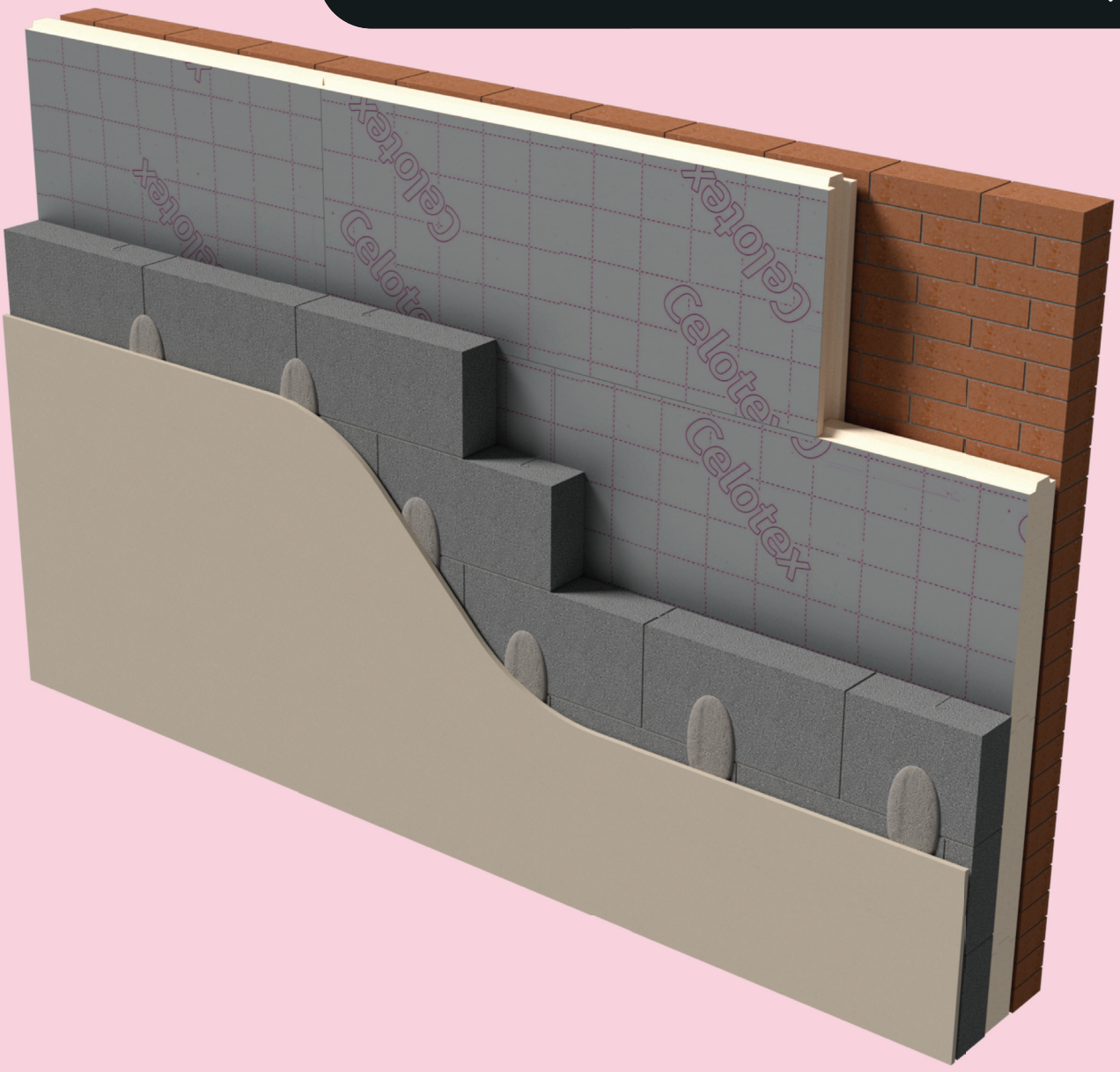
Celotex CW4000 FF Installation Guide

Thermal Insulation



Celotex
by SOPREMA
Building for Life

Installation

1 Build the Internal Wall Leaf

Construct the first section of the internal wall leaf as per the architectural plans.

2 Install Wall Ties

First row ties: Install the first row of wall ties at a depth of at least the equivalent of one full block height (215mm) below the underside of the floor structure/slab and beyond the depth of the floor insulation to avoid thermal bridging. Ensure the spacing of wall ties/clips allows one long edge of each full-length board to be secured at a minimum of two points (600mm centres). Refer to Eurocode 6, BS EN 845-1, and Building Regulations Approved Document A for further guidance.

Subsequent row wall ties: Build the leading leaf to the required height, placing wall ties at vertical intervals of 450mm and horizontal spacing not exceeding 900mm.

3 Prepare the Boards

Correctly orientate boards: Position the boards with the tongue at the top. Decide whether the tongue should be on the 'top and left' or 'top and right' and maintain this orientation. Boards may have the branded foil facer or unbranded facing outward, this does not affect performance.

Cut insulation for wall tie: Determine where the wall ties will land on the tongue side of the board. Use a self-retracting knife or sharp specialist insulation saw to make a small incision (no more than 15mm deep) in the tongue profile, tilted downward from the inner to the outer leaf *(Figures 2 & 3)*.

Create first row corner section (optional): Starting from a corner is advised to make installation easier and create the blocking pattern. Refer to step 7 for further information on corners.

Figure 2

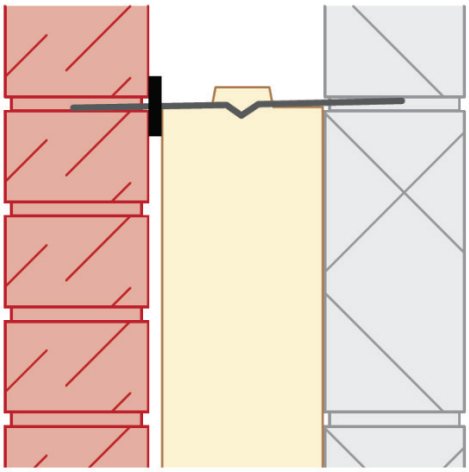
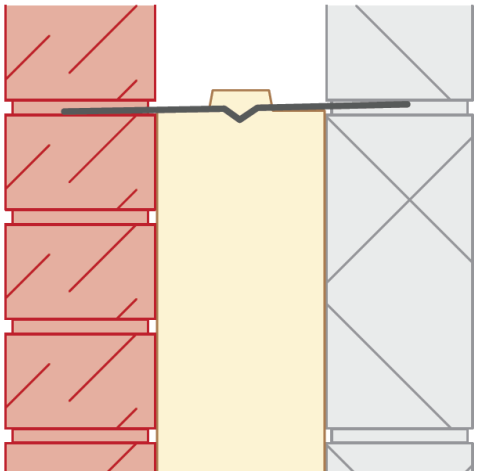


Figure 3



4 Install the First Row of Insulation Boards

Position the board onto the wall ties: Use the first row of wall ties to support the initial row of insulation boards a minimum of 215mm below the underside of the floor structure/slab and beyond the depth of the floor Insulation. Boards should not contact the ground. If ground contact is unavoidable in order to maintain thermal continuity, seal the edges with self-adhesive DPM or sealed DPC with a minimum 100mm overlap.

Position the boards flush against the internal leaf: Ensuring the specified residual cavity between the insulation and external leaf is maintained (0-10mm).

Insert retaining clip (where required): When using residual cavity, wall ties should include a retaining clip where possible to secure board position against the internal leaf. Where there is insufficient space for a retaining disk due to brick tolerances these can be omitted. However, the boards must still be positioned flush against the internal leaf.

Complete first row: The next board is then fitted tightly to the previous board by slotting the tongue and groove edges together. This is repeated for the first row of boards.

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5 Install Subsequent Rows

Maintain a staggered pattern: A staggering pattern of 600mm is recommended between rows to avoid continuous vertical joints. Ensure wall tie positions do not coincide with vertical joints.

Complete external leaf: Ensure the specified 0-10mm residual cavity between insulation and the external leaf is maintained.

Continue internal leaf: Celotex recommend laying a maximum of four courses of blocks on the preceding skin before installing the insulation. This ensures stability during construction, accurate placement of insulation and minimising gaps.

Remove excess mortar: Use a cavity board to prevent mortar dropping on the top edge of the insulation and remove excess mortar from the cavity face.

Repeat for subsequent rows: Follow the previous steps to construct the cavity wall and install insulation.

Termination below highest wall level: Protect the top edge of the insulation with a cavity tray and rake out alternate perpend joints for adequate drainage from the tray.

Note: Celotex CF4000 board joints do not require taping. Additional protection is required only where boards are exposed (see sections 7-8).

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6 Avoid Damage

Take care to avoid:

- Excess mortar squeeze on the leading leaf.
- Mortar droppings on exposed edges of the installed board.
- Damaging the board during installation.
- Piercing the foil facing of the insulation board with the wall tie, as this is a potential point of moisture ingress.

Damaged insulation boards should be replaced.

7 Corner Detailing (Figures 4-9)

Create blocking arrangement: Arrange boards in a 'blocking' arrangement to ensure staggered corner edge joints. Cutting an insulation board vertically in half along its longest side and abutting at right angles to a full board will start this arrangement (Figure 7). Apply the vertical DPC to the first corner piece before placing it into the cavity to simplify installation.

External presenting edges: If the tongue is exposed at the corner edge, remove it using a sharp insulation saw or knife. Grooved edges can be exposed at corner edges (Figure 7).

Internal presenting edges: Ensure all presenting edges between insulation boards are flush cut, removing the groove or tongue, if necessary, to ensure tight but joints with no air gaps thus achieving continuity of the thermal envelope.

Interlocking rows vertically: For blocking arrangements, cut and remove a section of the tongue at the top of the lower board to fit flush with the board above:

- Score and cut the tongue of board A to align with board B, removing sections to leave a residual rectangle of tongue (Figures 8 & 9).
- Cuts should reflect the tapered shape of the tongue (40mm wide at the top, 50mm at the bottom).

Maintain staggered pattern: Ensure corners follow the staggered pattern to avoid vertical joints. Corner boards should be cut to size where necessary, taking into consideration the butt-joint, to achieve this.

Install vertical DPC: Incorporate a vertical DPC, with a minimum 100mm overlap beyond exposed board ends at all courses (Figures 4-7). The width of the vertical DPC will vary with the thickness of the insulation board used. The vertical DPC should be applied to the full height of the corner and be secured with suitable tape or fixing system.

Wall ties at corners: Position wall ties around openings in accordance with the engineer's specifications, Eurocode 6, BS EN 845-1, and Building Regulations Approved Document A.

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8 Openings

Ensuring continuity: Where openings such as doors and windows are in proximity, it is recommended that a continuous lintel or cavity tray is used. Insulation boards should be cut to butt tightly against the cavity barrier/closer/tray.

The product can be cut using a sharp knife or fine-toothed saw to fit openings such as around windows, doors and airbricks. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured.

Damp proofing: Apply suitable damp proofing in accordance with regulations around openings to direct moisture to the external face of the building. Individual lintels or cavity trays should have stop ends and be adequately drained.

Wall ties at openings: Position wall ties around openings in accordance with the engineer's specifications, Eurocode 6, BS EN 845-1, and Building Regulations Approved Document A. Take care to avoid damaging the boards when fitting extra wall ties into the tongue and groove edge.

Jambs: To avoid piercing the boards and maintain the required wall tie density, provide two wall ties at each board joint at 450mm vertical spacings. Each pair of wall ties are to be installed within 225mm of the opening.

Cavity closers: Specialist advice should be sought on the correct use of insulated cavity closers to ensure effective fire and thermal performance of the wall in accordance with the detailed requirements of the construction.

Figure 4

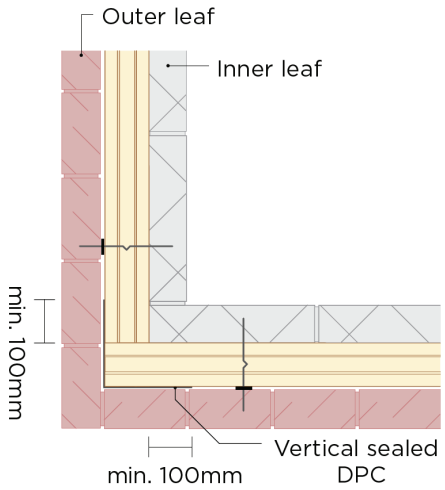


Figure 5

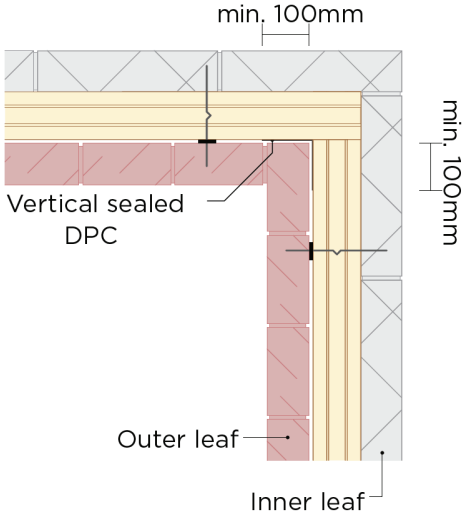


Figure 6

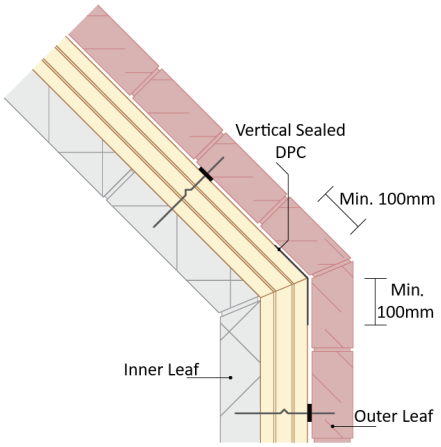


Figure 7

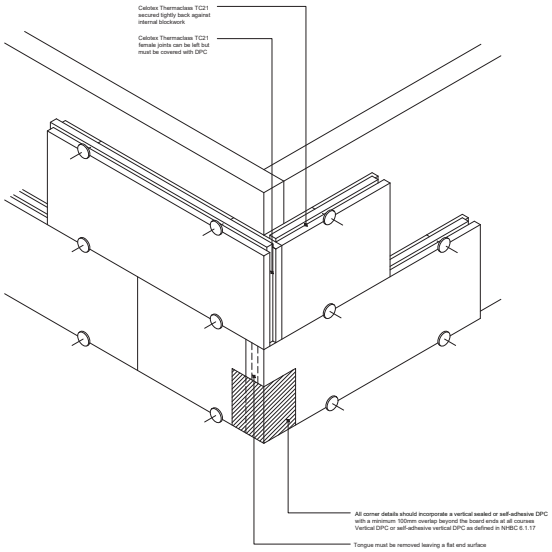


Figure 8

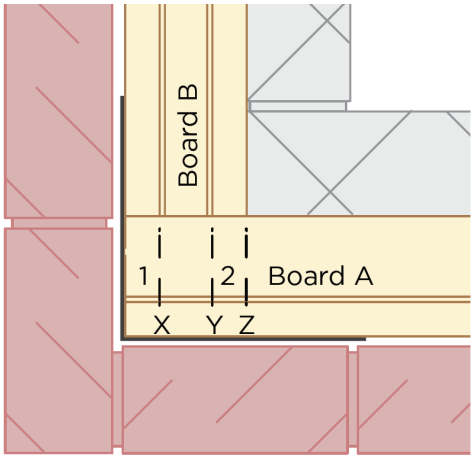
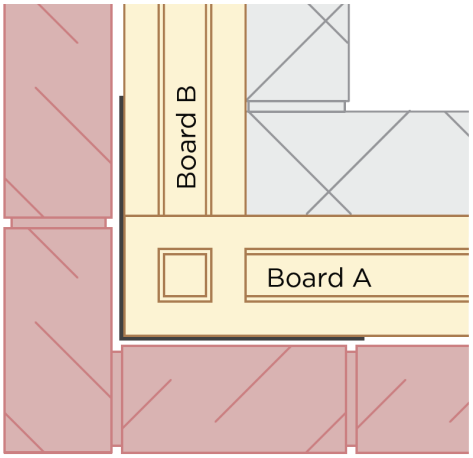


Figure 9



General Information

It is critical that all works are detailed in accordance to BBA certificate for CW4000 FF Insulation for Full Fill Cavity Walls, which is available at **celotex.co.uk/technical-services/resources/bba-certificates.**

Wear protective gloves when carrying or handling insulation boards to protect your hands from sharp edges (as a result of the aluminium facer).

Wash hands thoroughly after handling as a matter of good occupational hygiene.

Cutting and drilling insulation boards will release dust. Inhalation of dust may cause respiratory irritation and other health conditions. Any such activity should be carried out in a well-ventilated area, wearing a dust mask and safety glasses. Dust from the process should be collected and disposed of appropriately. If in doubt following inhalation of dust, seek medical attention promptly.

When cutting the boards, use a sharp specialist insulation saw or knife. Use a straight edge to ensure an accurate butt edge or mitre joint.

For penetrating elements, designs should clearly indicate means to limit disruption to the insulation. For recessed meter boxes on the cold side of the construction, insulation should be installed behind the enclosure. For incoming services, appropriate insulation should fit tightly around ducts, pipes, etc.

If a board is damaged, it should not be used.

Ensure that all exposed areas of insulation are protected with a weatherproof material or board when work is suspended or during rain.

When handling boards in wet conditions, the facings can become slippery.

The foil facer on the boards will reflect ultraviolet light so UV eye protection may be required during bright weather.

The boards feature a branded foil facer on one side and an unbranded facer on the other. This is for cosmetic reasons only there is no performance variation between these facers. In maintaining the defined orientation of the boards (see section 3), the wall will feature a mixture of branded and unbranded facers facing outward.

Seek advice from a wall tie manufacturer for the most suitable tie and retaining disk for the construction.

Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure and cavities cleared of debris as far as practicable.

Where a residual cavity of up to 10mm is used, mortar squeeze from the external leaf into the cavity should be minimised as far as practicable to keep the cavity clear. We understand that there will always be some mortar squeeze when installing the outer leaf. However, when this is only isolated areas, this will not affect the overall thermal performance or increase the risk of moisture ingress. CF4000 can be used as a completely full fill where both brick and mortar are in contact with the face of the board through the whole wall without additional risk of moisture ingress, as included in the BBA. Attempting to clear the cavity of mortar once dried may result in damage to the insulation facer.

Notes

Celotex at your service:

Do you have a question about a specific project, the products or application possibilities?
Then contact our technical team at:
technical@celotex.co.uk

All information can be found on:
www.celotex.co.uk

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