

V 2008



ACTIS THIN MULTIFOIL
INSULATION

TRISO-SUPER 10 Installation Guidelines

EUROPEAN TECHNICAL
APPROVAL IN PROCESS
Registration N° 12.01/12

ROOFS
ATTICS



ACTIS

THE THIN MULTIFOIL INSULATION

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Technical Characteristics

THERMAL EFFICIENCY: equivalent to 210mm mineral wool*

*Thermal performance equivalent to 210mm mineral wool ($\lambda = 0.04$) based on comparative tests conducted under real conditions and certified by BM TRADA Certification Ltd. For more information on testing under real conditions and the equivalence of performance of this product with 210mm of mineral wool please see the Special Notice on page 16 of this brochure.

PRODUCT DESCRIPTION

19 components:

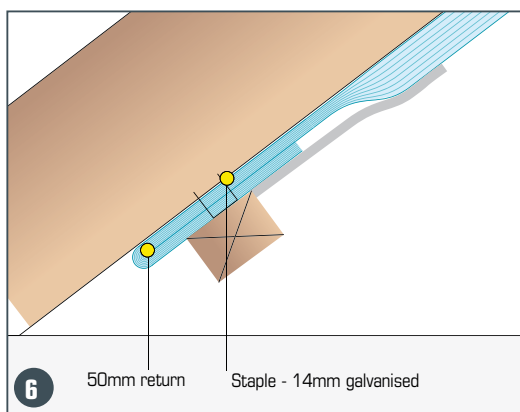
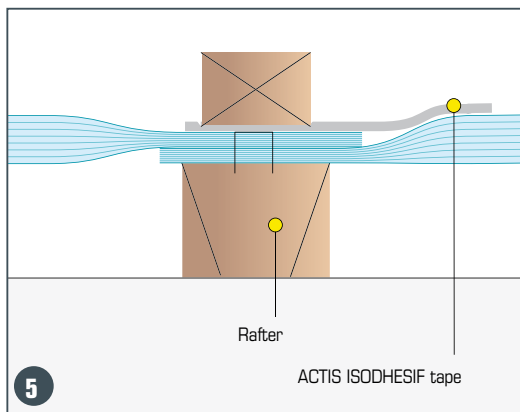
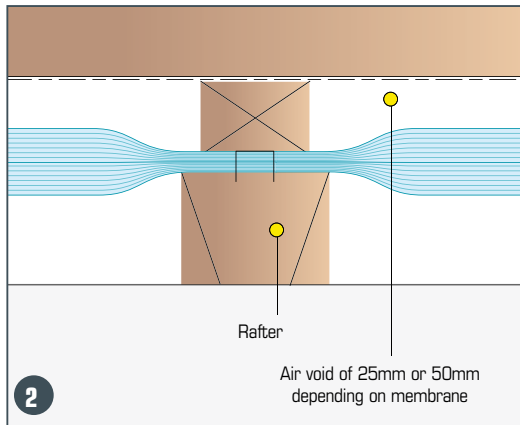
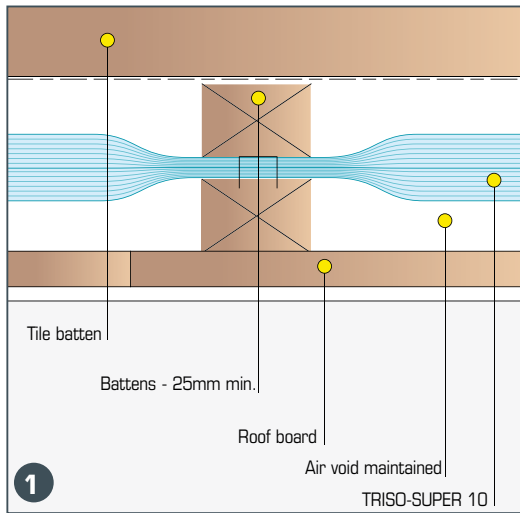
- 2 external reflective foils with reinforcing mesh
- 3 wadding layers
- 8 foam layers
- 6 internal reflective foils

Number of reflective foils: 8

Surface weight: 600g/m²

Thickness: 30mm approx.

MECHANICAL PROPERTIES	VALUE	REFERENCE STANDARD
Breaking strength		
Warp	>500N	ISO 13934-1
Weft	>400N	
Tear strength		
Warp	>60N	ISO 13937-2
Weft	>60N	
PACKAGING		
	10m²	20m²
Width	1.60m	1.60m
Length	6.25m	12.50m
Weight (per roll approx.)	7kg	14kg



1. Ensure an air gap of 25mm minimum on either side of the insulation.
2. Ventilation:
 - Vapour permeable underlay: ensure an air gap of 25mm minimum between the insulation and membrane. The membrane should have a vapour resistance less than 0.25MNs/g.
 - Felted Roof: Ensure an air gap of 50mm minimum between the insulation and the felt, with ventilation from eaves to ridge according to British Standards.
3. Pull the insulation taut and staple every 50mm to the rafters or timber support using galvanised staples, 14mm minimum. 20mm stainless steel staples are recommended.
4. Overlap the insulation 50-100mm at each joint and staple every 50mm onto the rafter or timber support batten.
5. Cover all joints with ACTIS ISODHESIF tape to give an air tight finish.
6. Fold all finishing edges under by 50mm minimum, staple every 50mm, and secure with a final batten

ACTIS ACCESSORIES:

ACTIS ISODHESIF tape

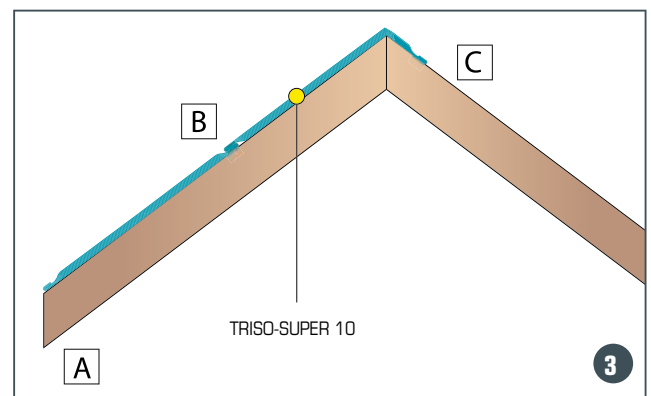
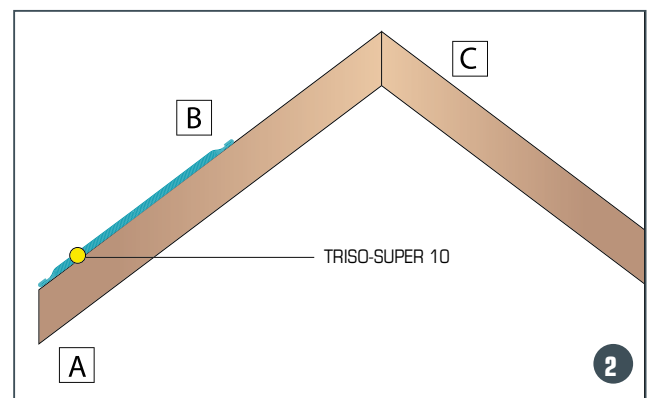
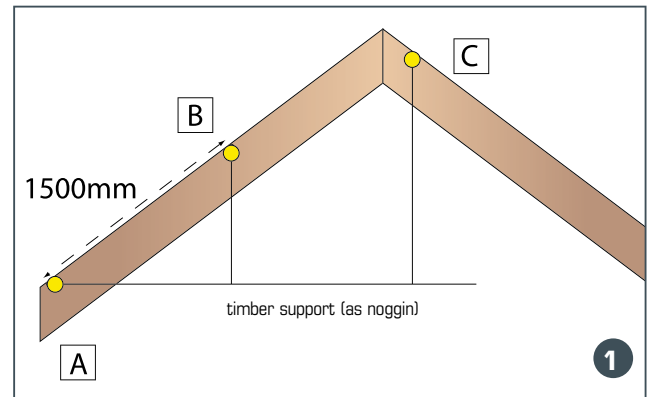


ACTIS CUTTER



TRISO-SUPER 10 is suitable for use in an over rafter application giving a continuous layer of insulation across the roof creating a more air tight section.

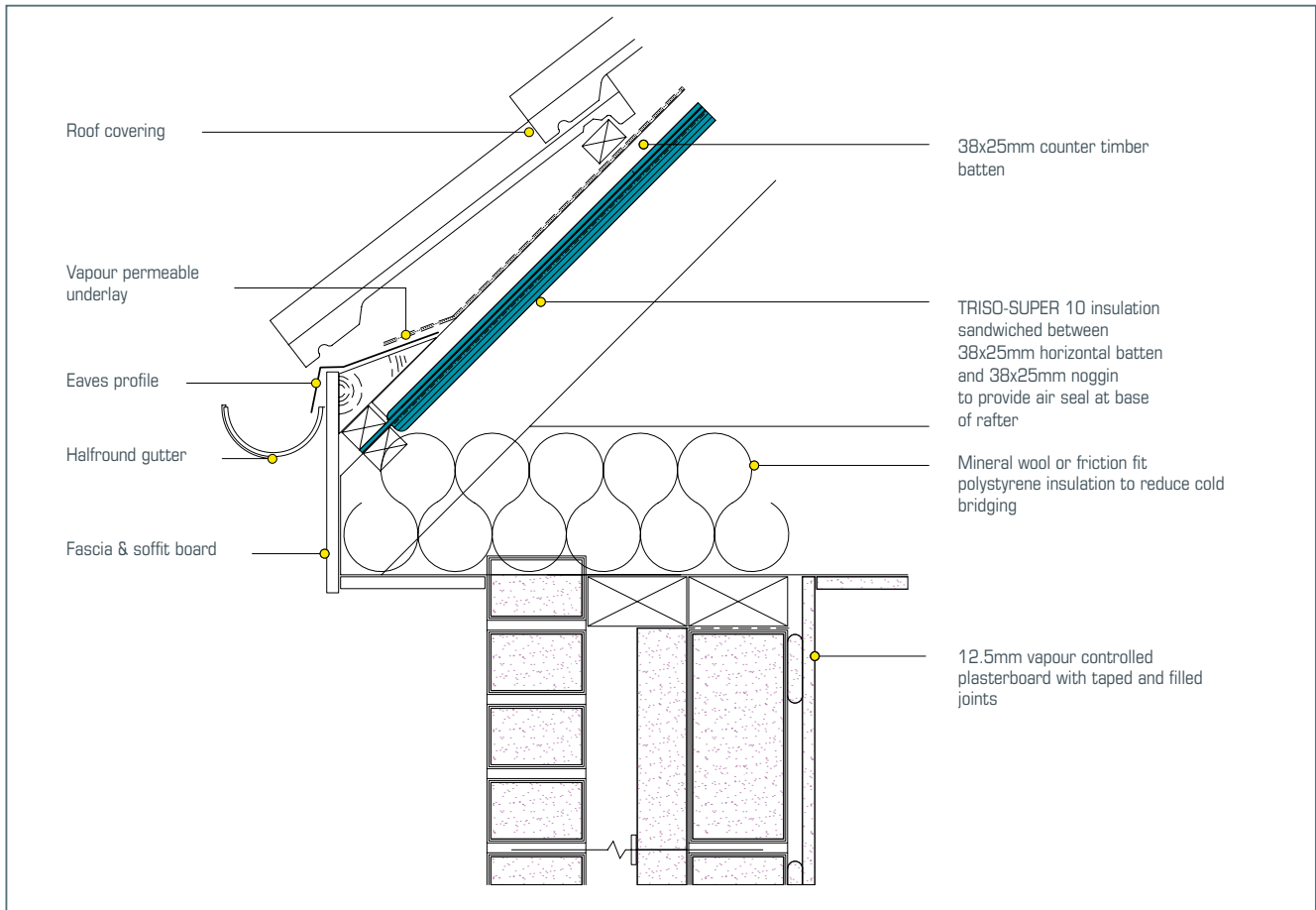
1. Measure 1500mm from the eaves (A), to (B), and fix timber support (as noggin) between the rafters. Continue to fix timber supports every 1500mm as appropriate.
2. Lay TRISO-SUPER 10 insulation horizontally starting at the eaves. Fold exposed edge over and staple to timber support every 50mm.
3. Fix next layer of insulation overlapping edges 50–100mm. Staple to timber support every 50mm and seal with 100mm ACTIS ISODHESIF tape.
4. At verges or gable, fold over insulation and staple to prevent air ingress.
5. Visually inspect installed insulation to ensure the finish is as air tight as possible.
6. Fix counter batten (38x25mm) with nails or screws.
7. Install vapour permeable underlay to manufacturer's specifications.
8. Fix tile batten to suit.



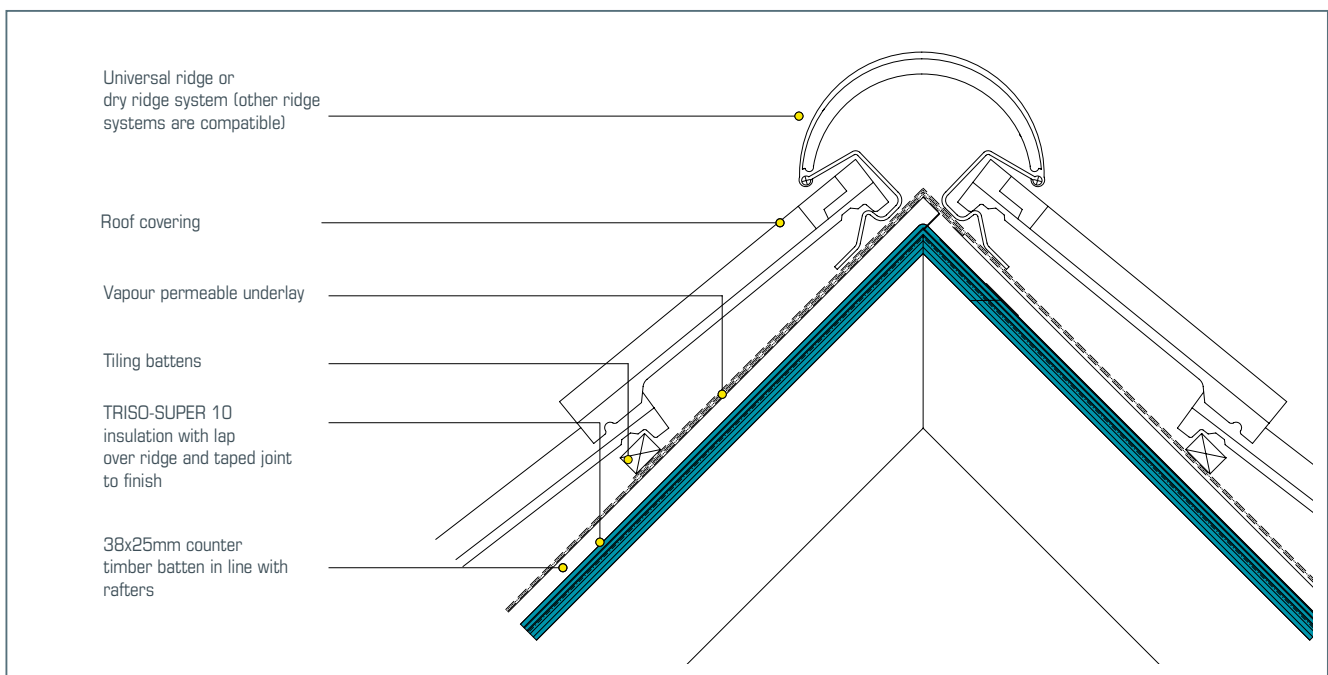
Appendices 1 - 4 show further installation instructions for specific details.

TRISO-SUPER 10 insulation can be used for walls around pitched roof installations such as dwarf walls, dormer walls and gable ends, as long as these constitute less than 40% of the overall insulated area.

Masonry cavity wall construction



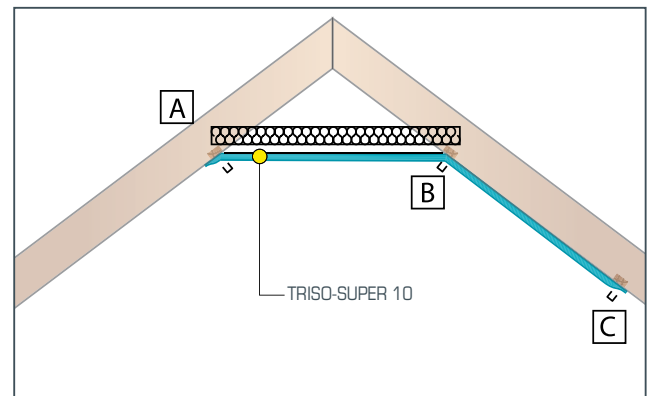
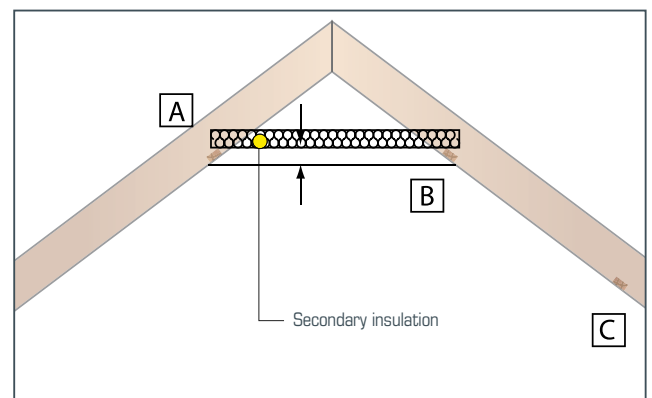
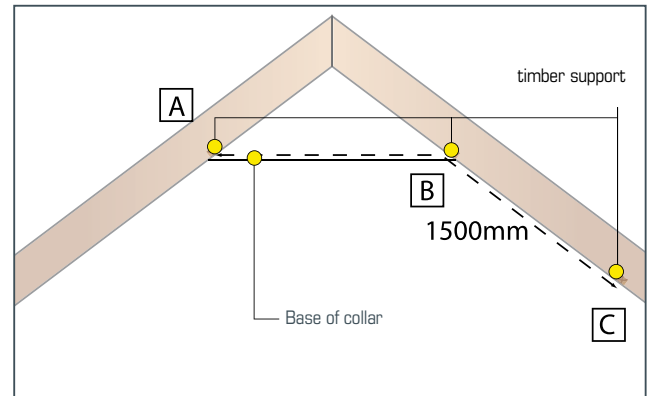
Prefabricated or made up roof trusses



Under rafter installation

TRISO-SUPER 10 is suitable for under rafter application.

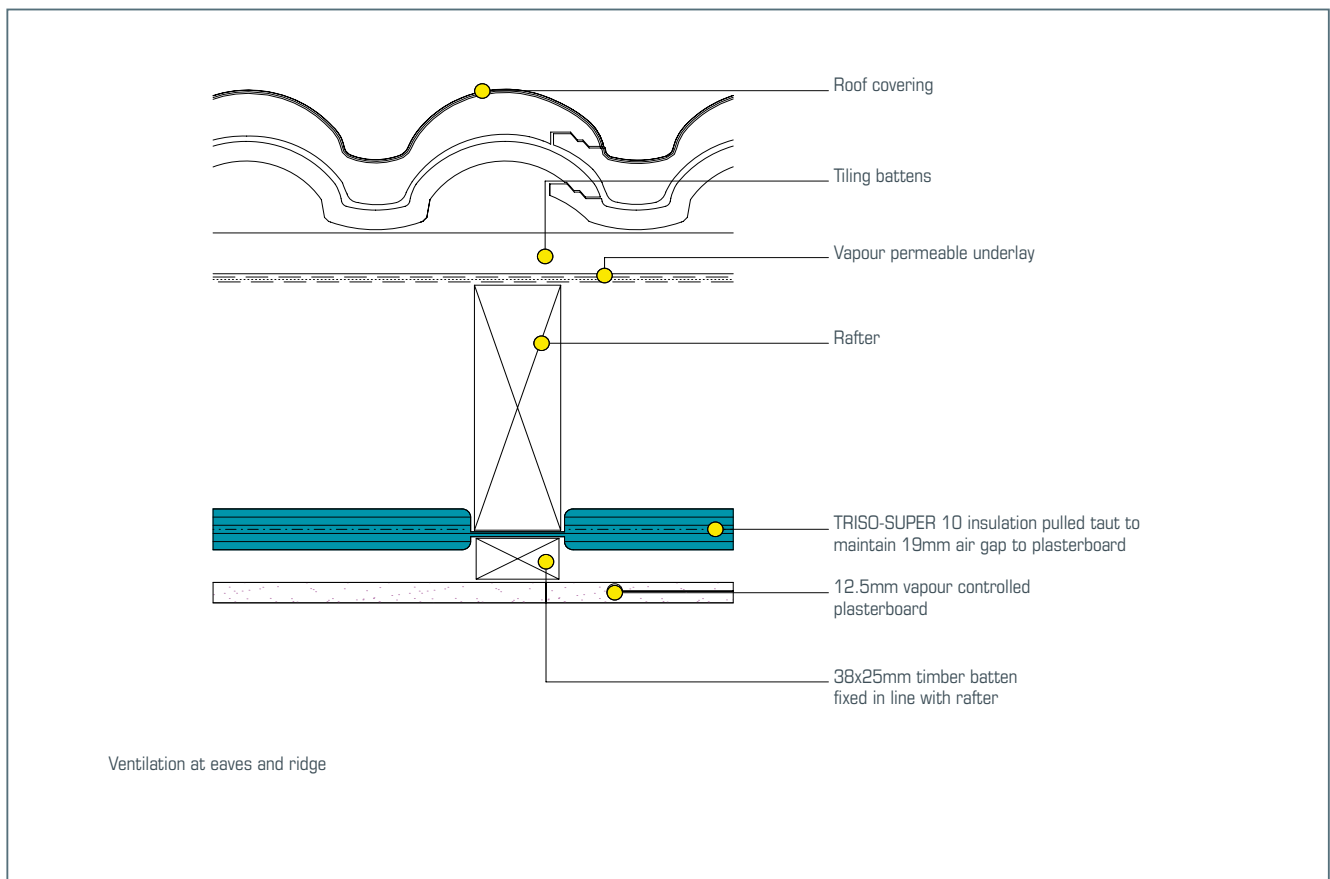
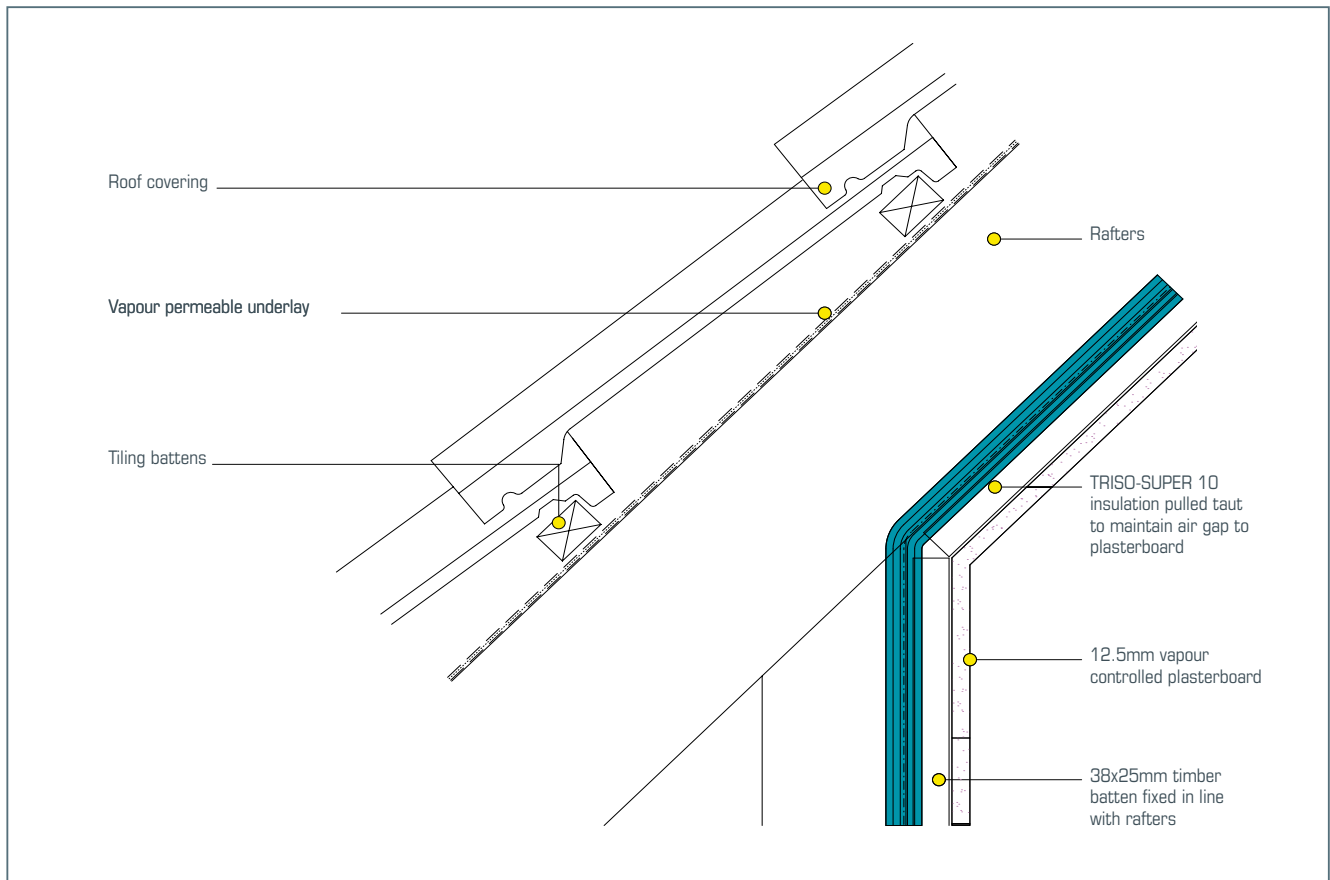
1. Fix timber supports (as noggin) (A) and (B) between the rafters at collar/roof junctions. Continue to fix timber supports every 1500mm as appropriate.
2. Install secondary insulation, for example mineral wool or PIR foam between roof collars, to achieve Part L compliance, aligning a 25mm air gap to the underside.
3. Lay TRISO-SUPER 10 across the face of the rafters, fixing in a continuous layer from timber support (A), through (B), to (C). Staple in place every 50mm keeping insulation as taught as possible.
4. Fix next layer overlapping insulation by 50–100mm.
5. Staple the insulation to timber support and seal with 100mm ACTIS ISODHESIF tape.
6. Ensure all exposed ends of insulation are folded to stop air ingress.
7. Visually inspect installed insulation to ensure the finish is as air tight as possible.
8. Prepare for plasterboard by fixing horizontal or vertical battens (38x25mm) using nails or screws, through the ACTIS insulation to the rafter.
9. Fixing vapour controlled plasterboard is recommended.



Appendices 1 - 4 show further installation instructions for specific details.

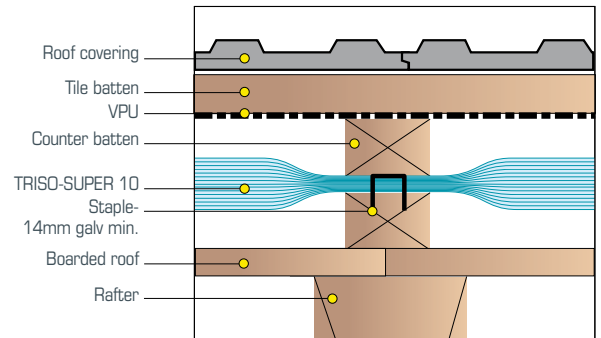
TRISO-SUPER 10 insulation can be used for walls around pitched roof installations such as dwarf walls, dormer walls and gable ends, as long as these constitute less than 40% of the overall insulated area.

UNDER RAFTER INSTALLATION



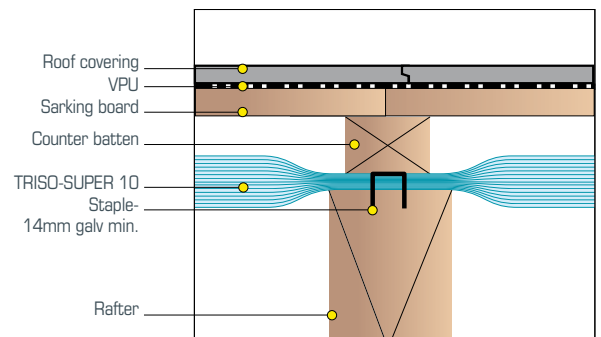
Over rafter installation – boarded roof

1. Fix counter battens (38x45mm) in-line with rafters.
2. Fix horizontal batten (38x45mm) at eaves.
3. Measure 1500mm from eaves batten and fix timber support (as noggin) between cross battens. Continue to fix timber supports every 1500mm, as appropriate.
4. Install TRISO-SUPER 10 insulation horizontally starting at the eaves. Fold exposed edge over and staple to timber support.
5. Visually inspect installed insulation to ensure the finish is as air tight as possible.
6. Fix counter batten (38x25mm) with nails or screws in line with rafters.
7. Fix vapour permeable underlay to manufacturer's specification.
8. Fix tile battens to suit.

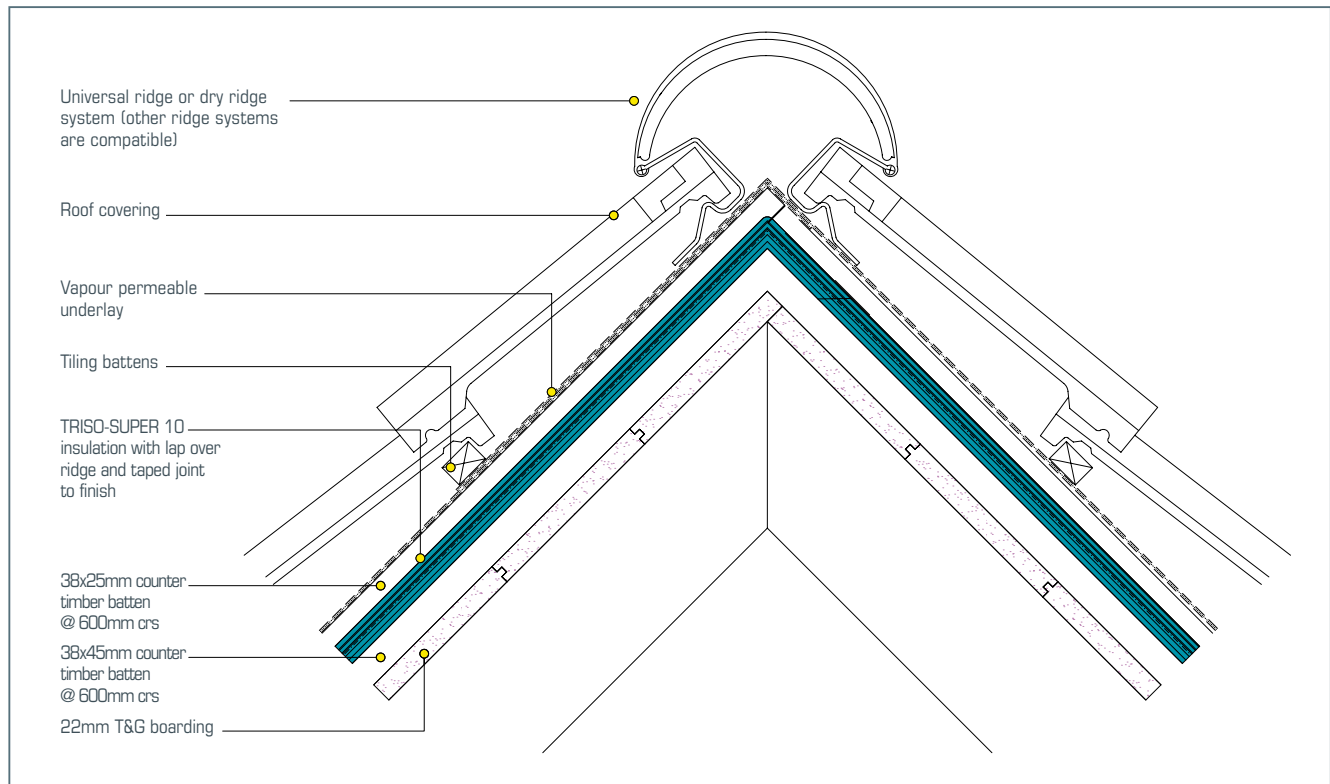


Over rafter installation – Sarking board

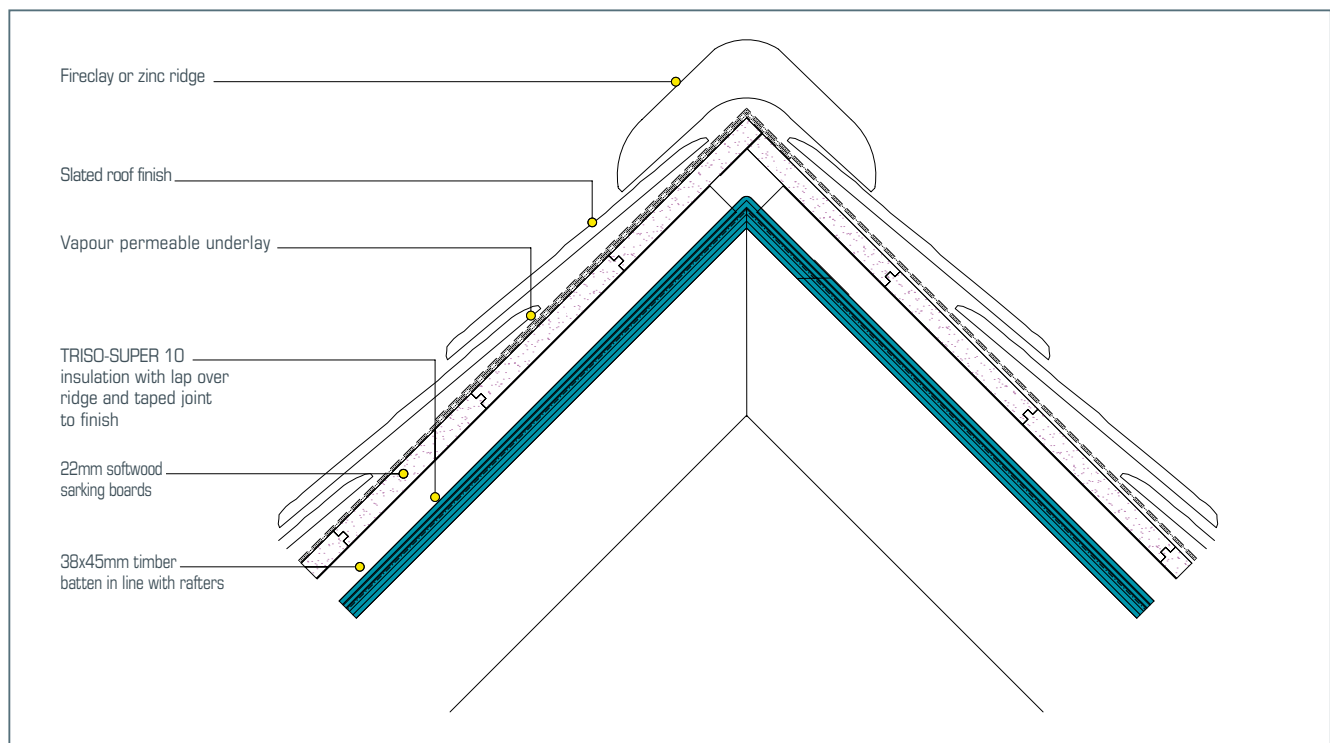
1. Fix horizontal batten (38x45mm) at eaves.
2. Measure 1500mm from eaves batten and fix timber supports (as noggin) between cross battens. Continue to fix timber supports every 1500mm, as appropriate.
3. Install TRISO-SUPER 10 insulation horizontally starting at the eaves. Fold exposed edge over and staple to timber support.
4. Visually inspect installed insulation is as air tight as possible.
5. Fix counter batten (38x45mm) with nails or screws in line with rafters.
6. Fix sarking board as required.
7. Fix vapour permeable underlay to manufacturer's specification.
8. Fix slate tiles.



Boarded roof



Sarking board roof

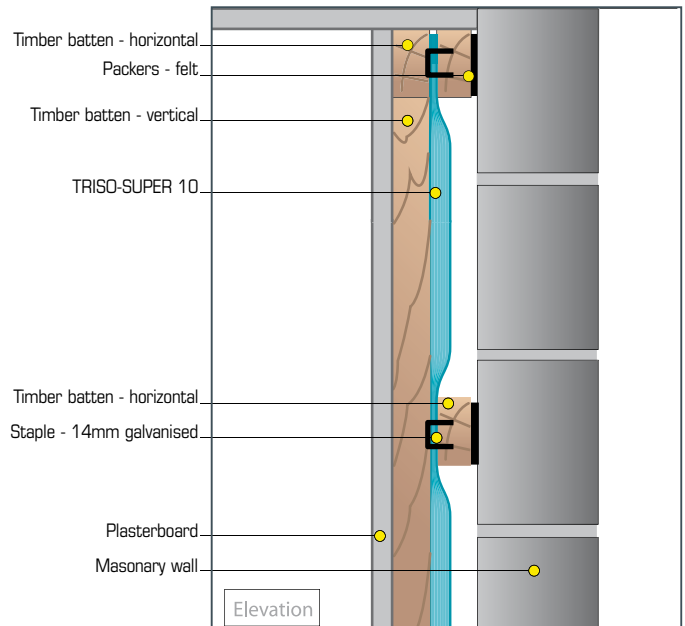


TRISO-SUPER 10 insulation can be used for walls around pitched roof installations such as dwarf walls, dormer walls and gable ends, as long as these constitute less than 40% of the overall insulated area.

(Please contact Local Building Control for guidance on a project specific basis).

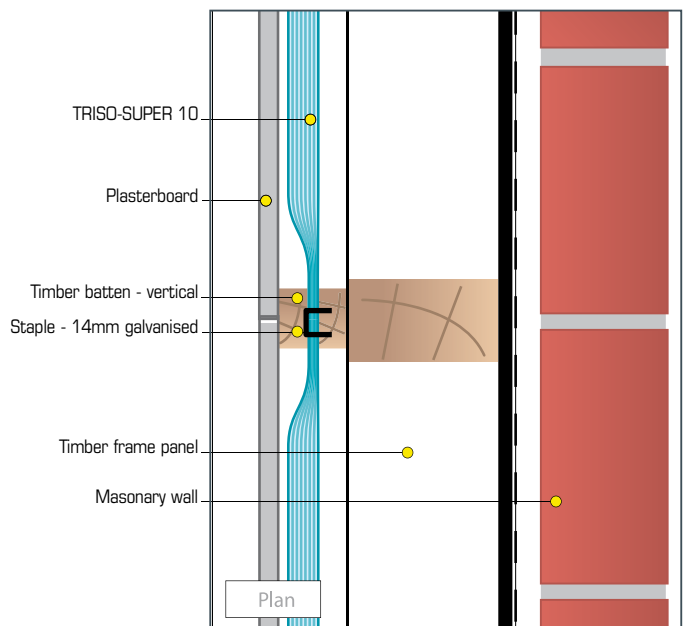
Masonry walls

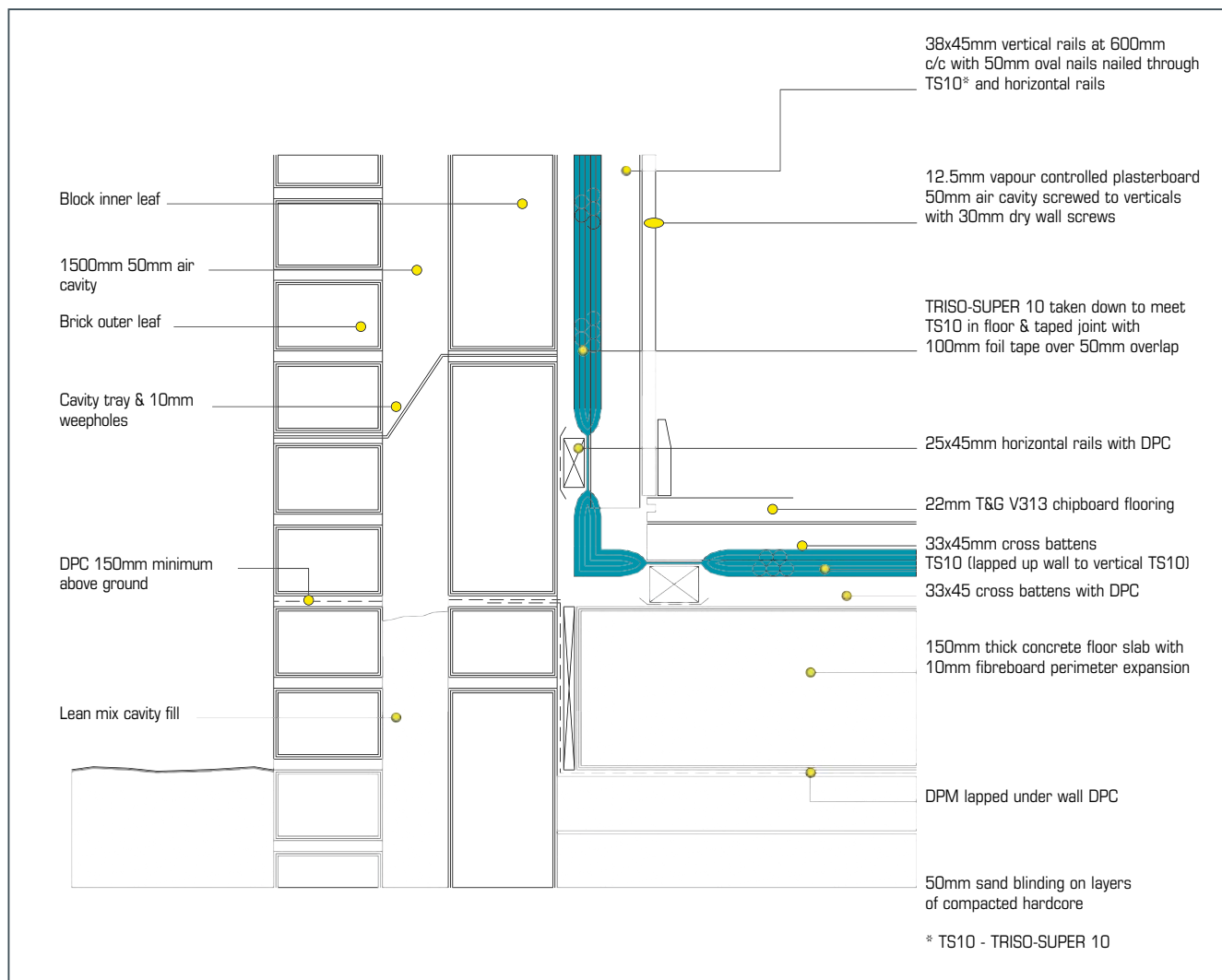
1. Fix horizontal or vertical batten (38x25mm min.) to wall at 500mm centres, inserting felt packers to ensure air circulation.
2. Fix horizontal batten (38x25mm min.) at ceiling and floor junction.
3. Lay TRISO-SUPER 10 insulation vertically stapling every 50mm with 14mm (min.) galvanised steel staples. Cut insulation 100mm longer at ceiling and floor allowing insulation to be clamped by second batten.
4. Overlap 50–100mm on batten and tape joints with 100mm ACTIS ISODHESIF tape.
5. Fix horizontal batten (38x25mm) at ceiling and floor clamping insulation to floor and ceiling and creating air tight seal.
6. Fix vertical batten (38x45mm min.) at 600mm (max.) centres.
7. Fix vapour controlled plasterboard.



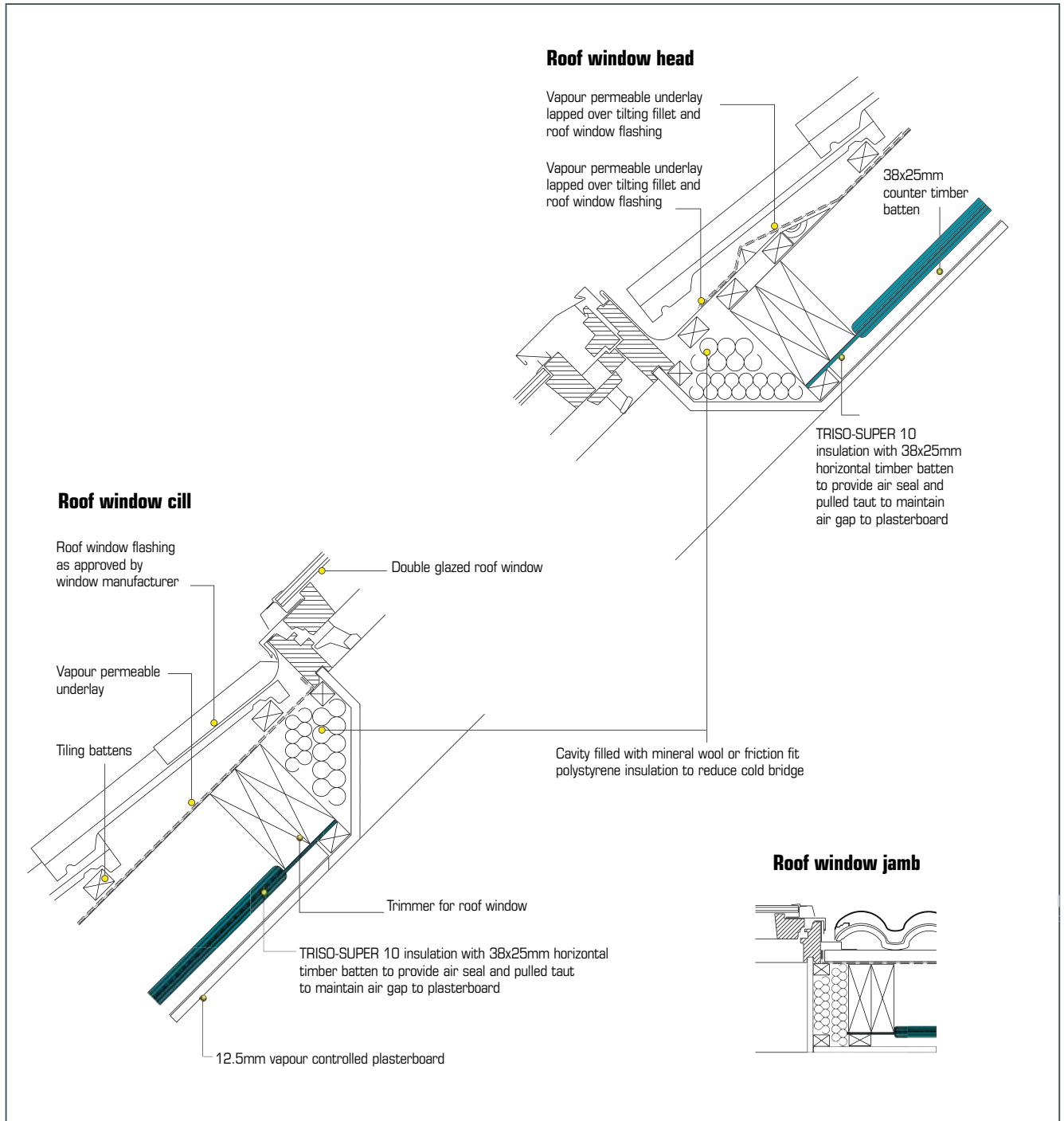
Timber frame walls

1. Fix vertical or horizontal support batten to timber frame at joint positions of insulation.
2. Fit insulation horizontally stapling every 50mm. Cut insulation oversized at floor and ceiling allowing insulation to be clamped by the second batten.
3. Overlap 50–100mm on batten, staple using 14mm galvanised staples, and tape with ACTIS ISODHESIF tape.
4. Fix horizontal batten (38x25mm) at ceiling and floor clamping insulation to floor and ceiling creating an air tight seal.
5. Fix vertical batten (38x25mm).
6. Fix vapour controlled plasterboard.

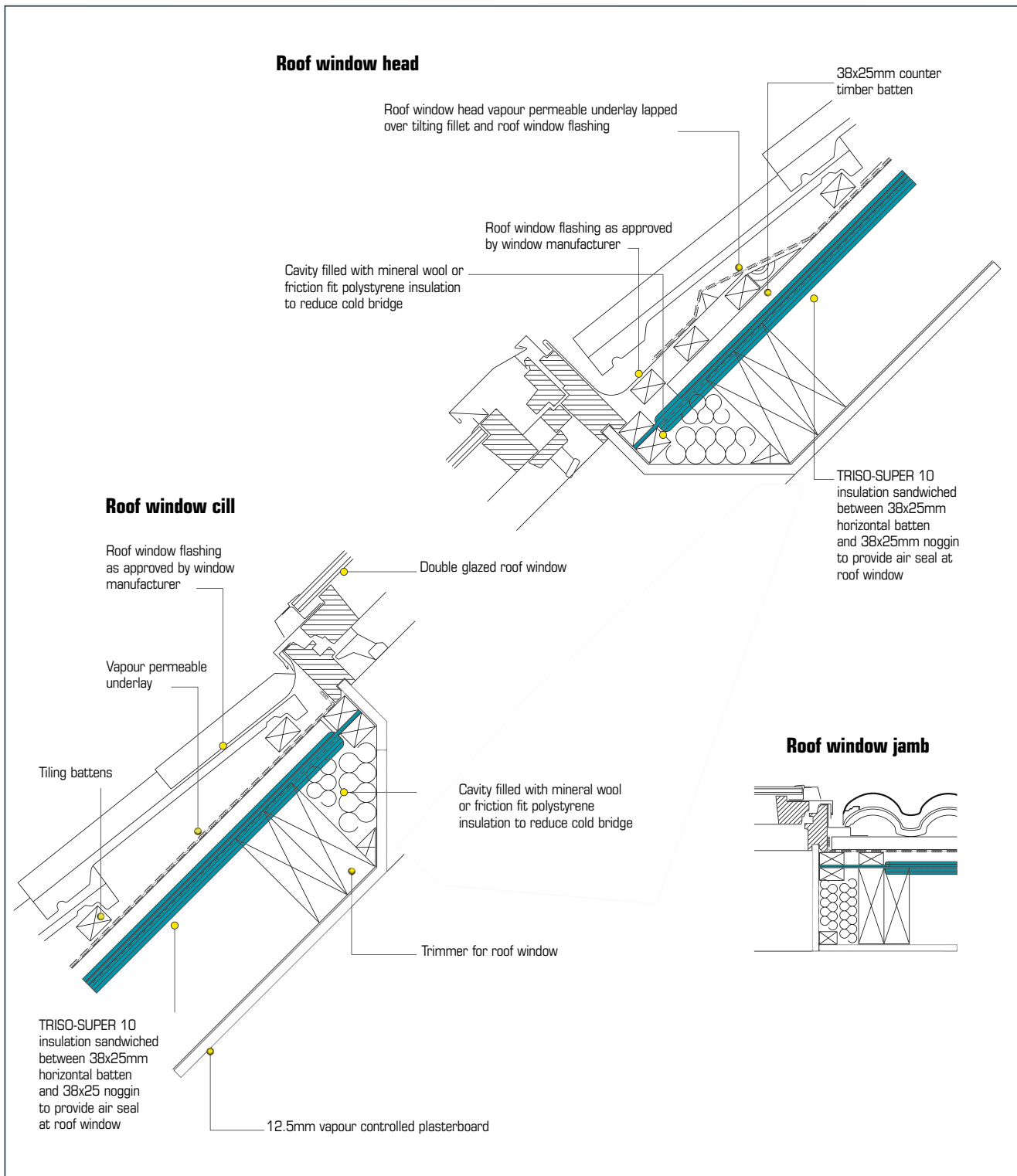




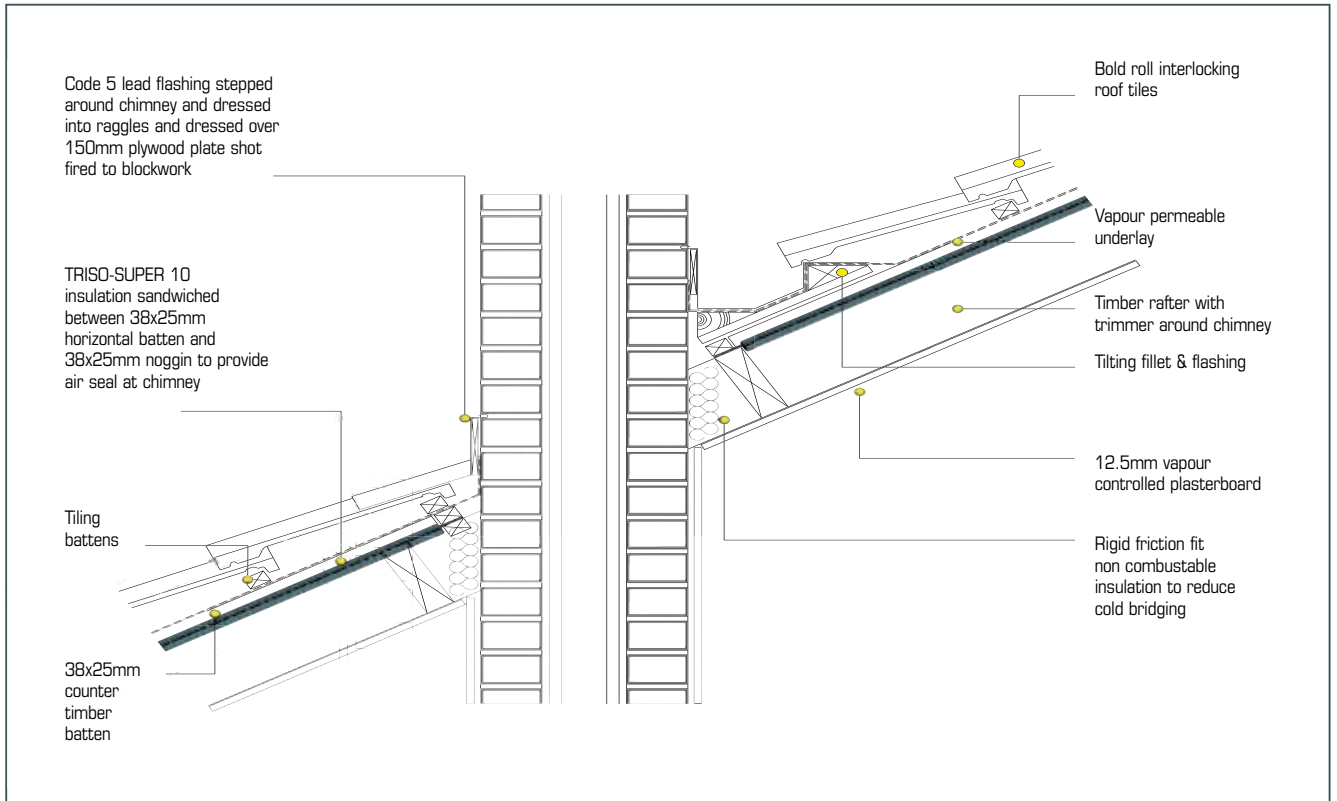
Installation around a roof window - under rafter installation



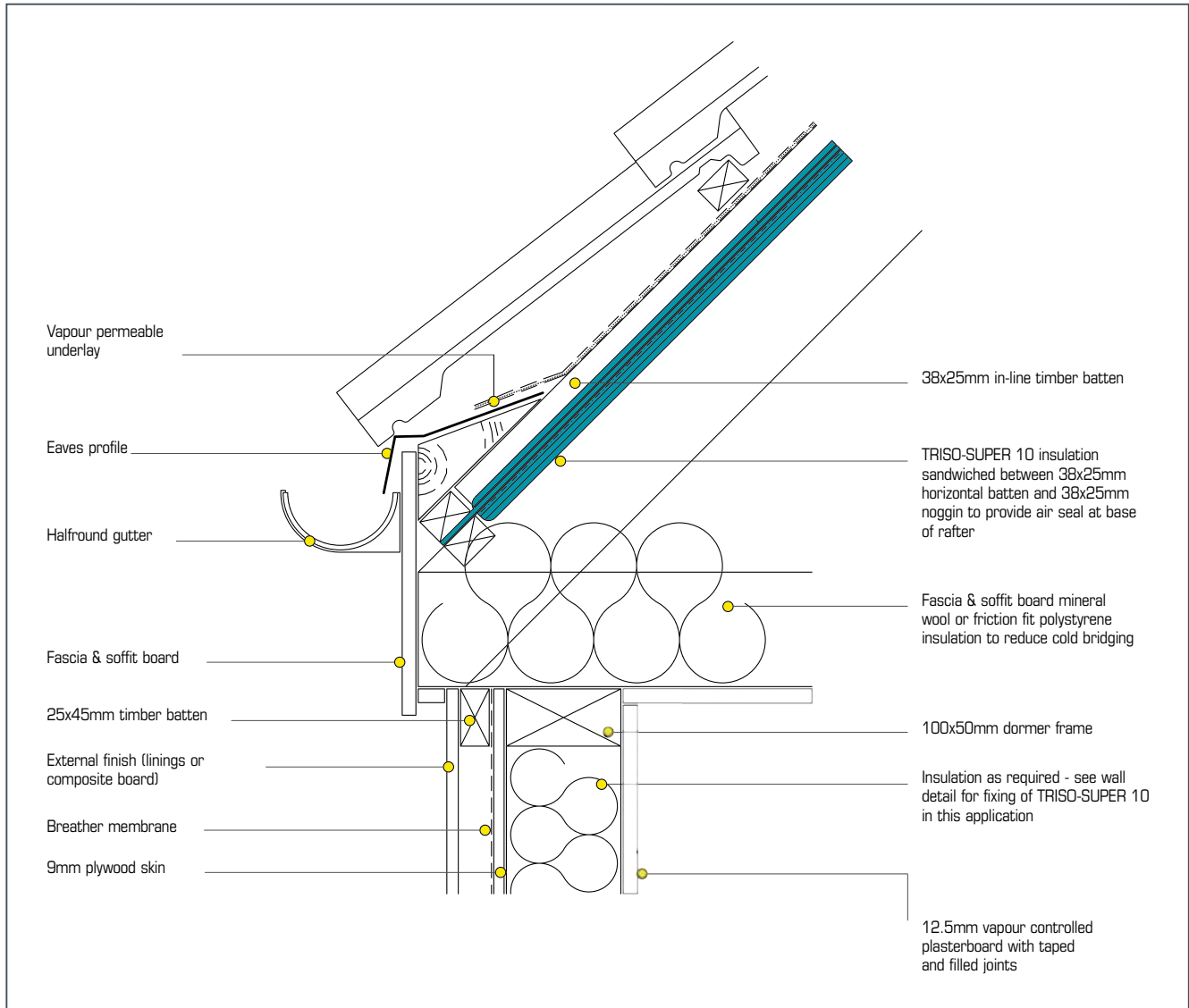
Installation around a roof window - over rafter installation



Installation around a chimney



Installation around a dormer window detail



For any application not shown in this document please contact our technical support team on 01249 462 888 or visit www.insulation-actis.com

How to get the most from your ACTIS product

IMPORTANT: in addition to the specific recommendations given by ACTIS (below), your ACTIS product should be installed and used in compliance with (1) good building practice; (2) the most recent editions of any applicable regulations or relevant guidance and (3) any British or European Standards relating to the installation and use of insulation products, particularly in relation to safety precautions.

■ Safety precautions to observe in relation to your ACTIS product

• Fire precautions

Never expose ACTIS insulation to a direct heat source, sparks or a naked flame.

Keep blow torches well away from ACTIS insulation, even when using a flame guard or other protective device, and make sure that hot debris and sparks do not make contact with the insulation.

• Fireproof finishes and compartment walls

As recommended by current regulatory guidance, do not leave insulation exposed in habitable rooms. We recommend that ACTIS insulation is always covered with a fireproof finish such as plasterboard (see, for example, the fire safety provisions contained in Approved Document B, which provides practical guidance on the fire safety requirements of the Building Regulations 2000 (as amended) in England and Wales; or refer to the relevant provisions in Scotland and Northern Ireland, as amended from time to time).

To ensure that compartment walls achieve the requisite levels of fire resistance, the insulation should not be carried over junctions with such walls (again, please refer to the fire safety provisions contained in Approved Document B noted above, or to any applicable provisions in Scotland and Northern Ireland, as amended from time to time).

TRISO-SUPER 10 is not fire rated and has Euroclass classification F.

• Chimneys, inserts, heat exchangers and other sources of heat

Never use ACTIS insulation to insulate a chimney flue, an insert, heat exchanger or any other heat source above 80°C. Use a Euroclass A1 non-combustible insulation in compliance with British or European Standards. ACTIS advise leaving a minimum gap of 200 mm between the insulation and chimneys, inserts, heat exchangers and all other sources of heat above 80°C.

Please seek advice from ACTIS by calling the helpline on 01249 462 888 and check with your local Building Control officer before installing ACTIS insulation near any source of heat above 80°C.

• Down-lighters and recess lighting

The use of down-lighters or recess lighting in conjunction with ACTIS insulation is not recommended. Unless special precautions are taken, this poses an elevated fire risk.

However, if the use of such recess lighting in conjunction with ACTIS insulation is desired, encasing the down-lighter appropriately with a non-combustible material may provide adequate fire protection, but in all cases advice should be sought with the relevant Building Control officer who will give guidance on a case by case basis.

• Contact between materials and compatibility between products

Avoid all contact between ACTIS insulation and lead, zinc, copper and its alloys as well as caustic products.

• Sun protection

When laying ACTIS insulation materials outside, remember that multi-foil insulation is highly reflective. Where the product is being installed in bright or sunny weather conditions, appropriate eyewear should be worn (such as sunglasses conforming to the most stringent requirements of BS EN 172, as amended from time to time) and protect against sunburn.

■ General guidance on installing your ACTIS insulation

Insulation should take into account all elements of the building envelope which are susceptible to thermal losses, such as doors, windows, roofs, chimneys, walls and floors. Adequate ventilation should be provided where necessary, in compliance with good building practice and with the most recent editions of the relevant regulatory guidance and British and European Standards available.

ACTIS cannot compensate for heat losses due to defective or poorly insulated joinery, or thermal bridging due to poor construction.

ACTIS makes no warranty, express or implied, as to the performance of its products if the relevant installation guidelines are not followed.

• Direction of laying ACTIS insulation materials

It is recommended that strips are laid horizontally but they can also be laid vertically, depending on the characteristics of the area to be insulated.

TRISO-SUPER 10 may be laid either side up without affecting the efficiency of the insulation.

• Staples

We recommend using galvanized or stainless steel staples, 14 mm minimum (ideally 20 mm).

• Television and mobile signals

It is advisable to have an external television aerial when using ACTIS insulation. Mobile signals may be affected by ACTIS insulation.

• Protecting your ACTIS product from the elements before and after installation

ACTIS insulation should be stored in its packaging under cover to protect it from the elements (such as rain or snow). During installation, ACTIS insulation should be protected from any prolonged exposure to rain or snow. Once installed, ACTIS insulation should not be left exposed to weathering for more than 3 days.

• Installing other products with your ACTIS product

When using ACTIS insulation in conjunction with other products, such as a tiling underlay or breather membrane (as recommended by current regulatory guidance), or with supplementary insulation, precautions must be taken to avoid vapour or condensation issues. This can be avoided by ensuring adequate ventilation, but ACTIS also recommends that the product with the highest vapour resistivity be placed on the inside (the warm side), and would always suggest installing a vapour control layer to the back of the plasterboard where the insulation is being installed in a habited space. ACTIS cannot make any warranty, express or implied, as to the performance or safety of other products used in conjunction with its own products.

Please contact the ACTIS helpline on 01249 462 888 or write to us at ACTIS Insulation Ltd, Unit 1 Cornbrash Park, Bumpers Way, Bumpers Farm Industrial Estate, Chippenham Wilts, SN14 6RA.

Thermal efficiency is carefully measured 'in-situ' under real weather conditions by the independent testing body TRADA Technology Ltd. The performance of the TRISO-SUPER 10 is compared to that of traditional mineral wool insulation materials tested concurrently and in identical conditions. This testing is strictly supervised and certified by BM TRADA Certification Limited (Certificate no. 0102 dated 3 April 2006). There are currently no ISO and BS EN testing standards which are appropriate for innovative multifoil insulation products.

Under the current legislative framework in England and Wales, Local Authority Building Control Bodies have the discretion to accept independent certification for insulation products, such as that provided for this product by BM TRADA. We strongly advise that you seek confirmation of this approval from your local Building Control Body before installing the TRISO-SUPER 10.

'In situ' testing gives a more accurate measurement of the actual performance of multifoil products than the guarded hot-box test method, which is designed to test bulk insulation products, and is conducted in a controlled static laboratory environment. A hot-box measures heat transfer primarily by conduction, and does not take correctly into account heat transfer by radiation, which is the function of multifoil products. The European Directive of Building Products includes a procedure which allows for the creation of new standards for innovative products, the Request for European Technical Approval (ETA).

ACTIS have made an ETA request for thin multifoil insulation products to the European Organisation for Technical Approvals (EOTA, the European body responsible for conducting this process). The aim of this request is to establish a new standard for assessing the thermal performance of thin multifoil insulation, based on the in situ test methodology defined by BM TRADA, with a view to achieving CE marking for these products.

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Example of ACTIS in-situ test cells, Limoux, France.

INSTALLATION FAQS

• Can ACTIS TRISO-SUPER 10 be used on Walls?

TRISO-SUPER 10 has been tested and certified for use on pitched roofs. TRADA certificate 0102 also allows for the use of TRISO-SUPER 10 on walls such as gable walls, dormer cheeks and other verticals within the roof space. These walls are to be less than 40% of the overall area to be insulated. TRISO-SUPER 10 has been installed successfully on walls throughout the UK, specifically in the refurbishment of homes where space is limited. However, local building control should always be contacted before installation to ensure approval.

• Can ACTIS TRISO-SUPER 10 be used within flat roofs?

ACTIS has not tested TRISO-SUPER 10 in a flat roof application, so is not qualified to offer a solution based on testing and certification. TRISO-SUPER 10 is primarily designed, tested and certified for pitched roof applications; however it can be used for insulation in a flat roof subject to the following: TRISO-SUPER 10 does not have certification for use in flat roofs, so you should always refer to your local Building Control for project approval before installation. TRISO-SUPER 10 is only suitable for simple flat roofs, used in domestic scale architecture, for areas such as dormer roofs and extensions. Ventilation of the void below the impervious waterproof surface finish is essential. If good cross flow ventilation cannot be provided then TRISO-SUPER 10 should not be used.

• How can down lighters be installed in insulated ceilings?

ACTIS does not generally encourage the use of recess lighting in any insulated ceiling. Using down lighters in insulated ceilings can cause problems due to the conflict between fire performance and air tightness / thermal performance requirements. It may be possible to combine recess lighting with TRISO-SUPER 10 insulation using specialist enclosures or other solutions. Holes should not be cut in the insulation to allow for lighting as this reduces the thermal integrity of the system. Please contact the ACTIS technical department for further details.

• Can you lay TRISO-SUPER 10 horizontally in a loft space, over existing insulation, to upgrade the thermal performance?

ACTIS TRISO-SUPER 10 has no certification for installation in this application. ACTIS would suggest other insulation options within this application, due to possible condensation risk when using two differing insulation types. Please contact the ACTIS technical department for further details.

• What type of fixings should I use?

It is recommended that battens are nailed at 150mm centres using maximum 45mm nails, preferably ring shank. Plasterboard should be fixed with maximum 30mm Gypsum or Driwall screws at 300mm centres. Screwing directly through TRISO-SUPER 10 is not recommended as many screws will catch on the separating wadding.

• What size battens should be used when installing TRISO-SUPER 10?

TRISO-SUPER 10 should be fixed to the rafters with a 25mm batten minimum, however 38mm is recommended in certain applications such as between the TRISO-SUPER 10 and a boarded roof. The battens' primary purpose is to provide an air gap between the insulation and any other element. TRISO-SUPER 10 principally provides its thermal performance by reducing thermal transfer through radiation, and the air gap is required to force thermal transfer to take place via radiation. If an element such as plasterboard is in contact with the TRISO-SUPER 10 heat transfer can occur through conduction, which reduces the thermal performance of the system and should therefore be avoided.

• Using two types of insulation in a pitched roof?

There is sufficient third party information to suggest that combinations of differing insulation types including multifoils can perform to expected levels. TRISO-SUPER 10 has been used successfully on many projects in conjunction with third party insulation. We are confident, for example, of the performance in terms of vapour when low density wool type insulation is used on the outside of the multifoil insulation. However, ACTIS cannot offer full assurances of the performance of such systems particularly in terms of condensation risk for the life of the roof as this has not been tested or certified. When considering using a third party insulation with the TRISO-SUPER 10 system, either because they want to offer an improved thermal performance or at the request of building control, then ACTIS recommends that the insulation with the higher vapour resistivity be placed on the inside, and would always suggest a vapour control layer is installed to the back of the plasterboard.

• What tape should be used and how much is required?

All testing of TRISO-SUPER 10 has been carried out using ACTIS ISODHESIF tape, and therefore this tape is recommended by ACTIS. There are 50 linear metres on a single roll of tape and roughly one roll of tape should be used with each 20m² roll of TRISO-SUPER 10. If ACTIS ISODHESIF tape is not available then foil tape, 75mm wide minimum, can be used as an alternative. Duct tape or electrical tape should not be used to fix the TRISO-SUPER 10 insulation system.

• What precautions should be taken in terms of fire performance?

ACTIS insulation is designed to be installed behind a fire safe surface such as plasterboard. The insulation should not be left exposed in a habitable space as this would not comply with Approved Document B of the Building Regulations.

Care should be taken during the installation stage not to expose TRISO-SUPER 10 to a heat source such as a blowtorch.

• Can TRISO-SUPER 10 affect my TV and mobile phone reception?

Due to the reflective nature of the TRISO-SUPER 10 insulation TV or mobile phone signals could possibly be affected. This would only happen where there is a weak signal and the aerial is completely surrounded by the insulation, such as in a loft space. ACTIS recommends the aerial is outside the insulated space if the signal is weak.

If you have any further queries please contact the ACTIS technical department.

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