Quinn Therm consists of a core of PIR foam bonded on both faces to composite metalised facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

Insulating beneath the floor slab brings the mass of the concrete within the insulation envelope, giving the building a steady thermal response. The design minimises thermal bridging and offers a straightforward construction sequence.

Quinn Therm is ideal for insulating floors beneath the slab: its high compressive strength enables it to withstand the dead and imposed loads transferred through the slab for domestic and light commercial applications, and it has a very low rate of moisture absorption. The low thermal conductivity of Quinn Therm minimises the thickness required for the floor to meet the heat loss standards of building regulations.

INSTALLATION GUIDANCE

1. Level the surface of the hardcore with a blinding of clean sand. Ensure finished deflection is less than 35mm over 3m.
2. Lay the damp-proof membrane (DPM). Lap joints by 300mm and seal. Lap and seal with the damp-proof course (DPM): with joints lapped 300mm and sealed. Take up to the dpc and sealed.
3. Fit Quinn Therm against perimeter walls to form edge insulation. The insulation should be deep enough to reach the top of the slab.
4. Lay Quinn Therm QF boards in broken bond. Butt boards tightly together and to edge insulation. Overlay with polyethylene slip sheet/vapour control layer.
5. Lap edges and turn up at perimeters. Lay the floor slab and screed.

NOTES

- At service penetrations cut Quinn Therm neatly to fit.
- Protect exposed edge insulation at surface of slab until it is covered by skirting and/or wall plaster.
- Use barrow boards when laying the slab to prevent damaging to the insulation. Ensure Quinn Therm boards extend below the level of floor insulation.

HANDLING AND STORAGE

Quinn Therm QF boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat. When handling Quinn Therm QF do not knock corners and edges. Cut Quinn Therm with a fine tooth saw or trimming knife.

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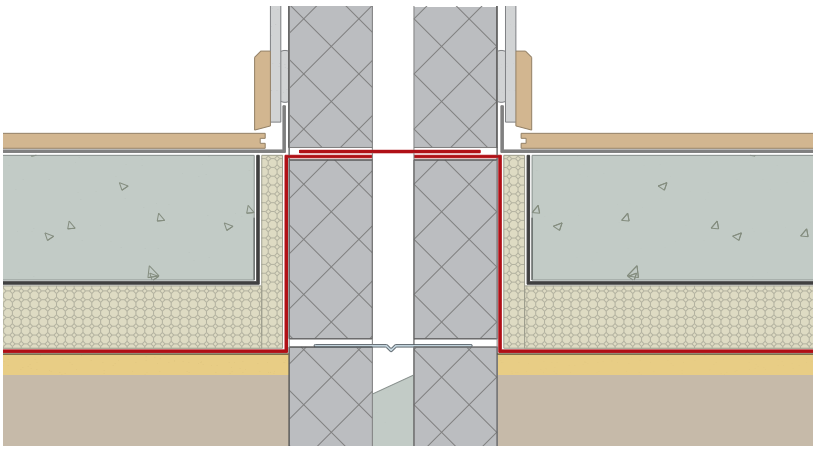
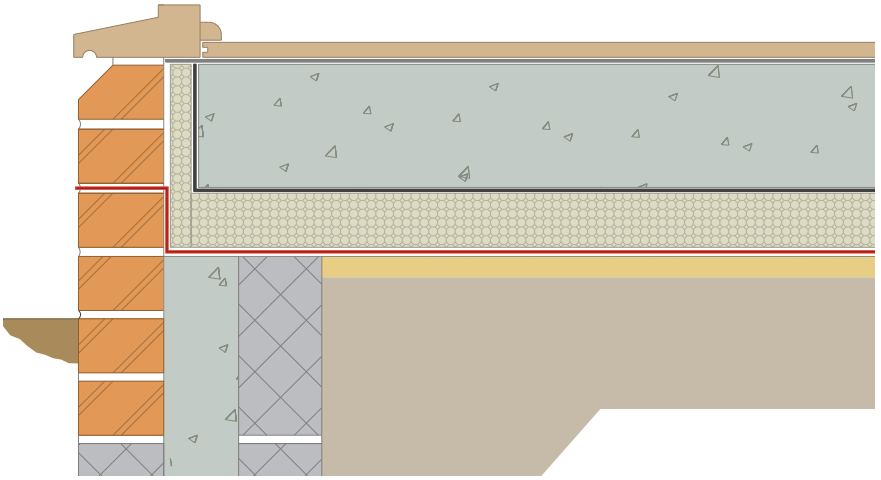


Internal party wall



External door threshold

	Properties	Value	Quinn Therm QF
PRODUCT DATA	Board width x length	mm	2400 x 1200**
	Board thickness	mm	20 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	2.88
	Edge profiles available		Butt edged

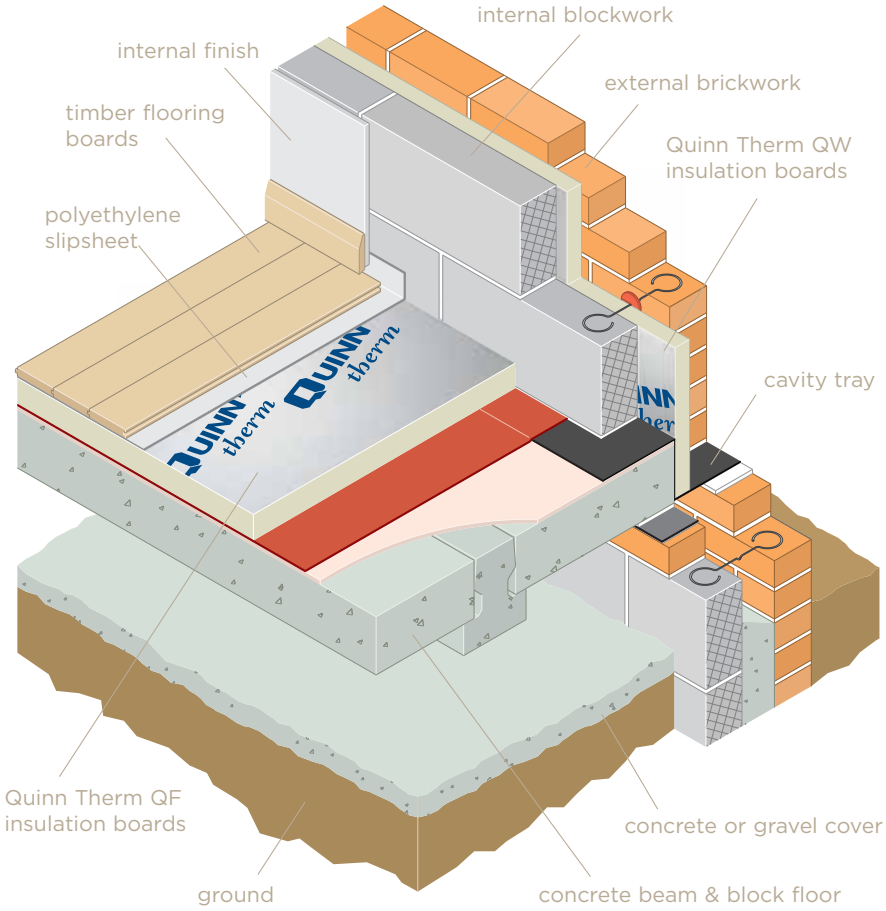
	Properties	Value	QuinnTherm QF
PERFORMANCE DATA	Thermal conductivity*	W/mK	0.023
	Water vapour resistivity	MNs/gm	~ 400
	Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Quinn Therm

Insulating suspended concrete and beam and block floors



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QF (mm)

U-value (W/m²K)	P (exposed perimeter, m) / A (floor area, m²)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.37	25	25	25	30	30	35	35	40	40	40
0.25	25	40	50	60	60	65	65	70	70	70
0.22	25	50	65	70	75	75	80	80	80	80
0.20	30	60	75	80	85	85	90	90	90	90

* The above table is a guideline - contact Quinn Technical Services department for more information.

Results based upon floor construction of:
suspended concrete beams infilled with concrete blocks, Quinn Therm QF,
60mm cement:sand screed (floor finish omitted).

Calculations performed to BS EN ISO 13770.

DESIGN NOTES

- where a Radon barrier is required it should be laid over the grouting layer and extended across the wall cavity to the outer leaf.
- extend cavity wall insulation at least 150mm below the top of the floor insulation slab to reduce thermal bridging at the wall/floor junction.
- subfloor ventilation is required to prevent problems with damp.
- lay a polyethylene separating layer over Quinn Therm boards to prevent moisture from the screed penetrating board junctions and causing movement.

INTRODUCTION

Quinn Therm QF (Quinn Floor) is a PIR (polyisocyanurate) insulation board intended for use in suspended floors of beam and block or pre-cast concrete units.

Quinn Therm consists of a core of PIR foam bonded on both faces to composite metalised facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

Suspended floors are quick to construct and are suitable for use where site conditions preclude the use of groundbearing floors, and are formed of concrete units, above a vented void. To achieve required energy efficiency standards they should be insulated above the structural floor and below the finish or screed. The insulation must be strong enough to withstand the dead and imposed loads without deflection.

Quinn Therm QF is ideal for insulating suspended floors: it is strong, moisture resistant and has a very low thermal conductivity, which minimises the thickness required to meet regulations and cuts down the increase in floor thickness which has to be accommodated.

INSTALLATION GUIDANCE

1. Level the surface of the beam and block floor with grout and/or a levelling topping.
2. Lay Quinn Therm QF boards in broken bond; butt tightly together.
3. Overlay with polyethylene slip sheet. Lap edges and turn up at perimeters.
4. Install sheet flooring. Leave a 10mm expansion gap to the wall at perimeters.

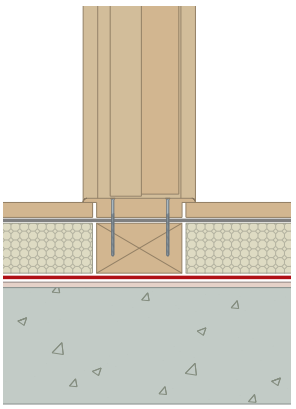
NOTES

- Build partition walls directly off the structural floor or timber battens: do not build walls off Quinn Therm QF.
- Install timber battens at thresholds, foot of stairs and beneath kitchen and sanitary fittings to prevent deformation of the floor by high point loadings.
- Cut Quinn Therm QF to fit neatly round penetrations.
- Ensure Quinn Therm QW cavity wall boards extend below the level of the floor insulation to prevent thermal bridging.

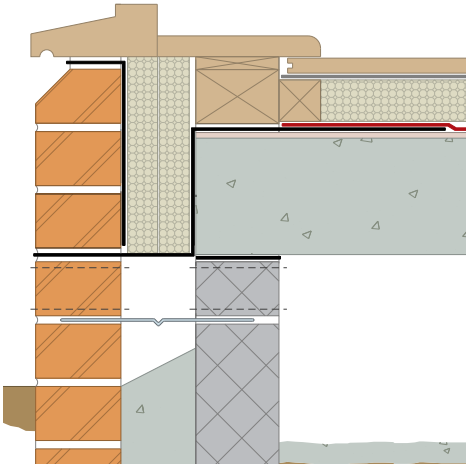
HANDLING AND STORAGE

Quinn Therm QF boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat.

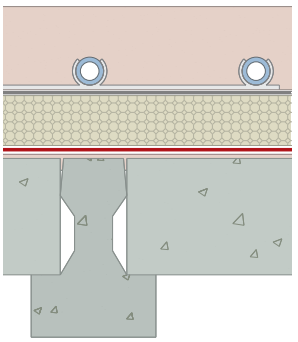
When handling Quinn Therm QF do not knock corners and edges. Cut Quinn Therm QF with a fine tooth saw or trimming knife.



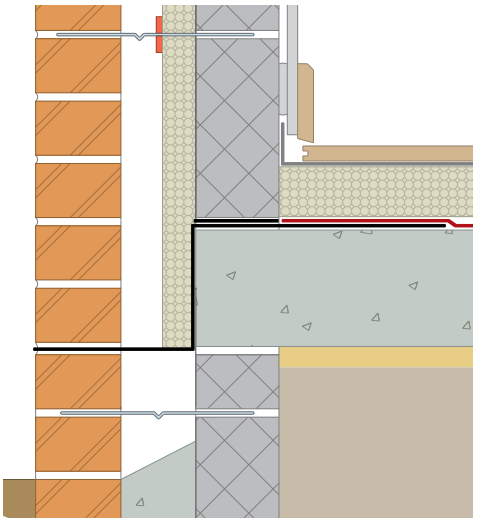
Internal door threshold



External door threshold



Floor heating elements



In situ suspended concrete slab

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PRODUCT DATA	Properties	Value	Quinn Therm QF
	Board width x length	mm	2400 x 1200**
	Board thickness	mm	20 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	2.88
	Edge profiles available		Butt edged

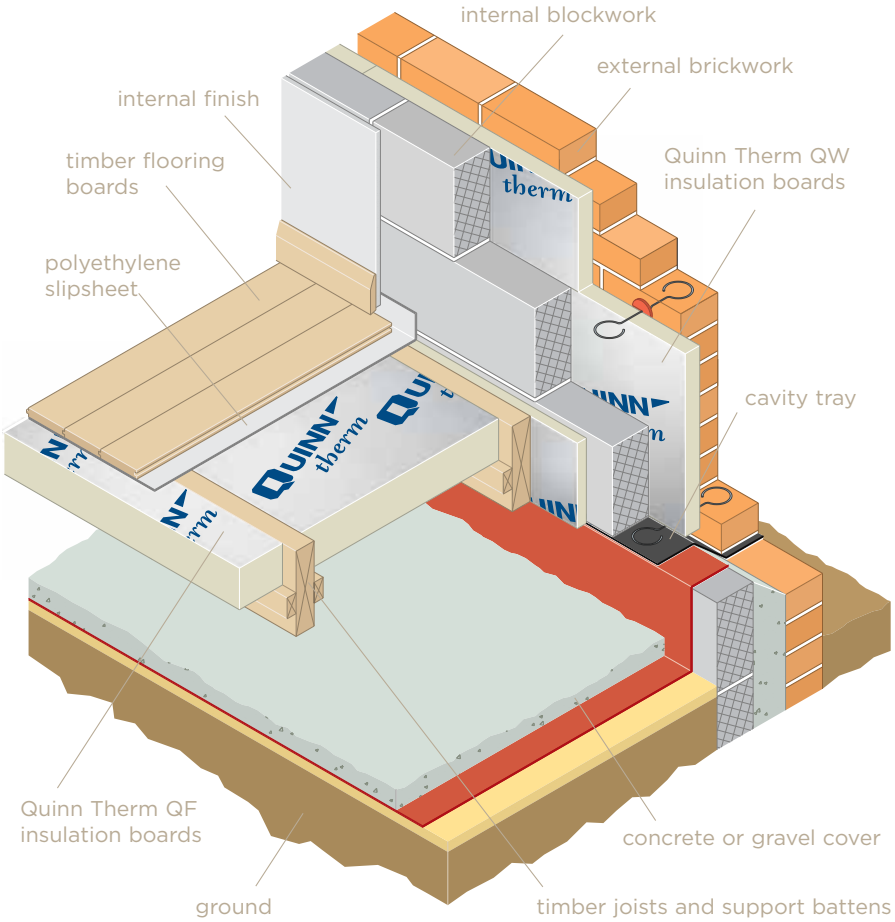
PERFORMANCE DATA	Properties	Value	QuinnTherm QF
	Thermal conductivity*	W/mK	0.023
	Water vapour resistivity	MNs/gm	~ 400
	Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Quinn Therm

Insulating suspended timber floors



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QF (mm)

U-value (W/m²K)	P (exposed perimeter, m) / A (floor area, m²)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.37	25	25	30	35	40	45	45	50	50	50
0.25	25	50	70	80	85	85	90	90	95	95
0.22	25	70	85	95	100	105	110	110	115	120
0.20	35	85	100	110	120	125	130	130	135	135

* The above table is a guideline - contact Quinn Technical Services department for more information.

Results based upon floor construction of:
timber joists (150mm x 70mm @ 600mm centres) overlaid with 19mm boarding,
Quinn Therm QF installed between joists (floor finish omitted).

Calculations performed to BS EN ISO 13770.

DESIGN NOTES

- where a Radon barrier is required it should be installed within the concrete or gravel cover of the floor and continued through the entire thickness of the wall.
- wall insulation must extend 150mm below the upper edge of floor insulation to prevent thermal bridging.
- ventilation is required to prevent problems with damp.

INTRODUCTION

Quinn Therm QF (Quinn Floor) is a PIR (polyisocyanurate) insulation board intended for use in suspended timber floors.

Quinn Therm consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

The simplest way of ensuring suspended timber ground floors achieve the thermal performance required by building regulations is to fit rigid insulation boards between the joists. On exposed floors, such as those above garages, the insulation may be applied in a continuous layer to the underside of the rafters to minimise thermal bridging.

Quinn Therm QF offers an ideal solution for insulating new floors and upgrading existing floors; its low thermal conductivity minimises the necessary board thickness, while its good workability makes it straightforward to install.

INSTALLATION GUIDANCE

1. Fit supports to the joists.
   Use either:
   (i) purpose-made saddle clips at 400mm centres,
   (ii) stainless steel nails partially driven into the joists at 400mm centres, or
   (iii) preservative treated timber battens nailed to the joists.

   Position the supports so the depth of joist above the batten matches the thickness of Quinn Therm boards*.
2. Cut Quinn Therm QF boards to fit tightly between the joists.
3. Fit Quinn Therm QF boards between the joists and press down until they sit on the supports.
4. Pack strips of Quinn Therm QF between the joists and perimeter walls to avoid thermal bridging.
5. Lay floorboards or sheet flooring.

NOTES

- Ensure Quinn Therm QF boards are tight to the underside of the flooring to avoid air movement*.
- Cut Quinn Therm QF to fit neatly around service penetrations and seal.
- Ensure subfloor ventilation paths are maintained.

HANDLING AND STORAGE

Quinn Therm QF boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat.

When handling Quinn Therm QF do not knock corners and edges. Cut Quinn Therm QF with a fine tooth saw or trimming knife.

* Where central heating pipes run between joists install Quinn Therm QF below the pipes, leaving an air gap between the insulation and the underside of the flooring.

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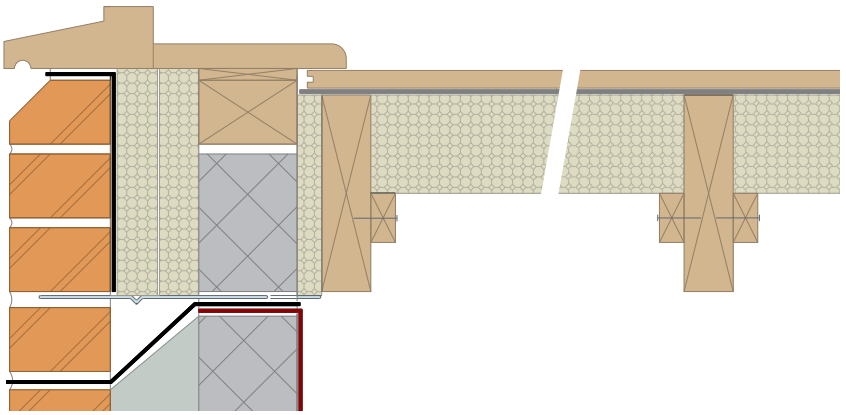
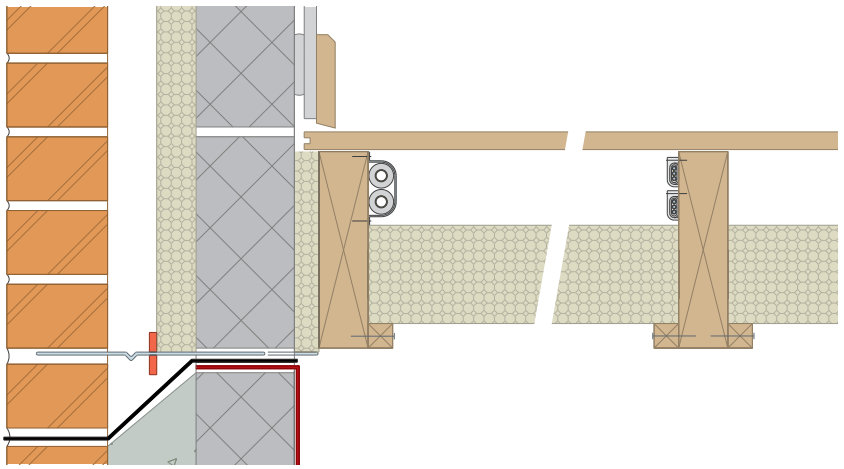
Website: www.quinn-group.com



Insulating at door thresholds



Alternative position of Quinn Therm QF to accommodate pipework and services

PRODUCT DATA	Properties	Value	Quinn Therm QF
	Board width x length	mm	2400 x 1200**
	Board thickness	mm	20 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	2.88
	Edge profiles available		Butt edged

PERFORMANCE DATA	Properties	Value	QuinnTherm QF
	Thermal conductivity*	W/mK	0.023
	Water vapour resistivity	MNs/gm	≥ 400
	Compressive strength	kPa	> 120

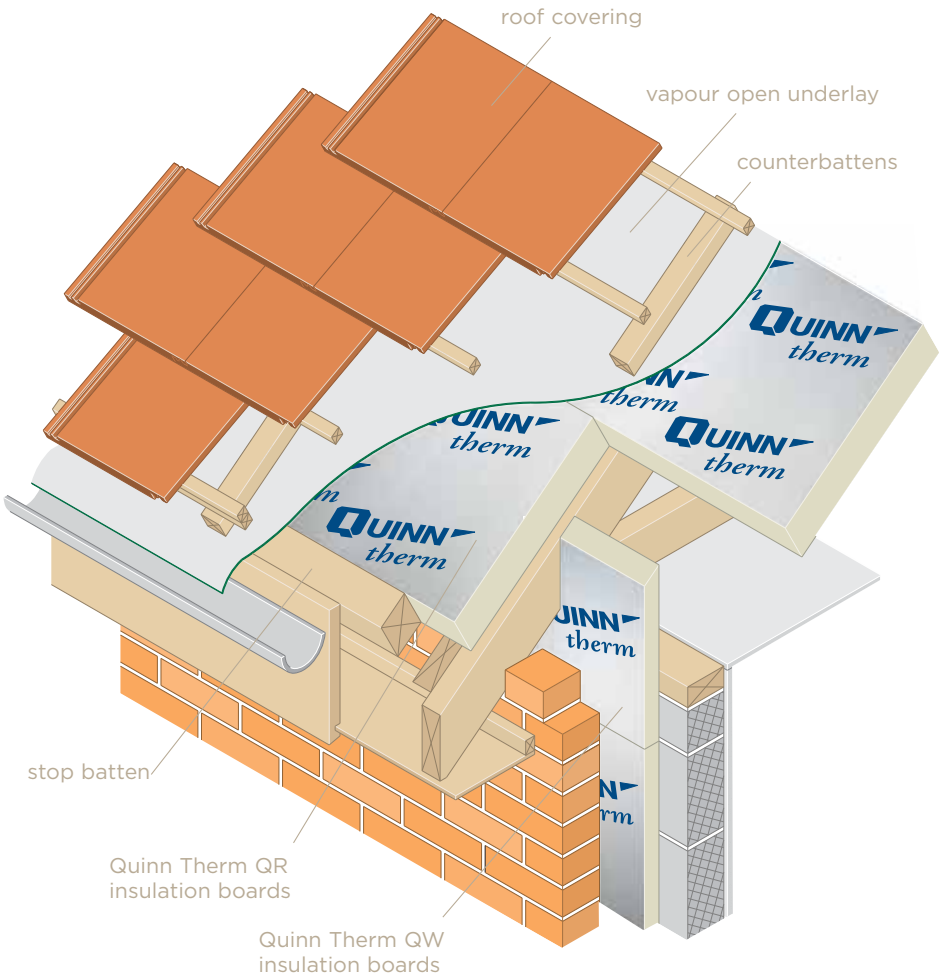
* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Every effort has been taken in the preparation of this sheet to ensure the accuracy of representations contained herein. Recommendations as to the use of materials, construction details and methods of installation are given in good faith and relate to typical situations. However, every site has different characteristics and reliance should not be placed upon the foregoing recommendations. Advice can be given as to specific applications of the products, upon request to Quinn Therm.

Quinn Therm

Insulating pitched roofs above the rafters



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QR (mm)

Required U-value (W/m²K)	0.25	0.20	0.18	0.16
Thickness of Quinn Therm (mm)	75	100	115	130

Results based upon roof construction of: 12.5mm plasterboard, polyethylene VCL, 150mm deep rafters at 600mm centres, Quinn Therm QR insulation (thickness as shown), vapour open underlay, 50mm cavity formed by counterbattens and battens, large format concrete tiles.

Calculations performed to BS EN ISO 6946:1997, taking account of repeating thermal bridges.

* Overall heat loss method.

For U-value calculations for other roof constructions contact Quinn Technical Services.

DESIGN NOTES

- a vapour control layer is required behind the surface finish to prevent condensation forming within the structure. Contact Quinn Technical Services for advice on condensation control.
- a vapour open underlay (vapour resistance < 0.25MNs/g) should be installed as a secondary protection against wind-driven rain and snow.
- counterbattens allow rain and snow to drain from the underlay to the gutter and form a vented airspace to minimise condensation risk.

INTRODUCTION

Quinn Therm QR (Quinn Roof) is a PIR (polyisocyanurate) insulation for creating warm pitched roofs by insulating above the rafter.

Insulating a pitched roof at rafter line - to create what is usually known as a warm roof - makes full use of the building volume by making the roof space available for occupation. Having the insulation at rafter line can also reduce stress on the structure and, even if the loft space is not utilised, there is still the benefit in having water tanks and other services within the insulated area.

Forming a warm roof by laying in a continuous layer above the rafters avoids thermal bridging, and so minimises the depth of insulation required to meet building regulations. This form of construction is suitable for new build, as well as projects where the roof will be stripped and re-covered.

Quinn Therm QR rigid insulation is well suited to use in warm roof constructions: it is robust enough to span the rafters and withstand transferred loads from the roof covering and will resist moisture. Also, its high thermal resistance enables the required U-value to be achieved with a minimum thickness of insulation, which reduces the loads applied to fixings.

DESIGN

Thermal bridging

To limit heat loss and prevent problems such as condensation, mould growth and staining occurring at cold spots in the construction, it is desirable to design junctions between elements so as to maintain continuity of insulation. For roofs the key junctions are those at eaves and gable, where wall insulation should be continuous with roof insulation.

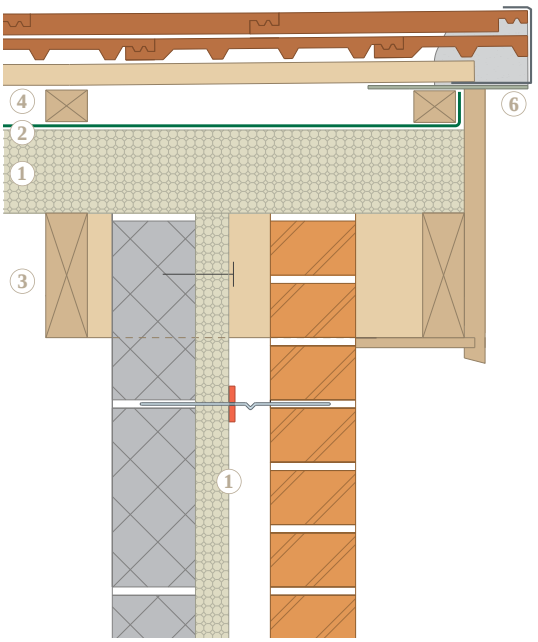
At eaves, wall insulation should be continued between the rafters until it butts the underside of the Quinn Therm QR boards. Where there is a cavity closer at the wall head the additional wall insulation may be fixed to the wall plate. Gable walls should be insulated for their full height and the insulation extended to meet the underside of the Quinn Therm QR boards.

The details shown here are designed to minimise thermal bridging and air leakage.

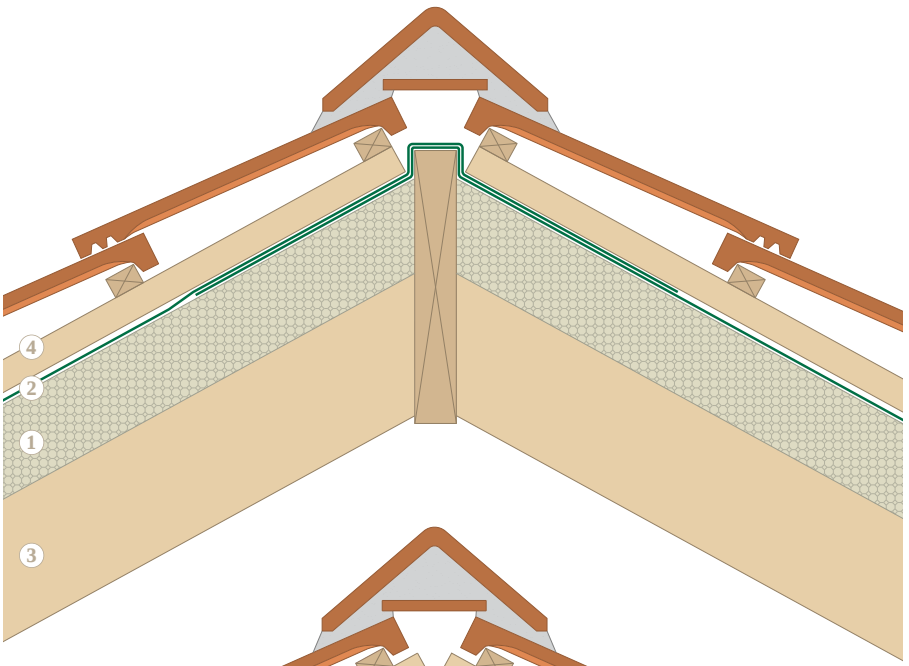
CONDENSATION CONTROL

To minimise the risk of interstitial condensation the roof structure should be progressively more vapour open from inside to outside; that may be achieved by using a high resistance insulation such as Quinn Therm QR and a vapour open underlay beneath the roof covering. The use of a vapour control layer between the insulation and the internal finish is recommended.

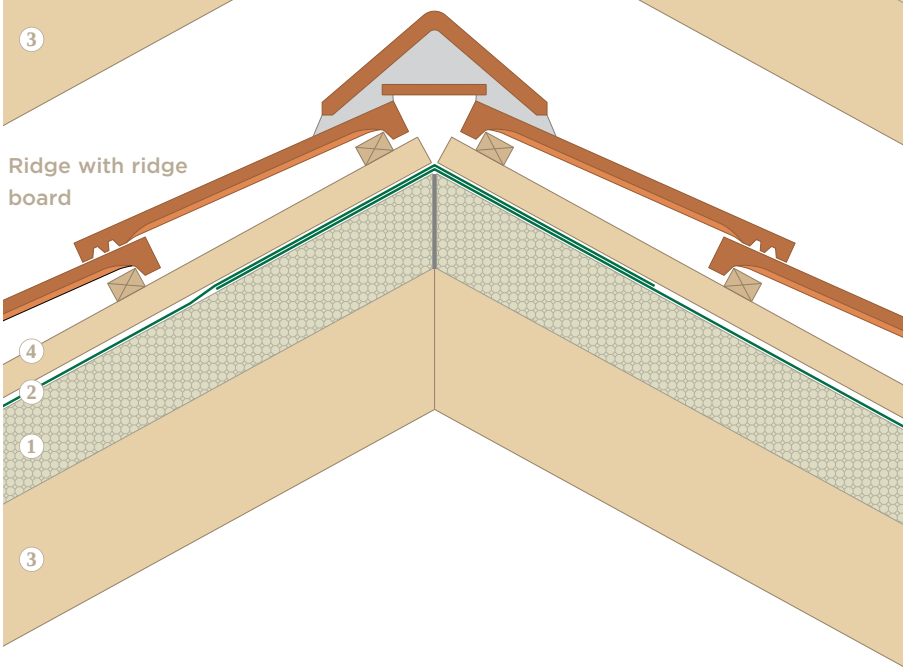
1. Quinn Therm insulation boards
2. Vapour open membrane
3. Rafters
4. Counterbattens
5. Lead lining on section of vapour open underlay or building paper
6. Undercloak
7. Valley boards set into ends of counterbattens and supported on a batten
8. Battens fixed to valley rafter to support insulation
9. Valley tile on counterbattens



Verge



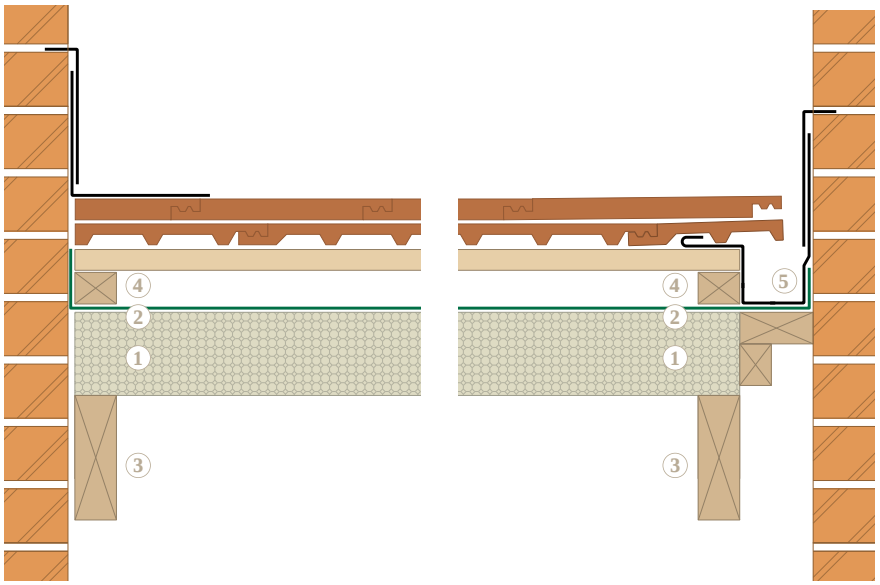
Ridge with ridge board



Ridge with trussed rafter

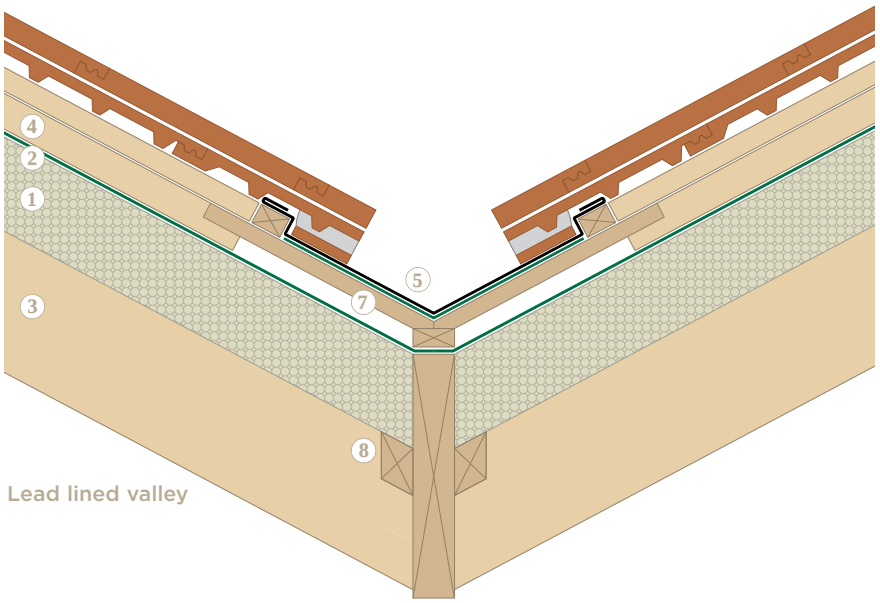
Quinn Therm

Insulating pitched roofs above the rafters

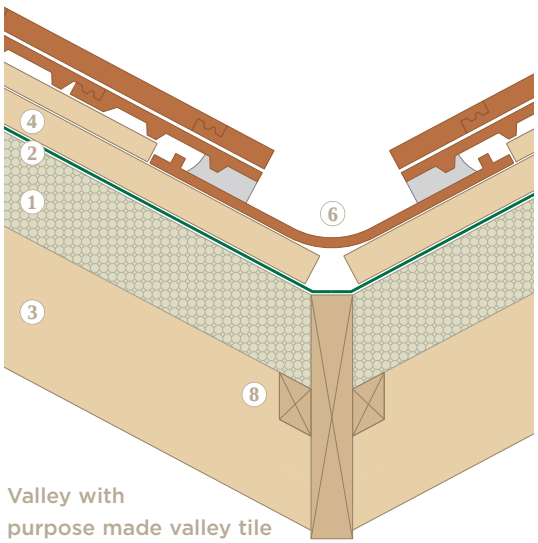


Abutment

Abutment with secret gutter



Lead lined valley



Valley with purpose made valley tile

1. Quinn Therm insulation boards
2. Vapour open membrane
3. Rafters
4. Counterbattens
5. Lead lining on section of vapour open underlay or building paper
6. Valley tile on counterbattens
7. Valley boards set into ends of counterbattens and supported on a batten
8. Battens fixed to valley rafter to support insulation

To prevent the build up of high moisture levels within the batten space - with the risk of condensation - the space must be adequately vented.

Coverings of tile or natural slate will usually allow enough air movement between the batten space and atmosphere, for other coverings specific provision for ventilation may be required (see BS 5250:2002 for details).

Condensation risk analysis should be conducted on all roofs using the method in ISO 13788:2001: consult Quinn Technical Services for assistance.

FIXINGS

Quinn Therm QR boards are held in place by the counterbattens which are fixed through to the rafters. The fixings for the counter battens must be strong enough to transfer dead and applied loads from the roof covering to the rafters without significant deflection.

A calculation method to determine the bending stress is given in BS 5534:2003 Annex B. A list of manufacturers of suitable fixings is available from Quinn Technical Services. Depending upon their dimensions and spacing, the fixings may affect the thermal performance of the roof.

A stop batten should be installed across the end of the rafters to prevent boards slipping down the roof. The boards should be nailed to the rafters during the installation process to give a temporary fixing until the counter battens are installed.

INSTALLATION GUIDANCE

1. Fix a stop batten across the rafters at the line where the insulation will stop.
2. Lay the first row of Quinn Therm QR boards across the rafters tight against the stop batten, with long sides running parallel to the eaves. Ensure board ends are supported on rafters.
3. Provide a temporary fix by nailing to the rafters.
4. Lay and fix subsequent rows of Quinn Therm QR boards.
   Stagger end joints from row to row.
5. Lay the underlay, following manufacturers instructions.
6. Fix counterbattens through to the rafters.
7. Fix the roof covering.

* for projects where the underlay is draped over the counterbattens reverse the order of items 5 and 6.

NOTES

- Butt boards tightly together to form a continuous layer of insulation.
- Cut boards neatly around penetrations. Seal gaps with expanding foam.
- At wall/roof junctions fit boards tight to the wall and seal any gaps with expanding foam.
- At junctions between roof planes cut boards to fit tightly together and seal with expanding foam.

Every effort has been taken in the preparation of this sheet to ensure the accuracy of representations contained herein. Recommendations as to the use of materials, construction details and methods of installation are given in good faith and relate to typical situations. However, every site has different characteristics and reliance should not be placed upon the foregoing recommendations. Advice can be given as to specific applications of the products, upon request to Quinn Therm.

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E-mail: info@quinn-therm.com
Website: www.quinn-group.com

PRODUCT DATA

Properties	Value	Quinn Therm QR
Board width x length	mm	2400 x 1200**
Board thickness	mm	60 - 200
Board density	kg/m^3	26 - 32
Area per board	m^2	2.88
Edge profiles available		Butt edged

PERFORMANCE DATA

Properties	Value	QuinnTherm QR
Thermal conductivity*	W/mK	0.022 - 0.023
Water vapour resistivity	MNs/gm	~ 400
Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 ¥Thermal insulation for Buildings - factory made polyurethane foam products¥.

** other sizes may be available upon request.

KEY PROPERTIES

Quinn Therm QR consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

When Quinn Therm QR is installed next to an airspace of at least 25mm deep the low emissivity surface of the insulation contributes to the thermal performance of the roof by reducing radiation heat loss across the cavity.

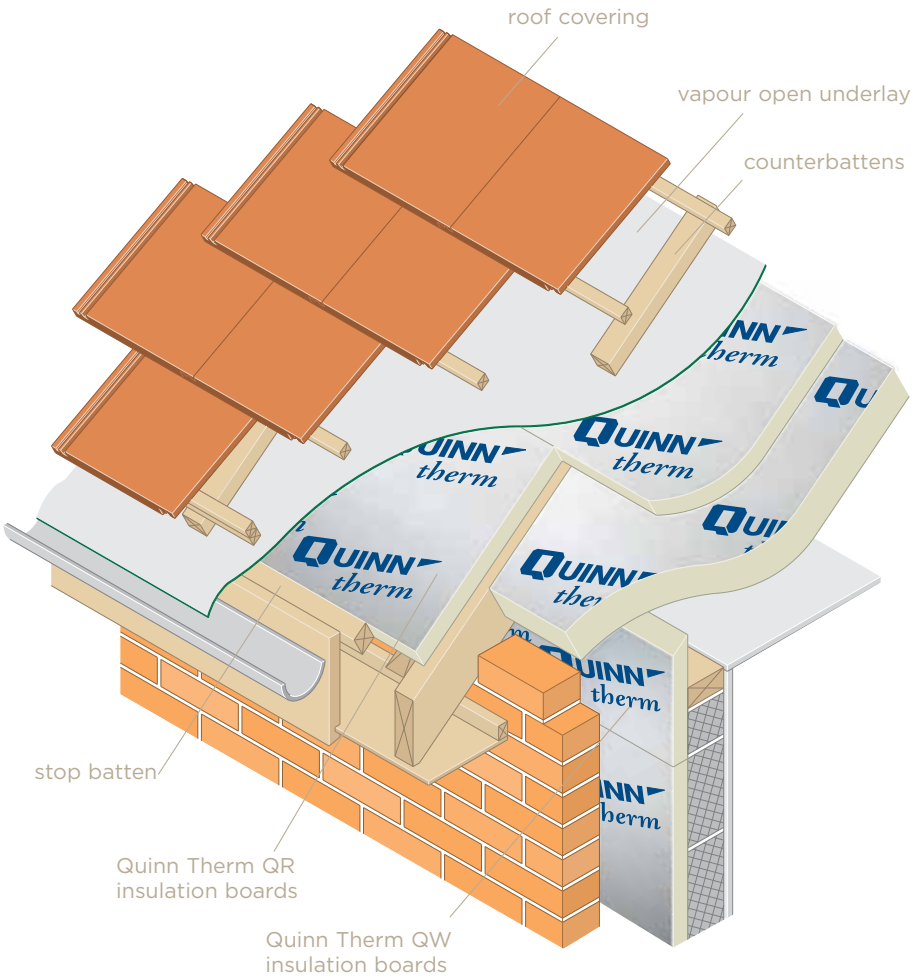
HANDLING AND STORAGE

Quinn Therm QR boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat. When handling Quinn Therm QR do not knock corners and edges.

Whilst Quinn Therm boards are robust, they are not designed to support people: do not stand on the boards nor use them as a working platform.

Quinn Therm

Insulating pitched roofs above and between the rafters



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QR (mm)

Required U-value (W/m²K)	0.25	0.20	0.18	0.16	0.14
Above Rafters	50	50	50	50	50
Between Rafters	35	65	80	105	130

Results based upon roof construction of: 12.5mm plasterboard, polyethylene VCL, 150mm deep rafters at 600mm centres, Quinn Therm QR insulation between rafters, 50mm Quinn Therm QR insulation above rafters, vapour open underlay, 50mm cavity formed by counterbattens and battens, large format concrete tiles.

Calculations performed to BS EN ISO 6946:1997, taking account of repeating thermal bridges.

* Overall heat loss method

For U-value calculations for other roof constructions contact Quinn Technical Services.

DESIGN NOTES

- a vapour control layer is required behind the surface finish to prevent condensation forming within the structure. Contract Quinn Technical Services for advice on condensation control.
- a vapour open underlay (vapour resistance < 0.25MNs/g) should be installed as a secondary protection against wind-driven rain and snow.
- counterbattens allow rain and snow to drain from the underlay to the gutter and form a vented airspace to minimise condensation risk.

INTRODUCTION

Quinn Therm QR (Quinn Roof) is a PIR (polyisocyanurate) insulation for creating warm pitched roofs by insulating above and between the rafters.

Insulating a pitched roof at rafter line - to create what is usually known as a warm roof - makes full use of the building volume by making the roof space available for occupation. Having the insulation at rafter line can also reduce stress on the structure and, even if the loft space is not utilised, there is still the benefit in having water tanks and other services within the insulated area.

A warm roof may be formed by laying insulation across the rafters and fitting additional insulation between the rafters. Using the space between the rafters reduces the depth of insulation required above the rafters which limits the loads on the fixings and makes installation easier. This form of construction is suitable for new build, as well as projects where the roof will be stripped and re-covered.

Quinn Therm QR rigid insulation is well suited to use in warm roof constructions: it is robust enough to span the rafters and withstand transferred loads from the roof covering and will resist moisture. Also, its high thermal resistance enables the required U-value to be achieved with a minimum thickness of insulation, which reduces the loads applied to fixings.

DESIGN

Thermal bridging

To limit heat loss and prevent problems such as condensation, mould growth and staining occurring at cold spots in the construction, junctions between elements should be designed to maintain continuity of insulation. For roofs the key junctions are those at eaves and gable, where wall insulation should meet roof insulation.

At eaves, wall insulation should be continued between the rafters until it butts the underside of the Quinn Therm QR boards. Where there is a cavity closer at the wall head the additional wall insulation may be fixed to the wall plate. Gable walls should be insulated for their full height and the insulation extended to meet the underside of the Quinn Therm QR boards.

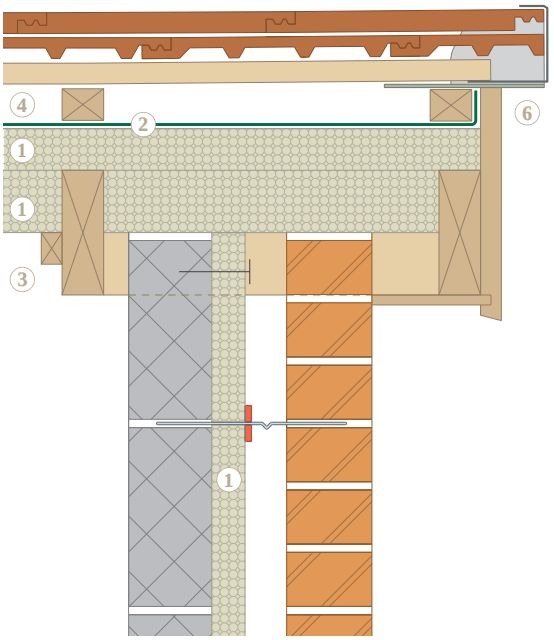
The details shown here are designed to minimise thermal bridging and air leakage.

CONDENSATION CONTROL

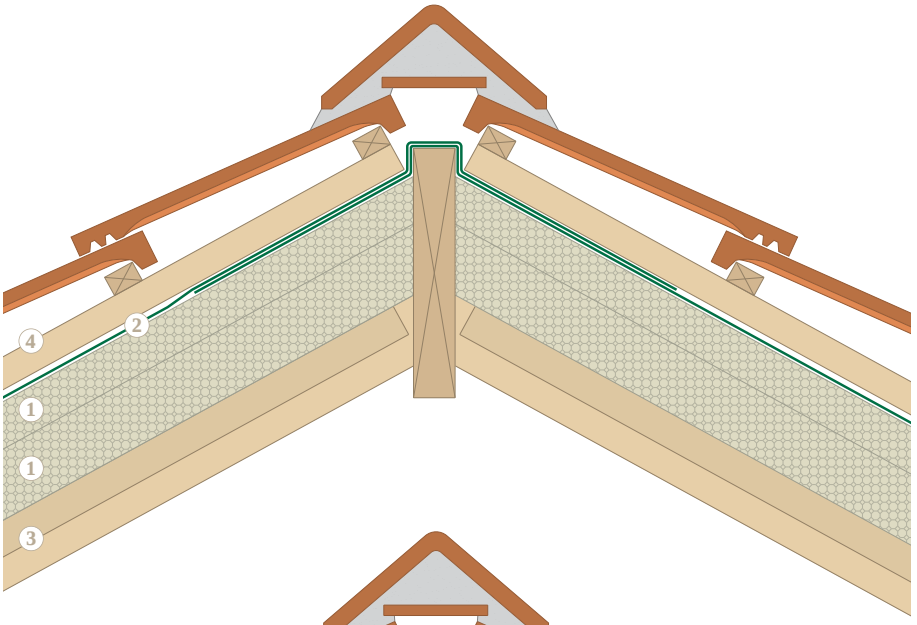
To minimise the risk of interstitial condensation the roof structure should be progressively more vapour open from inside to outside; that may be achieved by using a high resistance insulation such as Quinn Therm QR and a vapour open underlay beneath the roof covering. The use of a vapour control layer between the insulation and the internal finish is recommended.

To prevent the build up of high moisture levels within the batten space - with the risk of condensation - the space must be adequately vented.

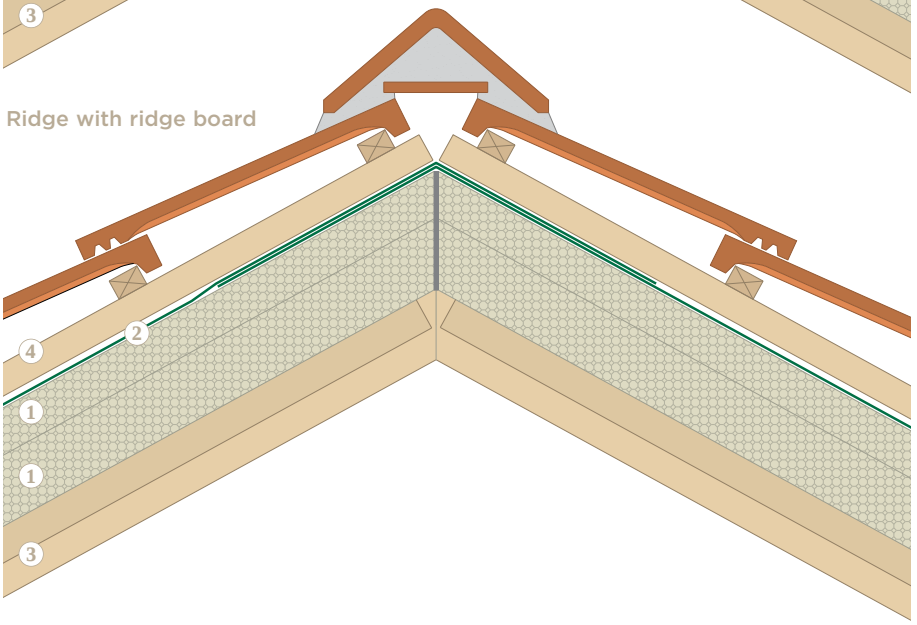
1. Quinn Therm insulation boards
2. Vapour open membrane
3. Support batten fixed to rafters
4. Counterbattens
5. Lead lining on section of vapour open underlay or building paper
6. Undercloak
7. Valley boards set into ends of counterbattens and supported on a batten
8. Battens fixed to valley rafter to support insulation
9. Valley tile on counterbattens



Verge



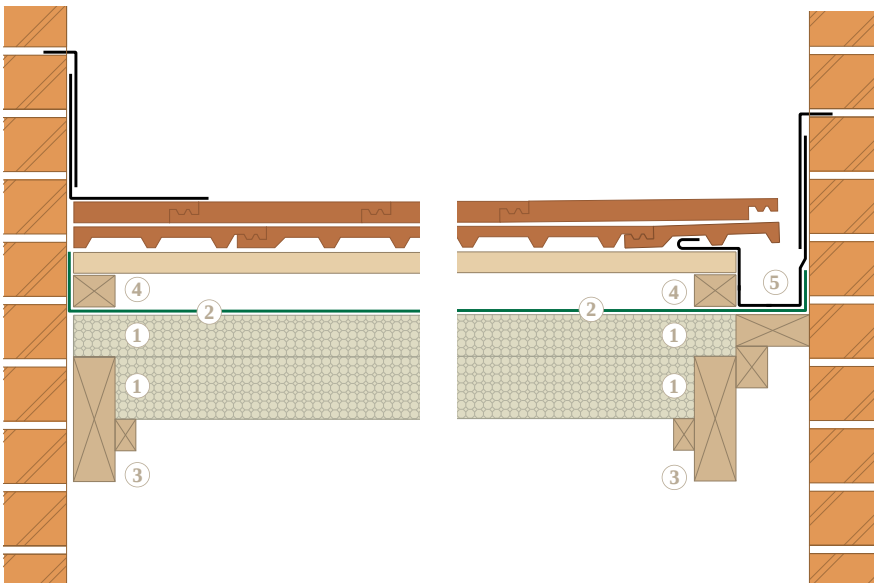
Ridge with ridge board



Ridge with trussed rafter

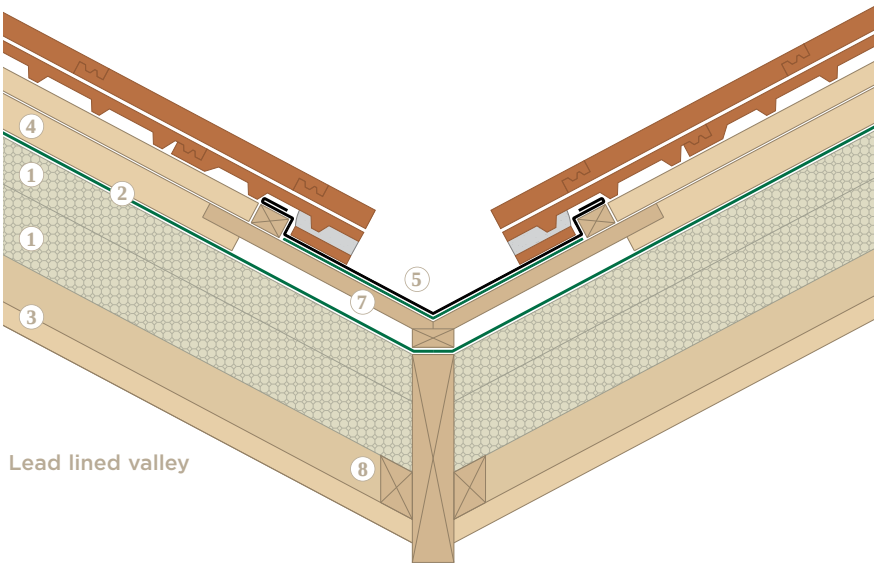
Quinn Therm

Insulating pitched roofs above and between the rafters

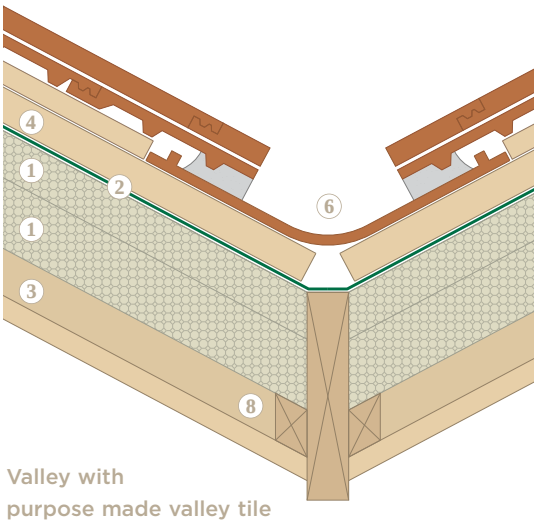


Abutment

Abutment with secret gutter



Lead lined valley



Valley with purpose made valley tile

1. Quinn Therm insulation boards
2. Vapour open membrane
3. Support batten fixed to rafters
4. Counterbattens
5. Lead lining on section of vapour open underlay or building paper
6. Valley tile on counterbattens
7. Valley boards set into ends of counterbattens and supported on a batten
8. Battens fixed to valley rafter to support insulation

Coverings of tile or natural slate will usually allow enough air movement between the batten space and atmosphere, for other coverings specific provision for ventilation may be required (see BS 5250:2002 for details).

Condensation risk analysis should be conducted on all roofs using the method in ISO 13788:2001: consult Quinn Technical Services for assistance.

FIXINGS

Quinn Therm QR boards laid across the rafters are held in place by the counterbattens which are fixed through to the rafters. The fixings for the counter battens must be strong enough to transfer dead and applied loads from the roof covering to the rafters without significant deflection.

A calculation method to determine the bending stress is given in BS 5534:2003 Annex B. A list of manufacturers of suitable fixings is available from Quinn Technical Services. Depending upon their dimensions and spacing, the fixings may affect the thermal performance of the roof.

A stop batten should be installed across the end of the rafters to prevent boards slipping down the roof. The boards should be nailed to the rafters during the installation process to give a temporary fixing until the counter battens are installed.

The Quinn Therm QR boards fitted between the rafters should be supported by battens nailed to the sides of the rafters.

INSTALLATION GUIDANCE

Quinn Therm QR boards over the rafters

1. Fix a stop batten across the rafters at the line where the insulation will stop.
2. Lay the first row of Quinn Therm QR boards across the rafters tight against the stop batten, with long sides running parallel to the eaves. Ensure board ends are supported on rafters.
3. Provide a temporary fix by nailing to the rafters.
4. Lay and fix subsequent rows of Quinn Therm QR boards. Stagger end joints from row to row.
5. Lay the underlay, following manufacturer's guidance.
6. Fix counterbattens through to the rafters. Fix the roof covering.

* for projects where the underlay is draped over the counterbattens reverse the order of items 5 and 6.

Quinn Therm QR boards between the rafters

1. Cut boards to fit snugly between the rafters.
2. Insert boards between the rafters. Push boards against the underside of the Quinn Therm QR board running over the rafters.
3. Nail timber battens to the rafters immediately beneath the boards.
4. Install the VCL and any internal finish. Seal gaps with expanding foam.

Every effort has been taken in the preparation of this sheet to ensure the accuracy of representations contained herein. Recommendations as to the use of materials, construction details and methods of installation are given in good faith and relate to typical situations. However, every site has different characteristics and reliance should not be placed upon the foregoing recommendations. Advice can be given as to specific applications of the products, upon request to Quinn Therm.

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PRODUCT DATA	Properties	Value	Quinn Therm QR
	Board width x length	mm	2400 x 1200**
	Board thickness	mm	60 - 200
	Board density	kg/m^3	26 - 32
	Area per board	m^2	2.88
	Edge profiles available		Butt edged

PERFORMANCE DATA	Properties	Value	QuinnTherm QR
	Thermal conductivity*	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	≃ 400
	Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

KEY PROPERTIES

Quinn Therm QR consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

When Quinn Therm QR is installed next to an airspace of at least 25mm deep the low emissivity surface of the insulation contributes to the thermal performance of the roof by reducing radiation heat loss across the cavity.

NOTES

- Butt boards tightly together to form a continuous layer of insulation.
- Cut boards neatly around penetrations. Seal gaps with expanding foam.
- At wall/roof junctions fit boards tight to the wall and seal any gaps with expanding foam.
- At junctions between roof planes cut boards to fit tightly together and seal with expanding foam.

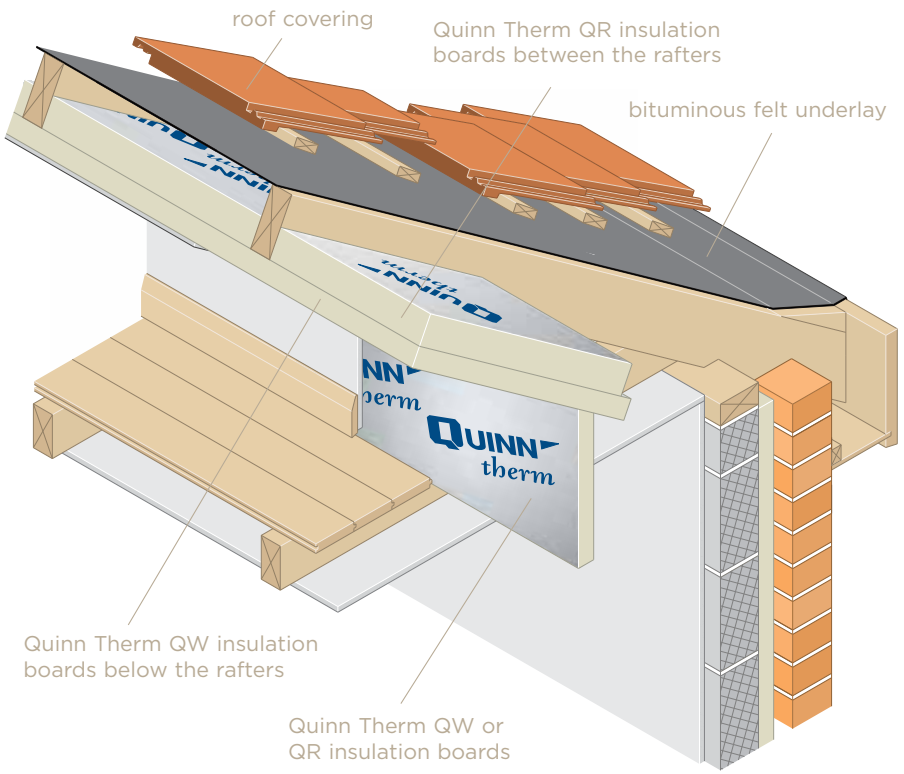
HANDLING AND STORAGE

Quinn Therm QR boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat. When handling Quinn Therm QR do not knock corners and edges.

Whilst Quinn Therm boards are robust, they are not designed to support people: do not stand on the boards nor use them as a working platform.

Quinn Therm

Insulating pitched roofs between and below the rafters



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QR (mm)

Required U-value (W/m²K)	0.25	0.20	0.18	0.16	0.14
Between Rafters	65	100	100	100	100
Below Rafters	25	25	40	55	75

Results based upon roof construction of:
12.5mm plasterboard, polyethylene VCL, 25mm Quinn Therm QR insulation across the underside of the rafters, 150mm deep rafters at 600mm centres, Quinn Therm QR insulation between rafters (thickness as shown), 50mm vented cavity, bituminous felt underlay, large format concrete tiles on battens.

Calculations performed to BS EN ISO 6946:1997, taking account of repeating thermal bridges.

* Overall heat loss method.

For U-value calculations for other roof constructions contact Quinn Technical Services.

DESIGN NOTES

- depending on the depth of the rafters and the required U-value, it may be necessary to install Quinn Therm QR between the rafters and below the rafters.
- a vapour control layer is required behind the surface finish to prevent condensation forming within the structure: that may be formed by taping the joints between the metallic surface of the boards with metalised tape. Contact Quinn Technical Services for further advice on condensation control.
- a vented cavity at least 50mm deep should be maintained between the underside of the underlay and the top of the insulation to prevent condensation.

INTRODUCTION

Quinn Therm QR (Quinn Roof) is a PIR (polyisocyanurate) insulation for creating warm pitched roofs by insulating between and below the rafters.

Insulating an existing pitched roof at rafter line - to create what is usually known as a warm roof - is an ideal way of increasing the usable space within the building without having to extend the structure. In projects where the loft space is being upgraded without removing the roof covering the insulation should be installed either in one layer between the rafters or in two layers, one between the rafters and the other fixed to the underside of the rafters (installing the insulation wholly between the rafters will in most cases result in insufficient headroom).

Quinn Therm QR rigid insulation is well suited to use in warm roof constructions: it is robust enough to span the rafters and will resist moisture. Also, its high thermal resistance enables the required U-value to be achieved with a minimum thickness of insulation, which minimises the loss of headroom within the loft space.

DESIGN

Thermal bridging

To limit heat loss and prevent problems such as condensation, mould growth and staining occurring at cold spots in the construction, junctions between elements should be designed to maintain continuity of insulation. For roofs the key junctions are those at eaves and gable, where wall insulation should meet roof insulation.

The thermal performance of existing gable walls should be upgraded with an insulated dry-lining system, such as Quinn Therm QL plasterboard laminate, or Quinn Therm QW wall insulation installed with plasterboard. Junctions with the roof slope should be designed to give continuity of insulation and sealed to prevent air leakage.

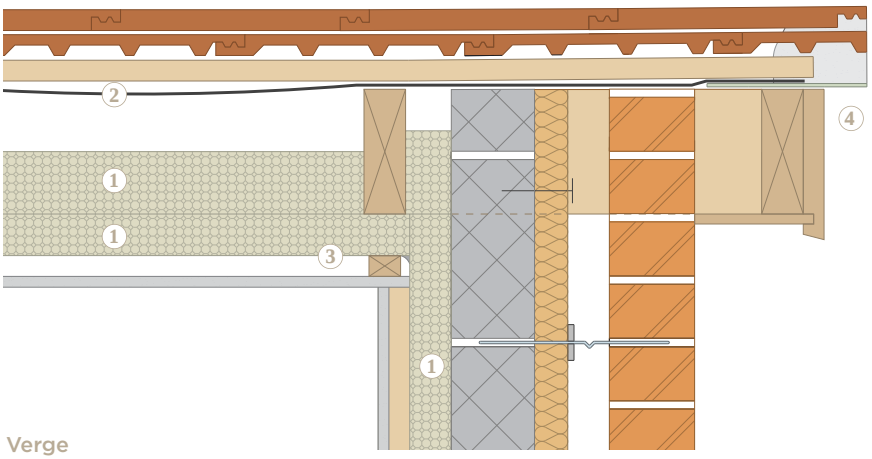
Given space constraints within existing roofs, it is usual to insulate the stud walls rather than attempt to extend insulation between the rafters as far as the eaves. The junctions between the stud walls and the roof insulation should be sealed. The roof between the stud walls and the eaves should be insulated between the joists, taking care to maintain any ventilation paths at eaves and ensuring continuity of insulation with the stud walls.

The details shown here are designed to minimise thermal bridging and air leakage.

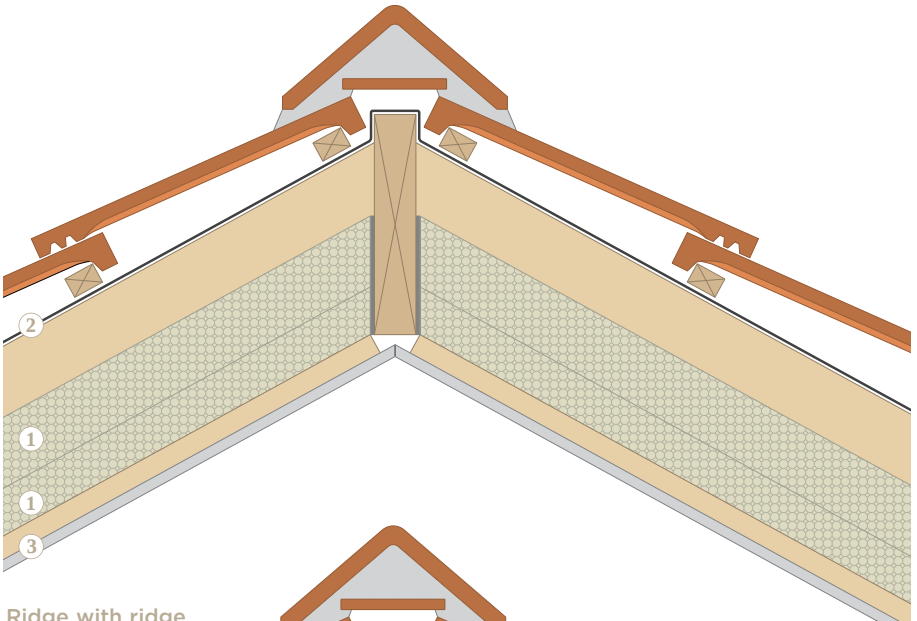
CONDENSATION CONTROL

In refurbishment and loft conversion projects the underlay is likely to be of bituminous felt, which has a very high vapour resistance. To prevent moisture from the occupied space condensing on the underside of the underlay and damaging the roof structure ventilated cavities at least 50mm deep must be maintained between underlay and the upper surface of the Quinn Therm QR boards (see BS 5250:2002 for details).

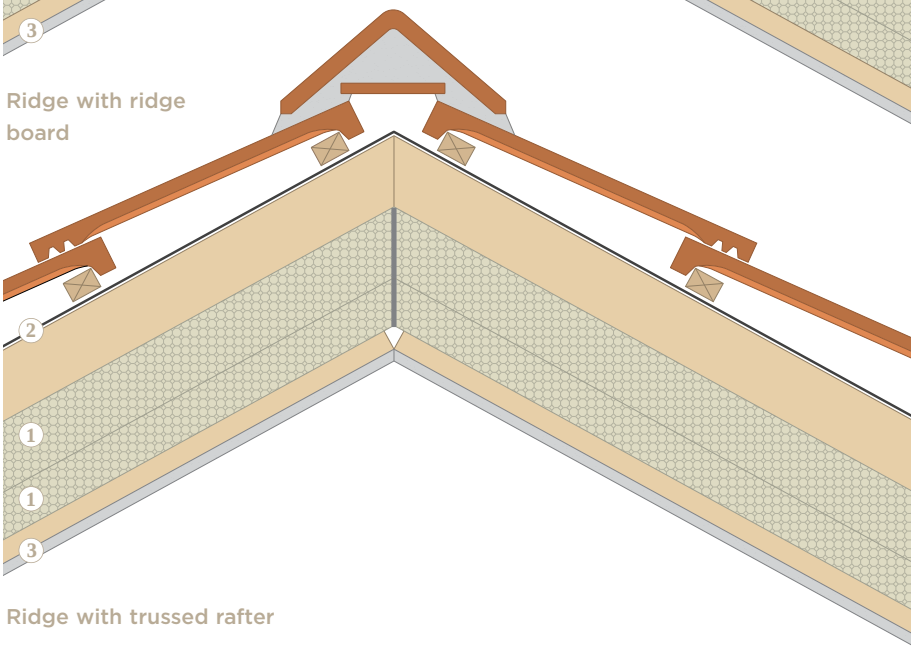
1. Quinn Therm insulation boards
2. Existing membrane
3. Battens fixed to rafters through insulation boards: plasterboard fixed to battens
4. Undercloak
5. Lead lining on section of vapour open underlay or building paper
6. Timber stud
7. Battens to secure vertical insulation boards



Verge



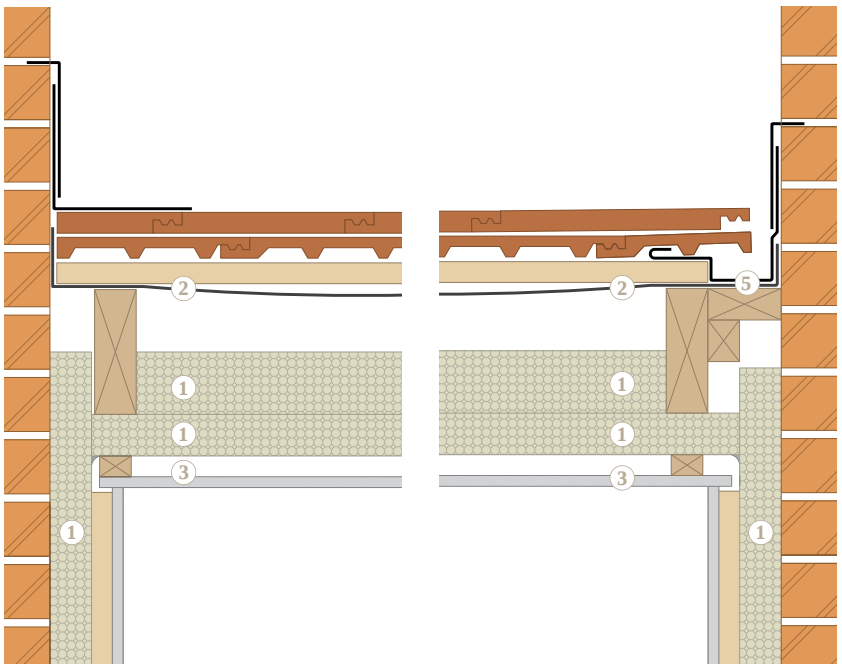
Ridge with ridge board



Ridge with trussed rafter

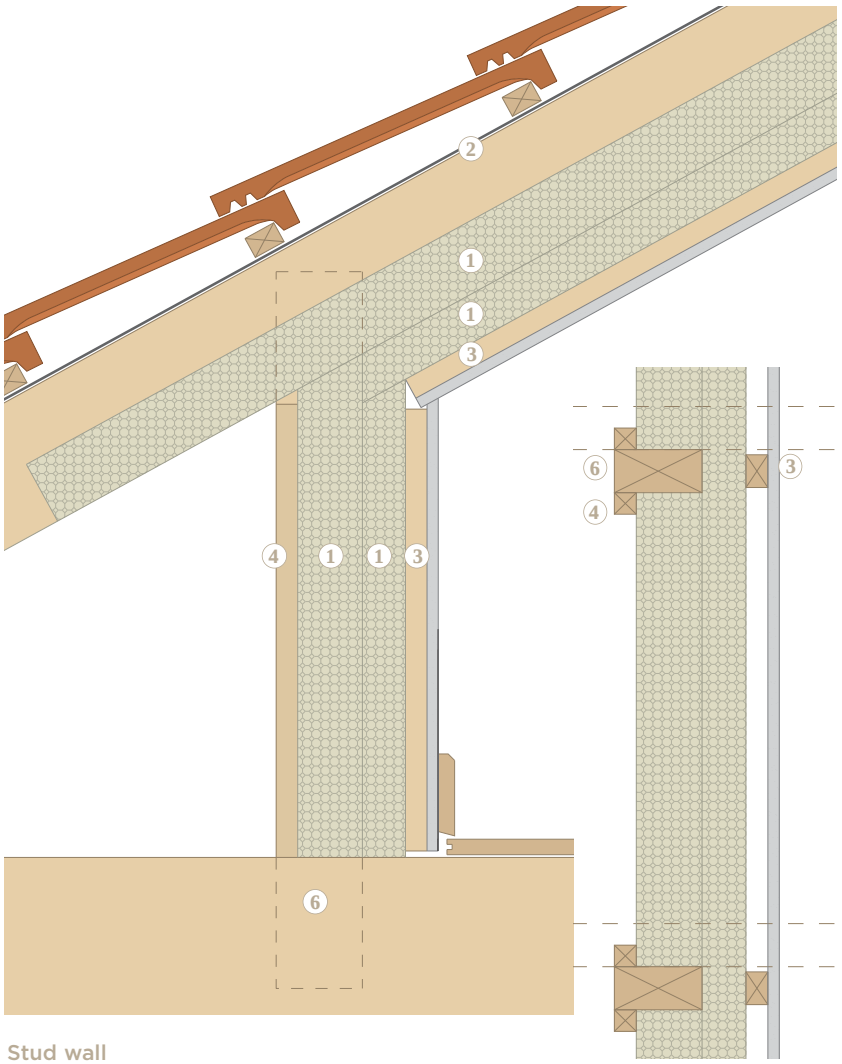
Quinn Therm

Insulating pitched roofs between and below the rafters



Abutment

Abutment with secret gutter



Stud wall

In some projects the rafters may not be deep enough to accommodate the insulation and the necessary cavity. The problem may be resolved either by increasing the depth of the rafter space by fixing 50mm x 50mm battens to the underside of the rafters or by installing some insulation between the rafters and the rest on the underside of the rafters.

To reduce vapour transfer through the roof structure there should be a vapour control layer behind the internal finish: that may be formed from the foil facing of the Quinn Therm QR boards by taping the joints with metalised tape.

Condensation risk analysis should be conducted on all roofs using the method in ISO 13788:2001: consult Quinn Technical Services for assistance.

FIXINGS

Quinn Therm QR boards fitted to the underside of the rafter should be fixed in place with 25mm deep timber battens nailed through to the rafters. The timber battens form a series of voids between the insulation and the surface finish which may be used for running services without disturbing the insulation. The voids, in combination with the low emissivity foil face of the boards will also improve the thermal performance of the roof by reducing radiation heat losses.

In stud walls the Quinn Therm QR boards should be cut to fit between the studs and fitted against timber battens nailed to the inside of the studs to prevent the insulation shifting out of place.

1. Quinn Therm insulation boards
2. Existing membrane
3. Battens fixed to rafters through insulation boards: plasterboard fixed to battens
4. Battens to secure vertical insulation boards
5. Lead lining on section of vapour open underlay or building paper
6. Timber stud

INSTALLATION GUIDANCE

Quinn Therm QR boards between the rafters

1. If necessary nail 50mm x 50mm battens to the undersides of the rafters to increase the available depth.
2. Cut boards to fit snugly between the rafters.
3. Insert boards between the rafters, ensuring there is a minimum 50mm gap between the underside of the underlay and the upper face of the boards.
4. Install the VCL and internal finish.

* see guidance on condensation risk

Quinn Therm QR boards between and below the rafters

1. Cut boards to fit snugly between the rafters.
2. Insert boards between the rafters, ensuring there is a minimum 50mm gap between the underside of the underlay and the upper face of the boards.
3. Fix the second layer of boards across the underside of the rafters using 25mm deep battens.
4. Tape the board joints with metalised tape to form a VCL.
5. Fix internal finish to battens.

Quinn Therm QR boards in stud walls

1. Follow the sequences for fitting boards between or between and below the rafters, but nail timber battens to the studs behind the boards to keep them in place.

Every effort has been taken in the preparation of this sheet to ensure the accuracy of representations contained herein. Recommendations as to the use of materials, construction details and methods of installation are given in good faith and relate to typical situations. However, every site has different characteristics and reliance should not be placed upon the foregoing recommendations. Advice can be given as to specific applications of the products, upon request to Quinn Therm.

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PRODUCT DATA

Properties	Value	Quinn Therm QR
Board width x length	mm	2400 x 1200**
Board thickness	mm	60 - 200
Board density	kg/m^3	26 - 32
Area per board	m^2	2.88
Edge profiles available		Butt edged

PERFORMANCE DATA

Properties	Value	QuinnTherm QR
Thermal conductivity*	W/mK	0.022 - 0.023
Water vapour resistivity	MNs/gm	~ 400
Compressive strength	kPa	> 120

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

KEY PROPERTIES

Quinn Therm QR consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

When Quinn Therm QR is installed next to an airspace of at least 25mm deep the low emissivity surface of the insulation contributes to the thermal performance of the roof by reducing radiation heat loss across the cavity.

NOTES

- Butt boards tightly together to form a continuous layer of insulation.
- Cut boards neatly around penetrations. Seal gaps with expanding foam.
- At wall/roof junctions fit boards tight to the wall and seal any gaps with expanding foam.
- At junctions between roof planes and stud walls cut boards to fit tightly together and tape joints with metalised tape.

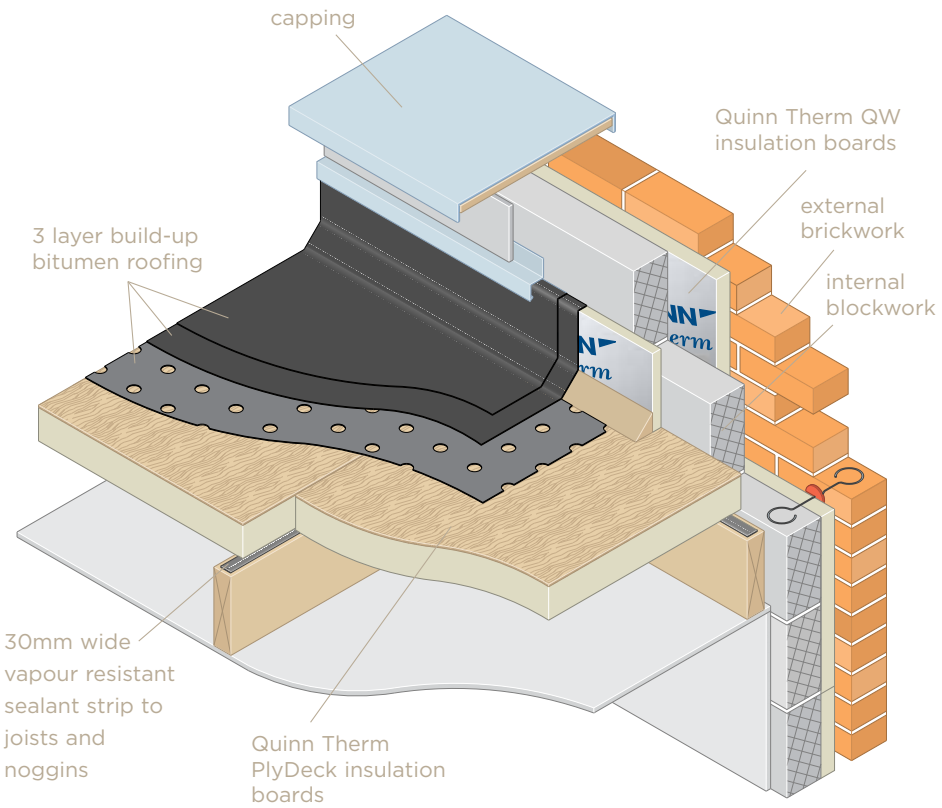
HANDLING AND STORAGE

Quinn Therm QR boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat. When handling Quinn Therm QR do not knock corners and edges.

Whilst Quinn Therm boards are robust, they are not designed to support people: do not stand on the boards nor use them as a working platform.

Quinn Therm

Insulating warm flat roofs with PIR-plywood laminate



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Required thicknesses of Quinn Therm QPD PlyDeck for different U-values

U-value (W/m2K)	Quinn therm Plydeck thickness* (mm)	
	Joists @ 400mm centres	Joists @ 600mm centres
0.25	70* + 6**	70* + 6**
0.22	90* + 6**	90* + 6**
0.20	110* + 6**	110* + 6**
0.18	110* + 6**	110* + 6**
0.16	125* + 6**	125* + 6**

* thickness of PIR board

** 6mm WPB plywood

Results based on roof construction of: 3 layer built-up felt roofing, Quinn Therm PlyDeck board, unvented low emissivity cavity, 12.5mm plasterboard. Calculations performed to EN ISO 6946:1997, taking account of repeating thermal bridges.

DESIGN NOTES

- Stagger fixings for adjacent boards to the same joist or noggin.
- Ensure screw heads finish flush with the surface of the plywood.
- Minimise the period between installation of Quinn Therm PlyDeck and of the waterproofing system. In poor weather use polyethylene sheeting as temporary protection of Quinn Therm PlyDeck.

INTRODUCTION

Quinn Therm PlyDeck is a composite insulation board intended for forming warm flat roof decks which will be finished with partially bonded built-up felt waterproofing systems.

Quinn Therm consists of a core of PIR foam auto adhered to two composite aluminium facings. A layer of 6mm WPB plywood is bonded to the insulation to give additional strength and rigidity, and to provide a suitable substrate for partially bonded built-up waterproofing systems.

The low thermal conductivity of the insulation minimises the board thickness, while the composite board offers rapid coverage and straightforward installation. Quinn Therm PlyDeck is suitable for new build and refurbishment projects.

Warm roof construction reduces the risk of condensation within the roof structure and eliminates the need for ventilation beneath the deck: it also protects the structure from extremes of temperature.

INSTALLATION GUIDANCE

Quinn Therm PlyDeck can be installed on 50mm wide joists at 600mm max. centres on roofs intended for occasional maintenance traffic, or 400mm max. centres where more frequent traffic is expected.

Quinn Therm PlyDeck boards must be supported at all edges, including cut edges at penetrations: 50mm x 50mm cross noggins should be fitted between the joists. The boards must bear at least 20mm on all supporting timbers.

Quinn Therm PlyDeck should be fixed with low profile headed screws, long enough to give minimum 35mm embedment into the timbers. Fixings should be at 200mm centres around the board edges (300mm centres on any intermediate timbers) and set at least 10mm from board edges and 50mm from corners.

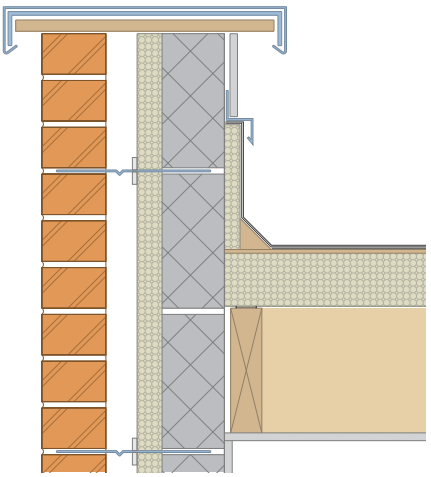
As 96mm is the maximum board thickness which is practicable to install over joists, U-values of 0.18 W/m²K and lower should be achieved by fitting additional Quinn Therm QR insulation between the joists.

Thermal bridging at roof-wall junctions must be avoided: at eaves and verges the joist space should be packed with insulation; at parapets vertical edge insulation should be applied to the inner face and the wall insulation carried at least 150mm above the surface of the Quinn Therm PlyDeck.

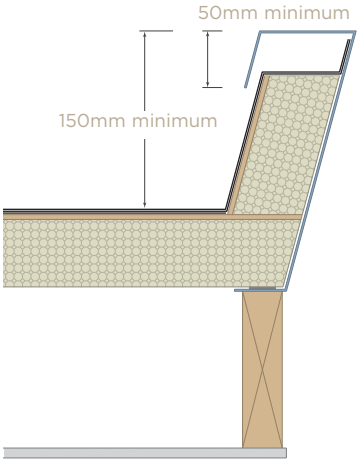
The foil facing on the underside of Quinn Therm PlyDeck has a very high vapour resistance and can be formed into a VCL by sealing the joints between boards, by setting the boards onto a wide (30mm) bead of vapour resistant sealant applied to the upper surface of all the joists and cross noggins.

INSTALLATION SEQUENCE

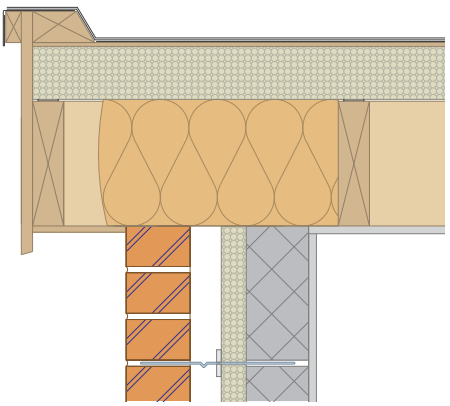
1. Plan the layout of Quinn Therm PlyDeck boards. Cut and fit cross noggins.
2. Apply vapour resistant sealant in a 30mm wide strip to the upper surface of the joists and cross noggins.
3. Lay Quinn Therm PlyDeck boards with long edges following joists and board edges in broken bond.
4. Fix with screws at 200mm centres around board edges: 300mm at any other cross timbers.
5. Lay the waterproofing system.



Parapet



Rooflight penetration



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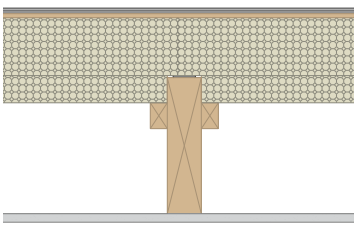

Insulation between joists

PRODUCT DATA	Properties	Value	Quinn Therm Plydeck
	Board width x length	mm	2400 x 1200*
	Board thickness	mm	56, 76, 96, 116, 131**
	PIR core density	kg/m³	32 - 34
	Area per board	m²	2.88
	Edge profiles available		Butt edged

* includes 6mm plywood facing ** other thicknesses available on request

PERFORMANCE DATA	Properties	Value	QuinnTherm Plydeck
	Thermal conductivity†	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	≥ 400
	Compressive strength at 10% deformation	kPa	> 150
	Surface spread of flame, foil facing only††		Class 1

† measured to EN 12667 and EN 12939 and declared as a 90/90 value to EN 13165. The value does not include the thermal conductivity of the plywood facing, which may be taken as 0.14W/mK.

†† Measured to BS 476: Part 7: 1997. The fire rating of the roof will depend upon the performance of the waterproofing system and the internal lining.

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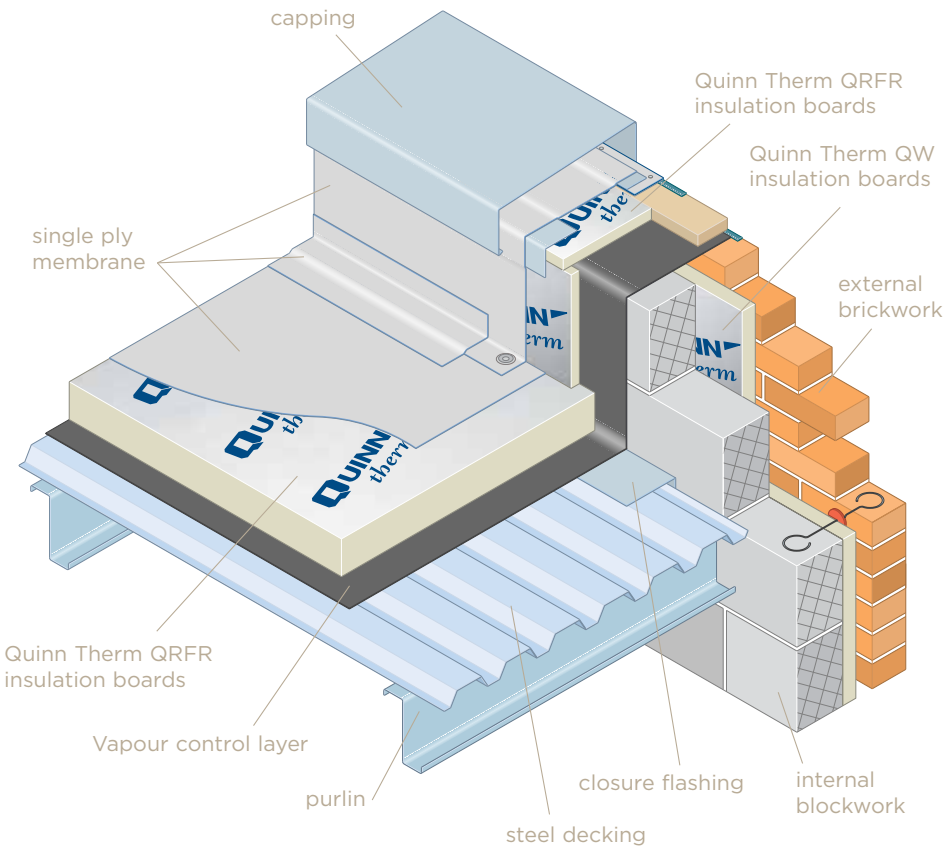
Quinn Therm
Insulating metal deck roofs



KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Thickness of Quinn Therm QRFR to meet required U-value (W/m²K)

Required U-value (W/m²K)	0.25	0.22	0.20	0.18	0.16
Thickness of Quinn Therm (mm)	90	100	110	125	140

Results based on roof construction of:
Lightweight metal deck, Quinn Therm QRFR, waterproofing membrane. 5 fixings/m².
Calculations performed to BS EN ISO 9646:1997, taking account of repeating thermal bridges.

DESIGN NOTES

- Detail perimeters to minimise thermal bridging and air infiltration at wall/roof junctions.
- The fixing pattern should be determined from the predicted uplift forces, and the type of fixing selected. Consult Quinn Technical Services for advice.
- Whilst Quinn Therm QRFR boards are compatible with a wide range of membranes the membrane manufacturer should always be consulted to confirm compatibility.

INTRODUCTION

Quinn Therm QRFR (Quinn Flat Roof) is a PIR (polyisocyanurate) insulation board intended for use in lightweight metal roof decks covered with single ply roofing membranes. Quinn Therm consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

Lightweight metal deck construction enables rapid weatherproofing of large roof spans. In a typical system the metal deck is covered with a VCL then rigid insulation boards are mechanically fixed to the deck.

The waterproofing layer - usually a single-ply polymeric membrane is then laid and fixed through to the deck. Quinn Therm QRFR is an ideal solution for such roofs: its low thermal conductivity minimises the insulation thickness, while the boards provide a stable substrate for installing the waterproofing.

INSTALLATION GUIDANCE

1. Lay the vapour control layer over the metal deck with laps sealed and edges bonded to the roof perimeter.
2. Lay Quinn Therm boards in brick bond, with long edges at right angles to the troughs of the deck. Ensure board ends are supported on the crowns of the deck.
3. Fix Quinn Therm boards to the deck with mechanical fixings, which should be at least 50 mm from board edges.
4. Lay and fix the waterproofing membrane.

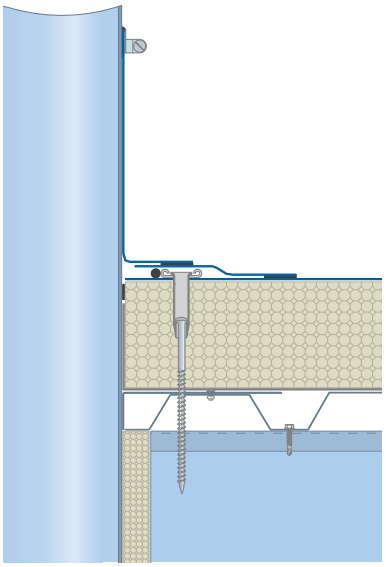
NOTES

- Butt boards tightly together to form a continuous layer of insulation.
- Cut boards neatly at penetrations. Seal gaps with expanding foam.
- Avoid high point loads on boards during installation.

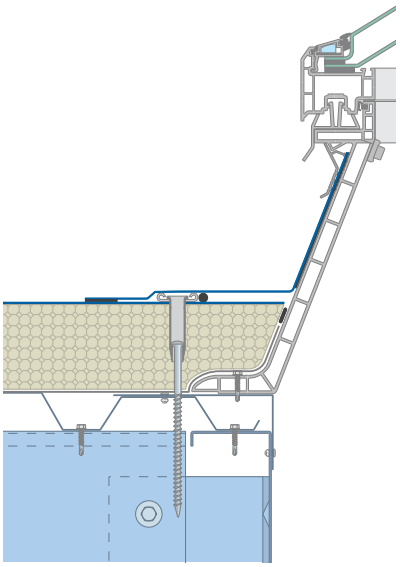
HANDLING AND STORAGE

Quinn Therm QRFR boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat.

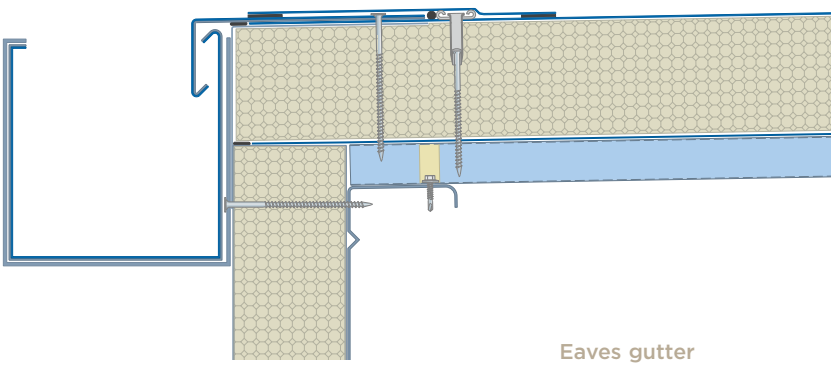
When handling Quinn Therm QRFR do not knock corners and edges. Cut Quinn Therm QRFR with a fine tooth saw or trimming knife.



Pipe penetration



Rooflight penetration



Eaves gutter

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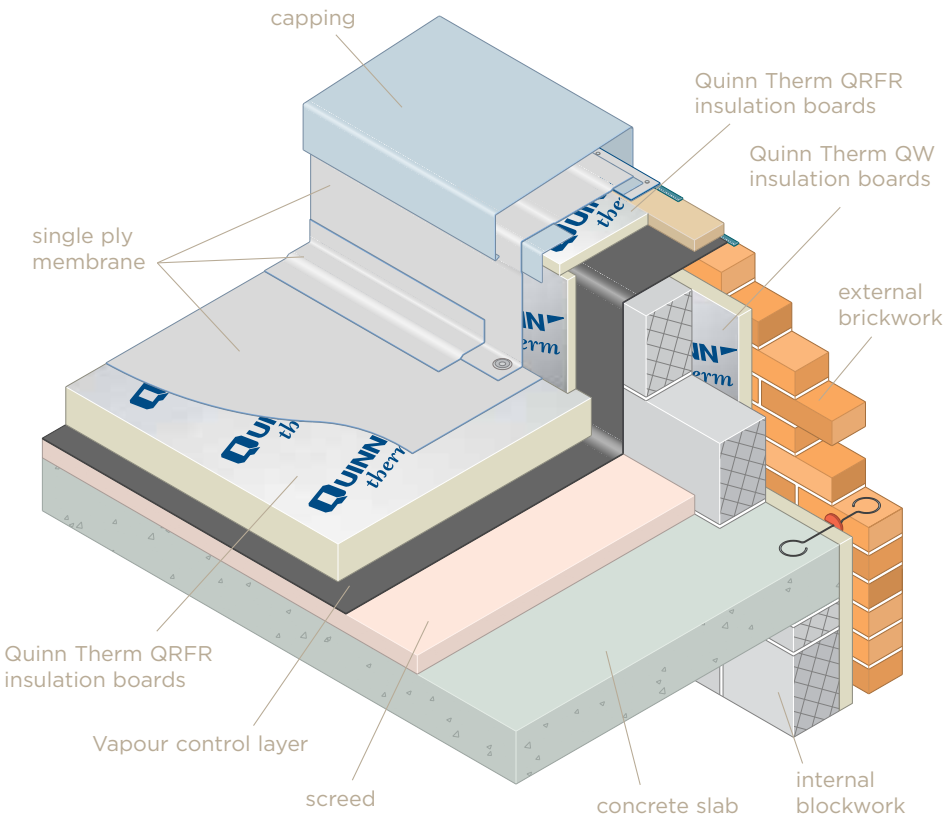
PRODUCT DATA	Properties	Value	Quinn Therm QRFR
	Board width x length	mm	2400 x 1200**
	Board thickness	mm	60 - 200
	Board density	kg/m³	30 - 34
	Area per board	m²	2.88
	Edge profiles available		Butt edged

PERFORMANCE DATA	Properties	Value	QuinnTherm QRFR
	Thermal conductivity*	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	~ 400
	Compressive strength	kPa	> 150

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Quinn Therm
Insulating concrete deck roofs



DESIGN NOTES

- Detail perimeters to minimise thermal bridging and air infiltration at wall/roof junctions.
- Fixing requirements should be determined from the predicted uplift forces, and the selected fixing method. Consult Quinn Technical Services for advice.
- Whilst Quinn Therm QRFR boards are compatible with a wide range of membranes the membrane manufacturer should always be consulted to confirm compatibility.

INTRODUCTION

Quinn Therm QRFR (Quinn Flat Roof) is a PIR (polyisocyanurate) insulation board intended for use in concrete deck flat roofs. Quinn Therm consists of a core of PIR foam bonded on both faces to composite aluminium facings; the gas filled cells give Quinn Therm its high thermal performance and strength.

In a warm roof construction the insulation maintains the structure of the roof at a temperature close to that of the building interior, protecting it from extremes of temperature and minimising the risk of condensation. Quinn Therm is an ideal solution for forming warm concrete roof decks, in combination with mechanically fixed single ply membranes: the low thermal conductivity of Quinn Therm minimises the insulation thickness required, while the rigid boards provide a stable substrate for installing the waterproofing.

KEY PROPERTIES

Quinn Therm:

- does not readily absorb water, making it suitable for use in damp environments;
- is light, robust and easy to handle; it may be worked using a saw or sharp knife;
- is durable and will perform for the service life of the building.

MEETING REGULATIONS

Thickness of Quinn Therm QRFR to meet required U-value (W/m²K)

Required U-value (W/m²K)	0.25	0.22	0.20	0.18	0.16
Thickness of Quinn Therm (mm)	85	100	110	120	135

Results based on roof construction of:

150 mm concrete deck, 50 mm cement/sand screed, Quinn Therm QRFR, waterproofing membrane. 5 fixings/m².

Calculations performed to BS EN ISO 9646:1997, taking account of repeating thermal bridges.

INSTALLATION GUIDANCE

1. Lay the vapour control layer over the deck with laps sealed and edges bonded to the roof perimeter.
2. Either:
   (i) Apply adhesive and lay Quinn Therm boards. Lay boards in brick bond pattern.
   Or
   (ii) Fix Quinn Therm boards to the deck with mechanical fixings, which should be at least 50mm from board edges. Lay boards in brick bond pattern.
3. Lay and fix the waterproofing membrane.

NOTES

- Butt boards tightly together to form a continuous layer of insulation.
- Cut boards neatly at penetrations. Seal gaps with expanding foam.
- Avoid high point loads on boards during installation.

HANDLING AND STORAGE

Quinn Therm QRFR boards are supplied in shrink-wrapped packs. Store boards under cover and out of direct sunlight, keeping boards flat.

When handling Quinn Therm QRFR do not knock corners and edges. Cut Quinn Therm QRFR with a fine tooth saw or trimming knife.

Every effort has been taken in the preparation of this sheet to ensure the accuracy of representations contained herein. Recommendations as to the use of materials, construction details and methods of installation are given in good faith and relate to typical situations. However, every site has different characteristics and reliance should not be placed upon the foregoing recommendations. Advice can be given as to specific applications of the products, upon request to Quinn Therm.

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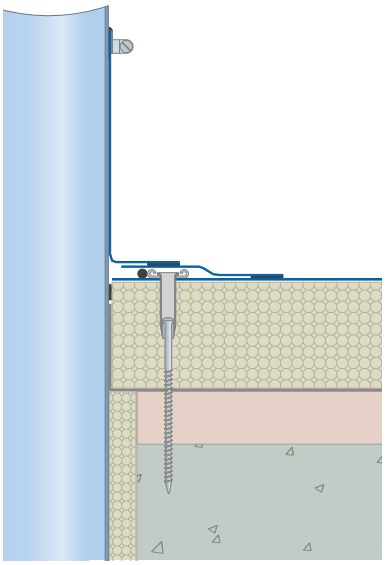
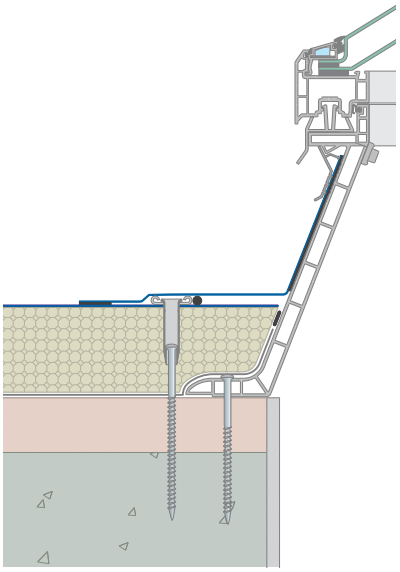
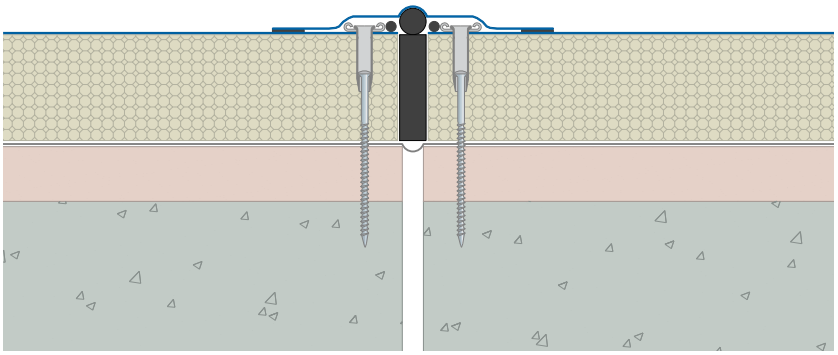


Pipe penetration



Rooflight penetration



Movement joint

	Properties	Value	Quinn Therm QRFR
PRODUCT DATA	Board width x length	mm	2400 x 1200**
	Board thickness	mm	60 - 200
	Board density	kg/m³	30 - 34
	Area per board	m²	2.88
	Edge profiles available		Butt edged

	Properties	Value	QuinnTherm QRFR
PERFORMANCE DATA	Thermal conductivity*	W/mK	0.022 - 0.023
	Water vapour resistivity	MNs/gm	~ 400
	Compressive strength	kPa	> 150

* quoted in accordance with BS EN 13165:2001 'Thermal insulation for Buildings - factory made polyurethane foam products'.

** other sizes may be available upon request.

Quinn Therm
Packaging profiles

Cavity wall insulation - Butt joint and Tongue & Groove#				
Thickness (mm)	Length & Width(mm)	Boards per Pack	Pack size (mm)	m²/Pack
30	1200 x 450	15	450	8.10
35	1200 x 450	13	455	7.02
40	1200 x 450	11	440	5.94
50	1200 x 450	9	450	4.86
60#	1200 x 450	7	420	3.78
75#	1200 x 450	6	450	3.24
100#	1200 x 450	4	400	2.16
Floor insulation - Butt joint				
Thickness (mm)	Length & Width(mm)	Boards per Pack	Pack size (mm)	m²/Pack
25	2400 x 1200	12	300	34.56
30	2400 x 1200	10	300	28.80
35	2400 x 1200	9	315	25.92
40	2400 x 1200	8	320	23.04
45	2400 x 1200	7	315	20.16
50	2400 x 1200	6	300	17.28
55	2400 x 1200	5	275	14.40
60	2400 x 1200	5	300	14.40
65	2400 x 1200	5	325	14.40
70	2400 x 1200	4	280	11.52
75	2400 x 1200	4	300	11.52
80	2400 x 1200	4	320	11.52
85	2400 x 1200	3	255	8.64
90	2400 x 1200	3	270	8.64
100	2400 x 1200	3	300	8.64
Roof insulation - Butt joint				
Thickness (mm)	Length & Width(mm)	Boards per Pack	Pack size (mm)	m²/Pack
60	2400 x 1200	5	300	14.40
65	2400 x 1200	5	325	14.40
70	2400 x 1200	4	280	11.52
75	2400 x 1200	4	300	11.52
80	2400 x 1200	4	320	11.52
85	2400 x 1200	3	255	8.64
90	2400 x 1200	3	270	8.64
100	2400 x 1200	3	300	8.64
120	2400 x 1200	2	240	5.76
125	2400 x 1200	2	250	5.76
150	2400 x 1200	2	300	5.76
Quinn laminate (QL)				
Thickness (mm)	Length & Width(mm)	Boards per Pack	Pack size (mm)	m²/Pack
25* + 9.5**	2400 x 1200	35	1207.5	100.80
25* + 12.5**	2400 x 1200	35	1312.5	100.80
38* + 12.5**	2400 x 1200	25	1262.5	72.00
50* + 12.5**	2400 x 1200	20	1250.0	57.60
60* + 12.5**	2400 x 1200	17	1232.5	48.96
80* + 12.5**	2400 x 1200	14	1295.0	40.32
Plydeck (QPD)				
Thickness (mm)	Length & Width(mm)	Boards per Pack	Pack size (mm)	m²/Pack
50† + 6††	2400 x 1200	24	1344	69.12
70† + 6††	2400 x 1200	18	1368	51.84
90† + 6††	2400 x 1200	14	1344	40.32
110† + 6††	2400 x 1200	11	1276	31.68
125† + 6††	2400 x 1200	10	1310	28.80

Quinn cavity wall: # tongue & groove | Quinn laminate: * thickness of core material ** thickness of plasterboard
Plydeck: † thickness of core material †† thickness of plywood

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Bord Agrément na hÉireann
Irish Agrément Board

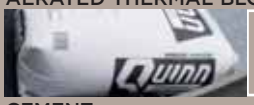
BBA BRITISH BOARD OF AGREMENT

nsai ISO 9001:2000 QUALITY

ZERO ODP CFC FREE AND HCFC FREE BOARD

Certification Europe


AERATED THERMAL BLOCKS


CEMENT

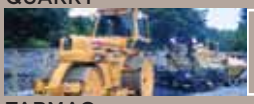

CONCRETE ROOFTILES


QUINN THERM (PIR)


QUINN LITE PAC


PRESTRESSED


QUARRY


TARMAC

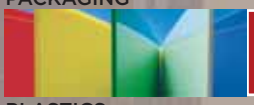

ENERGY


FINANCIAL SERVICES


GLASS


HOTELS


PACKAGING


PLASTICS


PROPERTY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While every care has been taken to ensure the accuracy of the information in this brochure, Quinn Group can accept no responsibility for any errors which may occur.