YBS Insulation

HIGH QUALITY PRODUCTS FOR THE BUILDING INDUSTRY

Cl/SfB (31,9) Xn6

system approval LABC

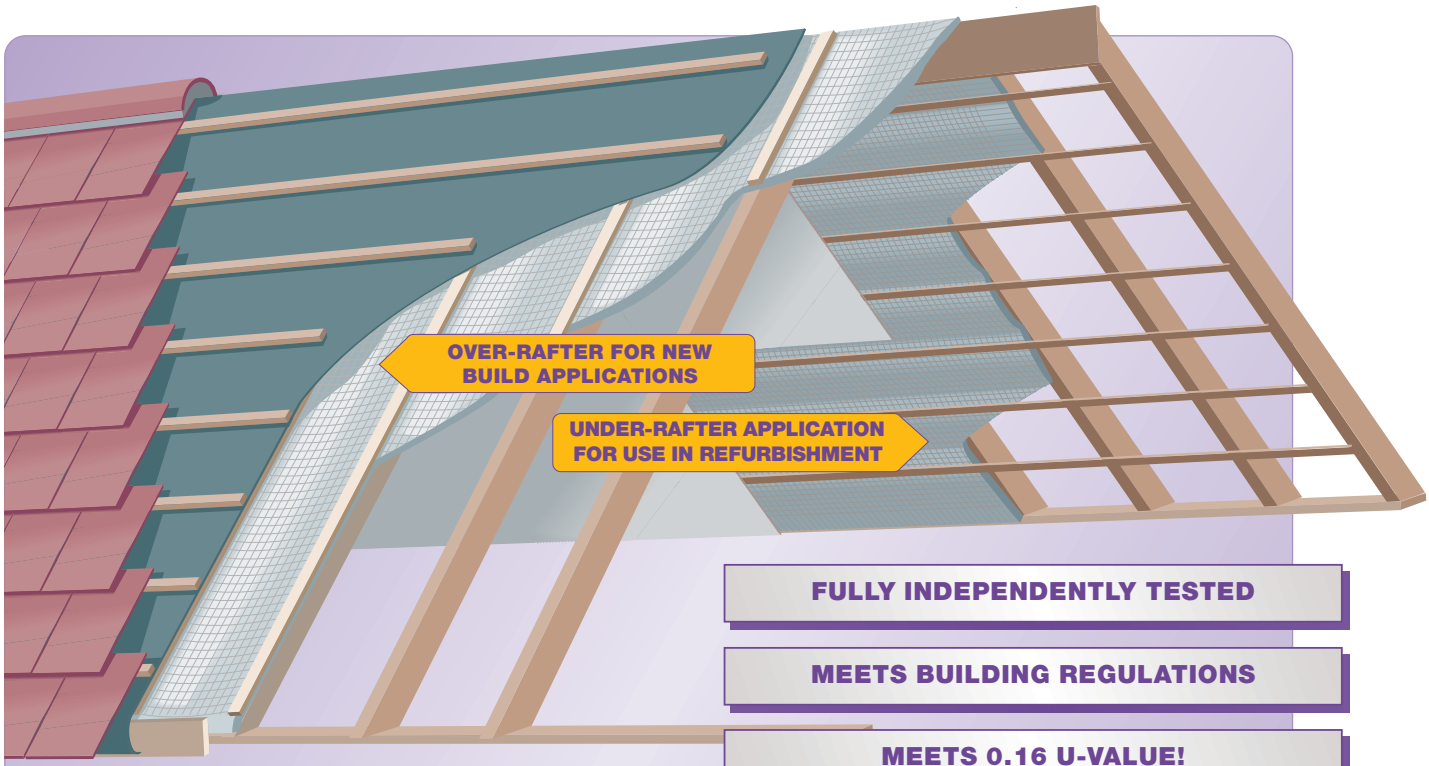
CERT NO. 363-3-7138

SuperQuilt

MANUFACTURED IN UK AND MADE TO A QUALITY SYSTEM MEETING THE REQUIREMENTS OF BS EN ISO 9002

Multi-layer Insulation Blanket For use in Roofs

Massive Thermal Insulation in a Thin, Flexible, Multi-layer Membrane



- FULLY INDEPENDENTLY TESTED
- MEETS BUILDING REGULATIONS
- MEETS 0.16 U-VALUE!
- IDEAL FOR LOFT CONVERSIONS
- FAST AND SIMPLE INSTALLATION
- LIGHTWEIGHT AND FLEXIBLE
- KEEPS YOUR HOUSE WARMER IN WINTER
- KEEPS YOUR HOUSE COOLER IN SUMMER
- EFFECTIVE SOLAR OVER HEATING BARRIER

MULTI-LAYER GIVES MAXIMUM PERFORMANCE

SuperQuilt

MANUFACTURED IN UK AND MADE TO A QUALITY SYSTEM MEETING THE REQUIREMENTS OF BS EN ISO 9002

system approval LABC

Multi-layer Insulation Blanket for use in Roofs

Massive Thermal Insulation in a Thin, Flexible, Multi-layer Membrane

SuperQuilt is a very flexible, easy to fit, multi-layer insulation that offers tremendous thermal benefits.

Tests have shown that **SuperQuilt** provides insulation equal to 270 mm of glass wool when installed in a pitched roof situation. **SuperQuilt** now has full certification with Local Authority Building Control.

How does SuperQuilt Work?

Due to the special composition of multi-layers of insulation **SuperQuilt** effectively deals with all forms of energy transfer (i.e. conduction, convection and radiation). **SuperQuilt** works most effectively by reflecting infra-red radiation.

This means that not only is SuperQuilt effective in winter, by reflecting heat back into the building and cold out, but also in summer Super-Quilt is a very effective solar over heating barrier reducing the need for artificial cooling systems, and preventing uncomfortable heat build up in the roof.

BRE testing

Moisture Performance of SuperQuilt

BRE Report number 223653.1

BRE was commissioned by YBS Insulation to assess the vapour transmission of **SuperQuilt**.

The vapour permeability was used to calculate the vapour resistance (Rv) of the material.

The Rv was measured as 390.6MNs/g.

Accreditation & Testing

BUILDING CONTROL NATIONAL TYPE APPROVAL

SYSTEM APPROVAL CERTIFICATE

Certificate No: 362-3-7138

Date: 28 February 2006

1 Certificate holder

Name: YBS Insulation Ltd

Address: The Craggs Industrial Park, Cresswell, Derbyshire S80 4AJ

tony@ybsinsulation.com Tel: 01909 721662

2 System Title

Description: YBS Insulation SUPER QUILT 14

3 The system has been assessed on the following drawings and documents:

Drawing No.: Test Report CIM 122/R3 Sheffield Hallam University

Roof insulation to achieve a U-Value of 0.18W/m2K

Limitations: To be installed on pitched roofs to manufacturers instructions.

4 Assessment

The design and method of construction of the system described in (2) above has been examined and as far as it has been shown has been found to be capable of complying with current Building Regulations.

5 Conditions of certification

1 The design shown and the materials specified shall not be changed without reference to the local authority responsible for certifying the system.

2 The certificate shall be valid for three years or until invalidated by formal notice.

3 Where reference is made on a plan to any Code of Practice, British Standard or manufacturer's instruction it shall be construed as a reference to such publication in the form in which it is in force at the date of this certificate.

4 This certificate should not be regarded as a formal approval under the Building Regulations.

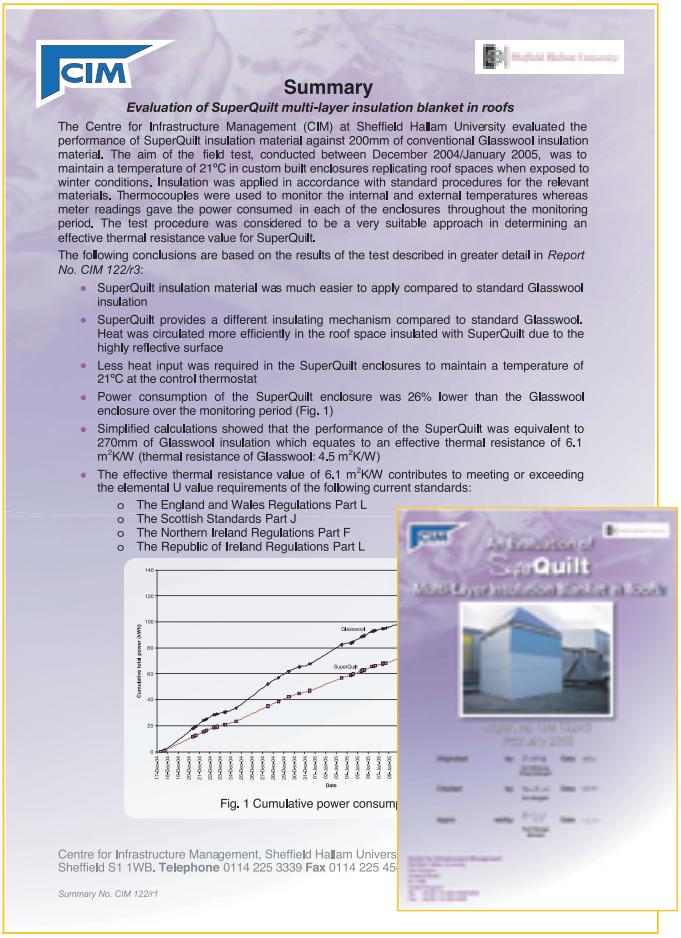
6 Authority

This system approval certificate is authorised by:

Name: [illegible] Signature: [illegible]

on behalf of: Calderdale Metropolitan Borough Council

A SERVICE OF THE LOCAL GOVERNMENT ASSOCIATION



CIM

Summary

Evaluation of SuperQuilt multi-layer insulation blanket in roofs

The Centre for Infrastructure Management (CIM) at Sheffield Hallam University evaluated the performance of SuperQuilt insulation material against 200mm of conventional Glasswool insulation material. The aim of the field test, conducted between December 2004/January 2005, was to maintain a temperature of 21°C in custom built enclosures replicating roof spaces when exposed to winter conditions. Insulation was applied in accordance with standard procedures for the relevant materials. Thermocouples were used to monitor the internal and external temperatures whereas meter readings gave the power consumed in each of the enclosures throughout the monitoring period. The test procedure was considered to be a very suitable approach in determining an effective thermal resistance value for SuperQuilt.

The following conclusions are based on the results of the test described in greater detail in *Report No. CIM 122/r3*:

- SuperQuilt insulation material was much easier to apply compared to standard Glasswool insulation
- SuperQuilt provides a different insulating mechanism compared to standard Glasswool. Heat was circulated more efficiently in the roof space insulated with SuperQuilt due to the highly reflective surface
- Less heat input was required in the SuperQuilt enclosures to maintain a temperature of 21°C at the control thermostat
- Power consumption of the SuperQuilt enclosure was 26% lower than the Glasswool enclosure over the monitoring period (Fig. 1)
- Simplified calculations showed that the performance of the SuperQuilt was equivalent to 270mm of Glasswool insulation which equates to an effective thermal resistance of 6.1 m^2K/W (thermal resistance of Glasswool: 4.5 m^2K/W)
- The effective thermal resistance value of 6.1 m^2K/W contributes to meeting or exceeding the elemental U value requirements of the following current standards:
  - The England and Wales Regulations Part L
  - The Scottish Standards Part J
  - The Northern Ireland Regulations Part F
  - The Republic of Ireland Regulations Part L

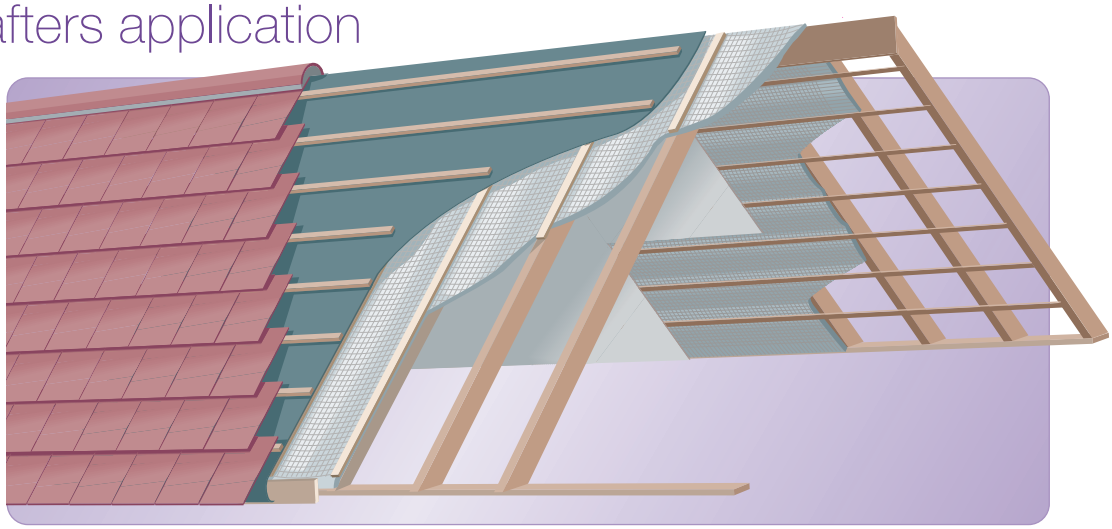
Fig. 1 Cumulative power consump

Centre for Infrastructure Management, Sheffield Hallam Univers
Sheffield S1 1WB. **Telephone** 0114 225 3339 **Fax** 0114 225 45

Summary No. CIM 122/r1

over/under rafters application

SuperQuilt is fast and simple to install. With great benefits, keeping rafter depths to a minimum, lightweight and high insulation values.



Over Rafter Fixing Details

SuperQuilt is rolled out over the rafters horizontally or vertically and stapled in position. All joints are taped with YBS Foil Tape.

At the eves SuperQuilt is cut around the rafters and sealed to the Cavity wall insulation or wall plate.

Battens are placed parallel with the rafters and fixed.

A breather-membrane is fitted in accordance with the manufacturers fixing details, above the battens.

Tile battens and tiles are then fitted.

Under Rafter Fixing Details

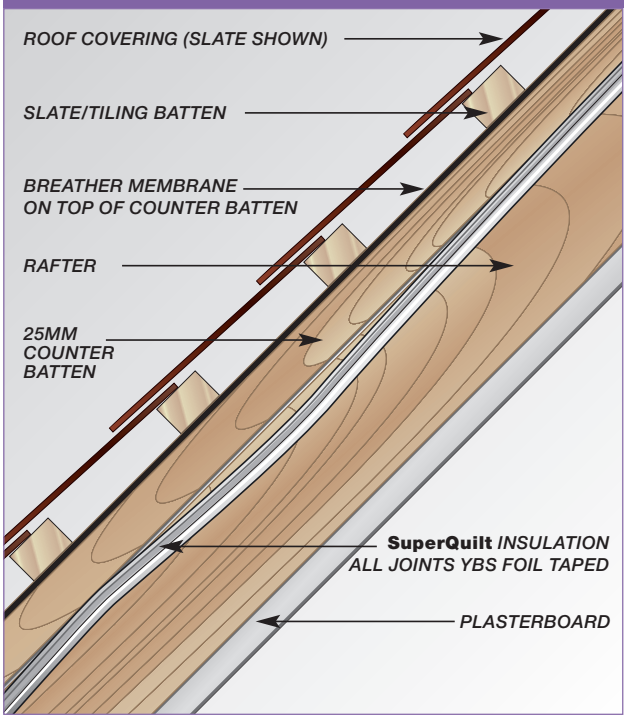
SuperQuilt is rolled out to the under side of the rafters horizontally or vertically and stapled in position. All joints are taped with YBS Foil Tape.

At the eves SuperQuilt is sealed to the Cavity wall insulation or wall plate.

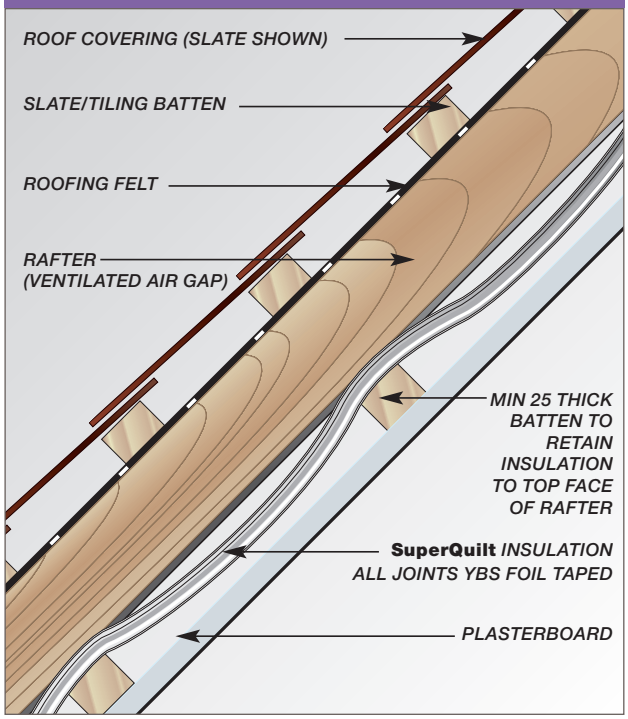
Counter battens are placed parallel or perpendicular with the rafters and fixed.

Plasterboard can then be fixed to the counter battens.

SuperQuilt Over Rafter Application



SuperQuilt Under Rafter Application



Over Rafter U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles	10.00	-	0.000
Tile Battens	25.00	-	0.000
Breather Membrane	-	-	-
Battens	25.00	-	0.000
SuperQuilt	25.00	-	6.100
Rafters	150.00	-	0.000
Plasterboard	12.50	0.190	0.066
Inside Surface Resistance	-	-	0.100

U-Value, Combined Method: 0.16W/m^2K
(lower limit = 6.366m^2K/W, upper limit = 6.366m^2K/W)

Under Rafter U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles	10.00	-	0.000
Tile Battens	25.00	-	0.000
Breather Membrane	-	-	-
Rafters	150.00	-	0.000
SuperQuilt	25.00	-	6.100
Battens	25.00	-	0.000
Plasterboard	12.50	0.190	0.066
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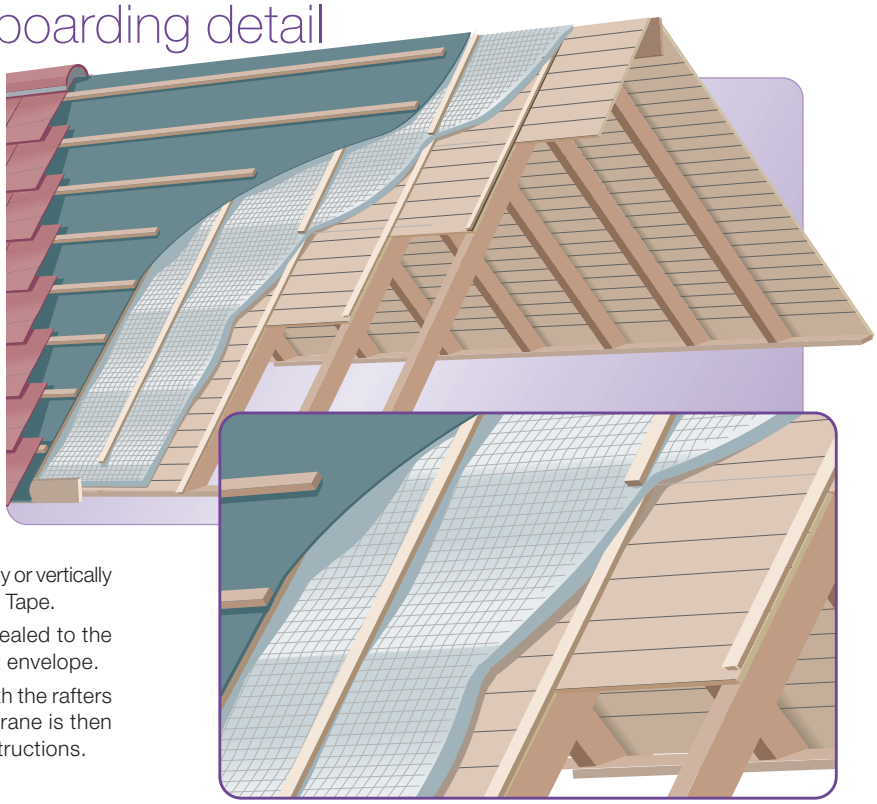
U-Value, Combined Method: 0.16W/m^2K
(lower limit = 6.366m^2K/W, upper limit = 6.366m^2K/W)

exposed rafters close boarding detail

SuperQuilt can be used over close boarding. In situations where exposed rafters are required or boarding for structural support, then SuperQuilt can be fitted above the boarding creating cavities with counter battens.



Fixing Details

Close boarding or plasterboard is fixed above the rafters. Counter battens are fixed parallel with the rafters through the boarding into the rafters with clout nails.

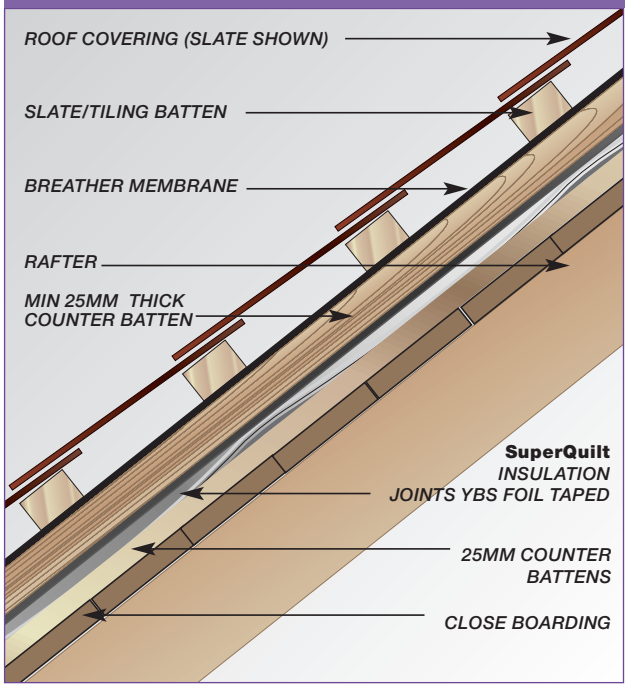
SuperQuilt is rolled out onto the counter battens horizontally or vertically and stapled in position. All joints are taped with YBS Foil Tape.

At the eves SuperQuilt is cut around the rafters and sealed to the Cavity wall insulation or wall plate to create an airtight envelope.

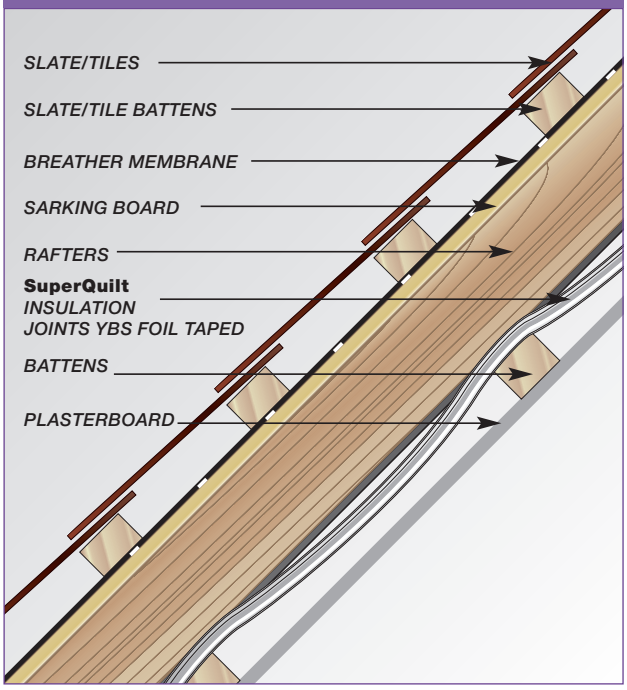
Battens are placed on top of the SuperQuilt, parallel with the rafters and fixed in to the counter battens. A breather membrane is then fitted in accordance with the manufacturers fitting instructions.

Tile battens and tiles can then be fitted.

Exposed Rafters Close Boarding Detail



Scottish Detail



Exposed Rafter Close Boarding / Plasterboard U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles	10.00	-	0.000
Tile Battens	25.00	-	0.000
Breather Membrane	-	-	-
Counter Battens	25.00	-	0.000
SuperQuilt	25.00	-	6.100
Counter Battens	25.00	-	0.000
Plasterboard / Plywood	12.50	0.190	0.066
Rafters	150.00	-	0.000
Inside Surface Resistance	-	-	0.100

U-Value, Combined Method: 0.16W/m^2K
(lower limit = 6.366m^2K/W, upper limit = 6.366m^2K/W)

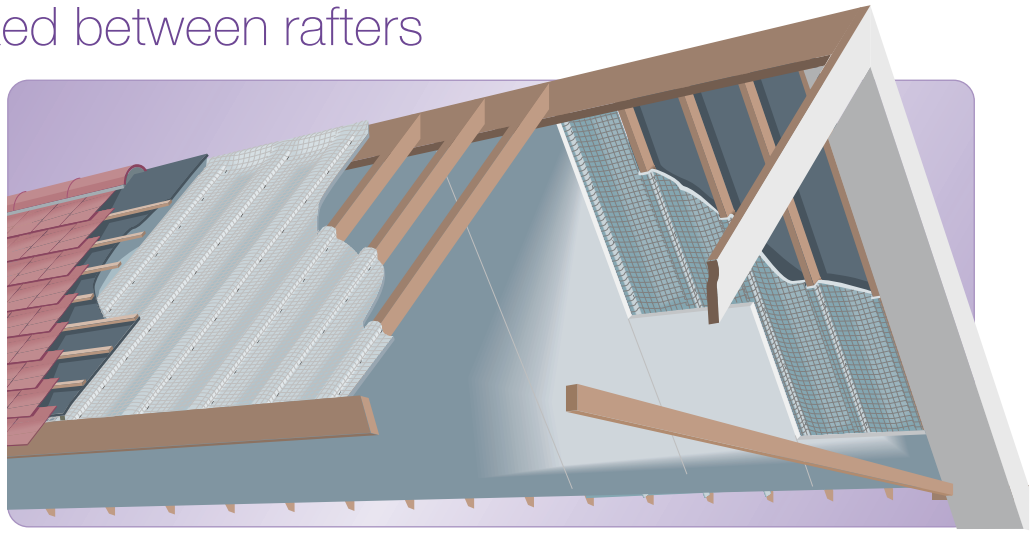
Scottish Detail U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles/Slates	10.00	-	0.000
Tile/Slate Battens	25.00	-	0.000
Breather Membrane	-	-	-
Sarking Board	18.00	-	0.000
Rafters	150.00	-	0.000
SuperQuilt	25.00	-	6.100
Battens	25.00	-	0.000
Plasterboard	12.50	0.190	0.066
Inside Surface Resistance	-	-	0.100

U-Value, Combined Method: 0.16W/m^2K
(lower limit = 6.366m^2K/W, upper limit = 6.366m^2K/W)

recessed and fixed between rafters

SuperQuilt can be fitted between rafters. In situations where head room is crucial SuperQuilt is recessed in to the rafter void to allow plasterboard to be fitted directly to the SuperQuilt on the underside of the rafters.



Over Rafter Fixing Details

Where roof height is critical SuperQuilt can be recessed between the rafters.

A. SuperQuilt is stapled to the top of the first rafter.
B. SuperQuilt is recessed into the rafter void and fixed by staples or with battens.
C. The material is then fixed to opposed rafter as per instruction B.
D. SuperQuilt is then wrapped around the rafter and the procedure starts again.

Once all the SuperQuilt is fitted all joints should be taped using YBS Foil Tape.

A breather membrane is then fitted in accordance with the manufacturers fitting instructions.

Tile batten and tiles can then be fitted.

Under Rafter Fixing Details

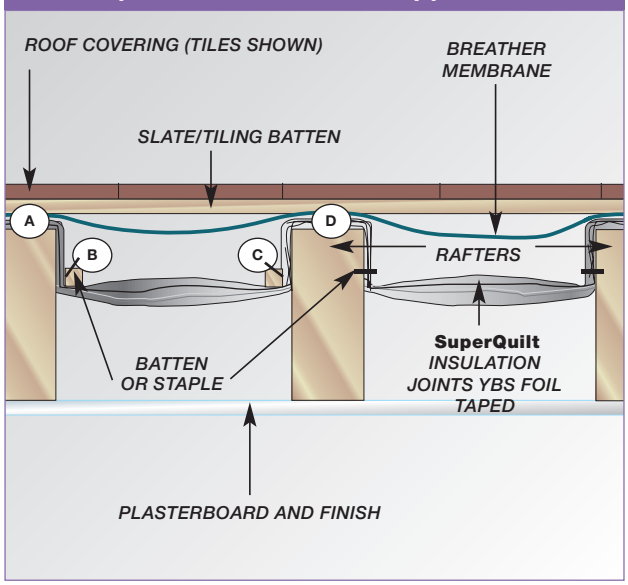
Where roof head room is essential SuperQuilt can be recessed between the rafters.

1. SuperQuilt is stapled to the underside of the first rafter.
2. SuperQuilt is recessed into the rafter void and fixed by staples or with battens.
3. The material is then fixed to opposed rafter as per instruction 2.
4. SuperQuilt is then wrapped around the rafter and the procedure starts again.

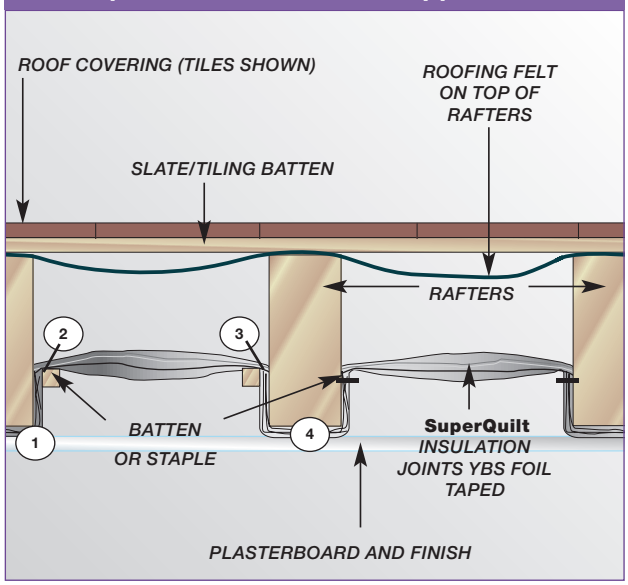
Once all the SuperQuilt is fitted all joints should be taped using YBS Foil tape.

Plasterboard can then be fixed directly to the underside of the rafters below the SuperQuilt.

SuperQuilt Over Rafter Application



SuperQuilt Under Rafter Application



Over Rafter U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles	10.00	-	0.000
Tile Battens	25.00	-	0.000
Breather Membrane	-	-	-
Rafters	25.00	-	0.000
SuperQuilt	25.00	-	6.100
Rafters	150.00	-	0.000
Plasterboard	12.50	0.190	0.066
Inside Surface Resistance	-	-	0.100

U-Value, Combined Method: 0.16W/m^2K
(lower limit = 6.366m^2K/W, upper limit = 6.366m^2K/W)

Under Rafter U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles	10.00	-	0.000
Tile Battens	25.00	-	0.000
Breather Membrane	-	-	-
Rafters	150.00	-	0.000
SuperQuilt	25.00	-	6.100
Rafter	25.00	-	0.000
Plasterboard	12.50	0.190	0.066
Inside Surface Resistance	-	-	0.100

U-Value, Combined Method: 0.16W/m^2K
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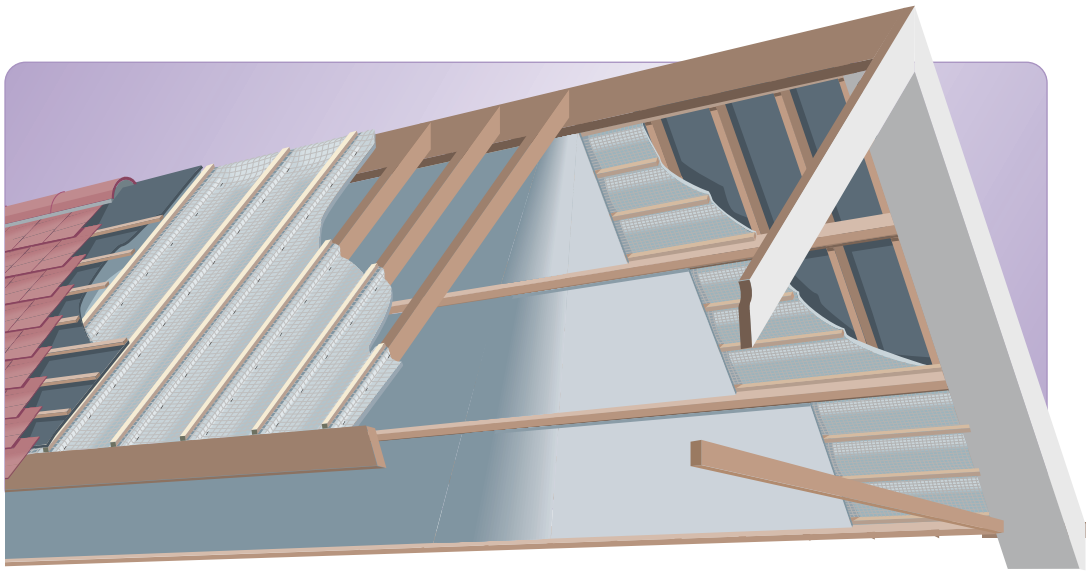
purlin details

SuperQuilt is the solution to difficult details e.g. around purlins and other obstructions.



Between Purlins fixing details

SuperQuilt is fixed horizontally or vertically and stapled to the underside of the the rafters.

At the purlins the SuperQuilt is turned up at stapled in place.

Battens are fixed through the SuperQuilt into the rafters, at the purlins the battens are fixed into the rafters crushing the SuperQuilt tightly against the purlins.

Plasterboard can then be fixed to the battens.

Behind Purlins fixing details

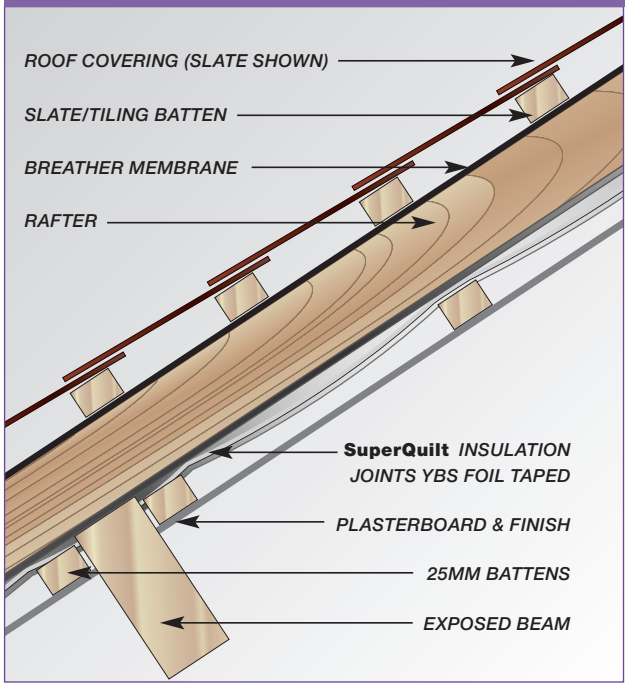
SuperQuilt is fixed horizontally or vertically and stapled to the underside of the the rafters.

At the purlins the SuperQuilt is cut and pushed behind the purlins then taped to the next piece at the opposed side of the purlin.

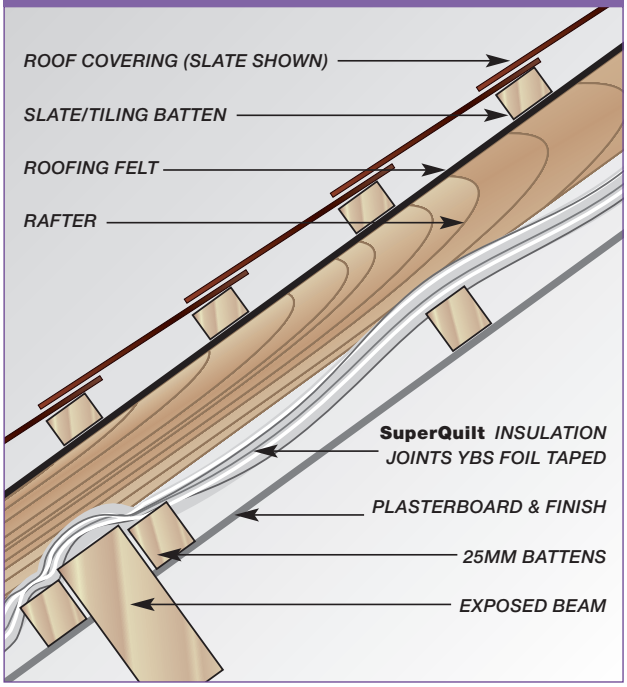
Battens are fixed through the SuperQuilt into the rafters.

Plasterboard can then be fixed to the battens.

Between Purlins



Around Purlins



Between Rafter U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles	10.00	-	0.000
Tile Battens	25.00	-	0.000
Breather Membrane	-	-	-
Battens	25.00	-	0.000
SuperQuilt	25.00	-	6.100
Rafters	150.00	-	0.000
Plasterboard	12.50	0.190	0.066
Inside Surface Resistance	-	-	0.100

U-Value, Combined Method: 0.16W/m^2K
(lower limit = 6.366m^2K/W, upper limit = 6.366m^2K/W)

Behind Purlin U-value calculation

Construction	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m^2K/W)
Outside Surface Resistance	-	-	0.100
Tiles	10.00	-	0.000
Tile Battens	25.00	-	0.000
Breather Membrane	-	-	-
Rafters	150.00	-	0.000
SuperQuilt	25.00	-	6.100
Battens	25.00	-	0.000
Plasterboard	12.50	0.190	0.066
Inside Surface Resistance	-	-	0.100

U-Value, Combined Method: 0.16W/m^2K
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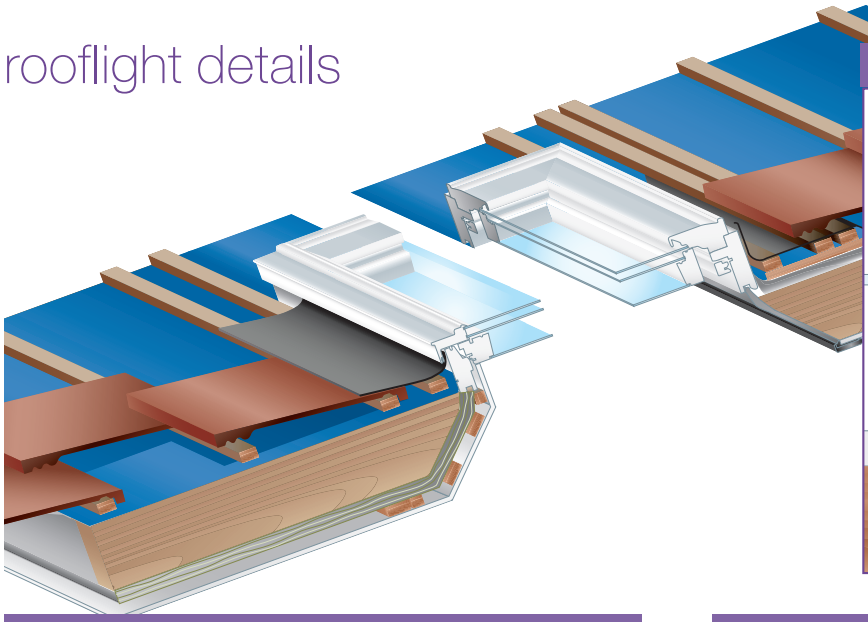
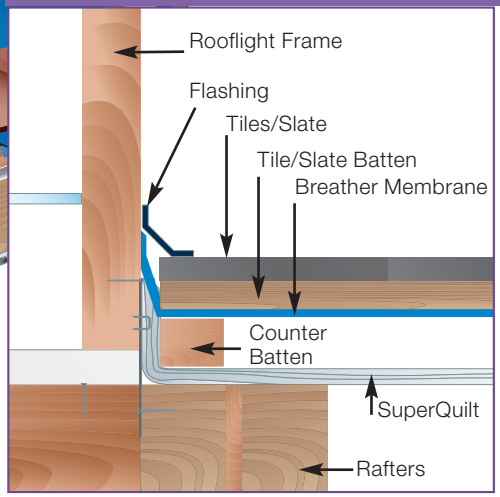
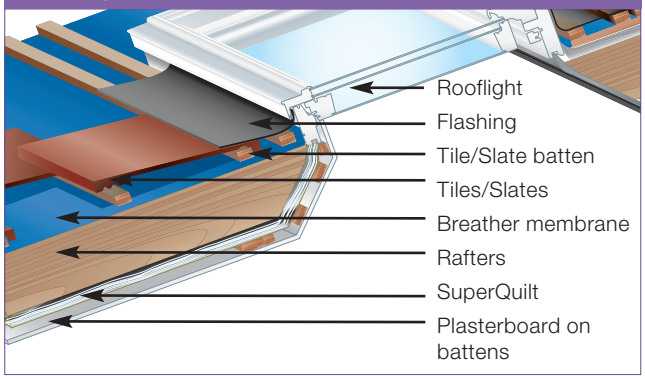
rooflight details



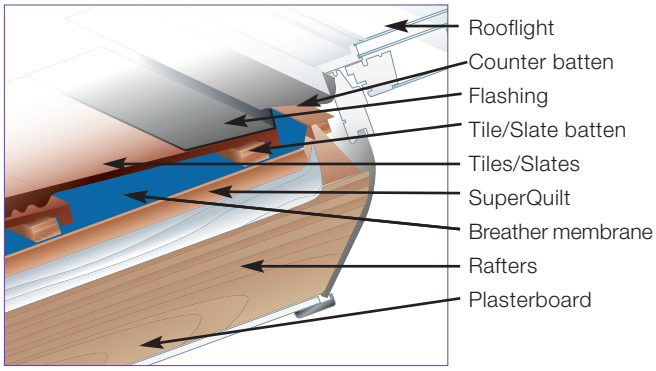
Rooflight 'Under Rafter' Side detail



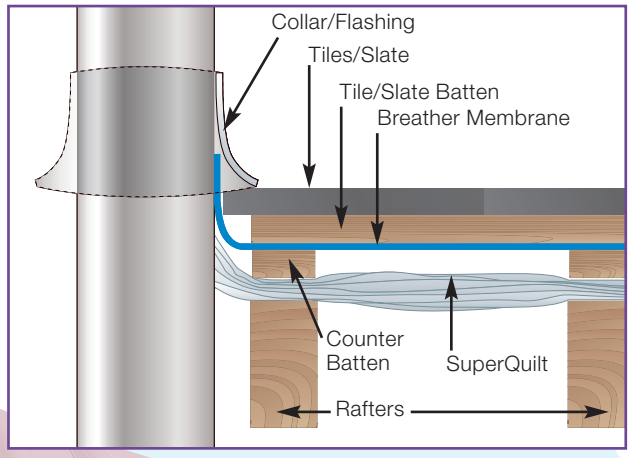
Rooflight Under Rafter Detail

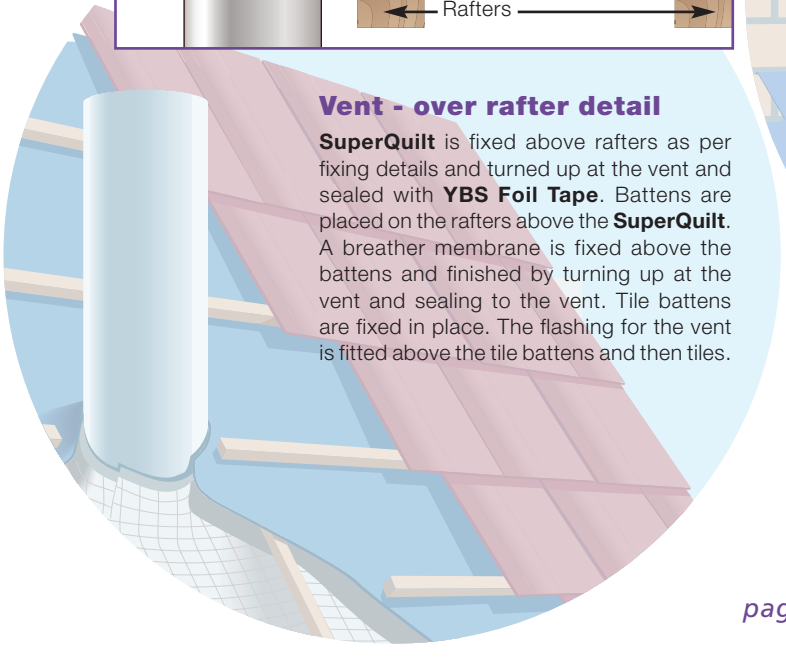


Rooflight Over Rafter Detail



vent/light-pipe details

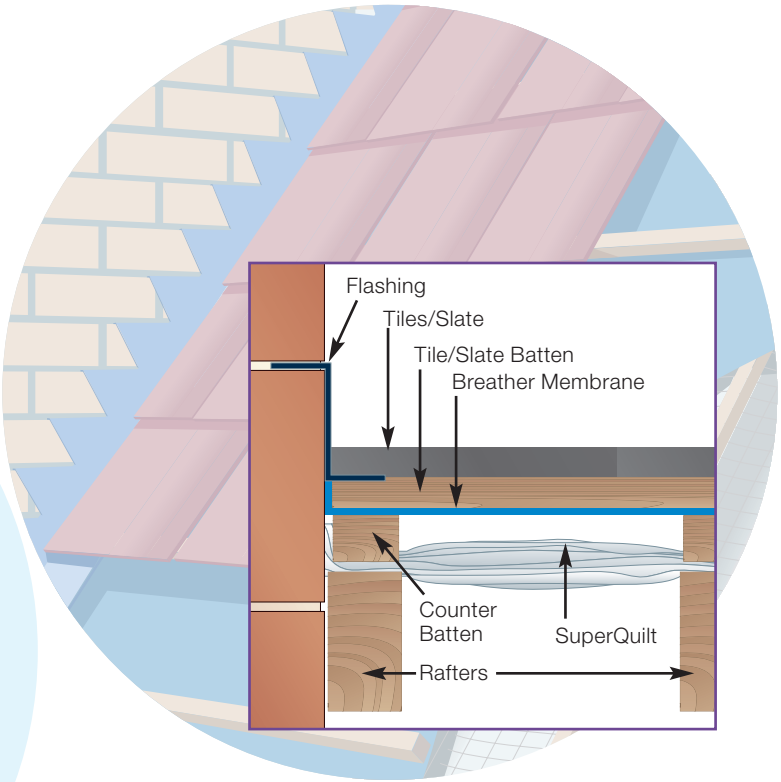




Vent - over rafter detail

SuperQuilt is fixed above rafters as per fixing details and turned up at the vent and sealed with **YBS Foil Tape**. Battens are placed on the rafters above the **SuperQuilt**. A breather membrane is fixed above the battens and finished by turning up at the vent and sealing to the vent. Tile battens are fixed in place. The flashing for the vent is fitted above the tile battens and then tiles.

flashings details



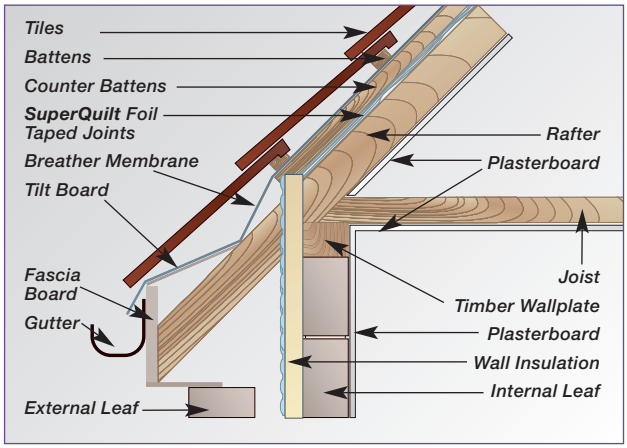
Flashings - over rafter detail

SuperQuilt is fixed above rafters as per fixing details and turned up at the wall. A batten is placed on the rafter to hold the **SuperQuilt** tight against the wall. A breather membrane is fixed above the battens and finished by turning up behind the flashing. Tile battens are fixed in place. The flashing is fitted above the tile battens and then tiles.

eves details

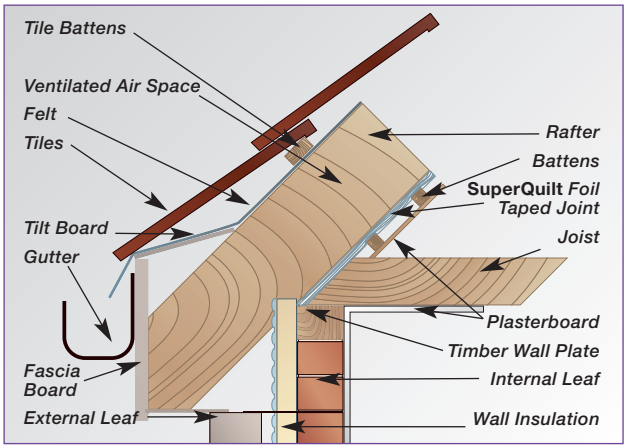
Over Rafter Fixing Details

SuperQuilt is stapled to the rafters. At the eves the SuperQuilt is cut and taken down between the rafters to the cavity wall insulation or the wall plate. The material needs to be sealed with staples and tape to the rafters and the cavity wall insulation or wall plate to create an airtight envelope.

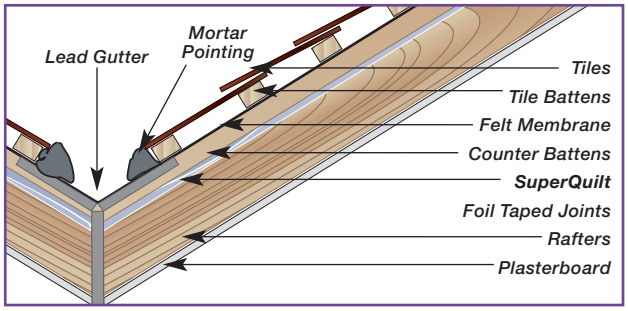


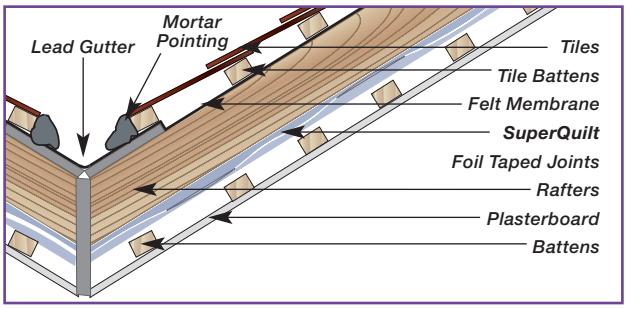
Under Rafter Fixing Details

SuperQuilt is stapled to the underside of the rafters. At the eves the SuperQuilt is cut and taken down between the joists to the cavity wall insulation or the wall plate. The material needs to be sealed with staples and tape to the joists and the cavity wall insulation or wall plate to create an airtight envelope.



valley details

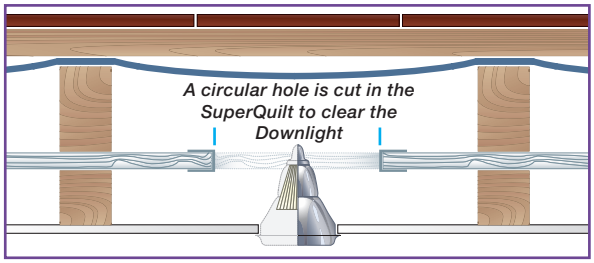




downlighter details

Downlighters Fixing Details

Install the **SuperQuilt** as per fixing instructions. There needs to be a 25mm clear cavity between the **SuperQuilt** and the down lighter. Locate where the light will fit if there is not a 25mm clear cavity cut a hole in the **SuperQuilt**, with a radius 25mm larger than the down lighters. Seal the cut edge of the **SuperQuilt** with **YBS Foil Tape**. Fix the plasterboard and fit the light. We recommend fire hoods are used with all sunken lights.



general instructions

Fixing Details

- **SuperQuilt** is designed to overlap each layer of insulation by 75mm and continually seal along the joints with **YBS Foil Tape.**
- No special equipment is needed to install **SuperQuilt.**
- **SuperQuilt** can be cut with a craft knife or a sharp pair of scissors.
- **SuperQuilt** can easily be fixed with staples at regular intervals (minimum staple depth is 14mm).
- **SuperQuilt** is at the most effective with a 25mm minimum air gap on either side. Using battens can create this gap. This will give you the maximum insulation benefit.

For Roof Applications

- Light Weight - only 13Kg per each 1.5m x 10m roll.
- Low Bulk - 25mm thickness - approximately equivalent to - 270mm Mineral Wool/Fibre
- Tear resistant.
- No special tools required Easily cut with scissors .
- Fix to beams or battens with staple gun.
- No protective clothing/handling required.
- Joints can be sealed with **YBS Foil Tape**.
- Keeps heat in during winter.
- Keeps heat out during summer.
- Easy to fit - suitable for professional or DIY use.
- Easy to store.

YBS Insulation
HIGH QUALITY PRODUCTS FOR THE BUILDING INDUSTRY

MANUFACTURED IN UK AND MADE TO A QUALITY SYSTEM MEETING THE REQUIREMENTS OF BS EN ISO 9002

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