Intelligent Environments
Superglass

Superwall Cavity Wall Batts.

Installation Guide for full fill and partial fill external masonry cavity walls.

etex inspiring ways of living

Superwall Cavity Wall Insulation Batts Installation Guide
Introduction

Product Description

Superglass Superwall is a British Board of Agrément (BBA) approved, non-combustible glass mineral wool insulation cavity wall batt, manufactured with a water-repellent additive to resist moisture ingress. The flexible batt is supplied at 455mm wide to allow easy installation between standard vertical wall tie spacings, reducing the need for on-site cutting and waste.

Application

Superwall batts are used as either a full fill or partial fill cavity wall insulation solution to reduce the thermal transmittance (U-value) of external cavity walls with masonry inner and outer leaves (where masonry includes clay and calcium silicate bricks, concrete blocks, reinforced concrete, and natural and reconstituted stone blocks). The product is for use in new domestic and non-domestic buildings up to and including 25 metres in height for full fill and without restriction for partial fill (although additional requirements apply above 12 metres in height for full fill and above 25 metres for partial fill). It is essential that walls are designed and constructed to incorporate the precautions given in the product BBA certificates 89/2231 Product Sheet 2, Product Sheet 3 & Product Sheet 5 to prevent moisture penetration.

Superwall is BBA approved for use in all UK exposure zones (subject to conditions detailed in the BBA Certificate).

CCPI (Code for Construction Product Information)

Superglass Superwall Cavity Batts hold a CCPI Verification Mark. Certificate number: 005800103/1026.

Design Considerations

Full Fill Use - Buildings over 12 metres high and up to and including 25 metres high

Where the walls of a building are between 12 and 25 metres high, the following requirements also apply:

- From ground level, the maximum height of a continuous cavity must not exceed 12 metres. Above 12 metres, the maximum height of continuous cavity must not exceed 7 metres. In both cases, breaks should be in the form of continuous horizontal cavity trays and weepholes discharging to the outside
- The area to be insulated must not be an infill panel in a framed structure
- The Certificate holder, in association with the architect, must carry out a detailed programme of assessment of the project including an examination of the quality of installation as work progresses. Above average site supervision is recommended during installation

Partial Fill Use - Buildings up to and including 25 metres high

The residual cavity width to be maintained during construction is 50 mm. This may reduce to 25 mm in isolated areas due to individual construction features (a minimum of 50 mm residual cavity width is required by the NHBC). This may be achieved by designing a cavity width which takes into account the dimensional tolerances of the components which make up the wall (by reference to the British Standards relating to the bricks, blocks and batts), or by using the data from the respective manufacturers. Allowances may need to be made for the quality of building operatives and the degree of site supervision or control available, and for the limitations in respect of exposure of the proposed building (as set out in Table 2).

Table 2: Maximum allowable total exposure factors of different constructions

Construction	Maximum allowable exposure factor E (1)
All external masonry walls protected by: rendering (to BS EN 13914-1: 2016), tile/slate hanging or timber, plastic or metal weatherboarding or cladding	No restriction
One or more external masonry walls constructed from facing clay brickwork or natural stone (the porosity of which exceeds 20% by volume). Mortar joints must be flush-pointed or weatherstruck	100
One or more external masonry walls constructed from calcium silicate bricks, concrete blocks, reinforced concrete and reconstituted stone, or natural stone (the porosity of which is less than 20% by volume), or any material with raked mortar joints	88

(1) To BS 5618:1985.

From ground level, the maximum height of continuous cavity walls must not exceed 12 metres; above 12 metres, the maximum height of continuous cavity walls must not exceed 7 metres. In both cases, breaks should be in the form of continuous horizontal cavity trays and weepholes discharging to the outside.

An external render coat or other suitable finish should be applied in locations where such application would be normal practice; care should be taken to ensure that the residual cavity is not bridged by mortar.

The use of cavity battens or boards is strongly recommended to prevent thermal bridging by mortar droppings.

Partial Fill Use - Buildings over 25 metres in height

The width of the residual clear cavity to be achieved is to be in excess of 50 mm, and the following additional requirements apply:

- the specifier must take extra care when detailing to ensure that the introduction of the insulation does not affect the weather resistance of the wall. Above average site supervision is recommended during installation of the product
- where, for structural reasons, the cavity width is reduced, e.g., by the intrusion of ring beams, a minimum residual cavity width of 25 mm must be maintained and extra care must be taken with fixings and weatherproofing, e.g., the inclusion of cavity trays with weepholes.

Building Regulations

Buildings subject to national Buildings Regulations should be constructed in accordance with the relevant recommendations of:

- BS EN 1996-1-1:2005+A1:2012, BS EN 1996-1-2:2005, BS EN 1996-2:2006 and BS EN 1996-3:2006 and their respective UK National Annexes.
- BS EN 845-1:2013+A1:2016 and BS 8000-3:2020.

New buildings not subject to regulatory requirements should also be built in accordance with Standards identified in section 4.4 of BBA Certificate No:

Superglass Superwall 32 = 89/2231: Product Sheet 3

Superglass Superwall 34 = 89/2231: Product Sheet 5

Superglass Superwall 36 = 89/2231: Product Sheet 2

NHBC Standards

In the opinion of the BBA, Superglass Superwall, if installed, used and maintained in accordance with BBA Certification No: 89/2231, can satisfy or contribute to satisfying the relevant requirements to NHBC Standards Chapter 6.1 External masonry walls.

Cavity Wall Ties

Cavity wall ties and, if required, any additional ties to BS EN 845-1:2013+A1:2016 and PD 6697:2019 should be used for structural stability in accordance with BS EN 1996-1-1:2005+A1:2012, BS EN 1996-2:2006 and BS EN 1996-3:2006.

Fire Performance

Superglass Superwall Cavity Batts are deemed non-combustible with a fire classification of Euroclass A1 (the highest possible rating) when tested to BS EN 13501-1 Reaction to Fire.

Cavity Barriers

Cavities should be closed with cavity barriers, in accordance with Building Regulations.

Cavity barriers should be provided:

- at the edges of cavities, including around openings e.g. window and doors,
- where the cavity abuts compartment walls and floors,
- where to break up extensive cavities which could act as a route for fire spread.

Approved document B (England and Wales) and Technical Booklet E (Northern Ireland) provides guidance on cavity barriers with considerations on installation and guidance on suitable materials for certain situations. Minimum performance is given as 30 minutes integrity (E 30) and 15 minutes insulation (I 15).

In Scotland, Technical Handbook – Domestic confirms horizontal and vertical cavity barriers should achieve short fire duration (30 minutes integrity – E 30).

Vertical cavity barriers, where required, should extend below the DPC and care should be taken to ensure continuity of cavity barriers where cavity barriers are installed at DPC level.

Where cavity barriers are used, they should be sized appropriately for the dimensions of the cavity. Normally they are installed under compression and as such maintaining the design cavity width is critical.

Significant reduction in cavity width will mean that the barrier cannot be fitted without creating problems for the following leaf of masonry. Significant widening in the cavity width will mean that the barrier may not be fitted with the appropriate level of compression and its performance may be impaired.

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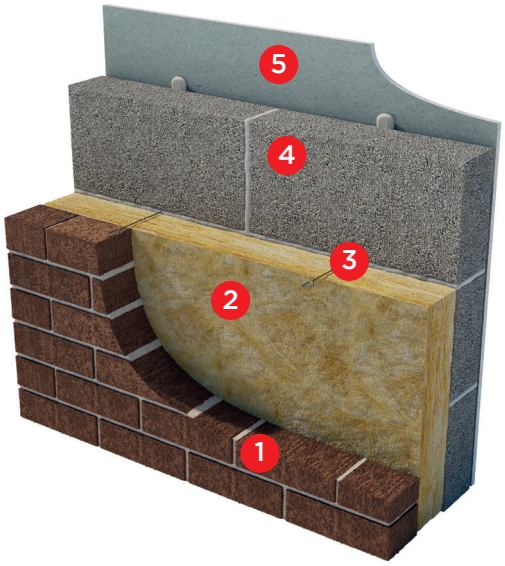
Typical Full and Partial Fill Construction Details

Brick & Block Construction

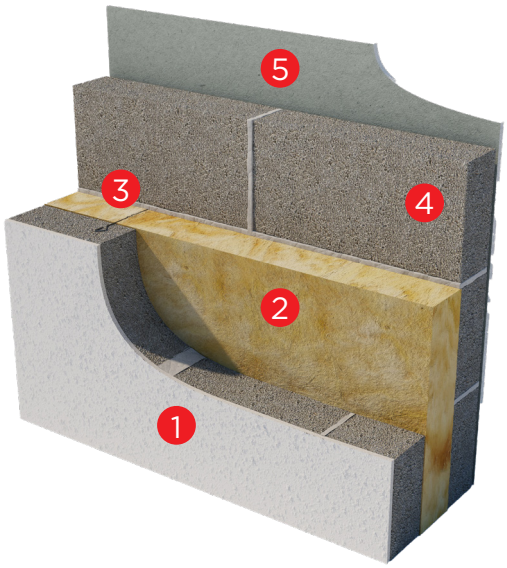
1. Outer Leaf - 102.5mm Brickwork
2. Superwall Cavity Batt in full fill or partial fill cavity (partial fill requires a minimum 50mm residual clear cavity)
3. Wall ties
4. Inner Leaf - 100mm Blockwork
5. 12.5mm Standard Plasterboard on plaster dabs



For illustrative purposes only

Block & Block Construction

1. Outer Leaf - 100mm Blockwork with render
2. Superwall Cavity Batt in full fill or partial fill cavity (partial fill requires a minimum 50mm residual clear cavity)
3. Wall ties
4. Inner Leaf - 100mm Blockwork
5. 12.5mm Standard Plasterboard on plaster dabs



For illustrative purposes only

Superwall Cavity Wall Insulation Batts
Installation Procedure - Full Fill

Full Fill step by step installation guide

1. A section of the inner leaf is built, with the first row of wall ties, at maximum 600 mm horizontal spacing, where the insulation is to begin. It is recommended that the wall ties are not placed directly on the dpc. The first run of batts may commence below dpc level (minimum 150 mm) to provide edge insulation for the floor.
2. The leading leaf is then built up to the required height, with wall ties placed at a vertical spacing of 450 mm ensuring the drip of the tie is located halfway across the residual cavity width. Excess mortar should be cleaned from the cavity face of the leading leaf, and the batts placed on the wall ties behind the retaining clips, to form a closely butt-jointed run.
3. The batt is compressed slightly and placed between the upper and lower wall ties to form a closely butt-jointed run. (See Figure 1).
4. The drip on each of the upper wall ties is inserted into the top of the batt and must be positioned to shed water away from the inner leaf. This is important to ensure that it functions correctly.
5. The outer leaf is built up to the same level as the batt, with its inner face in contact with the batts.
6. Successive sections of the wall, incorporating wall ties, are constructed and the batt installed as work proceeds up to the required height. Vertical joints must be staggered and all joints tightly butted. Where protrusions occur in the cavity or extra wall ties are used, the batts should be carefully cut to fit.
7. For wide cavities, it is possible to use two layers of batts with vertical joints staggered both between layers and within layers. Appropriate wall ties should be used to accommodate the extra width of cavity; if unequal thicknesses of batts are used, the thinner layer should be placed nearest the outer leaf.
8. Batts should be installed to the highest level of each wall.**
9. Additional wall ties may be required to satisfy the structural requirements of BS EN 845-1:2013+A1:2016, PD 6697:2019, BS EN 1996-1-1:2005+A1:2012, BS EN 1996-2:2006 and BS EN 1996-3:2006 to ensure adequate retention of the product or cut pieces.
10. Where additional wall ties are required at less than 450 mm vertical spacing, the batts must be cut and neatly fitted around them. Under no circumstances should the batts be impaled by the ties.

Notes:

- Cavities should be designed to suit the thickness of the proposed Superwall Cavity Batt. Thicker batts should not be compressed into narrow cavities.

- When stopping work due to adverse weather conditions or partially completed walls should be protected from inclement weather (e.g. wind, rain or snow) and covered at the end of the day's work or when stopping work due to adverse weather conditions. This is essential to ensure the product does not get wet or damaged.

**** If installation of the batts is terminated below the highest level of the wall, the top edge of the insulation must be protected by a cavity tray and alternative perpend joints raked out to provide adequate drainage of water from the tray.**

Figure 1

The illustrations outline technique only, and do not imply that the outer leaf must be built first.

Superwall Cavity Wall Insulation Batts
Installation Procedure - Partial Fill

Partial Fill step by step installation guide

1. The inner leaf is constructed ahead of the outer leaf (as batts are fastened to the cavity face of the inner leaf), with the first row of wall ties, at maximum 600 mm horizontal spacing, where the insulation is to be begin. It is recommended that the wall ties are not placed directly on the dpc. The first run of batts may commence below dpc level (minimum 150 mm) to provide edge insulation for the floor. **It is essential that the spacing of wall ties/clips allows one long edge of each batt to be secured at a minimum of two points.**

2. The leading leaf is then built up to the required height, with wall ties placed at vertical spacing of 450 mm, ensuring the drip of the tie is located halfway across the residual cavity width. Excess mortar should be cleaned from the cavity face of the leading leaf, and the batts placed on the wall ties behind the retaining clips, to form a closely butt-jointed run.

3. The second row of wall ties is fitted to retain the tops of the batts. **It is essential that all wall ties slope downwards towards the outer leaf (see Figure 2) and are placed at centres not exceeding 900 mm(1) to ensure that each batt is secured at a minimum of three points.** The first of insulation batts must not be in contact with the ground.

(1) Where buildings need to comply with NHBC Standards, the spacing should be no more than 600 mm.

4. Successive sections of the wall, incorporating wall ties, are constructed and the batt installed as work proceeds up to the required height. Vertical joints must be staggered, and all joints tightly butt. Where protrusions occur in the cavity or extra wall ties are used, the batts should be carefully cut to fit.

5. For wide cavities, it is possible to use two layers of batts with vertical joints staggered both between layers and within layers. Appropriate wall ties should be used to accommodate the extra width of cavity; if unequal thicknesses of batts are used, the thinner layer should be placed nearest the outer leaf.

6. Batts should be installed to the highest level of each wall.**

7. Additional wall ties may 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 and BS EN 1996-3:2006 to ensure adequate retention of the product or cut pieces.

8. Where additional wall ties are required at less than 450 mm vertical spacing, the batts must be cut and neatly fitted around them. **Under no circumstances should the batts be impaled by the ties.**

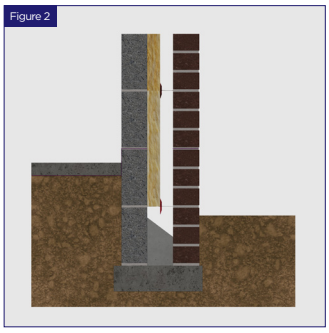
Notes:

- The residual cavity width to be maintained during construction is 50 mm. This may reduce to 25 mm in isolated areas due to individual construction features (a minimum of 50 mm residual cavity width is required by the NHBC).

- When stopping work due to adverse weather conditions or partially completed walls should be protected from inclement weather (e.g. wind, rain or snow) and covered at the end of the day's work or when stopping work due to adverse weather conditions. This is essential to ensure the product does not get wet or damaged.

**** If installation of the batts is terminated below the highest level of the wall, the top edge of the insulation must be protected by a cavity tray and alternative perpend joints raked out to provide adequate drainage of water from the tray.**

Figure 2



Mortar droppings

After each section of the wall leaf is built, excess mortar should be removed from the cavity and mortar droppings cleaned from exposed edges of the installed batt before installation of the next section of batts.

Full Fill - Use of a cavity board is recommended to protect batt edges and make cleaning easier. (See Figure 3).

Partial Fill - A cavity batten will protect the installed batts and help keep the cavity clean as the following leaf is built. (See Figure 4).

Figure 3

Figure 4

Cut pieces

Batts can be cut, using a sharp knife or fine-toothed saw, to fit around windows, doors, apertures, air bricks etc. It is essential that cut pieces completely fill the spaces for which they are intended and that no gaps are left in the insulation.

Water resistance

Superwall may be used in situations where it bridges the dpc in walls. Dampness from the ground will not pass through to the inner leaf provided the wall is detailed in accordance with the requirements and provisions of the national Building Regulations.

Constructions incorporating Superwall and built in accordance with the Standards listed in section 4.4, will resist the transfer of precipitation to the inner leaf and satisfy the national Building Regulations.

In all situations, it is particularly important to ensure during installation that:

- Installation is carried out to the highest level on each wall, or the top edge of the insulation is protected by a cavity tray
- Cavity trays are used with appropriate stop ends and weep holes at lintel level
- Cavity battens and/or boards are used during construction to prevent bridging by mortar droppings
- Wall ties are installed correctly and are thoroughly clean
- Excess mortar is cleaned from the cavity face of the leading leaf and any debris removed from the cavity
- Mortar droppings are cleaned from the exposed edges of installed batts
- Dpc's at ground level do not project into the cavity as they can form a trap for mortar bridging
- Insulation batts are properly installed and butt-jointed
- Raked or recessed mortar joints are avoided in very severe exposure areas

Window and door opening reveals should be constructed incorporating a cavity barrier/closer/dpc, as required.

Handling & Storage

Superwall Cavity Batts are lightweight and easy to handle; care should be taken to avoid crushing the edges or corners. If damaged, the product should be discarded.

Damaged, contaminated or wet product must not be used.

Partially completed walls should be protected from inclement weather (e.g. wind, rain or snow) and covered at the end of the day's work.

It is recommended that dust masks, gloves and long-sleeved clothing should be worn during cutting and handling of the product.

Cover exposed skin. When working in unventilated areas wear disposable face mask.

Clean area using vacuum equipment.

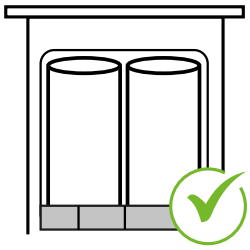
Waste should be disposed of according to local regulations.

Rinse in cold water before washing.

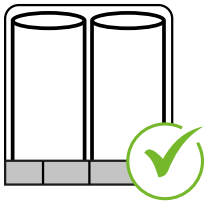
Ventilate working area if possible.

Wear goggles when working overhead.

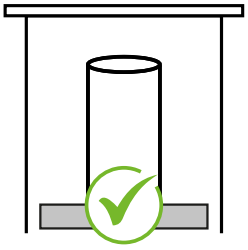
Superwall is supplied compression packed in polythene to provide short-term protection only. The product should be stored properly and handled in such a way as to ensure they are clean, dry and undamaged.



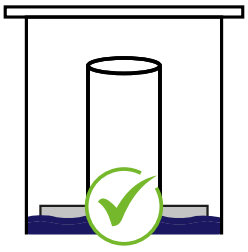
Keep the product covered and fully wrapped on a pallet until required.



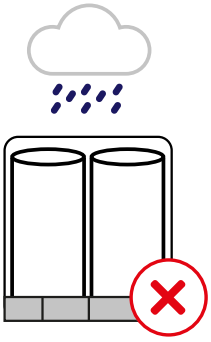
A wrapped pallet with its hood free from damage, can be left outside when space inside is not available, for short periods only.



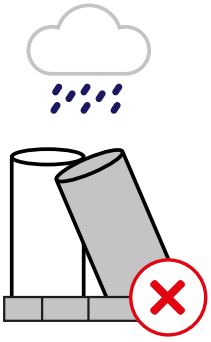
Once the plastic hood has been removed keep all of the product inside and off the ground away from the elements.



Product should be kept elevated on a pallet at all times to avoid sitting water.



Product can become wet and damaged when exposed to the elements for long periods of time.



Loose product is extremely likely to have water damage when left in the rain rendering your stock unfit for sale.

We do not recommend that Superglass pallets are double stacked.

Intelligent Environments
Superglass

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