# Celotex Thermaclass Cavity Wall 21

**Specification Guide** 

Insulation









### **Celotex Thermaclass** Cavity Wall 21

Thermaclass Cavity Wall 21 is an easy to install, polyisocyanurate (PIR) insulation board for full fill cavity wall applications with proven thermal performance (0.021 W/m.K).

Featuring a low emissivity foil facing, it can be installed with up to a 10mm residual cavity (to support ease of installation and accommodate mortar squeeze) or as a full fill solution with no residual cavity.

### **Thermaclass Cavity Wall 21 Insulation**





Proven Thermal Performance

Low Emissivity Foil Facing

Lightweight



Easy to Install



**BBA** Certified

'14 lifts per load'

Engineered Tongue and Groove Joint Profile

### **Features & Benefits**

#### **Thermal Performance**

Excellent thermal performance with a thermal conductivity of 0.021 W/m.K, reducing the thickness of the cavity required to achieve the target U-value.

#### Tongue and Groove Engineered Profile

Helping to ensure a continuous layer of insulation and minimise gaps between boards, maximising thermal performance and providing protection from wind driven rain. When installed according to our Installation Guide, the tongue and groove profile also removes the requirement to tape the joints between the boards to prevent water ingress.

#### Lightweight and Easy to Install

The boards are sized to fit standard cavity wall tie spacing. They are light and rigid, assisting with ease of transportation, handling, and fitting.

#### **High Performance Facer**

Low emissivity foil facing provides improved thermal performance in sealed cavity air spaces, improving the achievable U-value\*.

\*Based on a residual cavity of 10mm

#### **BBA Certified**

Thermaclass Cavity Wall 21 has been assessed by the British Board of Agrément for use in a full fill cavity application if installed, used, and maintained as set out in the certificate.

Please view or download the certificate at www.celotex.co.uk/technicalservices/resources/bba-certificates for details of the application and relevant restrictions.

#### Quality

All Celotex products are manufactured under an Environmental Quality Management System in line with the principles of ISO 14001:2015





### **Design Considerations**

When specifying and installing Celotex Thermaclass Cavity Wall 21 insulation boards you must ensure its technical specification meets or exceeds all relevant national Building Regulations and any other applicable standards/requirements relevant to your building/renovation project. Particular attention must be given to all specific fire and applicable height restrictions.

For more information, please refer to the following product documents available at:

- Insulation BBA Certificates | Celotex
- Datasheets & Brochures | Celotex
- Declaration of Performance | Celotex
- Health & Safety Documents | Celotex

Thermaclass Cavity Wall 21 MUST NOT be used in the external walls of buildings over 11 metres in height.

Recent changes to Building Regulations mean that only non-combustible insulation or insulation of limited combustibility can be used in buildings of that height.

You and your building designer should refer to the relevant Building Regulations and guidance applicable to your particular construction or application. You should also consult with warranty providers and local authority building control before building works commence.

For information on certified usage of Thermaclass Cavity Wall 21, please refer to BBA certificate 16/5343 (available https://celotex.co.uk/technicalservices/resources/bba-certificates) for detailed conditions of use, particularly in respect of behaviour in relation to fire and related restrictions.

#### **Thermal Bridging**

It is important to consider detailing at junctions to minimise the effects of thermal bridging and the associated risk of condensation.

When designed into a building, the right junction details significantly contribute to improving the fabric energy efficiency.

#### Moisture Tolerance

The tongue and groove edges of Thermaclass Cavity Wall 21 help increase protection from wind driven rain.

Moisture from the ground will not pass through to the inner leaf when the DPC and insulation are installed in the cavity wall in accordance with appropriate Building Regulations, standards, manufacturers installation instructions, and warranty requirements.

For information on usage of Thermaclass Cavity Wall 21 within a particular exposure zone, please refer to the 'Additional Information' section of BBA certificate 16/5343 for Thermaclass Cavity Wall 21 Insulation for Full Fill Cavity Walls alongside Building Regulations Approved Document C.

You should also consult with third party warranty providers and local authority building control for any additional requirements before building works commence.



### **Product Specification**

#### Figure 1A. Insulation Board Dimensions



#### Figure 1B. Groove Profile

Figure 1C. Tongue Profile



Edge Profile Dimensions	(mm)	(mm)	(mm)
Board thickness (A)	90	115	140
Outer edges (B)	20	32.5	45
Outer groove (C)	50	50	50
Inner groove (D)	40	40	40



Edge Profile Dimensions	(mm)	(mm)	(mm)
Outer edges (B)	20	32.5	45
Top of tongue (E)	40	40	40
Base of tongue (F)	50	50	50
Tongue height (G)	15	15	15

	L		Length (mm)		Width (mm)				
Stocked Thickness (mm)	(Lambda Value (W/m.K)	Lambda Value (W/m.K)	Gross (Including Tongue)	Net (Installed)	Gross (Including Tongue)	Net (Installed)	Weight (kg/m²)	Boards Per Pallet	Boards Per Bundle
90	0.021	4.25	465	450	1205	1190	2.80	96	6
115	0.021	5.45	465	450	1205	1190	3.55	80	5
140	0.021	6.65	465	450	1205	1190	4.30	64	4

#### **Reaction to Fire**

Euroclass F Reaction to Fire classification, according to BS EN 13501-1. Products with this level of classification are not provided with a rating for smoke emission.

#### **Specification Clause**

The full fill cavity wall insulation shall be Celotex Thermaclass Cavity Wall 21 \_\_mm thick, comprising a polyisocyanurate (PIR) rigid foam insulation core providing gas tight aluminium foil facings on both sides. Celotex Thermaclass Cavity Wall 21 is using a blowing agent with low GWP and zero ODP and UKCA marking compliance to BS EN 13165. Celotex Thermaclass Cavity Wall 21 has been mechanically engineered with a tongue and groove edge, tightly interlocking during installation to resist the passage of moisture across the cavity. All products must be installed in accordance with instructions issued by Celotex.

#### **Indicative U-Value Tables**

	Block Type & Lambda					
Product Thickness (mm)	Dense (1.13 W/m.K)	Medium Dense (0.59 W/m.K)	Lightweight Concrete (0.28 W/m.K)	Aircrete (0.15 W/m.K)		
Brick outer leaf, fair-fa	ced block inner leaf*					
90	0.20	0.20	0.19	0.18		
115	0.16	0.16	0.15	0.15		
140	0.13	0.13	0.13	0.13		
Brick outer leaf, block inner leaf, plasterboard on dabs internal finish with skim*						
90	0.19	0.19	0.18	0.18		
115	0.16	0.15	0.15	0.14		
140	0.13	0.13	0.13	0.12		
Rendered dense block outer leaf, fair-faced block inner leaf*						
90	0.20	0.20	0.19	0.18		
115	0.16	0.16	0.16	0.15		
140	0.14	0.13	0.13	0.13		
Rendered dense block outer leaf, block inner leaf, plasterboard on dabs internal finish with skim*						
90	0.19	0.19	0.18	0.18		
115	0.16	0.15	0.15	0.15		
140	0.13	0.13	0.13	0.12		

#### **Technical Support**

To help you find the right products for your application or projects, we have a suite of online tools. Supporting this, we have a dedicated team in the Technical Support Centre to provide U-value calculations, condensation risk analysis and information on installation of Celotex insulation boards within the fabric of your building.

Please visit <u>https://celotex.co.uk/technical-services</u> for technical assistance.

\*Based on 10mm residual cavity, U-value calculations in W/m<sup>2</sup>.K

## **Product Specification**

#### The Fabric First Approach with Celotex

At Celotex, we advocate for a "fabric first" approach to building design, focusing on maximising the performance of the building's envelope before considering mechanical systems like heating, ventilation, and air conditioning (HVAC). This method underscores the importance of high-quality insulation, airtightness, and thermal bridging to reduce energy consumption and enhance occupant comfort.

Key components of this approach include:

- 1. High-Performance Insulation: Using Celotex's advanced insulation materials to minimise heat loss and gain, ensuring thermal efficiency.
- 2. Airtight Construction: Ensuring the building is sealed to prevent unwanted air leakage, significantly reducing energy loss, and improving overall efficiency.
- 3. Minimising Thermal Bridging: Designing and constructing elements to reduce points where heat can easily transfer through the building envelope, using Celotex's insulation solutions.
- 4. Optimised Glazing: Selecting windows and glazing solutions that provide excellent thermal performance and reduce energy loss.
- 5. Efficient Building Materials: Choosing materials such as Celotex insulation boards that help to contribute to the overall energy efficiency and sustainability of the building.

By prioritising these elements, a fabric first approach aims to create buildings that require less energy for heating and cooling, thereby helping to reduce operational costs. This approach supports long-term performance and comfort, making buildings more sustainable and resilient. With Celotex's expertise and high-quality products, you can achieve outstanding energy efficiency and regulatory compliance in your building projects.

#### **Celotex' U-Value Calculation Services**

Celotex provides accurate U-Value Calculations for the construction industry, carried out by a team of experienced professionals.

All U-Values are determined using the Combined Method, adhering to the conventions outlined in BS EN ISO 6946, BR 443, and other standards specified by the BBA in their scheme guidance.

We provide these calculations free of charge to demonstrate the performance of Celotex products and ensure compliance with building regulations. To request a calculation, please email technical@celotex.co.uk.

Celotex U-Value Calculations can be accompanied by a Condensation Risk Analysis when appropriate, and we offer additional guidance as needed. Our advice on condensation risk follows the standards set out in BS EN ISO 13788 and BS 5250

#### **Fire Classification**

Euroclass F Reaction to Fire Classification, according to BS EN 13501-1. Products with this level of classification are not provided with a rating for smoke emission.



### 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.

> With Residual Cavity (Figure 2)

Without Residual Cavity (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.

#### 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 Thermaclass cavity wall 21 board joints do not require taping. Additional protection is required only where boards are exposed (see sections 7-8).

#### 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.

### Installation

### 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.

Additional Corner Information: See pages 30-35 of the Advanced Junction Guide

#### 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.

Additional Opening Information: See pages 18-23 of the Advanced Junction Guide.

#### Additional Resources

For more information on junctions and openings, refer to the Advanced Junction Guide (Pages 16-45).

#### External Corner Detail (Figure 4)



#### Mitred Corner Detail (Figure 6)









Internal Corner Detail (Figure 5)

(Figure 7)



(Figure 9)



## **General Information**

- It is critical that all works are detailed in accordance to BBA certificate 16/5343 for Thermaclass Cavity Wall 21Insulation for Full Fill Cavity Walls, which is available at https://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 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. Celotex Thermaclass Cavity Wall 21 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.

#### Storage

Thermaclass Cavity Wall 21 must be protected from prolonged exposure to sunlight. To avoid contact with ground moisture, it should be stored dry, flat, and raised above ground level.

Where possible, packs should be stored inside. If stored outside, they should be under cover or protected with opaque polythene sheeting If boards are stored under tarpaulins, care should be taken to prevent rope damage.

Only as much material as can be installed during a single working period should be removed from storage at any one time.

Boards left outside will deteriorate over time. Damaged boards should not be used.

#### **Waste Management and Recycling**

Celotex continuously monitors waste levels from its operations and implements procedures to minimise waste production. The company ensures that all employees understand the importance of waste reduction in every aspect of their work.

Celotex uses protective packaging for its products during transit that contains recycled materials and is also recyclable. This includes stretch wrap, cardboard banding, chipboard or wood bearers, and plastic strapping.

Waste PIR is inert and can be disposed of in landfills without any known impact on groundwater. Surplus product should be disposed of through a licensed waste disposal contractor.



## **Advanced Junction Guide**

Thermal bridging occurs at the intersections of a building's structural components, such as between roofs, walls, openings, and floors, contributing significantly to overall heat loss. This increased heat flow results from complex geometries or the use of materials with higher thermal conductivity than surrounding elements.

Such occurrences can lead to localised decreases in internal surface temperatures, leading to issues like surface condensation and mould growth. However, careful design detailing can mitigate these challenges.

This guidance emphasises solutions that are feasible to implement, promote excellent thermal performance, avoid moisture ingress, and minimise risk.

The building fabric should be constructed so that the insulation is reasonably continuous across newly built elements.

This document aims to supplement the installation guide to provide additional assistance and clarification at these intersections to promote best build practices.

Celotex Thermaclass Cavity Wall 21 can be cut using a sharp knife or fine-toothed saw to fit openings around windows, doors, and airbricks and other features. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured.

#### **Key Considerations**

When using Thermaclass Cavity Wall 21, you need to satisfy yourself that use of the product meets all relevant national Building Regulations and guidance as well as local, national, and other applicable standards relevant for your construction or application, including requirements in relation to fire and applicable height restrictions.

Celotex Thermaclass Cavity Wall 21 should not be used in the external walls of buildings over 11 metres in height. Recent changes to Building Regulations mean that only non-combustible insulation or insulation of limited combustibility can be used in buildings of that height.

Details within this document are indicative only. Please contact our technical department for information suited to your specific project at technical@ celotex.co.uk



## **Openings**

#### E1-01 Insulated Steel Lintel - Option One

#### **Construction Detail:**

Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

#### **Construction Notes:**

- · Fully insulated and continuous cavity closers should be used, installed tight to the insulation and cavity apertures. For door units, install perimeter insulation within the threshold zone or use a reinforced cavity closure.
- In Scotland, Northern Ireland, the Isle of Man, and areas of very severe exposure to driving rain, the upstand section of the damp proof protection should be returned into the inner leaf of masonry (this does not apply at sloping abutments). To avoid a slip plane, vertical spacing of wall ties and number of ties may need adjusting
- to produce equivalent number of required ties.
- Ensure insulation rigid board is cut to shape with a sharp knife or insulation saw and is in contact with the angle of the lintel and tight to the internal masonry.
- Celotex Thermaclass Cavity Wall 21 is mitre cut at the height required for the cavity tray, with a minimum 20° slope towards the outer leaf. (Tip: A 21° slope on a 90mm board will require a cut with a 35mm height difference between the two facers. Using a precut timber at the correct angle as a guide can ensure a consistent cut.)
- This angle is to avoid moisture moving towards the inner leaf.
- The cavity tray, such as Visqueen Zedex Housing Grade Damp Proof Course, is installed over the insulation to slope towards the outer leaf and the upper half of the cut Celotex Thermaclass cavity wall 21 board is fitted above.
- Ensure there are no gaps between the insulation boards.
- 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.
- Wall ties should be spaced no more than 225mm horizontally from the edge of any . opening, with vertical spacing not exceeding 450mm. The first row of wall ties directly above and below an opening should be spaced 450mm apart horizontally. Only use insulation retaining clips that are compatible with the wall tie (where required).
- Apply flexible sealant to all interfaces between the internal air barrier and the window / door frame.
- Seal all penetrations through the air barrier using a flexible sealant.
- Seal the joint between the window frame and the internal linings.
- Min 20mm insulation with 0.022 W/mK to window head reveal.



Masonry / Brick outer leaf

No cavity or a residual cavity of up to 10mm

Celotex Thermaclass Cavity Wall 21

Wall tie with retaining channel disc where possible

TB4000 + Plasterboard or PL4000 to window

Thermally broken Lintel by others, insulation cut to fit lintel

Window installation by others

#### E1-01 Insulated Steel Lintel - Option Two

#### **Construction Detail:**

Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

#### **Construction Notes:**

- Fully insulated and continuous cavity closers should be used, installed tight to the insulation and cavity apertures. For door units, install perimeter insulation within the threshold zone or use a reinforced cavity closure.
- If using galvanised steel lintel, cavity trays are required. Secure the cavity • tray DPC to the face of the blockwork using a compatible double-sided adhesive tape. Do not create a slip plane by continuing the DPC into the same mortar joint as the wall tie.
- In Scotland, Northern Ireland, the Isle of Man, and areas of very severe exposure to driving rain, the upstand part of the damp proof protection should be returned into the inner leaf of masonry (this does not apply at sloping abutments). To avoid a slip plane, vertical spacing of wall ties and number of ties may need adjusting to produce equivalent number of required ties.
- Ensure insulation rigid board is cut to shape with a sharp knife or insulation saw and is in contact with the angle of the lintel and tight to the internal masonry. Tongue should remain to fit into the board above.
- Ensure there are no gaps between the insulation boards. •
- 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.
- Wall tie spacing is 225mm maximum horizontal distance from opening, no . greater than 450mm vertical spacing. 450mm horizontal centres for first row of wall ties above and below opening. Only use insulation retaining clips that are compatible with the wall tie (where required).
- Apply flexible sealant to all interfaces between the internal air barrier and the window / door frame.
- Seal all penetrations through the air barrier using a flexible sealant. •
- Seal the joint between the window frame and the internal linings.
- Min 20mm insulation with 0.022 W/mK to window head reveal.



Masonry / Brick outer leaf

No cavity or a residual cavity of up to 10mm

Celotex Thermaclass Cavity Wall 21

Wall tie with retaining channel disc where possible

TB4000 + Plasterboard or PL4000 to window

Thermally broken Lintel by others, insulation cut to fit lintel

Window installation by others

#### E4 - Jamb (Insulated Reveal)

#### **Construction Detail:**

**Full-Fill Masonry Cavity Wall**: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf, and plasterboard on dabs.

- Fully insulated and continuous cavity closers should be used, installed tight to the Celotex Thermaclass Cavity Wall 21 and cavity apertures. For door units, install perimeter insulation within the threshold zone or use a reinforced cavity closure.
- 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.
- Use an additional wall tie within 225 mm of the opening / vertical edge on each board course (450 mm) level to satisfy the structural requirements of the wall. Avoid penetrating the board, as this may introduce an unacceptable risk of water penetration. Place additional ties on each board course to compensate. Only use insulation retaining clips that are compatible with the wall tie (where required).
- Ensure there are no gaps between the insulation boards.
- Apply flexible sealant to all interfaces between the internal air barrier and the window / door frame.
- Seal all penetrations through the air barrier using a flexible sealant.
- Seal the joint between the window frame and the internal linings.
- Min 20mm TB4000 or PL4025 insulation with 0.022 W/mK to window reveal. This should butt the window frame, be mechanically fixed, and be sealed with a suitable flexible sealant.



### **Ground Floor**

#### E5 Ground Floor - Solid Concrete Slab

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

Ground Floor Slab: Concrete on polythene separating layer, Celotex, DPM, and sand blinded hardcore.

#### **Construction Notes:**

- Celotex TB4000 insulation as vertical upstand. This should be flush with the floor finish and tight against the internal masonry.
- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- The Thermaclass Cavity Wall 21 boards should be positioned with the tongue at the top of the board.
- Install the first row of wall ties in the inner leaf at 600mm horizontal centres and a minimum of one full block height (215mm) below the underside of the floor structure/slab and beyond the depth of the floor insulation. Thermaclass should be positioned on the bottom wall tie. Ensure that the Thermaclass Cavity Wall 21 insulation boards are not in contact with the ground (1).
- Celotex Thermaclass Cavity Wall 21 is mitre cut at the height required for the cavity tray, with a minimum 20° slope towards the outer leaf. (Tip: A 21° slope on a 90mm board will require a cut with a 35mm height difference between the two facers. Using a precut timber at the correct angle as a guide can ensure a consistent cut.)
- The lower half of the board is installed on the wall ties and into the tongue of the insulation board . below. Ensure there are no gaps between boards and that the insulation is secured firmly against the inner leaf of the cavity wall.
- The cavity tray, such as Visqueen Zedex Housing Grade Damp Proof Course, is installed over the . insulation, sloping towards the outer leaf, with the upper half of the cut Celotex Thermaclass Cavity Wall 21 board fitted above.
- · For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.
- Wall ties should be no greater than 450mm vertical spacing. Only use insulation retaining clips that . are compatible with the wall tie (where required).
- Apply flexible sealant between the wall lining and floor lining.
- Apply flexible sealant between the skirting board and the floor screed / finish.
- Seal all penetrations through the air barrier using a flexible sealant or plaster mortar.

### **Figure One:**



#### E5 Ground Floor - Solid Concrete Slab

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

Ground Floor Slab: Concrete on polythene separating layer, Celotex, DPM, and sand blinded hardcore.

#### **Construction Notes:**

- Celotex TB4000 insulation as vertical upstand. This should be flush with the floor finish and tight against the internal masonry.
- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- The Thermaclass Cavity Wall 21 boards should be positioned with the tongue at the top of the board.
- Install the first row of wall ties in the inner leaf at 600mm horizontal centres and a minimum of one full block height (215mm) below the underside of the floor structure/slab and beyond the depth of the floor insulation. Thermaclass should be positioned on the bottom wall tie. Ensure that the Thermaclass Cavity Wall 21 insulation boards are not in contact with the ground (1).
- Where insulation must be in contact with the ground due to onsite constraints (2), the base of the Thermaclass Cavity Wall 21 board is protected using DPC, such as Visqueen Polyethylene Damp Proof Course or Visqueen Zedex Housing Grade DPC. Seal with appropriate double sided DPC jointing tape (typically butyl tape) to the foil face of the Celotex insulation board with a minimum 100mm overlap beyond the board ends.
- Celotex Thermaclass Cavity Wall 21 is mitre cut at the height required for the cavity tray, with a minimum 20° slope towards the outer leaf. (Tip: A 21° slope on a 90mm board will require a cut with a 35mm height difference between the two facers. Using a precut timber at the correct angle as a guide can ensure a consistent cut.)
- The lower half of the board is installed on the wall ties and into the tongue of the insulation board below. Ensure there are no gaps between boards and that the insulation is secured firmly against the inner leaf of the cavity wall.
- The cavity tray, such as Visqueen Zedex Housing Grade Damp Proof Course, is installed over the insulation, sloping towards the outer leaf, with the upper half of the cut Celotex Thermaclass Cavity Wall 21 board fitted above.
- · For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.
- Wall ties should be no greater than 450mm vertical spacing. Only use insulation retaining clips that are compatible with the wall tie (where required).
- Apply flexible sealant between the wall lining and floor lining.
- Apply flexible sealant between the skirting board and the floor screed / finish.
- Seal all penetrations through the air barrier using a flexible sealant or plaster mortar.

#### **Figure two:**



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### Roof

### E11-01 Eaves

#### **Construction Detail:**

**Full-Fill Masonry Cavity Wall**: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- Ensure the gap between the wall plate and eaves ventilator is filled with flexible insulation.
- Horizontal/vertical cavity barriers need to be fixed in accordance with manufacturers guidelines. If fixing spikes are used, they should be installed at the required centres. For compression-fit
- cavity barriers, use the correct size for a compressive fit in the cavity.
- Celotex Thermaclass Cavity Wall 21 should be trimmed using a sharp specialist insulation saw or knife so that the edges are firmly butted tightly against the fire stop/cavity barrier.
- Wall ties should be no greater than 450mm apart vertically. Only use insulation retaining clips that are compatible with the wall tie.
- Apply flexible sealant to all interfaces between the internal air barrier and the window or door frame.
- Seal the wall plate on a continuous layer of mortar.
- Seal the gap between the wall and ceiling linings with flexible sealant or plaster mortar.
- Seal all penetrations through the air barrier using a flexible sealant or plaster mortar.



Roof installation by others
 Wall plate
 Cavity barrier
 No cavity or a residual cavity of up to 10mm
Celotex Thermaclass Cavity Wall 21 Celotex TC21 tongue & groove joint
 Plasterboard
 Wall tie with retaining channel disc where possible
 Block inner leaf
 Masonry/Brick outer leaf

## **External Wall Junctions**

#### **Corner Installation Guidance:**

- Mortar snots should be removed from the leading leaf and insulation boards to ensure a tight fit with the structure. Cavities cleared of debris as far
  as practicable without damaging the foil facer.
- Position the Thermaclass Cavity Wall 21 boards flush to the blockwork with the tongue at the top.
- Arrange the boards in a 'blocking' pattern to ensure staggered corner edge joints. Start installation at a corner for better effectiveness.
- If the tongue of the board is exposed at the corner edge, this should be removed using a sharp specialist insulation saw or knife. There is no need to cut or fill the groove of the female edge of the board when it is exposed at the corner edge.
- Butt-joint the boards at the corner. Remove the groove or tongue from all presenting internal edges to ensure flush cuts. Ensure all cuts are accurate for tight butting with no air gaps, maintaining thermal envelope continuity around corners.
- Where the boards interlock as part of the blocking arrangement, cut and remove a section of the tongue at the top of the lower board for a flush fit with the board above.
- Incorporate a vertical DPC (such as Visqueen Polyethylene Damp Proof Course or Visqueen Zedex Housing Grade DPC) or self-adhesive DPM with a
  minimum 100mm overlap beyond the board ends at all courses. Select the width of the Vertical DPC based on the board thickness.
- Secure the DPC in place using appropriate DPC tapes (such as Visqueen GR lap tape or double-sided butyl tape). Alternatively, use suitable DPC insulation pins (such as Visqueen DPC Fixing Pins for Insulation), ensuring a minimum of 2 pins and a 100mm vertical overlap of the DPC below.
- Alternatively, for 90mm Thermaclass boards, the edges can be cleaned and sealed using 150mm Visqueen GR lap tap. Starting from the top, align centrally so that the tape overlaps the foil facer on both sides, slowly working downward, apply pressure to ensure adhesion. Once the tape is applied, apply firm pressure again to ensure complete adhesion and continuity.
- Ensure that the Thermaclass Cavity Wall 21 insulation boards are not in contact with the ground or that all board edges are sealed. The first row of insulation boards at the corner can be sealed with the vertical DPC and taped before installation. Once the DPC is sealed, lower the insulation boards into position sitting firmly on the wall ties.
- For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.
- Wall ties should be no greater than 450mm vertical spacing. Only use insulation retaining clips that are compatible with the wall tie (where required).



Tongue must be removed leaving a flat end surface

#### E16-01 Corner, Normal

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

#### **Construction Notes:**

- · Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- Position the Thermaclass Cavity Wall 21 insulation boards flush to the blockwork with the tongue at the top.
- Arrange the boards in a 'blocking' pattern to ensure staggered corner edge joints. Start installation at a corner for better effectiveness.
- If the tongue of the board is exposed at the corner edge, this should be removed using a sharp specialist insulation saw or knife.
- There is no need to cut or fill the groove of the female edge of the board when it is exposed at the corner edge.
- Butt-joint the insulation boards at the corner. Remove the groove or tongue from all presenting internal edges to ensure flush cuts. Ensure all cuts are accurate for tight butting with no air gaps, maintaining thermal envelope continuity around corners.
- Where the boards interlock as part of the blocking arrangement, cut and remove a section of the tongue at the top of the lower board for a flush fit with the board above.
- Incorporate a vertical DPC (such as Visqueen Polyethylene Damp Proof Course or Visqueen Zedex Housing Grade DPC) or self-adhesive DPM with a minimum 100mm overlap beyond the board ends at all courses. Select the width of the Vertical DPC based on the board thickness.
- Secure the DPC in place using appropriate DPC tapes (such as Visqueen GR lap tape or double-sided butyl tape). Alternatively, use suitable DPC insulation pins (such as Visqueen DPC Fixing Pins for Insulation), ensuring a minimum of 2 pins and a 100mm vertical overlap of the DPC below.
- Alternatively, for 90mm Thermaclass boards, the edges can be cleaned and sealed using 150mm Visqueen GR lap tap. Starting from the top, align centrally so that the tape overlaps the foil facer on both sides, slowly working downward, apply pressure to ensure adhesion. Once the tape is applied, apply firm pressure once again to ensure complete adhesion and continuity.
- Ensure that the Thermaclass Cavity Wall 21 insulation boards are not in contact with the ground or that all board edges are sealed. The first row of insulation boards at the corner can be sealed with the vertical DPC and taped before installation. Once the DPC is sealed, position at the corner and lower into position to sit upon the wall ties.
- For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.
- Wall ties should be no greater than 450mm vertical spacing. Only use insulation retaining clips that are compatible with the wall tie (where required).
- The vertical DPC is installed along the entire height of the corner.
- Apply flexible sealant between the wall lining and floor lining.
- Apply flexible sealant between the skirting board and the floor screed / finish.





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#### E16-02 Corner, Mitred

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- The Thermaclass Cavity Wall 21 insulation boards should be positioned with the tongue at the top.
- The boards at the corner should be mitre cut to the angle of the wall and butt jointed. All presenting internal edges must be flush cut. It is important that all cuts are accurate to ensure all edges are butted tightly with no air gaps, thus achieving continuity of the thermal envelope around the corners.
- Incorporate a vertical DPC (such as Visqueen Polyethylene Damp Proof Course or Visqueen Zedex Housing Grade DPC) or self-adhesive DPM with a
  minimum 100mm overlap beyond the joint.
- Secure the DPC in place using appropriate DPC tapes (such as 150mm Visqueen GR lap tape or double-sided butyl tape). Alternatively, use suitable DPC insulation pins (such as Visqueen DPC Fixing Pins for Insulation), ensuring a minimum of 2 pins and a 100mm vertical overlap of the DPC below.
- Alternatively, edges can be sealed using 150mm Visqueen GR lap tape. Starting from the top, align centrally so that the tape overlaps the foil facer on both sides, slowly working downward, apply pressure to ensure adhesion. Once the tape is applied, apply firm pressure once again to ensure complete adhesion and continuity.
- For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.
- The vertical DPC is installed along the entire height of the corner.
- Wall ties should be no greater than 450mm vertical spacing. Only use insulation retaining clips that are compatible with the wall tie (where required).
- Apply flexible sealant between the wall lining and floor lining.
- Apply flexible sealant between the skirting board and the floor screed / finish.
- Seal all penetrations through the air barrier using a flexible sealant or plaster mortar.



### **Party Walls**

#### E18-02 Party Wall: Mineral Wool Between Blockworks

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

Party Wall: Blockwork outer skin full-filled mineral wool, blockwork inner leaf, plasterboard on dabs both sides.

- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- The Thermaclass Cavity Wall 21 boards should be positioned with the tongue at the top of the board.
- Close the external wall cavity with flexible cavity barrier. Please note, some cavity barriers may require DPC to prevent moisture ingress and should be installed in accordance with manufacturers guidelines.
- Celotex Thermaclass Cavity Wall 21 should be trimmed using a sharp specialist insulation saw or knife so that the edges are firmly butted tightly against the fire stop/cavity barrier.
- Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical board joints.
- Apply flexible sealant to all interfaces between the internal air barrier and the window / door frame.
- Seal the gap between the wall and ceiling linings with flexible sealant / plaster mortar.
- Seal all penetrations through the air barrier using a flexible sealant / plaster mortar.



## **Cavity Tray**

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

#### **Construction Notes:**

- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- The Thermaclass Cavity Wall 21 boards should be positioned with the tongue at the top of the board.
- Celotex Thermaclass Cavity Wall 21 is mitre cut at the height required for the cavity tray, with a minimum 20° slope towards the outer leaf. (Tip: A 21° slope on a 90mm board will require a cut with a 35mm height difference between the two facers. Using a precut timber at the correct angle as a guide can ensure a consistent cut.)
- The lower half of the board is installed on the wall ties and into the tongue of the insulation board below. Ensure there are no gaps between boards and that the insulation is secured firmly against the inner leaf of the cavity wall.
- The cavity tray (such as Visqueen Zedex Housing Grade Damp Proof Course) is installed over the insulation with a slope towards the outer leaf, and the upper half of the cut Celotex Thermaclass cavity wall 21 board is fitted above it.
- For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.
- Wall ties should be no greater than 450mm vertical spacing. Only use insulation retaining clips that are compatible with the wall tie (where required).
- Seal all penetrations through the air barrier using a flexible sealant or plaster mortar.

DPC to have continuous slope to brick two courses below

Brick ties below DPC to support Celotex TC21, two wall ties per TC21 board



## **Coursing Bricks**

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

#### **Construction Notes:**

- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as far as practicable without damaging the foil facer.
- The Thermaclass Cavity Wall 21 boards should be positioned with the tongue at the top of the board.
- Celotex Thermaclass Cavity Wall 21 is mitre cut at the height required for the cavity tray, with a minimum 20° slope towards the outer leaf. (Tip: A 21° slope on a 90mm board will require a cut with a 35mm height difference between the two facers. Using a precut timber at the correct angle as a guide can ensure a consistent cut.)
- Where a reduction in height of a row of boards is needed, due to coursing bricks or similar, the required reduction in board height should be measured.
- Mark two lines the length of the board on the outer face. Each line should be equidistant to the centre and separated to the other by the measured length.
- The marked lines are cut perpendicular to the facer, and the excess board height central piece is removed.
- The remaining upper and lower portions are placed together and resealed using suitable DPC tape (such as 150mm Visqueen GR lap tape). Alternatively, using a separate DPC with min 100mm lap each side of the cut, seal with appropriate double sided DPC joining tape (typically butyl tape) and mechanically fix such as Visqueen Zedex DPC Surface fixing System).
- The reduced height Thermaclass Cavity Wall 21 board with upper and lower T+G edges is positioned onto the wall ties and interlocked to the board below.
- Insulation should have no gaps and be secured firmly against the inner leaf of the cavity wall.
- For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.



Wall ties at 450mm centres with retaining channel disc where possible

Celotex Thermaclass Cavity Wall 21

Block inner leaf

Extra wall tie not at 450mm centres with retaining channel disc where possible

Masonry/Brick outer leaf

Two lengthways cuts are required to remove a central section of the Thermaclass cavity wall 21 board, whist still retaining the T+G edges. The boards are then taped with appropriate DPC tape to ensure water tightness.

The tongue & groove system should be maintained at the bottom of any cut piece

Coursing brick

No cavity or a residual cavity of up to 10mm

Plasterboard

Celotex Thermaclass TC21 tongue & groove joint system

### **Telescopic Vents / Meter Boxes**

#### **Construction Detail:**

Full-Fill Masonry Cavity Wall: Masonry outer skin, 10mm cavity (or no cavity) and Celotex Thermaclass Cavity Wall 21, blockwork inner leaf and plasterboard on dabs.

- Celotex TB4000 insulation as vertical upstand. This should be flush with the floor finish and tight against the internal masonry.
- Mortar snots should be removed from the leading leaf and insulation to ensure a tight fit with the structure. Cavities should be cleared of debris as
  far as practicable without damaging the foil facer.
- The Thermaclass Cavity Wall 21 boards should be positioned with the tongue at the top of the board.
- Install the first row of wall ties in the inner leaf at 600mm horizontal centres and a minimum of one full block height (215mm) below the underside
  of the floor structure/slab and beyond the depth of the floor insulation. Position Thermaclass on the bottom wall tie, ensuring that the Thermaclass
  Cavity Wall 21 insulation boards do not come into contact with the ground.
- Where telescopic vents or meter boxes are installed, voids between should be filled with Celotex insulation. Cut and install Celotex TB4000, GA4000, or CW4000 and ensure it butts with the adjacent Celotex Thermaclass Cavity Wall 21 and is flush with the blockwork.
- A cavity tray (such as Visqueen Zedex Housing Grade DPC) is required above the vent/meter box.
- Celotex Thermaclass Cavity Wall 21 is mitre cut at the height required for the cavity tray, with a minimum 20° slope towards the outer leaf. (Tip: A 21° slope on a 90mm board will require a cut with a 35mm height difference between the two facers. Using a precut timber at the correct angle as a guide can ensure a consistent cut.)
- The lower half of the board is installed on the penetration and insulated voids. Ensure there are no gaps between boards and that the insulation is secured against the inner leaf of the cavity wall.
- The cavity tray should be installed over the insulation to slope towards the outer leaf, and the upper half of the cut Celotex Thermaclass Cavity Wall 21 board should be fitted above.
- For subsequent rows, maintain a staggered pattern to avoid continuous vertical joints between boards. Wall tie positions have a maximum of 900mm horizontal centres and should not coincide with vertical joints.
- Wall ties should be no greater than 450mm vertical spacing. Only use insulation retaining clips that are compatible with the wall tie (where required).
- Apply flexible sealant between the wall lining and floor lining.

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## **Stepped Cavity Trays**

Celotex Thermaclass Cavity Wall 21 has been tested with Visqueen Zedex Housing Grade Damp Proof Course (DPC) and Visqueen Zedex DPC Surface Fixing System for use with stepped cavity trays when using a 10mm residual cavity.

When correctly specified and installed in accordance with the BBA certificate, Visqueen's Technical Datasheet and Guidance Detail DPC-22, Zedex Housing Grade Damp Proof Course provides a horizontal, vertical or stepped damp proof course, including cavity trays, in either solid, or cavity external walls of brick, block, stone or concrete, in masonry, timber-frame or lightweight steel-frame constructions.

For more information, please contact Visqueen on tel: 0333 202 6800 or email: technicaloffice@visqueen.com





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# Celotex Soprema

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