

**INSTALLATION GUIDELINES**  
**IKO ENERTHERM ALU FF**



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# INSTALLATION GUIDELINES

## IKO ENERTHERM ALU FF

**IKO Enertherm Full Fill is a cavity wall insulation board with a thermal conductivity of 0.022 W/mK. IKO Enertherm Full Fill is ideal for use with masonry walls and is suitable where the requirement is for insulation to completely fill the cavity, whilst maintaining a residual 10 mm cavity to resist moisture transfer. IKO Enertherm Full fill offers the highest thermal standards offering protection from wind driven rain. IKO ALU FF insulation boards should only be fixed to the inner leaf for the wall to perform correctly.**

### General guidelines



#### Storage

The insulation boards should be stored in such a way to prevent damage. The boards also need to be protected from the weather. If the insulation boards are stored for a longer period, it will be necessary to take measures to protect them from all weather conditions such as direct sunlight.



#### Procedure

Always work on the insulation boards on a base which is dry and free of dirt. During processing, you need to take measures to prevent damp from penetrating inside the insulation boards. You should allow wet insulation boards to dry before you start work.

### General

IKO Enertherm high-performance insulation for homes, offices and other buildings is the most immediate and efficient solution for making savings in energy consumption when considering a buildings structural make-up. Lower energy consumption means lower CO<sub>2</sub> emissions, which are responsible for global warming. This means that good insulation can make a positive contribution to the environment. IKO enertherm can help in reducing this energy consumption. Thanks to special properties creating moisture and mould resistance and dimensional stability, IKO enertherm insulation boards have a long service life, while retaining their energy performance.

## Design Considerations

### **Technical approval**

IKO enertherm is a 100% CFC, HCFC or HFC-free insulation board with a rigid polyisocyanurate foam core, clad on both sides with various facings depending on the application and waterproof finishing required. With an optimum formulation of raw materials and production parameters, IKO enertherm has an exceptionally fine cell structure created by Micro Cell Technology.

### **Fire Safety**

Fire safety is an important contribution to occupant safety and an important criterion for the building design. PIR insulation products meet a wide range of fire performance requirements as stipulated by Building Regulations.

IKO enertherm ALU CW has a reaction to fire class NP0.

The insulation board has a low to zero smoke emission rate and does not melt or drip.

This fire performance is an inherent part of the foam's cell structure.

The product does not prejudice the fire resistance properties of the wall. It is unlikely to become ignited within the cavity when used in context. If the fire does penetrate into an unventilated cavity, the amount of air present will be insufficient to support combustion, and flame spread will be minimal.

### **Residual cavity width**

A 10 mm residual cavity width is recommended between the insulation and the outer leaf for wall heights up to 25 metres. The NHBC accepts the use of IKO Enertherm ALU FF Full Fill, other than in very severe exposure locations with fair faced masonry, provided it is installed, used and maintained in accordance in relation to NHBC standards, chapter 6.1 External masonry walls.

### **Wall ties**

Wall ties should have a retaining clip/disc for securing the insulant to the masonry plane. Ideally, they should be BBA/NSAI approved and conform to BS EN 845-1: 2013 + A1: 2016 (Specification for ancillary components of masonry. Wall ties, tension straps, hangers and brackets), BS EN 1996-1-1: 2005 + A1: 2012 (Eurocode 6. Design of masonry structures. General rules for reinforced and unreinforced masonry structures), BS EN 1996-2: 2006 (Eurocode 6. Design of masonry structures. Design considerations, selection of materials and execution of masonry), BS EN 1996-3: 2006 (Eurocode 6. Design of masonry structures. Simplified calculation methods for unreinforced masonry structures) and PD 6697: 2019 (Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2).

### **Moisture Tolerance**

When the product is used in situations where it bridges the Damp Proof Course (DPC) in walls, dampness from the ground will not pass through to the inner leaf provided the cavity wall is detailed in accordance with Building Regulations/Standards (Figure 1). The tongue and groove edges of IKO Enertherm Full Fill helps increase protection from wind driven rain

IKO Enertherm ALU Full Fill may be used in any exposure zone provided the appropriate construction, external finish or facing masonry and joints are carried out. However, some warranty providers or local authority building control will not accept the use of full fill cavity wall insulation in very severe exposure zones to driving rain. Where buildings are subject to such, the requirements of the specific warranty provider or local authority building control must be met. Checks with the relevant parties must be completed before building works commence.

## Thermal bridging

Careful consideration should be given to junctions between elements (corners, floors, and openings) in order to reduce linear thermal bridging. Heat loss is represented by the junction's psi ( $\Psi$ ) value. The psi ( $\Psi$ ) values of all the linear thermal bridges in a building are used in whole building CO<sub>2</sub> emissions calculation software.

## Fixing details

- All boards should be fitted or butted together with vertical joints staggered.
- Excess mortar should be cleaned from the cavity face of the internal wall leaf before the installation of each run of IKO Enertherm ALU Full Fill boards.
- IKO Enertherm ALU Insulation recommend the use of a cavity board (i.e. timber boarding) and cavity timber stop (i.e. 10 mm plywood) to protect the IKO enertherm ALU Full Fill boards and to help keep the cavity clean as each section of wall leaf is built. (figure 4)
- IKO enertherm Insulation recommend the use of insulated cavity closers at door and window openings.
- The boards can be cut to fit openings, (i.e. around windows, doors and airbricks). The tongue and groove edge should be trimmed so that a tight butt edge is formed at opening interfaces. To ensure a continuous layer of insulation is maintained, it is essential to cut boards accurately and that cut pieces completely fill the spaces and are adequately secured.
- Where openings such as doors and windows are in proximity, it is recommended that a continuous lintel and/or cavity tray is used. Individual lintels or cavity trays should have stop ends and be adequately drained.
- Corner details are formed by cutting the boards squarely and closely butting the two IKO enertherm Full Fill boards. Alternatively, board ends can be cut at a 45° angle to create a mitred joint. All corner details, internal and external, are to incorporate a vertical DPC or self-adhesive vertical DPC overlapping beyond the board ends (at all courses).
- At gable walls IKO enertherm Full Fill should be continued no less than 200 mm beyond the top storey ceiling and a cavity tray installed to protect the top of the IKO enertherm Full Fill boards.
- Exposed areas of board should always be covered at the end of a day's work or in driving rain.
- A 10 mm residual cavity should always be maintained between IKO enertherm Full Fill insulation board and external wall leaf. The cavity can be protected from moisture, and allow airflow for drying by traditionally utilising a square dressed timber batten allowing moisture drainage (figure 3)
- Install the first row of wall ties at 600 mm horizontal centres (2 per board) at a minimum of one course of blockwork below the DPC (Figure 2 ). Wall ties should not be placed directly on the DPC. The insulation boards should commence at least 150 mm below the DPC to provide edge insulation for the floor, but not be in contact with the ground. (Figure 1)
- Construct the internal wall leaf up to 450 mm (2 block courses) and install wall ties at 900 mm horizontal centres.
- Install the first row of IKO Enertherm Full Fill boards between the 2 rows of wall ties, tightly to the internal wall leaf, with the tongue and grooved edges tightly interlocked to form a closely jointed run, and secure in place with a retaining clip/disc on each tie.
- Each board should be secured at a minimum of three points. Additional ties may also be required to satisfy the structural requirements of BS EN 845-1: 2013 + A1: 2016, BS EN 1996-1-1: 2005 + A1: 2012, BS EN 1996-2: 2006, BS EN 1996-3: 2006, PD 6697: 2019 and/or to ensure adequate retention of boards or cut pieces.
- Construct the external wall leaf to meet the top of the IKO Enertherm Full Fill boards and repeat the process up to the required height (wall ties spaced at 450 mm vertical centres and 900 mm horizontal centres).

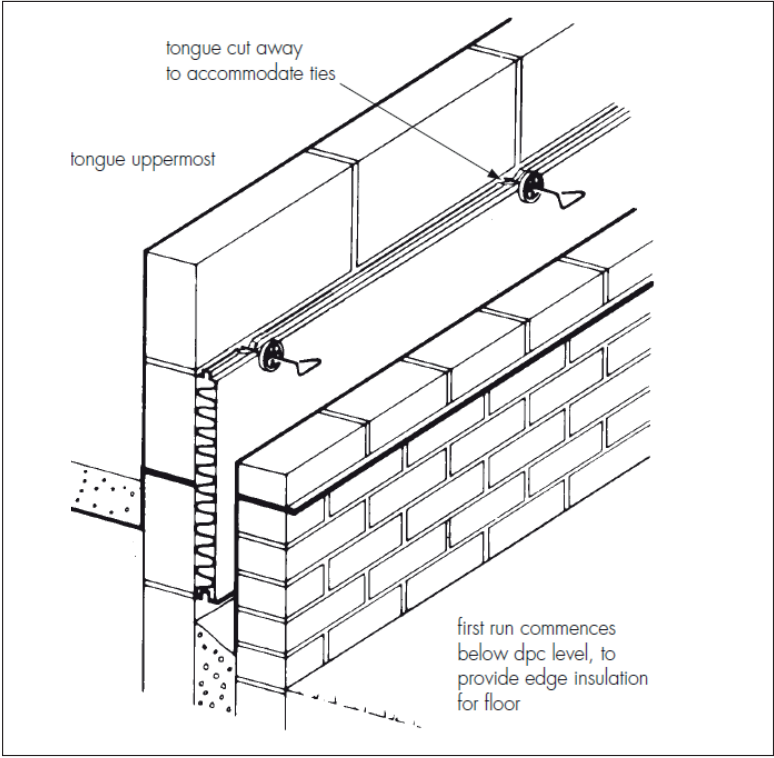


Figure 1 - Insulation installed below dpc level to provide edge insulation for floor.

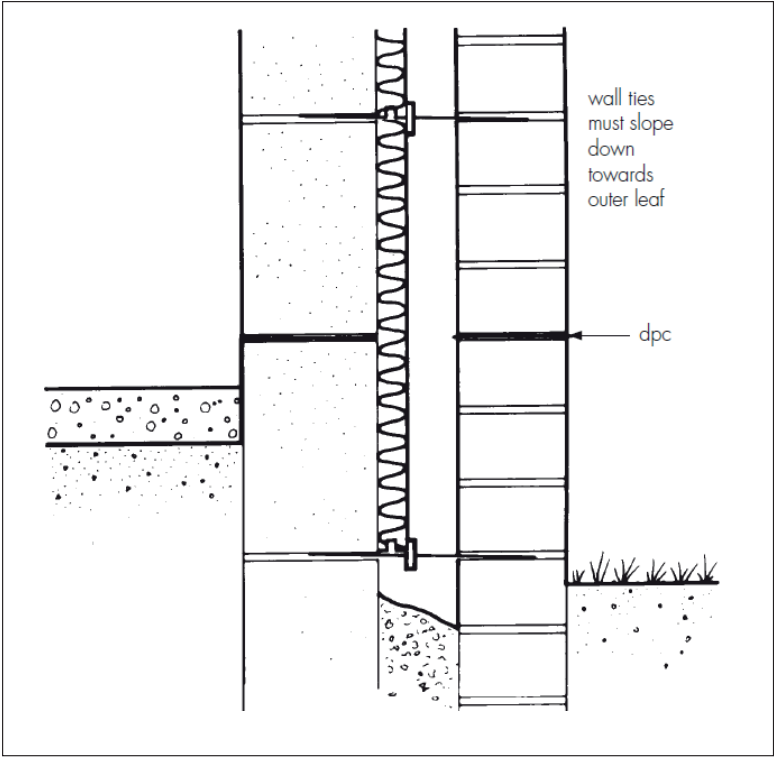


Figure 1 - Insulation of wall ties



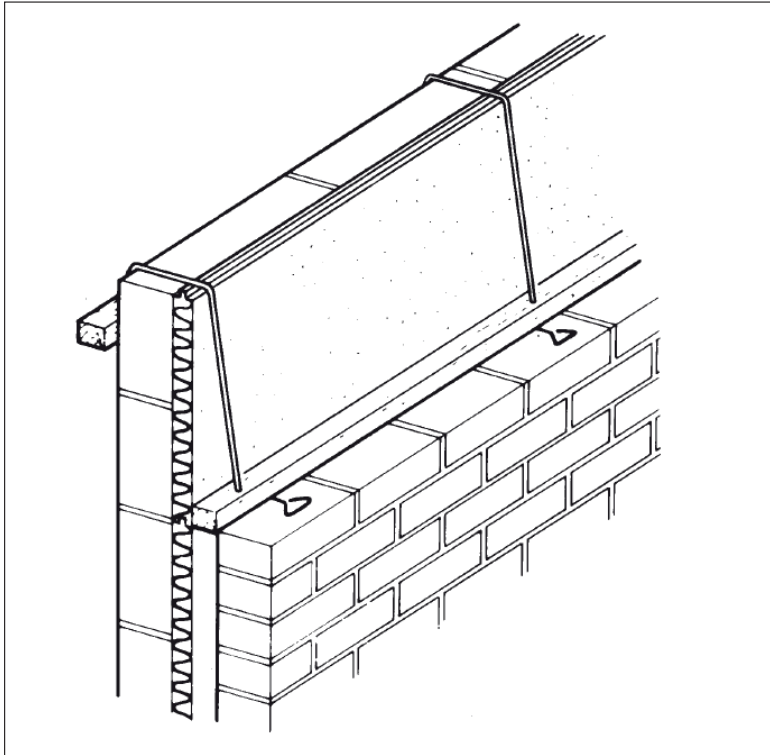


Figure 3 - Use of cavity batten

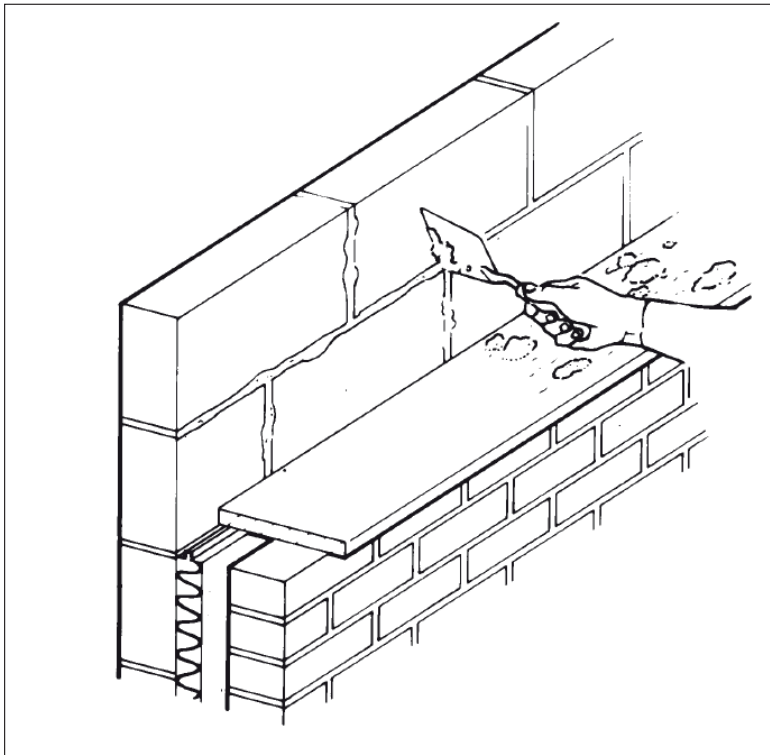


Figure 4 - Use of cavity board



