HControl Hybrid

Use on the warm side of any insulation material, behind the internal finish in roofs, walls and ceilings.

**HCONTROL HYBRID** is a thin multifoil insulation product with a built-in vapour control function and an unrivalled thermal performance.

**HCONTROL HYBRID** provides dual performance within a single product: a vapour control layer and insulation, allowing a reduction in the number of installation steps whilst reducing the thickness of the main insulation to achieve the same required U-Value.

It can be used in conjunction with any type of insulation.

### Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Declared Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>EN 823</td>
<td>45mm +/- 5mm</td>
</tr>
<tr>
<td>Weight/m²</td>
<td>EN 1849-2</td>
<td>880 g/m²</td>
</tr>
<tr>
<td>Length</td>
<td>EN 1848-2</td>
<td>6.25m</td>
</tr>
<tr>
<td>Width</td>
<td></td>
<td>1.6m</td>
</tr>
</tbody>
</table>

### Declared Thermal Performance

- **R Value of HCONTROL HYBRID + 2 air cavities after ageing**
  - EN 16012
  - Horizontal Heat Flow
    - 3.20 m² K/W
  - Upward Vertical Heat Flow
    - 2.80 m² K/W
- **Core R-value**
  - 1.90 m² K/W
- **Declared Emissivity after ageing**
  - 0.06

### Tensile Strength

- **Longitudinal direction**
  - EN 12311-1 & EN 13859-1 Annex C
  - >300 N/50mm
- **Transversal direction**
  - >200 N/50mm
- **Elongation (Longitudinal)**
  - >20%
- **Elongation (Transversal)**
  - >5%

### Resistance to tearing, nail Shank

- **Longitudinal direction**
  - EN 12310-1 & EN 13589-1 Annex B
  - >150 N
- **Transversal direction**
  - >150 N

### Joint Strength

- **EN 12317 - 2**
  - >50 N/50mm

### Water Vapour Transmission

- **Permeability (W)**
  - EN 1931 set C
  - 7.51 x 10⁻¹² Kg/m².s.Pa
- **Vapour Resistance (Z)**
  - >1000 MNs/g
- **Diffusion eq.air layer thickness (Sd)**
  - >200m

### Watertightness

- **EN 1928 Method A**
  - Watertight (W1) to 2 kPa

### Air Permeability

- **EN 12114**
  - Airtight

### Durability After Ageing

- **EN 13984**
  - Test successful

### Reaction to Fire

- **NPD (No performance determined)**
HYBRIS is an innovative and unique insulation product providing an excellent thermal performance.

HYBRIS is a reflective insulation product based on a honeycomb structure made of shaped polyethylene foams glued to aluminium coated polyethylene foils. Its high thermal performance is provided by a special structure composed of a large number of low emissivity cavities, protected from dust and excessive air movement. Moreover, the low emissivity external films provide additional thermal resistance, when associated with air cavities.

### Property Table

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Declared Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>EN 823</td>
<td>50 to 205mm</td>
</tr>
<tr>
<td>Weight/m²</td>
<td>EN 1602</td>
<td>9.5 kg/m³</td>
</tr>
<tr>
<td>Length</td>
<td>EN 822</td>
<td>1200mm</td>
</tr>
<tr>
<td>Width</td>
<td></td>
<td>1145mm</td>
</tr>
<tr>
<td><strong>DECLARED THERMAL PERFORMANCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal conductivity $\lambda_0$</td>
<td>EN 16012</td>
<td>0.033 W/m.K</td>
</tr>
<tr>
<td>Declared core thermal resistance</td>
<td></td>
<td>1.50 m2.K/W (50mm) to 6.20 m2.K/W (205mm)</td>
</tr>
<tr>
<td>Emissivity (inner/outer) after ageing</td>
<td></td>
<td>0.06/0.10</td>
</tr>
<tr>
<td><strong>TENSILE STRENGTH (BEFORE AND AFTER AGEING)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal direction</td>
<td>EN 1608</td>
<td>&gt;45 kPa</td>
</tr>
<tr>
<td>Transversal direction</td>
<td></td>
<td>&gt;45 kPa</td>
</tr>
<tr>
<td><strong>RESISTANCE TO TEARING, NAIL SHANK (BEFORE AND AFTER AGEING)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal direction</td>
<td>EN 12310-1</td>
<td>&gt;150 N</td>
</tr>
<tr>
<td>Transversal direction</td>
<td>part 1</td>
<td>&gt;150 N</td>
</tr>
<tr>
<td><strong>WATER VAPOUR TRANSMISSION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permeability (W)</td>
<td>EN 1931</td>
<td>&lt;2.3 E-12 Kg/m².s.Pa</td>
</tr>
<tr>
<td>Vapour Resistance (Z)</td>
<td></td>
<td>450 MNs/g</td>
</tr>
<tr>
<td>Diffusion eq.air layer thickness (Sd)</td>
<td></td>
<td>&gt;90m</td>
</tr>
<tr>
<td><strong>WATERTIGHTNESS</strong></td>
<td>EN 1928</td>
<td>Watertight, W1</td>
</tr>
<tr>
<td>AIR PERMEABILITY</td>
<td>EN 12114</td>
<td>Airtight</td>
</tr>
<tr>
<td>HEAT CAPACITY</td>
<td></td>
<td>2300 JK/Kg.k</td>
</tr>
<tr>
<td><strong>REACTION TO FIRE</strong></td>
<td></td>
<td>NPD (No performance determined)</td>
</tr>
</tbody>
</table>

HYBRIS is a reflective insulation product based on a honeycomb structure made of shaped polyethylene foams glued to aluminium coated polyethylene foils. Its high thermal performance is provided by a special structure composed of a large number of low emissivity cavities, protected from dust and excessive air movement. Moreover, the low emissivity external films provide additional thermal resistance, when associated with air cavities.

Use on timber frame or masonry walls, pitched roofs and ceilings.
**Boost’R Hybrid**

Use on the cold side of the building fabric in roofs and walls.

**BOOST’R HYBRID** is a thin multifoil insulation product with a built-in breather membrane function and an exceptional thermal performance.

**BOOST’R HYBRID** provides dual properties within a single product: A breathable membrane and insulation, allowing a reduction in the number of installation steps whilst reducing the thickness of the main insulation to achieve the same required U-Value. It can be used in conjunction with any type of insulation.

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<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST METHOD</th>
<th>DECLARED VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>EN 1849-2 under 50 Pa load</td>
<td>35mm +/- 5mm</td>
</tr>
<tr>
<td>Weight/m²</td>
<td>EN 1849-2</td>
<td>650 g/m²</td>
</tr>
<tr>
<td>Length</td>
<td>EN 1848-2</td>
<td>6.7m</td>
</tr>
<tr>
<td>Width</td>
<td></td>
<td>1.5m</td>
</tr>
</tbody>
</table>

**DECLARED THERMAL PERFORMANCE (INNER/OUTER SIDE)**

- **R Value of BOOST’R HYBRID + 2 air cavities after ageing**
  - Core R-Value: EN 16012
  - Horizontal Heat Flow: $2.40 \text{m}^2 \cdot \text{K} / \text{W}$
  - Upward Vertical Heat Flow: $2.10 \text{m}^2 \cdot \text{K} / \text{W}$
  - Declared Emissivity (inner/outer side) after ageing: 0.05 / 0.31

**TENSILE STRENGTH**

- **Longitudinal direction**
  - EN 12311-1 & EN 13859-1/2 Annex A
  - >300 N/50mm
- **Transversal direction**
  - EN 12311-1 & EN 13859-1/2 Annex A
  - >200 N/50mm
- **Elongation (Longitudinal)**
  - >20%
- **Elongation (Transversal)**
  - >10%

**RESISTANCE TO TEARING, NAIL SHANK**

- **Longitudinal direction**
  - EN 12310-1 & EN 13859-1/2 Annex B
  - >150 N
- **Transversal direction**
  - EN 12310-1 & EN 13859-1/2 Annex B
  - >150 N

**WATER VAPOUR TRANSMISSION**

- **Vapour Resistance (Z)**
  - EN 12572 set C
  - 0.55 MNs/g
- **Vapour Resistance of external layer**
  - EN 12572 set C
  - 0.25 MNs/g
- **Diffusion eq.air layer thickness (Sd)**
  - ≤ 0.11m

**WATERTIGHTNESS**

- EN 1928 Method A
  - Watertight, W1

**AIR PERMEABILITY**

- EN 12114
  - < 0.030 m³ / (m² x h x 50Pa)

**FLEXIBILITY AT LOW TEMP**

- EN 1109
  - -30/30 °C / ø30mm

**DIMENSIONAL STABILITY**

- EN 1107
  - +80°C/6h < 1%

**REACTION TO FIRE**

- NPD (No Performance Determined)
BENEFITS OF THE HYBRID PRODUCTS

DUAL PERFORMANCE

- Each Hybrid product combines insulation, air tightness, moisture resistance and reflective properties.
- ACTIS Hybrid products are resistant to air infiltration and create a barrier to thermal losses through convection.
- All components are moisture resistant.
- They take advantage of radiation effects due to the very low emissivity of their external films.
- Whatever the climatic conditions, the thermal performance of the Hybrid product range can be depended upon and is durable.

LABC, LABSS & NHBC ACCEPTED

- The 3 Hybrid products have been awarded LABC and LABSS Registered Detail.
- They are also NHBC accepted when used in accordance with their certification.

USE SEPARATELY OR AS A SYSTEM

All hybrid products can be used separately or together to provide a total insulation system in roofs, walls and ceiling applications. Together, they can achieve the best U-Value requirements with a minimal thickness compared to standard solutions.

DUAL TESTING, IN A LABORATORY & IN-SITU

Hybrid is a range of innovative insulation products that are fully tested both under laboratory and real conditions of use, so their performance is guaranteed.

- Laboratory testing according to EN 16012
- Real life testing according to ISO 9869

USER FRIENDLY

- A+ classification for internal air quality according to ISO 16 000.
- Clean: Hybrid products don’t generate dust or fibre.

A UNIQUE PATTERN

Easy to recognise, each hybrid product has a copper coloured external film with a very low emissivity, as low as 0.05.

Their additional resistance value can be gained from the air voids facing these highly reflective films.

- The foils’ low emissivity is protected from degrading by surface lacquering.
- The foils reflect up to 95% of the solar thermal radiation outside the building, contributing to summer comfort.

QUICK AND EASY TO INSTALL

Hybrid products reduce the installation time without changing installation procedures.

HControl Hybrid & Boost Hybrid flexible properties

Enable fitting to any uneven surface, allowing a continual insulation, thus offering a high quality installation without air leakages.

Hybris flexible properties

Easily installed between rafters, timber studs or within floor joists. HYBRIS is held in place by compression and doesn’t slump down.
Discover a unique tool to get a quick simulation of your project by visiting Hybrid.insulation-actis.com

Please visit www.insulation-actis.com for more details.

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