

Hybris



General information

HYBRIS is an insulation material generally used for roof, wall, ceiling and suspended timber floor applications. HYBRIS is usually installed between structural members such as timber/steel frames. It can be in direct contact with building components but the thermal efficiency will be improved with air gaps associated with the product.

HYBRIS is installed with the embossed copper-coloured film facing the inside (warm side) of the building. HYBRIS is flexible and accurately fits all widths, held in place by compression and will not slump down.

The product should be installed in association with a suitable breather membrane or roofing felt. An independent and continuous vapour barrier may be required, however HYBRIS can act as a vapour control layer without the need for an independent VCL. This application requires taping of all joints with ACTIS tape.

HYBRIS can be combined with other ACTIS Hybrid products or with traditional insulation products such as foam board or insulated plasterboard.

HYBRIS is available in 1145mm wide panels and in a range of thicknesses from 50mm to 205mm. **One panel, prior to cutting for installation, is sufficient to fill the space between timber studs 2.4 metres high.**

Precautions

HYBRIS 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.

HYBRIS is a non load bearing product. It will resist normal loads associated with installation and use, although cannot be walked on.



ACTIS cutter is recommended for cutting HYBRIS packaging.

HYBRIS STEP BY STEP INSTALLATION

Measuring

- 1 Before removing from the packaging, tap the panels down to ensure they are level before cutting.
Measure between the timber studs and mark the Hybris pack approximately 5-10mm wider than the gap between the studs.



Cutting

- 2 Keep HYBRIS in its packaging whilst cutting and ensure an accurate cut. HYBRIS can be easily cut with an insulation saw, standard hand saw or an electric alligator saw if preferred.

The polyethylene packaging is fully recyclable and can be quickly removed using an ACTIS cutter. Alternatively, a knife could be used, but care should be taken not to damage product.



HYBRIS STEP BY STEP INSTALLATION

Installing Hybris

3 Pulling

Hold both ends of the embossed copper-coloured face and pull the product open to its full length. Turn HYBRIS over and hold the silver-coloured face and repeat the pulling action.



4 Installation in a Timber Frame Wall

'Friction fit' by pushing the HYBRIS between the studs and up against the OSB - no fixing is required. Ensure that the embossed copper-coloured film is facing the inside (warm side) of the building.

Install the next panel as before and ensure a good fit between the two pieces of insulation and joint with timber. Repeat between all studs.



FURTHER INSTALLATION ADVICE

Trimming

If HYBRIS needs to be trimmed, the horizontal direction of internal structure makes it easy to cut accurately. The length of HYBRIS needs to be approximately 20mm longer than the height between horizontal timbers.



Pipes and ducting

Make a cross-shaped cut in the copper-coloured face with a sharp knife, matching the diameter of the pipe. Put the pipe through Hybris and install the panel between the studs. 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 joins.

Note: HYBRIS must not be in contact with heat sources above 80°C.



Electric wiring

Create a hole through the HYBRIS panel from the copper-coloured face, using a sharp tool (e.g. screwdriver or sharp general-use knife). Thread the wire through the hole and place the HYBRIS panel between the studs. Cut two pieces of tape approximately 10cm in length. Stick the tape either side of the protruding wire, attaching the wire to the product.



HYBRIS behind timbers (e.g. in a corner)

HYBRIS is very easy to install behind timbers due to its flexible structure. Simply push into place ensuring a good all-round fit.



For further advice from ACTIS call the technical department on **01249 462 888** or email solutions@insulation-actis.com

SPECIFIC CONFIGURATIONS

Reduce condensation risk

Condensation is most likely to occur where warm moisture laden air is able to pass to the cold side of the insulation and is then prevented from dissipating to the external ambience.

Please follow the next steps to prevent condensation risk:

1. Ventilation:

- Encourage fresh air circulation by opening a window.
- Remove moisture-laden air mechanically from kitchens, bathrooms, etc. (mechanical and natural ventilation)

2. Install an independent and continuous vapour control layer (**HCONTROL HYBRID**) to limit the flow of warm air and water vapour through the structure to the cold side of the wall or ceiling.

- The vapour control layer must have a high vapour resistance
- Ensure all joints are well sealed

3. Install a breather membrane (**BOOST[®] HYBRID**) to ensure any water vapour can disperse through the structure.

- 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 air void. This will allow moist air to dissipate into the atmosphere.

4. Avoid thermal bridging: keep the insulation continuous wherever possible and interfacing with existing insulation. Architects should give consideration to this, particularly at the eaves.



For further information please refer to BS 5250.

Wall application

Preparation

Where possible, remove the source of moisture within the building. Improve the internal ventilation and airflow, by opening windows or providing mechanical ventilation. Before installing Hybrid solutions, ensure that the surfaces to be covered are firm, clean, dry and smooth.

Junctions of walls

The air tightness and thermal continuity must be carefully maintained at all times, especially at the junction of walls and between floor and walls.

To ensure thermal continuity, the insulation in each wall should be cut so that the junction does not create any empty cavities.

Windows and doors



The installation requires careful detailing around doors and windows to achieve a satisfactory surface for finishing. In addition, make sure to minimise the risk of thermal bridging at reveals and where separating walls are attached to the external wall.

In new builds, the construction must be designed to accommodate the thickness of the dry lining, particularly at reveals, heads and sills.

Joints around openings such as roof windows and ventilation pipes must be sealed with **Actis tape** to guarantee air tightness as well as thermal continuity and quality.

SPECIFIC CONFIGURATIONS

BOOST[®] HYBRID

Water drainage

On a low pitched roof, the draping of the breather membrane between rafters can result in pooling which is unsatisfactory and should be avoided. It is preferable for the breather membrane to be pulled taut and counter-battened to give a clear drainage path. Where possible, avoid blockages which could prevent the free drainage of water.

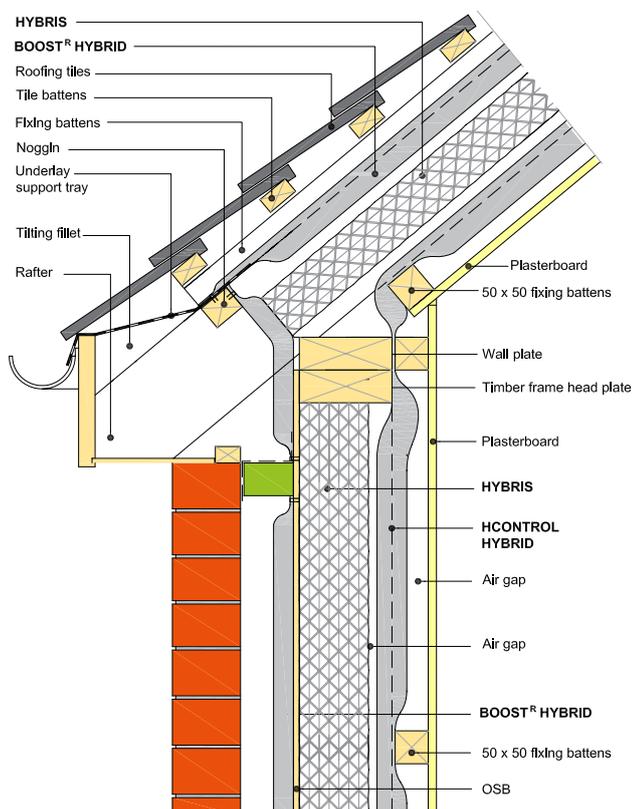
Joints around openings such as roof windows and ventilation pipes must be sealed with **ACTIS tape**, to guarantee air tightness of the underlay. The joint between vertical walls and the floor should be made with appropriate sealant.

Edge of insulation

Ensure all exposed edges are folded under to stop air ingress and visually inspect installed insulation to ensure the finish is as air tight as possible.

Junction with the gutter

At junctions with gutters use an underlay support tray. Overlap **BOOST[®] HYBRID** by at least 50mm, ensuring good water drainage into the gutter.



HY11 - EAVES DETAILS

HCONTROL HYBRID

General rule

The vapour control layer needs to be continuous and provide a significantly greater vapour resistance than any products installed above it.

Any vapour that does get through the vapour control layer also needs to disperse through the structure, via a breather membrane or effective ventilation.

Ventilation

Excess of water vapour contained in the internal ambient air increases the risk of condensation. This can be avoided by using natural or mechanical ventilation:

- encourage fresh air circulation by opening a window
- remove moisture-laden air mechanically from kitchens, bathrooms, etc.

Edges of insulation

Ensure all exposed edges are folded under to stop air ingress and visually inspect installed insulation to ensure the finish is as air tight as possible.

Ducting

To ensure air tightness around ducting, make a small circular hole in **HCONTROL HYBRID** (smaller than the diameter of the ducting) and introduce small segmental cuts outwards to the edge of the required hole. The vapour control layer can then be sealed to the duct by using the **ACTIS tape**.

IN LOFTS

Storage in lofts

Hybris is a non load bearing product. If the cold roof is intended for storage, the floor can be boarded to create a storage deck on top of the joists. Ensure that joists are of adequate size to support the anticipated weight.

Loft access

Loft hatches should also be insulated and the frame fitted with a rubber seal (or similar) to ensure airtightness.

Vapour control layer

Where feasible an independent VCL will improve performance.

ADDITIONAL INFORMATION

IMPORTANT: in addition to the specific recommendations given by ACTIS below, your ACTIS Hybrid 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 and (3) any British or European Standards relating to the installation and use of insulation products, particularly in relation to safety precautions.

Fire precautions

ACTIS Hybrid products are not fire rated and are classified NPD (No Performance Determined).

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

Keep blow torches well away from ACTIS Hybrid 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.

Fireproof finishes and compartment walls

As recommended by current regulatory guidance, do not leave insulation exposed in habitable rooms.

ACTIS Hybrid products should always be 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 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).

Chimneys, flues, heat exchangers and other sources of heat

Never use ACTIS Hybrid 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.

Downlighters and recess lighting

The use of down-lighters or recess lighting in conjunction with ACTIS Hybrid products 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 Hybrid products 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.

Sun protection

When laying ACTIS Hybrid products outside, remember that they 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.

Storage

The panels should be stored in clean, dry conditions, not exposed to sunlight and in such a way that dirt and dust cannot adhere to the product surfaces. The products must be protected from being dropped or crushed by objects. They must not be exposed to open flame or other ignition sources and must be stored away from flammable material such as solvents.

Safety

Security precautions against falling from a roof are necessary.

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

Avoid all contacts between ACTIS Hybrid products and caustic products.

ADDITIONAL INFORMATION

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.

Service void

Penetration of product by services should be kept to a minimum. In timber frame constructions, services can be incorporated behind the dry lining, making chasing of the wall unnecessary. In this situation the electrical installation for example, occurs after the insulation has been fitted and before siding interior finishing. Fitting sockets, switches, light fixtures and ducting should not deteriorate the insulation and must be airtight by sealing with ACTIS tape to achieve good airtightness.

Thermal bridges

Thermal bridges reduce thermal performance and can contribute to condensation and extra energy consumption. Thermal bridging can usually be reduced by ensuring:

- perfectly sealed joints between adjacent insulation layers
- continuous insulation at junction between elements
- overall continuous vapour and air tightness, especially at junctions with walls and windows
- perfectly sealed electric devices (plug, switch, cable) to avoid cold air leakage.

Insulated building zone: Insulated building zones are to be adequately ventilated and maintained at constant internal ambient temperature, of at least 12°C, in order to avoid condensation risks.

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