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Agrément Certificate
15/5258
Product Sheet 1 Issue 2

INSTABEAD CAVITY WALL INSULATION SYSTEM

INSTABEAD CARBON SAVER AND INSTABEAD DIAMOND CAVITY WALL INSULATION

This Agrément Certificate Product Sheet(1) relates to InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation, comprising expanded polystyrene (EPS) materials injected in bead form with or without a bonding agent, for use in external cavity walls with masonry inner and outer leaves up to and including 12 m in height, with cavity widths of not less than 50 mm (InstaBead Diamond) and 40 mm (InstaBead Carbon Saver), in new and existing domestic and non-domestic buildings. The products may also be used in buildings over 12 m where a height restriction waiver has been issued by the Certificate holder, but further restrictions may apply based on the reaction to fire performance.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:
- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:
- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:
- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 5 November 2025
Originally certified on 22 September 2015

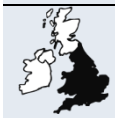
Hardy Giesler
Chief Executive Officer

SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**B4(1)**	**External fire spread**
Comment:		The products are restricted by this Requirement in some cases. See section 2 of this Certificate.
Requirement:	**C2(a)**	**Resistance to moisture**
Comment:		The products can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The products can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The products can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The products can contribute to satisfying this Requirement. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The products are acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
Comment:		The products are restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**25B**	**Nearly zero-energy requirements for new buildings**
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings (applicable to Wales only)**
Regulation:	**26C**	**Target primary energy rates for new buildings (applicable to England only)**
Regulation:	**26C**	**Energy efficiency rating (applicable to Wales only)**
Comment:		The products can contribute to satisfying these Regulations. See section 6 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Fitness and durability of materials and workmanship**
Comment:		The products are acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**8(3)**	**Fitness and durability of materials and workmanship**
Comment:		The products are restricted by this Regulation. See section 2 of this Certificate.

Regulation:	**9**	**Building standards – construction**
Standard:	2.6	Spread to neighbouring buildings
Comment:		The products are restricted by this Standard in some cases, with reference to clauses 2.6.5(1) and 2.6.6(2). See section 2 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The products can contribute to satisfying this Standard, with reference to clauses 3.4.1(1)(2) and 3.4.5(1)(2). See section 3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products can contribute to satisfying this Standard, with reference to clause 3.10.1(1)(2). See section 3 of this Certificate.
Standard:	3.15	Condensation
Comment:		The products can contribute to satisfying this Standard, with reference to clauses 3.15.1(1)(2), 3.15.4(1)(2) and 3.15.5(1)(2). See section 3 of this Certificate.
Standard:	6.1(b)(c)	Energy demand
Comment:		The products can contribute to satisfying this Standard, with reference to clauses 6.1.1(1) and 6.1.2(2). See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The products can contribute to satisfying these Standards, with reference to clauses 6.2.1(1)(2), 6.2.3(1), 6.2.4(2), 6.2.6(1), 6.2.7(1)(2), 6.2.8(1)(2), 6.2.9(1)(2), 6.2.10(2) and 6.2.12(1). See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The products can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the products can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4(1), 7.1.6(1)(2), 7.1.7(1), 7.1.9(2) and 7.1.10(2). See section 6 of this Certificate.
Regulation:	**12**	**Building standards – conversion**
Comment:		All comments given for the products under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	**23(1)(a)(i) (iii)(b)(i)(ii)**	**Fitness of materials and workmanship**
Comment:		The products are acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**23(2)**	**Fitness of materials and workmanship**
Comment:		The products are restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**28(a)**	**Resistance to moisture and weather**
Comment:		The products can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The products can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The products can contribute to satisfying this Regulation. See section 3 of this Certificate.

Regulation:	**36(a)**	**External fire spread**
Comment:		The products are restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Regulation:	**43(1)(2)**	**Renovation of thermal elements**
Regulation:	**43(B)**	**Nearly zero-energy requirements for new buildings**
Comment:		The products can contribute to satisfying these Regulations. See section 6 of this Certificate.

Additional Information

NHBC Standards 2025

In the opinion of the BBA, InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 6.1, *External masonry walls*.

The opinion of the BBA does not amount to any endorsement or approval by NHBC and does not in any way guarantee that NHBC will approve such product / system as compliant with the NHBC Technical Requirements and Standards.

Fulfilment of Requirements

The BBA has judged InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation to be satisfactory for use as described in this Certificate. The products have been assessed as cavity wall insulation, injected in bead form with or without a bonding agent, for use in external cavity walls with masonry inner and outer leaves up to and including 12 m in height with cavity widths of not less than 50 mm (InstaBead Diamond) and 40 mm (InstaBead Carbon Saver), in new and existing domestic and non-domestic buildings, and also in buildings over 12 m where a height restriction waiver has been issued by the Certificate holder but further restrictions may apply based on the reaction to fire performance.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation consist of grey EPS bead materials, for use as an injected insulation with or without a bonding agent (an aqueous polymer adhesive). The bonding agent is used to adhere the beads together and provide long-term stability to the insulation.

Applications

The products are satisfactory for use as an injected cavity wall insulation and are effective in reducing 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, and natural and reconstituted stone blocks). Where natural stone is used, it must be dressed so that the cavity formed is uniform and both faces are parallel.

The products are for use in external cavity walls with masonry inner and outer leaves up to and including 12 m in height, with cavity widths of not less than 50 mm(1) (InstaBead Diamond) and 40 mm(1) (InstaBead Carbon Saver), in new and existing domestic and non-domestic buildings, and also in buildings over 12 m where a height restriction waiver has been issued by the Certificate holder.

(1) The minimum cavity width must take into account the dimensional, workmanship and build tolerances of both masonry leaves.

This Certificate covers the use of the products in the following hard-to-treat (HTT) application: a partially filled cavity (see section 9.1.13).

Product assessment – key factors

The products were assessed for the following key factors, and the outcome of the assessment is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Not applicable.

2 Safety in case of fire

Data were assessed for the following characteristic.

2.1 Reaction to fire

2.1.1 The Certificate holder has not declared a reaction to fire classification to BS EN 13501-1 : 2018 for the products.

2.1.2 On the basis of data assessed, the products will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.1.3 In England, Wales and Northern Ireland, the products must not be used on buildings with a storey 18 m or more above ground level and which contain: one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house in Wales and Northern Ireland only), student accommodation, care homes, sheltered housing or dormitories in boarding schools and, additionally in Northern Ireland, nursing homes and places of lawful detention.

2.1.4 In England, Wales and Northern Ireland, the products are unrestricted in terms of proximity to a relevant boundary and, for constructions comprising two leaves of brick or concrete each at least 75 mm thick and with cavities closed around openings and at the top of the wall (with cavity barriers in Northern Ireland), is also unrestricted in terms of height, except for those constructions described in section 2.1.3.

2.1.5 In England, Wales and Northern Ireland, for constructions other than those described in section 2.1.4, the products must not be used on buildings with a storey 18 m or more above ground level and, in England only, on residential buildings with a storey 11 m or more in height.

2.1.6 In Scotland, the products must not be used on buildings that have a storey 11 m or more above ground level and which contain: a dwelling; a building used as a place of assembly, or as a place of entertainment or recreation; a hospital; a residential care building or sheltered housing complex or a shared multi-occupancy residential building.

2.1.7 In Scotland, the products may be used without restriction on height or proximity to a relevant boundary, provided they are installed in a cavity that is between two leaves of masonry or concrete at least 75 mm thick, and which has a cavity barrier around all openings in the wall and at the top of the wall head. For other constructions, the product must not be used on buildings with a storey 11 m or more above ground level or within 1 m of a relevant boundary.

2.1.8 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

3.1.1 An adequacy of fill test and a rain penetration test for the products injected into a cavity wall was carried out and the results are given in Table 1.

Table 1 Adequacy of fill test and rain penetration test

Product assessed	Assessment method	Requirement	Result
InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation	BBA adequacy of fill test	Even fill with no voids	Pass
	BBA resistance to rain penetration test method	No water transfer to inner skin	Pass

3.1.2 On the basis of data assessed, constructions incorporating the products, and built in accordance with the Standards and requirements listed in section 9 of this Certificate, will resist the transfer of precipitation to the inner leaf and satisfy the requirements of the national Building Regulations.

3.2 Effectiveness against rising damp

The products may be used in situations where they bridge the damp-proof course (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.

3.3 Water vapour permeability

For the purposes of condensation risk calculations, the water vapour resistivity of the products may be taken as approximately 5 $MNs \cdot g^{-1} \cdot m^{-1}$.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Data were assessed for the following characteristics.

6.1 Thermal conductivity

The products were tested for thermal conductivity, and the results are given in Table 2.

Table 2 Thermal conductivity

Product assessed	Assessment method	Requirement	Result
InstaBead Carbon Saver Cavity Wall Insulation	BS EN 12667 : 2001 and BS EN 16809-1 : 2019	Declared value (λ_D)	0.033 $W \cdot m^{-1} \cdot K^{-1}$
InstaBead Diamond Cavity Wall Insulation			0.032 $W \cdot m^{-1} \cdot K^{-1}$

6.2 Conservation of fuel and power

6.2.1 The U value of a completed wall will depend on the product used, the cavity width and wall structure, and its internal finish. Example U values are given in Tables 3 and 4.

Table 3 Example U values — existing/retained cavity walls

Cavity width/insulation thickness (mm)	U values ($W \cdot m^{-2} \cdot K^{-1}$)[1]			
	InstaBead Carbon Saver Cavity Wall Insulation		InstaBead Diamond Cavity Wall Insulation	
	13 mm dense plaster; 100 mm dense block[2][3]	Plasterboard on dabs; 100 mm AAC block[4][5]	13 mm dense plaster; 100 mm dense block[2][3]	Plasterboard on dabs; 100 mm AAC block[4][5]
50	0.52	0.37	0.52	0.37
75	0.38	0.29	0.37	0.29
100	0.30	0.24	0.29	0.23
125	0.25	0.20	0.24	0.20

(1) 102.5 mm thick brick outer leaf and fixings correction for fully-penetrating mild steel (50 $W \cdot m^{-1} \cdot K^{-1}$) double-triangle ties (12.5 mm^2) at 2.5 m^{-2} bridging the insulation.
(2) 13 mm dense plaster with a thermal conductivity of 0.57 $W \cdot m^{-1} \cdot K^{-1}$.
(3) 100 mm dense block with a thermal conductivity of 1.13 $W \cdot m^{-1} \cdot K^{-1}$ and 6.6% mortar at 0.88 $W \cdot m^{-1} \cdot K^{-1}$.
(4) 100 mm AAC block with a thermal conductivity of 0.12 $W \cdot m^{-1} \cdot K^{-1}$ and 6.6% mortar at 0.88 $W \cdot m^{-1} \cdot K^{-1}$.
(5) 12.5 mm plasterboard with a thermal conductivity of 0.25 $W \cdot m^{-1} \cdot K^{-1}$.

Table 4 Example U values – new cavity walls[1]

U value requirement ($W \cdot m^{-2} \cdot K^{-1}$)	Insulation thickness (mm)			
	InstaBead Carbon Saver Cavity Wall Insulation		InstaBead Diamond Cavity Wall Insulation	
	13 mm dense plaster; 100 mm dense block[2][3]	Plasterboard on dabs; 100 mm AAC block[4][5]	13 mm dense plaster; 100 mm dense block[2][3]	Plasterboard on dabs; 100 mm AAC block[4][5]
0.13	235	210	225	205
0.15	200	175	195	170
0.17	175	155	170	150
0.18	165	145	160	140
0.21	140	120	140	115
0.26	115	90	110	85
0.28	105	80	100	80
0.30	95	75	95	70

(1) 102 mm thick brick outer leaf and fixings correction for fully-penetrating stainless steel (17 $W \cdot m^{-1} \cdot K^{-1}$) double-triangle ties (12.5 mm^2) at 2.5 m^{-2} bridging the insulation.
(2) 13 mm dense plaster with a thermal conductivity of 0.57 $W \cdot m^{-1} \cdot K^{-1}$.
(3) 100 mm dense block with a thermal conductivity of 1.13 $W \cdot m^{-1} \cdot K^{-1}$ and 6.6% mortar at 0.88 $W \cdot m^{-1} \cdot K^{-1}$.
(4) 100 mm AAC block with a thermal conductivity of 0.12 $W \cdot m^{-1} \cdot K^{-1}$ and 6.6% mortar at 0.88 $W \cdot m^{-1} \cdot K^{-1}$.
(5) 12.5 mm plasterboard with a thermal conductivity of 0.25 $W \cdot m^{-1} \cdot K^{-1}$.

6.2.2 The products can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

7 Sustainable use of natural resources

Not applicable.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the products were assessed.

8.2 Service life

Under normal service conditions, the products will have a life at least equivalent to the structure in which they are incorporated, provided they are designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed by the BBA and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 This Certificate covers the use of the products in any exposure zone, subject to the following conditions being satisfied. They are particularly important in areas subject to severe or very severe driving rain:

- a site survey should be carried out prior to installation (see sections 9.2.8 and 9.2.9)
- the minimum cavity width must be no less than 50 mm (InstaBead Diamond) and 40 mm (InstaBead Carbon Saver)
- the cavity constructed must be uniform, with parallel faces to both masonry leaves within permissible tolerances
- walls must be in a good state of repair and show no evidence of frost damage
- walls must include a DPC (damp proof course)
- mortar joints must not show evidence of more than hairline cracking. Raked or recessed mortar joints should be avoided in very severe exposure areas.

9.1.3 As with other forms of cavity wall insulation, where buildings need to comply with *NHBC Standards*, specifiers must observe the requirements of that document.

9.1.4 The target mean density of the products when installed is 12 $kg \cdot m^{-3}$ for InstaBead Carbon Saver and 13 $kg \cdot m^{-3}$ for InstaBead Diamond over the entire installation. Individual areas within the wall must not have an absolute density variation of more than ±2 $kg \cdot m^{-3}$ from the target mean density when measured over an area of 0.5 m^2.

9.1.5 Essential ventilation openings, such as those providing combustion air on underfloor ventilation, and all flues in the cavity wall must be checked. If adequate sleeving or other cavity closures are not present, installation must not proceed until these openings have been sleeved or otherwise modified to prevent blockage by the insulant.

9.1.6 Wherever practicable, all uncapped cavity walls must be sealed prior to installation (for example, with plugs of mineral fibre insulation).

9.1.7 The detailed guidance given in the documents supporting the national Building Regulations for the provisions that are applicable when the products are installed in close proximity to certain flue pipes and/or heat producing appliances must be followed.

9.1.8 Calculations of the thermal transmittance (U value) of specific external wall constructions must be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2019.

9.1.9 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration. Detailed guidance can be found in the documents supporting the national Building Regulations.

Interstitial condensation

9.1.10 Walls will limit the risk of interstitial condensation adequately when they are designed and constructed in accordance with BS 5250 : 2021.

Surface condensation

9.1.11 In England and Wales, walls will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 0.7 $W \cdot m^{-2} \cdot K^{-1}$ at any point and the junctions with other elements are designed in accordance with the guidance referred to in section 9.1.9 of this Certificate.

9.1.12 For buildings in Scotland, constructions will be acceptable where the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.9 of this Certificate.

Partial filling — omitted areas

9.1.13 Partial filling of the gable apex (ie, limiting the fill to several brickwork courses above ceiling level) is permitted provided the top of the wall is adequately protected and:

- the roof void is not an occupied space
- the loft insulation is at ceiling level.

9.1.14 Partial filling is also allowed when:

- separately insulating semi-detached or terraced properties. The cavity brush used for this purpose is retained in the cavity and must be as defined in section 9.2.5
- filling up to the underside of a horizontal boundary, other than the roof, where that horizontal boundary is protected by a cavity tray or similar waterproof barrier
- treating properties where the wall to be insulated is below a waterproof cladding (eg tile hung) and this cladding either extends up to the roof or is protected at the top by other means (eg windowsills)
- treating areas of wall where access for drilling may be limited by features such as carports and conservatories, as defined in sections 9.2.21 and 9.2.22.

Partial filling – residual cavities(1)

9.1.15 This Certificate covers the use of the products for topping up of residual cavities in partial fill installations, subject to the following conditions being satisfied:

- prior to installation, a site survey is carried out by an approved assessor (see section 9.2.8)
- the existing built-in insulation in the cavity is one of the following:
  — mineral wool (MW) batts
  — expanded polystyrene (EPS) boards
  — foil-faced polyisocyanurate (PIR), polyurethane (PUR) or phenolic (PF) boards
- the minimum residual cavity width is not less than 50 mm for InstaBead Diamond and 40 mm for InstaBead Carbon Saver
- installation is carried out by a BBA Approved Installer, trained to work on this type of installation
- all other conditions given in section 9.1.2 of this Certificate must be met.

(1) Partial fill installations relate to existing constructions where insulation, in the form of batts or boards, has previously been built into a wall and there is a residual cavity.

Existing buildings

9.1.16 In an existing building, the products may be installed only where:

- there are no signs of dampness on the inner face of the cavity wall, other than those caused solely by condensation, and
- the cavity is not being used as a source of combustion air or as a flue for ventilation purposes.

New buildings

9.1.17 New buildings subject to the national Building Regulations should be constructed in accordance with the relevant recommendations of:

- BS 8000-3 : 2001
- BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their UK National Annexes.

9.1.18 New buildings not subject to regulatory requirements should also be built in accordance with the Standards identified in section 9.1.17.

9.1.19 In a new building where the products are to be installed:

- cavity battens or boards must be used to reduce the amount of mortar droppings left in the cavity
- injection of the products must be left until the cavity is sealed from the weather, ie the roof is in place and the window and door openings sealed.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate, the *BBA Assessment and Surveillance Scheme for BBA Approved Installers of Cavity Wall Insulation* and the Certificate holder's instructions.

9.2.3 The installation of the products must only be undertaken using installation equipment tested and accepted for use with the products by the BBA.

9.2.4 The installer must provide all of the necessary hoses, drilling tools, equipment and materials for making good the walls after the installation.

9.2.5 Where a semi-detached or terraced property is to be insulated, a cavity brush must be inserted at the line dividing the properties to contain the insulation. This consists of a continuous polypropylene brush, which is left in place when the installation is completed.

9.2.6 To prevent debris falling onto the insulation, installation must not start until the drilling has been completed on each elevation and affected areas of adjacent elevations, as the insulation travels around corners.

9.2.7 During installation, the following simple checks can be made, as an aid to determining that the installation conforms to the certified method:

- the correct EPS bead and adhesive flow checks have been carried out prior to filling
- the pattern of holes complies with the description given in section 9.2.11
- the injection of the material takes place at each hole, to complete the filling of the cavity space.

9.2.8 Prior to installation, an assessment must be carried out by a trained assessor, who may also be the installing technician, to ascertain the suitability of the property or properties to receive InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation for Masonry Walls. An assessment report must be prepared and held at the installer's offices. Problems must be specifically identified and any reasons for rejection of the work noted. Care must be taken at this stage for the assessor and the party commissioning the work to identify and agree in writing, as appropriate, any areas of the wall that will not be filled (see sections 9.2.21 and 9.2.22) and any special requirements for making good (see section 9.2.19).

9.2.9 Assessment of HTT properties must be carried out by an assessor trained, approved and monitored by the Certificate holder for this specific purpose.

9.2.10 The installing operative must ensure that the property has been correctly assessed and is suitable for insulation with the products. Any problems encountered during installation which prevent compliance with this Certificate must be referred to the installation company before proceeding.

Standard procedure (standard nozzle)

9.2.11 Holes of 22 mm diameter are drilled into the wall between bricks and, where possible, at the junction of the horizontal and vertical mortar joints. The holes are normally spaced not more than 0.7 m horizontally apart, with the exceptions of the gable and roof line (up to 1 m) and the first row of a plain wall (up to 1.5 m). Holes must not be drilled any more than 500 mm from wall ends, and no greater than 300 mm from the top of the wall. Sufficient injection holes must be drilled to ensure that the cavity will be completely filled without voids. Additional drilling pattern dimensions are given in Table 5.

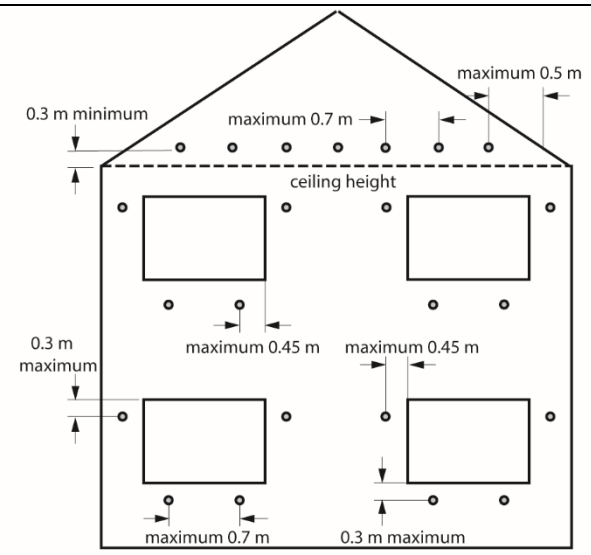
Table 5 Drilling pattern – typical dimensions

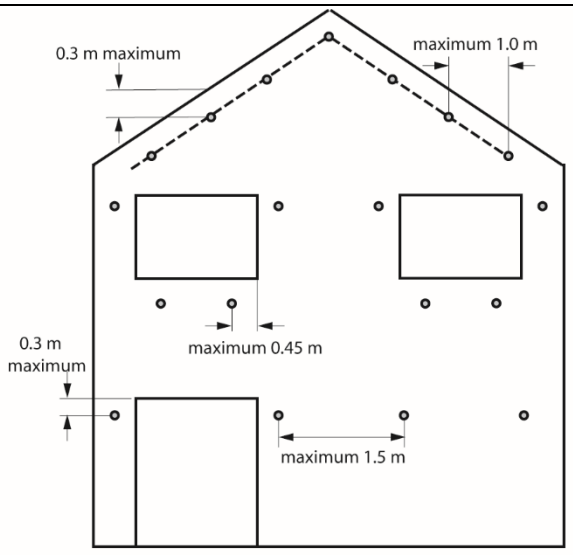
Location/feature	Maximum distance from location / feature (mm)
Wall end	500
Wall top	300
Door/window lintel across	450
Door/window lintel down	300
Window edge	450
Window ledge	300
Ceiling joists lower level	300
Last ceiling joist	300
Obstacles (eg around vents/pipes)	300

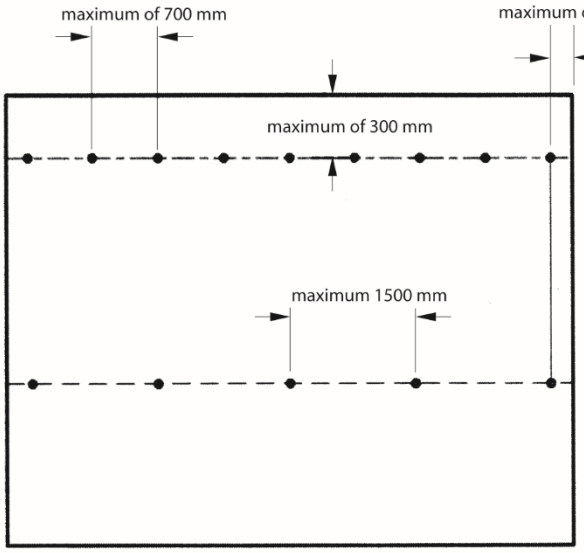
9.2.12 Additional holes must be drilled between windows, doors and other obstacles where necessary. It is important to ensure chimneys and flues are not obstructed by the installation of the products; hence, these must be checked prior to installation and once the installation is complete.

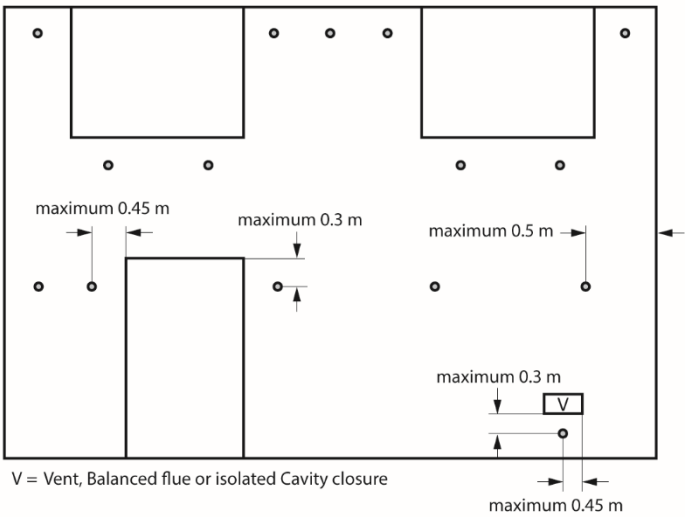
9.2.13 The installation must be carried out in accordance with the drilling pattern shown in Figure 1 and must take place from the lowest injection holes up, with the products installed into the upper holes only after the lower holes have been filled. Care must be taken to ensure that any holes drilled in the upper floors do not correspond with intermediate timber floors and that the installation does not fill into the roof space.

Figure 1 Standard drilling pattern

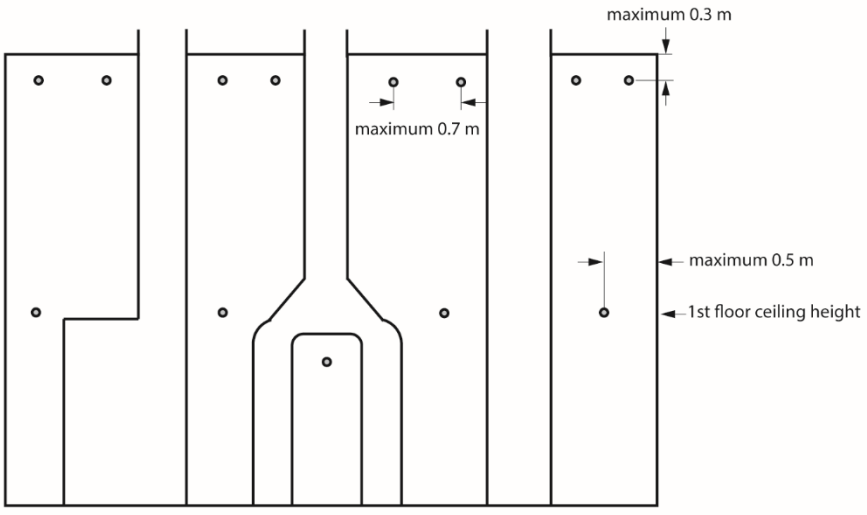








examples of drilling pattern around chimneys/flues



dimensions in mm

Directional nozzle (partial fill)

9.2.14 The procedure for topping up residual cavities in partial fill installations (see section 9.1.15) is as described in sections 9.2.11 to 9.2.13, with the only difference being that installation is carried out using a directional aperture nozzle with a diameter of 22 mm to avoid damage to the existing insulation in the cavity.

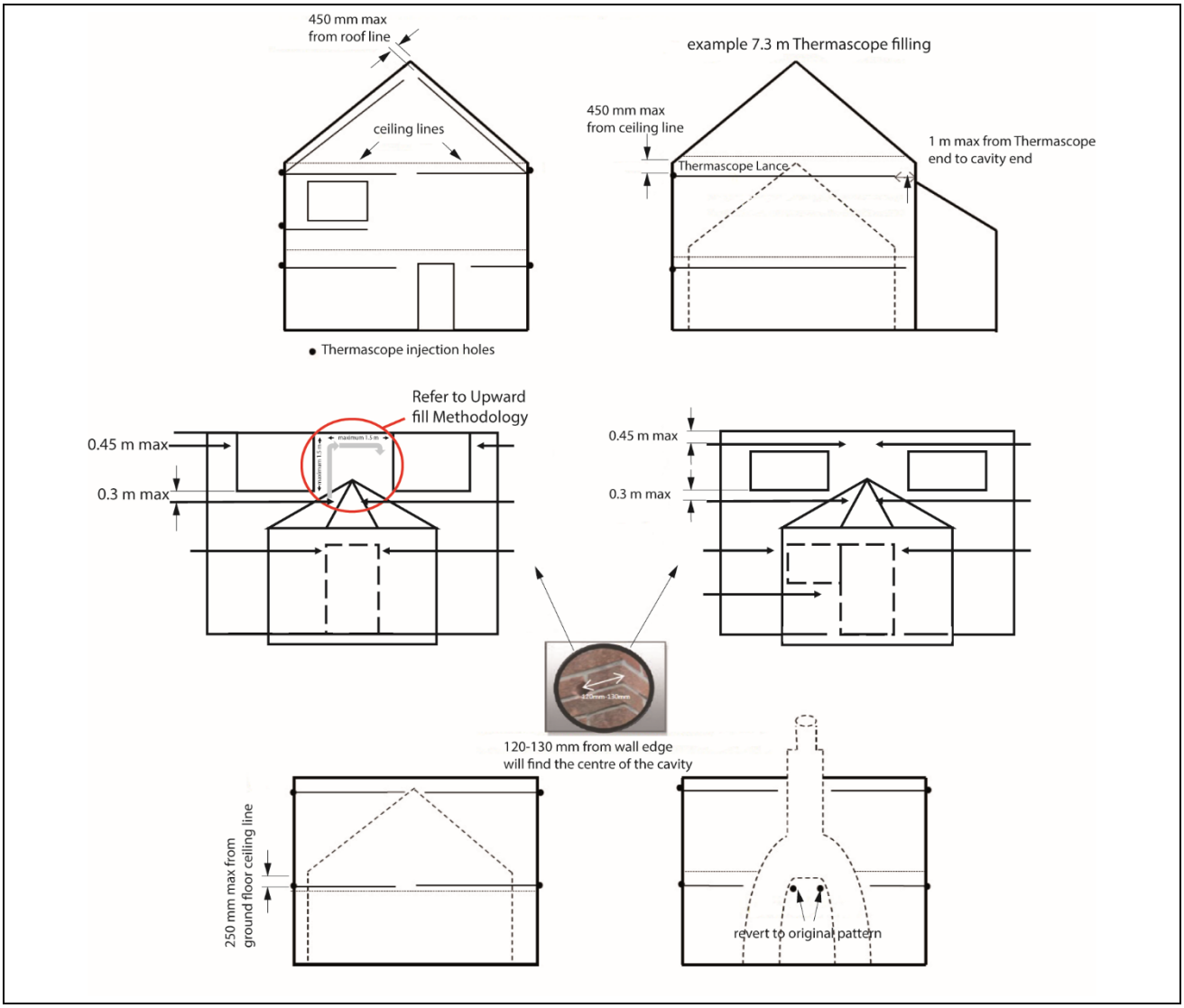
Thermascopic lance system

9.2.15 Where drilling injection holes and filling with insulation becomes difficult, such as in areas with access problems as described in section 9.2.12, it is in some cases possible to insulate these areas by using the Thermascopic lance system, which injects the insulation from the end of the wall in an upward or downward directional position, up to a maximum of 7.3 or 14.6 m length from both ends.

9.2.16 Installation must be conducted in accordance with the drilling pattern shown in Figure 2 and must take place from the lowest injection holes up. Injection holes of 22 to 40 mm diameter are drilled on each side of the wall, both at the top of ground floor ceiling level and again at the top of first floor ceiling level. Where possible, the holes must be located at the junctions between the horizontal and vertical mortar joints.

9.2.17 The advice of the Certificate holder should be sought for further information and guidance on the installation procedure using this system, but such advice is outside the scope of this Certificate.

Figure 2 Thermascopic lance system drilling pattern



New build

9.2.18 Installation into a new build is generally carried out through the internal masonry leaf, in a similar manner to that detailed in sections 9.2.11 to 9.2.13 and filled in accordance with the Certificate holder's instructions.

Finishing

9.2.19 After injection, the drill holes are fully filled with mortar of a similar type, colour, texture and weathertightness to that of the existing wall. Where a wall requires a high degree of colour-matching, the level of finish-matching must be agreed in writing during the site assessment. All trunked air vents, eg those providing underfloor ventilation and combustion air for heating appliances, must be checked and any obstructions cleared. In addition, all flues must be carefully checked by an appropriate test (eg by a smoke test) to verify that they are clear and unobstructed.

9.2.20 Insulant blown through the top of the cavity into the loft space must be removed and any points of leakage sealed (see section 9.1.6).

Omitted areas

9.2.21 In some circumstances, access for drilling injection holes and filling with insulation may be limited by features such as carports, conservatories, cladding or tiling. The practicability of safely accessing and making good these areas, or installing the insulation through the inner leaf, may outweigh the benefits of insulating those areas.

9.2.22 It is permissible to omit such areas only when:

- a full justification detailing the reasons to omit areas is included in the assessment report
- the assessor obtains written consent for omitting any areas of the wall from the party commissioning the work. The assessor must inform the commissioning party that heat loss through uninsulated areas will not be reduced, and that they will also be subject to a slightly higher risk of condensation.

Height restriction waivers

9.2.23 InstaBead Carbon Saver and InstaBead Diamond Cavity Wall Insulation are for use in buildings up to and including 12 m in height, in domestic and non-domestic buildings. The products may also be used in buildings over 12 m where a height restriction waiver has been issued by the Certificate holder but must not exceed any height restrictions detailed in section 2 of this Certificate.

9.2.24 The Certificate holder has a detailed programme for the assessment of buildings over 12 m, as approved and maintained under surveillance by the BBA. Each installation beyond 12 m must be individually assessed by the Certificate holder against this agreed assessment programme and documented approval given prior to the commencement of work.

9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information and a site visit to witness an installation in progress. To achieve the performance described in this Certificate, the products must be installed by operatives trained and approved by the Certificate holder and subsequently approved by the BBA.

9.4 Approved Installers

9.4.1 Installation of the products must be carried out by the Certificate holder or their approved installers. An Approved Installer is defined as a company:

- required to satisfy an initial site installation check by the BBA following approval by the Certificate holder and subject to the *BBA Assessment and Surveillance Scheme for Approved Installers of Cavity Wall Insulation*
- approved by the Certificate holder and the BBA to install the products
- having undertaken to comply with the Certificate holder's installation procedure
- employing technicians who have been issued with appropriate identity cards by the Certificate holder; at least one member of each installation team must carry a card
- subject to inspections by the Certificate holder who oversees the activities of Approved Installers operating under the BBA Surveillance Scheme for Cavity Wall Insulation. It is a requirement that the Certificate holder undertakes inspections of each card-carrying technician using their product, and maintains records, as detailed in the *BBA Assessment and Surveillance Scheme for Approved Installers of Cavity Wall Insulation*.

9.5 Maintenance and repair

As the products are confined within the wall cavity and has suitable durability, maintenance is not required. Should it become necessary for any reason, the products can be evacuated from the cavity void.

10 Manufacture

10.1 The production processes for the products have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

11 Delivery and site handling

11.1 The Certificate holder stated that the bead material is delivered to site in polythene sacks or bulk containers. The bonding agent is water based and is delivered to site in containers marked with the BBA logo incorporating the number of this Certificate.

11.2 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 The EPS bead material must be kept dry and away from heat sources.

11.2.2 The bonding agent must be protected from frost, high temperatures and direct sunlight. Containers must be stored inside and off the ground at a temperature between 2 and 30°C. It must not be used beyond its use-by date or allowed to freeze at any time.

† ANNEX A – SUPPLEMENTARY INFORMATION

Supporting information in this Annex is relevant to the products but has not formed part of the material assessed for the Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

Bibliography

BRE Report BR 262 : 2002 *Thermal insulation: avoiding risks*

BRE Report BR 443 : 2019 *Conventions for U-value calculations*

BS 5250 : 2021 *Management of moisture in buildings — Code of practice*

BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*

BS EN 1996-1-1 : 2005 + A1 : 2012 *Eurocode 6: Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
NA to BS EN 1996-1-1 : 2005 + A1 : 2012 UK National Annex to *Eurocode 6: Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
BS EN 1996-1-2 : 2005 Eurocode 6: *Design of masonry structures — General rules — Structural fire design*
NA to BS EN 1996-1-2 : 2005 UK National Annex to *Eurocode 6: Design of masonry structures — General rules — Structural fire design*
BS EN 1996-2 : 2006 Eurocode 6: *Design of masonry structures — Design Considerations, selection of materials and execution of masonry*
NA to BS EN 1996-2 : 2006 UK National Annex to *Eurocode 6: Design of masonry structures — Design Considerations, selection of materials and execution of masonry*
BS EN 1996-3 : 2006 Eurocode 6: *Design of masonry structures — Simplified calculation methods for unreinforced masonry structures*
NA to BS EN 1996-3 : 2006 UK National Annex to *Eurocode 6: Design of masonry structures — Simplified calculation methods for unreinforced masonry structures*

BS EN 12667 : 2001 *Thermal performance of building materials and products — Determination of thermal resistance by means of guarded hot plate and heat flow meter methods — Products of high and medium thermal resistance*

BS EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

BS EN 16809-1 : 2019 *Thermal insulation products of buildings – In-situ formed products from loose-fill expanded polystyrene (EPS) beads and bonded expanded polystyrene beads*

BS EN ISO 6946 : 2017 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

Conditions

1 This Certificate:

- relates only to the products that are named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- and any matter arising out of or in connection with it or its subject matter (including non-contractual disputes or claims) is governed by and construed in accordance with the law of England and Wales.
- the courts of England and Wales shall have exclusive jurisdiction to settle any matter arising out of or in connection with this Certificate or its subject matter (including non-contractual disputes or claims).

2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the products and their manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the products or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the products
- actual installations of the products, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the products are installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the products, including their manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of these products which is contained or referred to in this Certificate is the minimum required to be met when the products are manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

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