

# HControl Hybrid



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### GENERAL INFORMATION

**HCONTROL HYBRID** is a thin multifoil insulation with built-in vapour control function. **HCONTROL HYBRID** is generally installed on the inside face of walls, roofs and suspended timber floors.

**HCONTROL HYBRID** is installed with the embossed copper-coloured film facing inwards. The product should be installed in a continuous layer to guarantee contiguous insulation, airtightness and prevent any water vapour diffusion through the structure.

**HCONTROL HYBRID** is laid over the inside of timber structure and fixed using corrosion-resistant staples, in the case of installation on a metal frame, double-sided tape is recommended. Joints should be lapped by min. 50mm and sealed with **ACTIS** Isodhesif tape which is recommended for the product. Butt-jointing is also possible. Where necessary, noggins are suggested as support to the joints in order to ensure a secure and airtight fixing point.

**HCONTROL HYBRID** can be combined with other **ACTIS** Hybrid products or with traditional insulation products. It can be in direct contact with building components but the thermal efficiency will be improved with air gaps associated with the product. For optimal thermal efficiency, it is recommended to leave an air gap, either side of **HCONTROL HYBRID**, which should be at least 20mm for wall and 13mm for roof applications. It is good practise to install an independent and continuous breather membrane on the cold side of construction build-ups.

**HCONTROL HYBRID** is available in 1.6m x 6.25m rolls, which cover an area of 10.00m<sup>2</sup>. 1 roll of **ISODHESIF** tape will cover the installation of approximately 3x **HCONTROL HYBRID** rolls.

# GENERAL INSTALLATION GUIDELINES

## TOOLS / ACCESSORIES

Cutter, Stapler, Tape.



## PRECAUTIONS

**HCONTROL HYBRID** must not be in contact with a chimney, fire or any source of ignition. The product must be isolated from a chimney with a fire resistant material or a safety distance of min. 200mm shall be maintained. The product is not intended to provide an internal finish and should be underlined with a suitable building board.

The installation of **HCONTROL HYBRID** must not be continued over the junctions of compartment elements (e.g. walls or floors). **HCONTROL HYBRID** is a non-load bearing product. It will resist normal loads associated with installation and use, although cannot be walked on.

Fire safety precautions and limitations of use apply to **ACTIS** products. Please see chapter 'Additional & Safety' information.

# HCONTROL HYBRID STEP BY STEP INSTALLATION

## PITCHED ROOF

### 1. Cutting

Cut **HCONTROL HYBRID** to the required dimensions.



### 2. Installing

Install **HCONTROL HYBRID** across the face of rafters, flat and taut, fixing in a continuous layer.



### 3. Fixing

Staple to timbers every 50mm as taut as possible, using min. 14mm galvanised staples. Cut **HCONTROL HYBRID** oversized at eaves and pitch, allowing it to be adequately sealed by a batten.



# HCONTROL HYBRID STEP BY STEP INSTALLATION

## 4. Joints

Fix adjacent layer overlapping by 50–100mm. Staple to timber support and seal joint with 100mm **ACTIS** tape. Butt-jointing is also possible.



## 5. Securing

All perimeter edges should be stapled every 50mm and secured with tape and batten.



## 6. Plasterboard fixing

Prepare for plasterboard by fixing horizontal or vertical battens (ACTIS recommends 38 x 38mm to gain full thermal performance) nailing through **HCONTROL HYBRID** to the rafter.

## 7. Seal with tape

Around windows and doors, seal **HCONTROL HYBRID** with **ACTIS** tape and batten. Seal around any cable or pipe penetrations, and joints between walls and floors, with **ACTIS** tape.



## TIMBER FRAME WALL

### 1. Cutting

Cut **HCONTROL HYBRID** to the required dimensions and install across the face of the timber frame, flat and taut, fixing in a continuous layer. Staple to studs every 50mm using min. 14mm galvanised staples.



## 2. Fixing

Fix adjacent layer overlapping by 50 - 100mm. Staple to timber support, and seal joint with ACTIS tape. Butt-jointing is also possible. Cut HCONTROL HYBRID oversized at floor and ceiling, allowing it to be adequately sealed by a batten. All perimeter edges should be stapled every 50mm and secured with tape and batten.



## 3. Plasterboard fixing

Prepare for plasterboard by fixing horizontal or vertical battens (ACTIS recommends 38 x 38mm to gain full thermal performance) nailing through **HCONTROL HYBRID** to the wall stud. Attach the plasterboard to the battens.



## 4. Seal with tape

Around windows and doors, seal **HCONTROL HYBRID** with **ACTIS tape** and batten. Seal around any cable or pipe penetrations with **ACTIS tape**. Seal joints between walls and floors with **ACTIS tape**.



For further advice from ACTIS call the technical department on **01249 462 888** or email [solutions@insulation-actis.com](mailto:solutions@insulation-actis.com)

# SPECIFIC DETAILS

## Penetration through the product

If penetration of the product is necessary, this should not deteriorate the insulation and all joints must be sealed with **ACTIS** tape to achieve good airtightness. Airtight grommets can be used as an alternative. Penetration of product by services should be kept to a minimum.

## Pipes and Ducting

Make a cross-shaped cut through the product with a sharp knife, matching the diameter of the pipe and put the pipe through the product. Stick the airtight grommet to the product. Alternatively cut several strips of **ACTIS** tape and stick around the pipe overlapping each piece by approximately 1cm. If required, stick further pieces of tape on top of the first layer of tape, covering the joints.

## Electric Wiring

Create a hole through the product using a sharp tool (e.g. screwdriver or knife) and thread the wire through the hole. Stick the airtight grommet to the product. Alternatively cut two pieces of tape approximately 10cm in length. Stick the tape either side of the protruding wire, attaching the wire to the product.

**Note:** **ACTIS** products must not be in contact with heat sources above 80°C. If heat sources above 80°C are present, a safety distance of min. 200mm shall be maintained.

For specific services e.g. waterpipes, gas pipes, electrical wiring, flues follow guidance BR 262 thermal insulation - avoiding risks.

## Puncture damages

Where damage has occurred, apply a good-sized patch of insulation over the hole ensuring all edges of the patch are completely sealed with tape. Alternatively, for small puncture damage of less than 25mm, **ACTIS** tape may be used.

## Retrofit projects

Where required the installation must be undertaken on the basis of a retrofit design in accordance with PAS2035 using a process complying with PAS 2030 including Annexes.

Check that sufficient space is available to allow for product thickness and any ventilation requirements that might be needed and extend timbers if required.

Make sure that allowance is given for drape of underlays (usually 10mm) and for a sufficient ventilated air cavity between the product and underlay where required.



*Fix grommet around pipes and ducting*



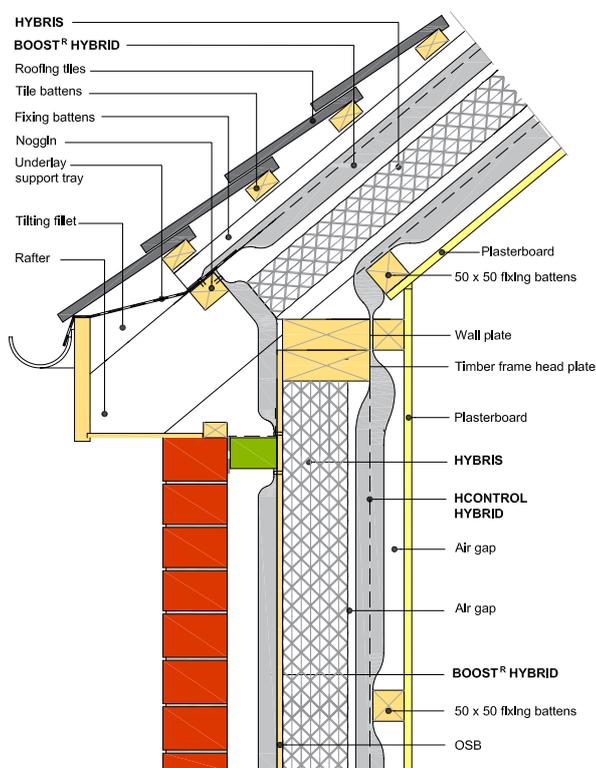
*Fix grommet around electric wiring*

# FURTHER TECHNICAL GUIDANCE

## Continuity of insulation and airtightness

Building Regulations state that “Insulation should be reasonably continuous over the whole building envelope. Reduction in thermal performance can occur where the air barrier and the insulation layer are not continuous and the cavity between them is subject to air movement.”

Attention to detail is therefore paramount from technical design through to construction stage, to address any shortcomings that may lead to the building not performing as predicted. Please see below typical timber frame wall build-up with **HCONTROL HYBRID**, **HYBRIS** insulation and **BOOST<sup>R</sup> HYBRID**, further construction details are available at [www.insulation-actis.com](http://www.insulation-actis.com)



HY11 - Eaves details

## Thermal bridging

A thermal bridge is where a penetration through the insulation layer occurs, and heat is transferred through a non-insulating material, reducing thermal performance and potentially contributing to condensation and extra energy consumption. Thermal bridging can usually be reduced by ensuring:

- tightly fitting insulation layers without gaps
- perfectly sealed joints between adjacent insulation layers
- all exposed edges of multifoil insulation are folded under to stop air ingress
- continuous insulation and airtightness at construction junctions

## Linear Thermal Bridging

Heat loss at construction details (i.e. where two thermal elements meet) is defined as linear thermal bridging and quantified by the  $\Psi$ -value (psi-value).

Thermal modelling assessment of junctions have shown that using thermal blankets, such as **HCONTROL HYBRID**, **EOLIS HC**, **BOOST<sup>R</sup> HYBRID** helps to counteract linear thermal bridging.

Please contact Actis Technical Department for standard construction details and related psi-values.

## Ducting & Service voids

Reflective insulation products are preferably installed with air cavities/service battens. This creates an integrated service void, undisturbed by follow up trades, which favours the continuity of the insulation product within the building envelope and quality on-site. If penetration of product is necessary, this should not deteriorate the insulation and joints must be sealed with **ACTIS** tape to achieve good airtightness.

The installation requires careful detailing around doors and windows to achieve a satisfactory surface for finishing. The construction must be designed to accommodate the thickness of the dry lining, particularly at reveals, heads and sills.

**Note:** Continuity of insulation must not compromise compartmentation (fire safety). Please also see chapter ‘Additional & Safety’ information.

## Condensation risk management

Condensation is most likely to occur when warm moisture laden air is able to pass from the warm to the cold side of the insulation and is then prevented from dissipating to the external ambience. Please consider the following to prevent condensation risk and also refer to Building Regulations Approved Document C and BS 5250:

## Ventilation

Excess of water vapour in the internal ambient air increases the risk of condensation. This can be avoided by adequately ventilating internal spaces using natural or mechanical ventilation. Furthermore, insulated building zones are to be maintained at constant internal ambient temperature of at least 12°C.

## Vapour control layer

Vapour control layers on the warm side of construction build-ups are recommended because they limit the flow of warm air and water vapour through the structure to the cold side and provide airtightness.

It is recommended to install a continuous vapour control layer with a significantly greater vapour resistance than any products installed beyond it. Joints must be well sealed with appropriate tape to guarantee airtightness.

## FURTHER TECHNICAL GUIDANCE

### Breather membrane

Construction build-ups are to be covered on the external with a membrane to prevent water ingress into the structure and to prevent the effect of wind loading onto wall/roof covering. Please follow good practice guidance as laid out in BS 5534 – Code of practice for slating and tiling.

High vapour resistant membranes can be used, but usually require ventilation on their warm side, unless a condensation risk analysis in line with EN 15026 proves otherwise. Such ventilation is not necessary when breather membranes are used as they allow for water vapour to disperse. In order to avoid a build-up of moisture in the batten space between breather membrane and roof covering, it is good practice to ensure adequate air movement through this void

(e.g. under-tile ventilation). This will allow moist air to dissipate into the atmosphere.

### Assessment of condensation risk

Construction build-ups should be assessed in accordance with BS 5250 – Code of practice for control of condensation in buildings. In order to show that solutions are free from condensation risk. A condensation risk analysis in accordance with EN 13788 (Glaser method) is recommended for most build-ups.

Actis offer a free calculation service for U-value and Condensation Risk Analysis. Please contact the Technical Department.

## ADDITIONAL & SAFETY INFORMATION

**IMPORTANT: Fire safety precautions and limitations of use apply to ACTIS products. In addition to the specific recommendations given by ACTIS below, your ACTIS products should be installed and used in compliance with (1) good building practice, (2) the most recent editions of any applicable regulations or relevant guidance (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 in England and Wales; or refer to the relevant provisions in Scotland and Northern Ireland, as amended from time to time) and (3) any British or European Standards relating to the installation and use of insulation/membrane products, particularly in relation to safety precautions.**

### Fire Precautions & Limitations of Use

**ACTIS** reflective insulation products are not fire rated and therefore have been classified as NPD (no performance declared). **EOLIS HC** and **HYBRIS** have been classified Euroclass F.

**ACTIS** insulation products must not be exposed to a direct heat source above 80°C, sparks, naked flame or any other ignition source. **ACTIS** products will melt and shrink away from a heat source, but will burn in the presence of a naked flame.

Keep blow torches well away from **ACTIS** products, even when using a flame guard or other protective device, and make sure that hot debris and sparks do not make contact with the products. Those carrying out hot work should have appropriate fire extinguishers with them and know how to use them.

**ACTIS** products must not be used in the construction of an external wall (including balconies) of buildings

- (a) with a storey 18m or more in height
- (b) that include a 'residential' purpose with a storey 11m or more in height (i.e. this is typically above 4 storey buildings)

**Note:** In Scotland, the maximum building height at which **ACTIS** products can be used is 11 metres.

Please follow fire safety provisions contained within guidance documents mentioned above.

### Fireproof finishes and internal fire spread

As recommended by current regulatory guidance, **ACTIS** insulation products should always be covered with a fireproof lining board such as plasterboard as soon as possible.

Building Regulations specify minimum periods of fire resistance to be achieved by building elements e.g. 30 minutes fire resistance (REI 30). The periods of fire resistance vary according to the use and the size of buildings. Please follow fire safety provisions contained within guidance documents mentioned above.

For further information about fire resistance of systems using **ACTIS** products please contact **ACTIS** Technical Department and request to the detailed fire safety information document TSD11.

### Compartmentation

The spread of fire within a building can be restricted by sub-dividing it into segments separated from one another by walls and / or floors of fire resisting construction.

## ADDITIONAL & SAFETY INFORMATION

To ensure that compartment walls achieve the requisite levels of fire resistance, the insulation should not be carried over junctions with such walls.

Fire stops are used to ensure that fire resistance requirements are met – they are typically based on non-combustible materials.

Cavity barriers are used within air cavities of cladding systems to prevent the spread of smoke and fire. Cavity barriers are usually required at eaves, around openings and at elements between compartments.

Please follow fire safety provisions contained within guidance documents mentioned above including positioning of cavity barriers.

Fire mitigation measures might be required during the construction phase of a project to prevent fire spread onto neighbouring properties. Follow STA (Structural Timber Association) Site Safe Guidance and consult a fire engineer to assess fire mitigation measures when necessary, depending on site requirements.

Limitations to cladding materials apply depending on separating distances to boundaries. Please follow fire safety provisions contained within guidance documents mentioned above.

### Chimneys, flues, heat exchangers and other sources of heat

Never use **ACTIS** insulation products to insulate a chimney flue, 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, flues, heat exchangers and all other sources of heat above 80°C.

### Electrical installations

Follow requirements for electrical installations as set out in Building Regulations, NHBC and other relevant standards. De-rating of electrical cables must be considered in areas where the product restricts the flow of air. The use of suitable conduit or trunking is recommended.

The use of down-lighters, recess lighting or any other source of localised heat (transformers, etc.) in direct contact with **ACTIS** insulation products is prohibited. However, if the use of recess lighting in conjunction with **ACTIS** insulation products is desired, specific precautions must be taken and **ACTIS** recommend the provision of a 'safety cavity' by creating a space between the insulation and the heat source in line with NHBC guidance. This "safety cavity" guarantees the installation of e.g. down-lighters without the risk of contact with the insulation. The minimum height of this "safety cavity" depends on the safety distance recommended by the down-light manufacturer.

In all cases advice should be sought from the relevant Building Control officer for guidance on a case by case basis.

For further information please contact **ACTIS** Technical Department and request the detailed fire safety information document TSD11.

### Safety

Security precautions against e.g. falling from height are necessary.

During installation extra care should be taken when working in wet conditions due to the increased risk of slipping.

**ACTIS** products are lightweight and non-loadbearing. They will resist normal loads associated with installation and use, although cannot be walked on.

Check individual company policy regarding the distribution and type of PPE required e.g. Hi-Viz tops, hard hats, safety footwear, gloves etc.

Remember that **ACTIS** products are highly reflective. Where the products are 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.

All **ACTIS** products have safety information data sheets (COSHH) available on request. They are free from asbestos or irritant fibres and are CFC and HCFC free.

### Storage

Products should be stored in clean, dry conditions, not exposed to UV-radiation and sunlight and in such a way that dirt and dust cannot adhere to the product surfaces.

Indoor storage of product is recommended. The products must be protected from being dropped or crushed by objects.

They must not be exposed to a direct heat source above 80°C, sparks, naked flame or other ignition sources and must be stored away from flammable material such as solvents. Avoid all contact between **ACTIS** products and caustic products.

For a more extensive list of solutions and for further technical support please visit:

#### CPD

Find out more about the CPDs we offer and how to book by visiting our website or following us on our social networks.

#### VISIT OUR WEBSITE

Please visit [www.insulation-actis.com](http://www.insulation-actis.com) for more details.

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