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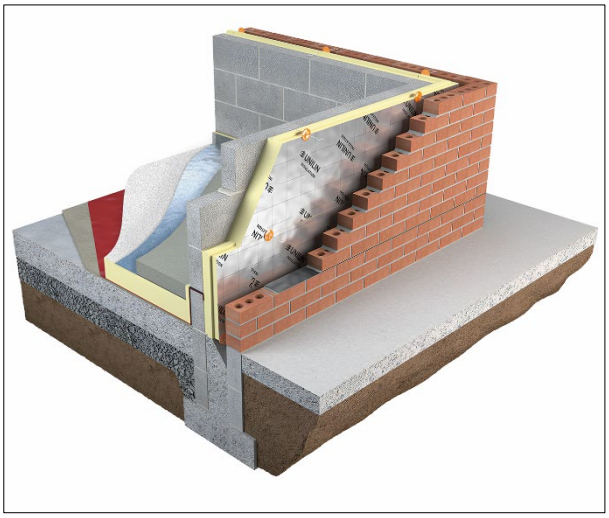
Agrément Certificate
23/6997
Product Sheet 4 Issue 2

UNILIN THIN-R INSULATION

UNILIN THIN-R (XT/CW) AND THIN-R PLUS (XT/CWP) PARTIAL FILL CAVITY BOARDS

This Agrément Certificate Product Sheet(1) relates to Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards, comprising rigid polyisocyanurate (PIR) foam boards with a composite foil facing on both sides, for use as partial fill insulation (with a minimum 50 mm residual cavity) in new external masonry cavity walls, in domestic and non-domestic buildings. Additional requirements apply for buildings above 12 m in height and 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: 25 February 2026
Originally certified on 9 October 2024

Hardy Giesler
Chief Executive Officer

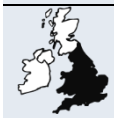
This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.
The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).
Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.
The Certificate must be read in full as it may be misleading to read clauses in isolation.
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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 Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards, 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:	**B3(4)**	**Internal fire spread (structure)**
Comment:		The products can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	**B4(1)**	**External fire spread (structure)**
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 9 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; however, compensating fabric measures may be required. 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 (applicable to England only)**
Regulation:	**26A**	**Primary energy rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings**
Regulation:	**26C**	**Target primary energy rates for new buildings (applicable to England only)**
Regulation:	**26C**	**Minimum energy efficiency rating (applicable to Wales only)**
Comment:		The products can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. 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:	**9**	**Building standards – construction**
Standard:	2.4	Cavities
Comment:		The products can contribute to satisfying this Standard with reference to clause 2.4.2(1)(2), and are restricted by this Standard with reference to clauses 2.4.4(1) and 2.4.6(2). See section 2 of this Certificate.
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 clauses 3.10.1(1)(2) and 3.10.3(1)(2). See section 9 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); however, compensating fabric/service measures may be required. See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The products can contribute to satisfying this Standard, with reference to clauses 6.2.1(1)(2), 6.2.3(1), 6.2.4(2), 6.2.8(1), 6.2.9(2) and 6.2.12(1); however, compensating fabric measures may be required. 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 at least a bronze level of sustainability as defined in this Standard. In addition, the products can, in some cases, 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:		Comments made in relation to 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)**	**Fitness of materials and workmanship**
Comment:	**(iii)(b)(i)(ii)**	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 9 of this Certificate.

Regulation:	**29**	**Condensation**
Comment:		The products can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread – structure**
Comment:		The products can contribute to satisfying this Regulation. See section 2 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**
Comment:		The products can contribute to satisfying this Regulation; however, compensating fabric measures may be required. See section 6 of this Certificate.
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Regulation:	**43(1)(2)**	**Renovation of thermal elements**
Regulation:	**43B**	**Nearly zero-energy requirements for new buildings**
Comment:		The products can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.

Additional Information

NHBC Standards 2026

In the opinion of the BBA, Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards, 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 the NHBC and does not in any way guarantee that the NHBC will approve such a product / system as compliant with the NHBC Technical Requirements and Standards.

Fulfilment of Requirements

The BBA has judged Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards to be satisfactory for use as described in this Certificate. The products have been assessed as partial fill insulation in new external masonry cavity walls with a minimum residual cavity of 50 mm, in domestic and non-domestic buildings. Additional requirements apply for buildings above 12 m in height and 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 products under assessment. Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards consist of rigid PIR foam boards, with a composite foil facing on both sides.

The products have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic	Value	
	Unilin Thin-R (XT/CW)	Unilin Thin-R Plus (XT/CWP)
Length (mm)	1200	1200
Width (mm)	450	450
Thickness (mm)	40 to 125	50 to 120
Edge profile	Square, tongue-and-groove	Tongue-and-groove

Ancillary Items

The Certificate holder recommends cavity wall ties with insulation-retaining fixings to BS EN 845-1 : 2013 for use with the products, but these materials have not been assessed by the BBA and are outside the scope of this Certificate.

Applications

The products are intended for use as partial fill cavity wall insulation in new 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).

Product assessment – key factors

The products were assessed for the following key factors, and the outcome of the assessments 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 reaction to fire classification is given in Table 2.

Table 2 Reaction to fire classification

Product assessed	Assessment method	Requirement	Result
Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards	BS EN 13165 : 2012	Declared value	F

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 and Wales, the products must not be used on buildings that have a storey at least 18 m above ground level and which contain one or more dwellings, an institution, a room for residential purposes, student accommodation, care homes, sheltered housing, hospitals and dormitories in boarding schools.

2.1.4 In Northern Ireland, the products must not be used on buildings that have a storey at least 18 m 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), student accommodation, care homes, sheltered housing, hospitals, dormitories in boarding schools, nursing homes and places of lawful detention.

2.1.5 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), are also unrestricted in terms of height, except for those constructions described in sections 2.1.3 and 2.1.4.

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

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 products 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 Effectiveness against rising damp

3.1.1 The products were tested for short-term water absorption by partial immersion, and the results are given in Table 3.

Table 3 Short-term water absorption by partial immersion

Product assessed	Assessment method	Requirement	Result
Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards	BS EN 1609 : 2013	≤ 1.25 $kg \cdot m^{-2}$	Pass

3.1.2 On the basis of data assessed, 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.

3.2 Water vapour permeability

3.2.1 The products were tested for water vapour resistivity/resistance, and the results are given in Table 4.

Table 4 Water vapour resistivity/resistance

Product assessed	Assessment method	Requirement	Result
PIR insulation core	BS EN 12086 : 2013	Value achieved	272 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$
Composite foil facing			940 $MN \cdot s \cdot g^{-1}$

3.2.2 For the purpose of assessing the risk of condensation, the water vapour resistivity/resistance values may be taken as stated in Table 4.

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 5.

Table 5 Thermal conductivity

Product assessed	Assessment method	Requirement	Result
Unilin Thin-R (XT/CW)	BS EN 13165 : 2012	Declared value (λ_D)	0.022 $W \cdot m^{-1} \cdot K^{-1}$
Unilin Thin-R Plus (XT/CWP)			0.021 $W \cdot m^{-1} \cdot K^{-1}$

6.2 Thermal performance

The foil facing was tested for emissivity and the result is given in Table 6.

Table 6 Aged emissivity

Product assessed	Assessment method	Requirement	Result
Composite foil facing	BS EN 15976 : 2011	Declared value	0.05

6.3 Conservation of fuel and power

6.3.1 The U value of a completed wall construction will depend on the insulation type and thickness, the number and type of fixings, the wall structure, and its internal finish. Example U values are given in Table 7.

Table 7 Example U values(1) — partial fill insulation (50 mm residual cavity)

Target U value ($W \cdot m^{-2} \cdot K^{-1}$)	Insulation thickness (mm)			
	100 mm dense block with 13 mm dense plaster(2)		100 mm AAC block plasterboard on dabs(3)	
	Thin-R (XT/CW)	Thin-R Plus (XT/CWP)	Thin-R (XT/CW)	Thin-R Plus (XT/CWP)
0.13	—(4)	—(4)	125	120
0.15	120	115	105	100
0.17	105	100	90	85
0.18	100	95	80	80
0.21	80	75	65	60
0.26	60	60	45	50
0.28	55	55	40	50
0.30	50	50	40	50
0.35	40	50	40	50

(1) The U value calculations are based on the following:
- wall ties: stainless steel (λ = 17 $W \cdot m^{-1} \cdot K^{-1}$), 2.5 per m^2, 12.5 mm^2 cross-section
- 102 mm brick (λ = 0.77 $W \cdot m^{-1} \cdot K^{-1}$)
- 50 mm low e cavity.

(2) 100 mm dense block (λ = 1.13 $W \cdot m^{-1} \cdot K^{-1}$) bridged by mortar (6.6%, λ = 0.88 $W \cdot m^{-1} \cdot K^{-1}$) and 13 mm dense plaster (λ = 0.57 $W \cdot m^{-1} \cdot K^{-1}$).

(3) 100 mm AAC block (λ = 0.12 $W \cdot m^{-1} \cdot K^{-1}$) bridged by mortar (6.6%, λ = 0.88 $W \cdot m^{-1} \cdot K^{-1}$) and 12.5 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$) on 15 mm dabs (20%, λ = 0.43 $W \cdot m^{-1} \cdot K^{-1}$).

(4) See section 6.3.3.

6.3.2 On the basis of data assessed, the products can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

6.3.3 For improved energy or carbon savings, designers must consider appropriate fabric and/or service measures.

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 these products were assessed.

8.2 Specific test data were assessed as given in Table 8.

Table 8 Dimensional stability

Product assessed	Assessment method	Requirement	Result
Unilin Thin-R (XT/CW) and Thin-R Plus (XT/CWP) Partial Fill Cavity Boards	BS EN 1604 : 2013 (70°C and 90% RH for 48 hours)	Length and width ≤ 1 % change Thickness ≤ 4 % change	Pass

8.3 Service life

Under normal service conditions, the products will have a life equivalent to the building 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 External masonry cavity walls must be designed and constructed in accordance with the relevant recommendations of:

- BS 5250 : 2021
- BS 8000-3 : 2020
- BS EN 845-1 : 2013
- BS EN 1996-1-1 : 2022 and its UK National Annex
- BS EN 1996-1-2 : 2024 and its UK National Annex
- BS EN 1996-2 : 2006 and its UK National Annex
- BS EN 1996-3 : 2023 and its UK National Annex.

9.1.3 As with other forms of cavity wall insulation, where buildings need to comply with the *NHBC Standards* 2026, specifiers must observe the requirements of that document.

9.1.4 Cavity wall ties with insulation-retaining fixings and, if required, any additional ties to BS EN 845-1 : 2013 must be used for structural stability in accordance with the principles of BS EN 1996-1-1 : 2022, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2023, and their UK National Annexes.

9.1.5 Care must be taken in the overall design and construction of walls incorporating the products to ensure the provision of appropriate:

- cavity trays and DPCs
- cavity barriers
- resistance to the ingress of precipitation, moisture and dangerous gases from the ground
- resistance to sound transmission when flanking separating walls and floors.

9.1.6 Provided that external masonry cavity walls are designed and constructed to incorporate the precautions in this Certificate to prevent moisture penetration, the products will resist the transfer of precipitation to the inner leaf.

9.1.7 Window and door opening reveals must be constructed incorporating a cavity barrier/closer/DPC, as required.

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

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

9.1.10 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

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

9.1.12 If the products are to be used in the external wall of rooms expected to have high humidity, care must be taken to provide adequate permanent ventilation to avoid possible problems from the formation of interstitial condensation.

Surface condensation

9.1.13 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 9.1.10 of this Certificate.

9.1.14 For buildings in Scotland, wall constructions will be acceptable when 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 9.1.10 of this Certificate.

Buildings up to and including 25 m high (see also section 2 of this Certificate)

9.1.15 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 considers the dimensional tolerances of the components which make up the wall (by reference to the British Standards relating to the bricks, blocks and boards, 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. The limitations in respect of exposure of the proposed building as set out in Table 9 must also be observed.

Table 9 Maximum allowable exposure index E(1)

Construction	Maximum allowable exposure index *E*(1)
All external masonry walls protected by: rendering (to BS EN 13914-1 : 2016), tile hanging, 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, 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.

9.1.16 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 must be in the form of continuous horizontal cavity trays and weepholes discharging to the outside.

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

Buildings over 25 m in height (see also section 2 of this Certificate)

9.1.18 The width of the residual clear cavity to be achieved must be in excess of 50 mm, and the following additional requirements apply in addition to those stated in 9.1.15 to 9.1.17:

- 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 products
- where, for structural reasons, the cavity width is reduced, eg 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, eg the inclusion of cavity trays with weepholes.

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 and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A.

9.2.3 The inner leaf must be constructed ahead of the outer leaf, as the boards are fastened to the cavity face of the inner leaf. It is essential that the spacing of wall ties/clips allows one long edge of each board to be secured at a minimum of two points.

9.2.4 Vertical joints in the boards must be staggered and all joints tightly butted. Where protrusions occur in the cavity, the boards should be carefully cut to fit.

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

9.2.6 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 weepholes 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 boards
- insulation boards are properly installed and either butt jointed, or interlocked using the tongue and groove or rebated edges
- the DPC at ground level does not project into the cavity, as it can form a trap for mortar bridging
- raked or recessed mortar joints are avoided in very severe exposure areas.

9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the products must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

As the products are confined within the wall cavity and have suitable durability, maintenance is not required.

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 product is delivered to site in polythene-wrapped packs on pallets. Each pack of boards contains a label with the product and Certificate holder's names, board dimensions, year of manufacture, batch code and 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 products must be protected from prolonged exposure to sunlight, and stored dry, flat and raised above ground level (to avoid contact with ground moisture). Where possible, packs should be stored inside. If stored outside, they must be under cover or protected with opaque polythene sheeting.

11.2.2 The products must not be exposed to open flame or other ignition sources, or to solvents or other chemicals.

† 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.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard EN 13165 : 2012.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015, BS EN ISO 14001 : 2015 and BS ISO 45001 : 2018 by BRE (Certificates 718 QMS, 718 EMS and 718 HS respectively).

Additional information on installation

General

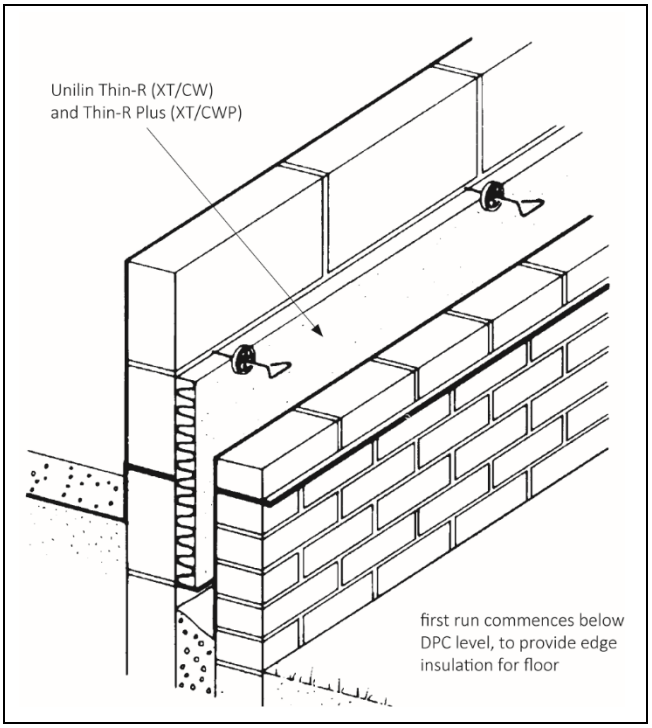
A.1 The Certificate holder will provide on-site demonstrations on request, to ensure correct installation from the outset.

A.2 Adequate supervision of the installation must be maintained, and the Certificate holder must have right of access to site to ensure correct installation.

Procedure

A.3 A section of the internal leaf is built in the conventional manner, with the first row of wall ties, at approximately 600 mm horizontal spacing, where the insulation is to begin. The wall ties should not be placed directly on the DPC. The first run of boards should commence at least 150 mm below the DPC level, to provide some edge insulation for the floor (see Figure 1).

Figure 1 First run of boards

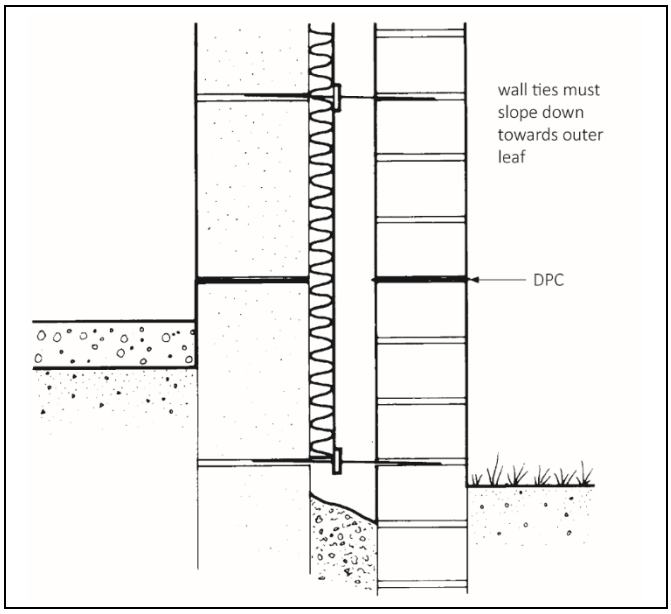


A.4 The internal leaf is then built up to a course above the next row of wall ties, which are placed at spacings of 450 mm vertically and not more than 900(1) mm horizontally (see BS EN 1996-1-2 : 2024). Excess mortar must be cleaned from the cavity face of the internal leaf.

(1) Where buildings need to comply with *NHBC Standards* 2026, the spacing must be no more than 600 mm.

A.5 Boards are placed between the upper and lower wall ties, behind the retaining clips, to form a closely butt-jointed run for square-edged boards, or with the tongue-and-groove boards tightly interlocked to form a closely jointed run. It is essential that all wall ties slope downwards towards the external leaf (see Figure 2), with the drip positioned halfway across the residual cavity width pointing downwards to shed water away from the internal leaf. Wall ties must not be placed at centres exceeding 900 mm to ensure that each board is secured at a minimum of three points. The first row of boards must not be in contact with the ground.

Figure 2 Installation of wall ties



A.6 For the tongue-and-grooved version, the boards must interlock tightly with the previous row by slotting the tongue-and-grove edges together in a jigsaw effect.

A.7 The corresponding edges of the two interlocking boards are cut with a sharp knife or fine-toothed saw to allow insertion of the wall ties so that they are sloping downwards to the outer leaf. Care must be taken to ensure that damage is minimised during this process.

A.8 The external leaf is then built up to the level of the top of the boards.

A.9 Successive sections of wall, incorporating wall ties, are constructed and the boards installed as work proceeds up to the required height.

A.10 Additional ties may be required to satisfy the structural requirements of BS EN 845-1 : 2013, BS EN 1996-1-1 : 2022, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2023 to ensure adequate retention of the products or cut pieces.

A.11 All boards must be either close-butted together (for square edge boards) or interlocked together (for tongue-and-groove boards), with vertical joints staggered. Insulation boards and wall ties must be staggered as construction proceeds and carried up to the highest level of the wall, except where protected by a cavity tray.

Mortar droppings

A.12 After each section of the leading leaf is built, excess mortar must be removed from the cavity face and mortar droppings cleaned from exposed edges of the installed board, before installation of the next run of boards. Use of a cavity board or a cavity batten will protect the installed board edges and help to keep the cavity clean as the following leaf is built (see Figures 3 and 4).

Figure 3 Use of cavity batten

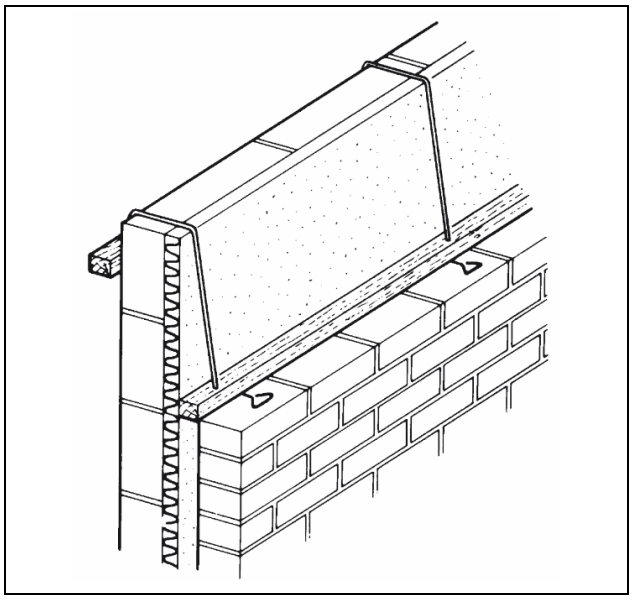
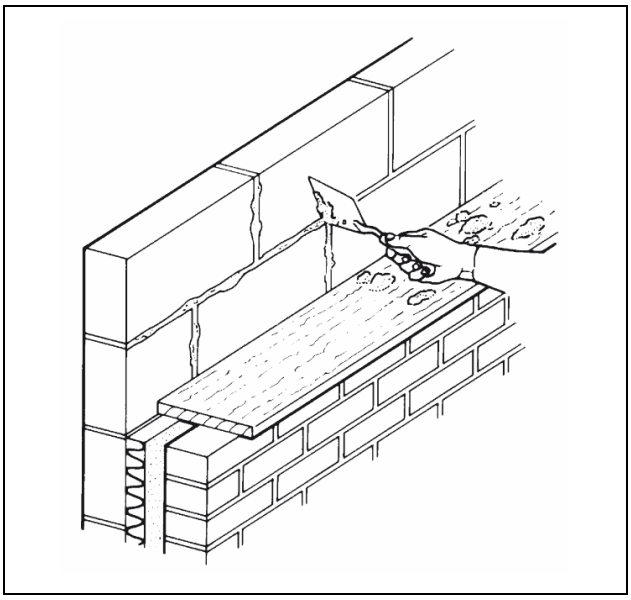


Figure 4 Use of cavity board



Wall openings

A.13 Where openings such as doors and windows are in close proximity, it is recommended that a continuous lintel or cavity tray is used. Individual lintels or cavity trays must have stop ends and be adequately drained. Insulation boards must be cut to butt tightly against the cavity barrier/closer/DPC.

Cut pieces

A.14 The products can be cut, using a sharp knife or fine-toothed saw, to fit around openings, eg around windows, doors and airbricks. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured.

Protection

A.15 Exposed areas of board must always be covered at the end of a day's work or during rainfall.

A.16 All building involving the products, particularly interrupted work, must conform to the relevant sections of BS EN 1996-2 : 2006.

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 5618 : 1985 *Code of practice for thermal insulation of cavity walls (with masonry or concrete inner and outer leaves) by filling with urea-formaldehyde (UF) foam systems*

BS 8000-3 : 2020 *Workmanship on construction sites — Code of practice for masonry*

BS EN 845-1 : 2013 + A1 : 2016 *Specification for ancillary components for masonry — Wall ties, tension straps, hangers and brackets*

BS EN 1604 : 2013 *Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions*

BS EN 1609 : 2013 *Thermal insulating products for building applications — Determination of dimensional short term water absorption by partial immersion*

BS EN 1996-1-1 : 2022 *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
NA to BS EN 1996-1-1 : 2022 UK National Annex to *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
BS EN 1996-1-2 : 2024 *Eurocode 6 — Design of masonry structures — General rules — Structural fire design*
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BS EN 12086 : 2013 *Thermal insulating products for building applications — Determination of water vapour transmission properties*

BS EN 13165 : 2012 + A2 : 2016 *Thermal insulation products for buildings — Factory made rigid polyurethane foam (PUR) products — Specification*

BS EN 13914-1 : 2016 *Design, preparation and application of external rendering and internal plastering — External rendering*

BS EN 15976 : 2011 *Flexible sheets for waterproofing – Determination of emissivity*

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

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

BS EN ISO 14001 : 2015 *Environmental Management systems — Requirements with guidance for use*

BS ISO 45001 : 2018 *Occupational health and safety management systems — Requirements with guidance for use*

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
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- 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 its 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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