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BBA APPROVAL INSPECTION TESTING CERTIFICATION
TECHNICAL APPROVALS FOR CONSTRUCTION

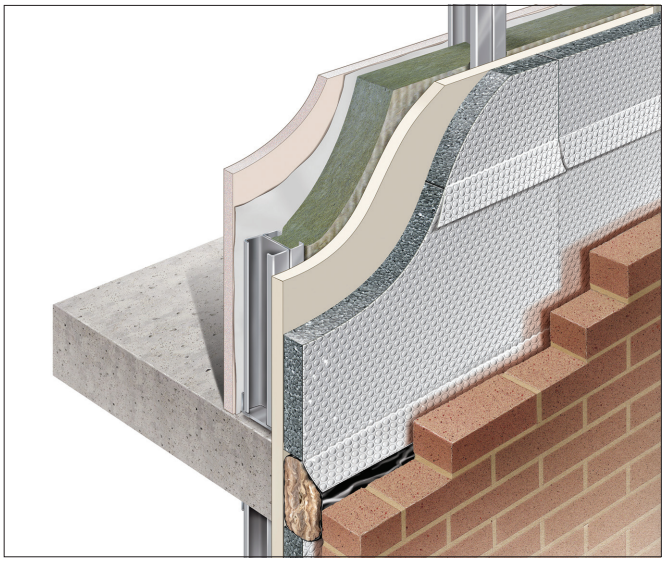
Agrément Certificate
93/2861
Product Sheet 7

ALREFLEX RANGE OF CAVITY WALL INSULATION AND CAVITY RAIN BARRIERS

ALREFLEX PLATINUM ON STEEL FRAMED WALLS

This Agrément Certificate Product Sheet[1] relates to Alreflex Platinum on steel framed walls, which consists of a single-layer polyethylene bubble sheet, faced on one side with a coated aluminium foil; the other side is bonded to a platinum expanded polystyrene (EPS) board. The product is for use as thermal insulation in steel framed cavity walls up to 18 metres in height (11 m in Scotland), with a residual cavity of 50 mm and external masonry leaf, in new domestic and non-domestic buildings. The product is installed during construction.

(1) Hereinafter referred to as 'Certificate'.



CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Thermal performance — the product has a declared thermal conductivity (λ_D) of 0.030 $W \cdot m^{-2} \cdot K^{-1}$ for the platinum EPS board, a thermal resistance of 0.10 $m^2 \cdot K \cdot W^{-1}$ for the bubble sheet and an emissivity of 0.03 for the outer foil (see section 6).

Water resistance — the product will resist water transfer across the cavity of the walls (see section 7).

Condensation — the product can contribute to limiting the risk of condensation (see section 8).

Behaviour in relation to fire — the insulation core of the product has a Class F reaction to fire classification to BS EN 13501-1 : 2007 and the foil face a class 1 classification to BS 476-7 : 1997 and its use is restricted in some cases (see section 9).

Durability — the product will have a life equivalent to that of the wall structure in which it is incorporated (see section 12).

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 14 December 2016

John Albon — Head of Approvals Construction Products

Claire Curtis-Thomas
Chief Executive

Certificate amended on 20 June 2019 to include Regulation 7(2) for England and associated text.
Certificate amended on 13 January 2020 to include new regulatory guidance for fire in Scotland and Wales.

Regulations

In the opinion of the BBA, Alreflex Platinum on steel framed walls, 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 presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):

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

Requirement:	B3(4)	Internal fire spread (structure)
Comment:		The product is restricted by this Requirement. See sections 9.1 to 9.3 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		In England, the product is restricted by this Requirement. See sections 9.1 and 9.2 of this Certificate.
Requirement:	C2(a)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See section 7.1 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See section 7.2 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The product can contribute to satisfying this Requirement. See sections 8.1 and 8.3 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The product can contribute to satisfying this Requirement. See section 6 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The product is restricted by this Regulation. See sections 9.1 and 9.2 of this Certificate.
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 consumption rates for new buildings (applicable to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (applicable to Wales only)
Comment:		The product can contribute to satisfying these Regulations. See section 6.3 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.
Standard:	2.4	Cavities
Comment:		The product may be restricted by this Standard with respect to clause 2.4.2[(1)(2)], 2.4.4[(1)] and 2.4.6[(2)]. See section 9.1 of this Certificate.
Standard:	2.6	Spread to neighbouring Buildings
Comment:		The product can be restricted by this Standard with respect to clauses 2.6.5[(1)] and 2.6.6[(2)]. See sections 9.1 to 9.3 of this Certificate.
Standard:	3.4	Moisture from the ground
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.4.1[(1)(2)] and 3.4.5[(1)(2)]. See section 7.1 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.10.1[(1)(2)] and 3.10.3[(1)(2)]. See section 7.2 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product 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 sections 8.2 and 8.3 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying this Standard with reference to clauses, or parts of, 6.1.1[(1)], 6.1.2[(2)], 6.1.6[(1)], 6.2.1[(1)(2)], 6.2.3[(1)], 6.2.5[(2)], 6.2.9[(1)], 6.2.10[(1)], 6.2.11[(2)] and 6.2.13[(2)]. See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product 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 product can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4[(1)(2)] [Aspects 1[(1)(2)] and 2[(1)]], 7.1.6[(1)(2)] [Aspects 1[(1)(2)] and 2[(1)]] and 7.1.7[(1)(2)] [Aspect 1[(1)(2)]]. See section 6.1 of this Certificate.
Regulation:	12	Building standards applicable to conversions
Comment:		All comments given for the product 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 Fitness of materials and workmanship
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		The product can contribute to satisfying this Regulation. See section 7.1 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product can contribute to satisfying this Regulation. See section 7.2 of this Certificate.
Regulation:	29	Condensation
Comment:		The product can contribute to satisfying this Regulation. See section 8.3 of this Certificate.
Regulation:	35(4)	Internal fire spread — structure
Comment:		The product is restricted by this Regulation. See sections 9.1 to 9.3 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:		The product can contribute to satisfying these Regulations. See section 6 of this Certificate.

Construction (Design and Management) Regulations 2015

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

In the opinion of the BBA, there is no information in this Certificate which relates to the obligations of the client, designer (including Principal Designer) and contractor (including Principal Contractor) under these Regulations.

Additional Information

NHBC Standards 2016

In the opinion of the BBA, and subject to a 50 mm minimum residual cavity being maintained, NHBC accepts the use of Alreflex Platinum on steel framed walls, as insulation for partial fill cavity walls, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.10 *Light steel framed walls and floors*.

CE marking

The manufacturer of the platinum expanded polystyrene insulation board has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13163 : 2015. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Alreflex Platinum on steel framed walls consists of one layer of polyethylene bubble sheet manufactured with a coated aluminium foil-lining on one side; the other side is bonded to platinum expanded polystyrene insulation board.

1.2 The nominal characteristics of the product are given in Table 1.

Table 1 Nominal characteristics

Length (mm)	1200
Width (mm)	450
Thickness of the bubble film (1L1) (mm)	3.25
Thickness of the rigid board (mm)	Starting from 25 mm increasing in 5 mm increments
Edge detail	Square with bubble sheet/foil overlap

2 Manufacture

2.1 Aluminium foil is laminated to the back of the polyethylene bubble sheet and, at a preset point, a third layer of low density material (same mix ratio) is laminated and a flat surface is given to both sides. The product is then sent to another location where it is bonded to the expanded polystyrene insulation.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out 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.

2.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 and/or BS EN ISO 14001 : 2004 by BSI (Certificate MF82602).

3 Delivery and site handling

3.1 The product is delivered to site in packets. Each packet is sealed with adhesive tape bearing the manufacturer's name, basic application details and the BBA logo incorporating the number of this Certificate.

3.2 The product should be stored off the ground in clean and dry conditions and under cover to protect it from precipitation. Damaged products should be discarded.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Alreflex Platinum on steel framed walls.

Design Considerations

4 General

4.1 Alreflex Platinum on steel framed walls is used to reduce the thermal transmittance (U value) and provides a rain barrier in new cavity walls with masonry outer leaves (where masonry includes clay and calcium silicate bricks, concrete blocks and natural and reconstituted stone blocks). It is essential that such walls are designed and constructed to incorporate the normal precautions to prevent moisture penetration.

4.2 The product is for use on the external walls of new or existing domestic and non-domestic sheathed, lightweight steel framed buildings up to 18 metres in height (11 metres in Scotland), with external masonry leaf. Prior to installation of the product the wall surfaces should comply with section 14 of this Certificate.

4.3 Steel framed buildings must incorporate vertical steel studs (minimum thickness 1.2 mm and minimum flange width 50 mm) at 600 mm centres, sheathed with 10 mm thick (minimum) cement particle board or boards with equivalent structural properties (see Table 2). The system incorporates steel top-hat sections secured to the particle board, creating a 15 mm wide cavity between the sheathing and insulation. In addition, top-hat sections are fixed to the sheathing around openings and where required, to ensure the insulation boards are fully supported.

Table 2 Minimum construction specification

Item	Characteristic	Specification
Steelwork[1]	Grade and coating Thickness	BS EN 10346 : 2009 type S 320 GD +Z275 1.2 mm
Sheathing board[1] (fire-rated)	Type	BS EN 634-2 : 2007 (contact Certificate holder for details)

(1) The board is of exterior grade and the minimum acceptable specification is given here. The specification of the frame and sheathing is outside the scope of this Certificate and should be determined by the building designer. The board thickness must also be determined by the building designer.

4.4 New walls subject to the national Building Regulations should be constructed in accordance with the relevant recommendations of BS EN 1993-1-1 : 2005, and other parts where appropriate.

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

- BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003 , BS EN 1991-1-4 : 2005, 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 respective UK National Annexes
- BS EN 845-1 : 2013 and BS 8000-3 : 2001.

4.6 Other new buildings not subject to these Regulations should also be built in accordance with the Standards listed in section 4.5 of this Certificate.

4.7 Cavity wall ties with insulation-retaining fixings and, if required, any additional ties to BS EN 845-1 : 2013 should be used for structural stability in accordance with BS EN 1996-1-1 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their respective UK National Annexes. The Certificate holder can advise on suitable insulation-retaining fixings, brackets and compatible wall ties for use with the products. These items are outside the scope of this Certificate.

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

- cavity trays and damp-proof courses (dpc's)
- cavity barriers and fire dampers
- resistance to the ingress of precipitation, moisture and dangerous gases from the ground
- resistance to sound transmission when flanking separating walls and floors.

4.9 It is recommended that installation is carried out to the highest level on each wall or that the top edge of the insulation is protected by a cavity tray.

4.10 The residual cavity width to be maintained during construction must be a minimum 50 mm. To achieve this requirement, a greater nominal residual cavity width may need to be specified at the design stage to allow for inaccuracies inherent in the building process. The specifier may:

- design a nominal residual cavity width of 50 mm, or
- design a cavity width taking into account the dimensional tolerances of the components which make up the wall (with reference to the British Standards relating to steel frames, bricks, blocks and boards) or by using the data from the manufacturers of the specific components. In addition, allowance may need to be made for the quality of available 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 3 must also be observed.

Table 3 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 : 2005) • slate hanging • 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) Based upon the approach in 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. Breaks should be in the form of continuous horizontal cavity trays and weepholes discharging to the outside.

4.11 An external render coat or other suitable finish should be applied in locations where such application would be normal practice.

5 Practicability of installation

The product is designed to be installed by a competent general builder or a contractor experienced with this type of product.

6 Thermal performance

6.1 Calculations of the thermal transmittance (U value) of specific external wall constructions should be carried out in accordance with BS EN ISO 6946 : 2007 and BRE Report BR 443 : 2006, using the declared thermal conductivity* (λ_D *value*) of 0.030 $W \cdot m^{-1} \cdot K^{-1}$ for the expanded polystyrene insulation and the following data for the product:

0.03 outer surface emissivity of the product

0.10(1) $m^2 \cdot K \cdot W^{-1}$ core *R* value of the bubble sheet

0.71(1)(2) $m^2 \cdot K \cdot W^{-1}$ *R* value of an air cavity adjacent to the product ≥20 mm thick (horizontal heat flow).

(1) Unventilated cavity with a width and length at least 10 times the thickness and one high emissivity surface.

(2) For guidance on U value calculations refer to the BBA Information Bulletin No 3.

6.2 For certain constructions, in order to meet the limiting fabric parameters of the national Building Regulations, it will be necessary to incorporate additional insulation material in the wall construction.

6.3 The U value of a completed wall will depend on the selected additional insulation thickness, number and type of fixings, the insulating value of the steel frame and the internal finish of the wall. Calculated U values for example constructions are given in Table 4.

Table 4 Typical cavity wall U values ($W \cdot m^{-2} \cdot K^{-1}$)

U Value	Platinum Insulation thickness (mm) (with OSB)	Platinum Insulation thickness (mm) (no OSB)
0.35	50	55
0.30	65	70
0.27	75	80
0.25	85	90
0.22	100	105
0.19	125	130
0.18	140	140

The above U value calculations are based on the following:

— 102 mm brick (outer leaf) with conductivity 0.77 $W \cdot m^{-1} \cdot K^{-1}$

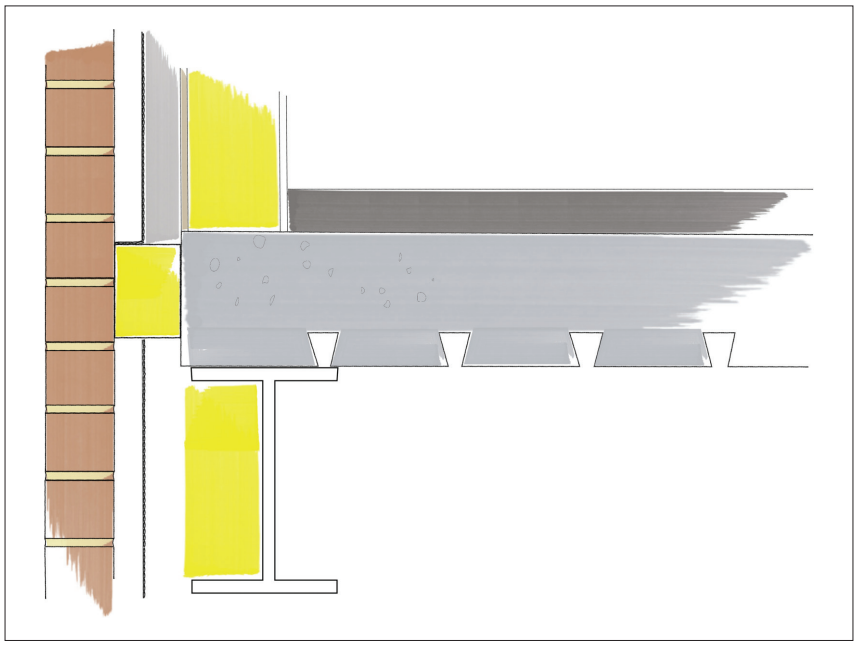
— 47 mm low emissivity cavity

— Standard steel frame with conductivity 50.00 $W \cdot m^{-1} \cdot K^{-1}$

— 12.5 mm plasterboard with conductivity 0.25 $W \cdot m^{-1} \cdot K^{-1}$.

6.4 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration (see Figure 1). Detailed guidance can be found in the documents supporting the national Building Regulations.

Figure 1 Detailing around floor/wall junctions



7 Water resistance

7.1 Where the product is used in situations where it bridges 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.

7.2 Constructions incorporating the product and built in accordance with the Standards listed in section 4.5, will resist the transfer of precipitation to the inner leaf and satisfy the national Building Regulations.

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

- any additional insulation boards are properly installed and butt jointed
- installation is carried out to the highest level on each wall or the top edge of the insulation is protected by a cavity tray
- at lintel level, a cavity tray, stop ends and weep holes must be provided
- dpc's at ground level do not project into the cavity as they can form a trap for mortar bridging.

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

8 Condensation

Surface condensation

8.1 Walls incorporating the product 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 6.4 of this Certificate.

8.2 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 : 2011, Annex G. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 6.4 of this Certificate.

Interstitial condensation

8.3 Walls incorporating the product will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2011, Annexes D and G, and the relevant guidance.

8.4 The bubble sheet has a nominal vapour resistance exceeding 125 $MN \cdot s \cdot g^{-1}$ and hence provides a significant resistance to water vapour transmission.

8.5 If the product is to be used in the external walls 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 in the internal wall leaf.

9 Behaviour in relation to fire

9.1 The insulation core has an F reaction to fire classification to BS EN 13501-1 : 2007 and the foil face a class 1 classification to BS 476-7 : 1997.

9.2 The product is not classified as non-combustible or of a limited combustibility and its use is limited to 18 m in height (11 m in Scotland).

9.3 Cavity barriers should be provided in accordance with the relevant provisions of the documents supporting the national Building Regulations.

9.4 Designers should 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.

10 Proximity of flues and appliances

When installing the product in close proximity to certain flue pipes and/or heat-producing appliances, the relevant provisions of the national Building Regulations are applicable:

England and Wales — Approved Document J, sections 1 to 4

Scotland — Mandatory Standard 3.19, clauses 3.19.1[1][2] to 3.19.9[1][2]

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

Northern Ireland — Technical Booklet L, section 2.

11 Maintenance

As the product is confined within the wall cavity and has suitable durability (see section 12), maintenance is not required.

12 Durability

The product is unaffected by the normal conditions found in a wall construction, and is durable, rot proof, water resistant and sufficiently stable to remain effective as insulation for the life of the building.

Installation

13 Installation

General

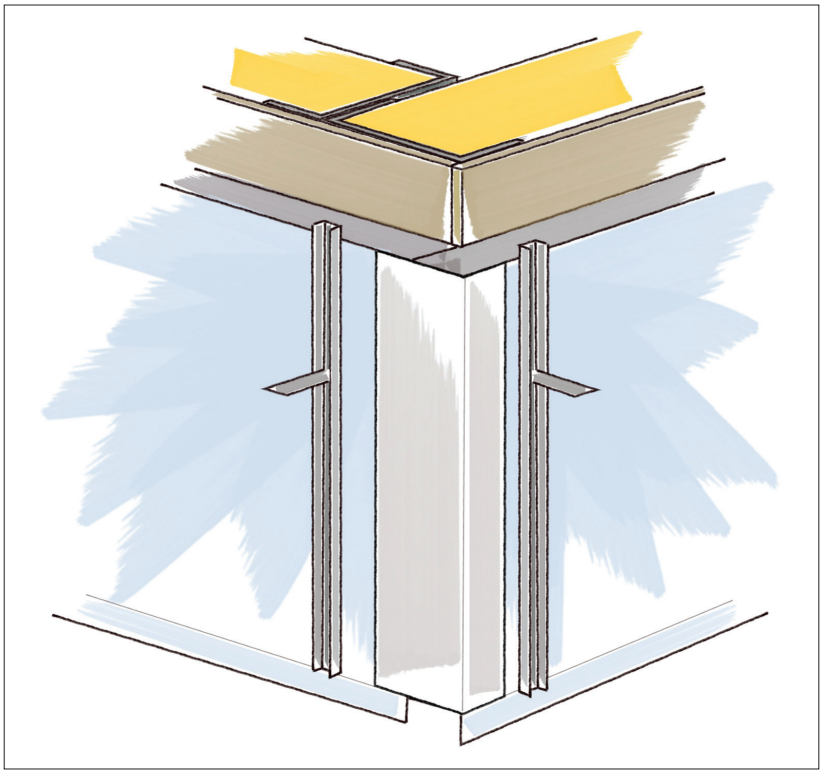
13.1 The steel frame must be constructed in accordance with the relevant clauses of BS EN 1993-1-2 : 2005.

13.2 It must be ensured that:

- the foil is facing towards the cavity
- corners are block bonded
- vertical joints are staggered
- the boards tightly butt against the cavity closer.

13.3 Boards must be measured and cut to fit around openings.

Figure 2 Steel framed installation

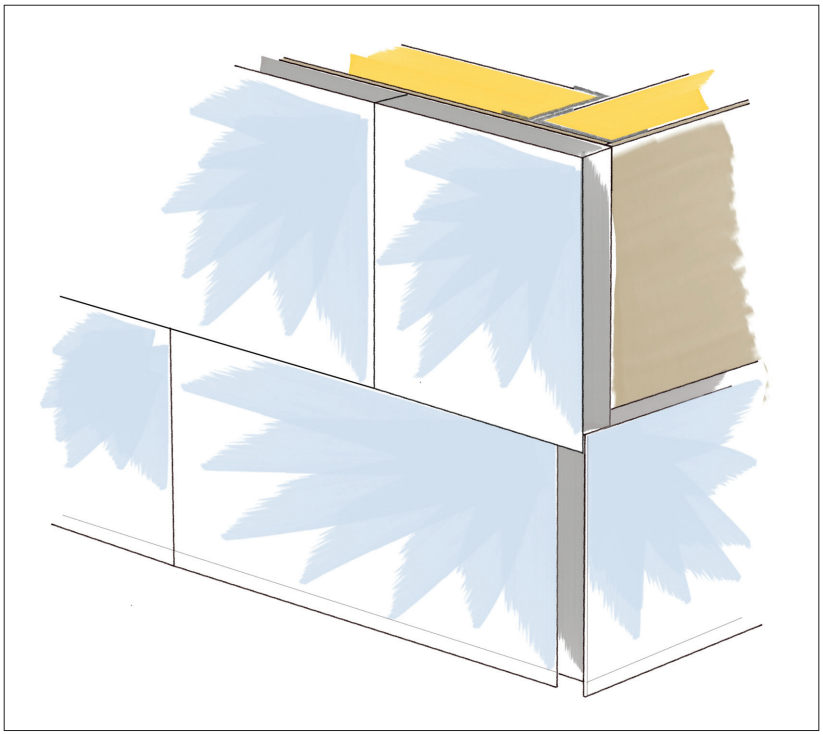


14 Procedure

14.1 The product should be temporarily fixed to the outside of the frame using self-tapping screws and washers or mushroom screws.

14.2 Care should be taken to ensure that the boards are tightly butted together in a block-bonded pattern and that vertical joints are staggered, as shown in Figure 3.

Figure 3 Staggered joints

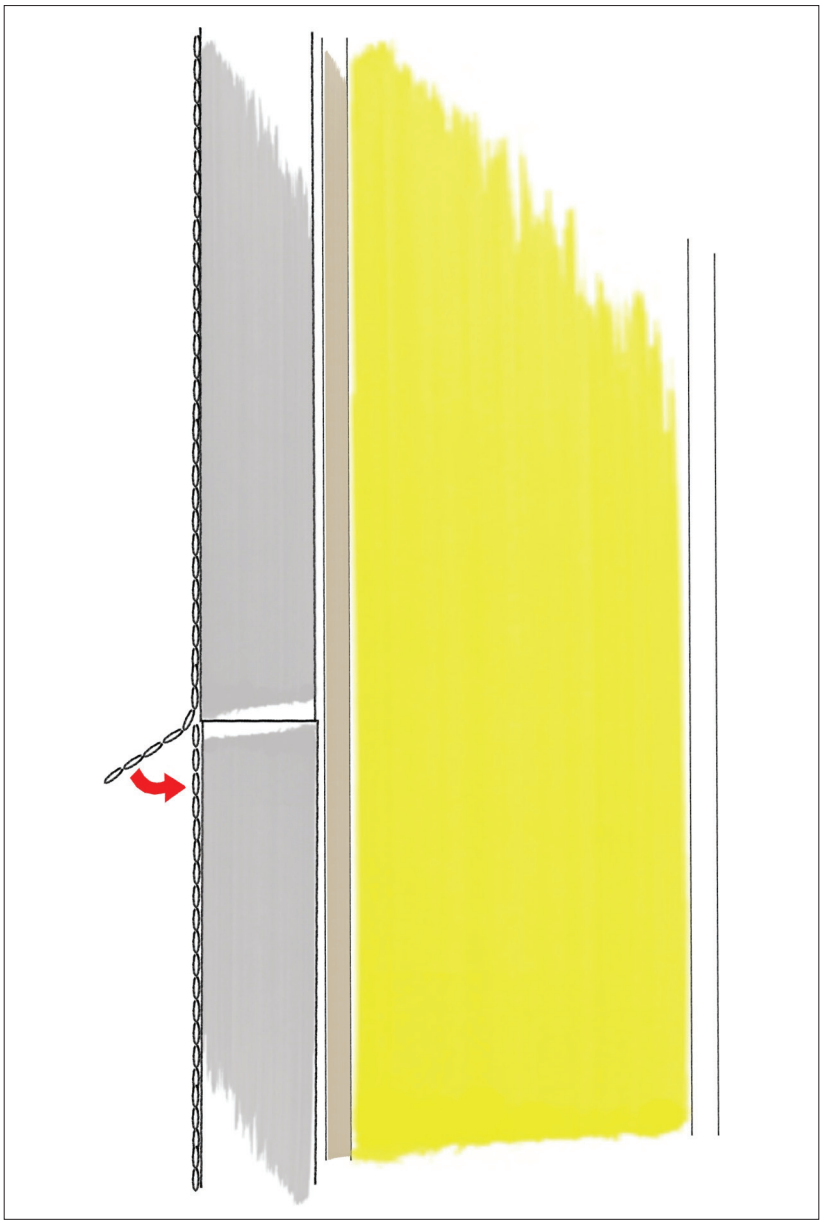


14.3 Retaining channels are fixed through the boards. Advice on instructions for the fixing details should be sought from the manufacturer.

14.4 All corners should be taped with a suitable reflective tape. The manufacturer can advise on suitable products for this purpose.

14.5 The foil overhanging laps should be fitted over lower boards and folded down to create a weather lap, as shown in Figure 4.

Figure 4 Overlap of foil to create weather lap



14.6 Boards are measured and cut to fit around openings and tightly butted against cavity closers.

14.7 Fire stops should be fitted in accordance with manufacturer's details. It must be ensured that the foil laps of the product are taken towards the outer leaf.

14.8 Any damage to the foil during installation should be repaired with a suitable reflective tape.

14.9 The outer masonry leaf is to be constructed in the conventional manner, using wall ties to restrain the outer leaf to the steel frame. It is essential that all wall ties slope downwards towards the outer leaf.

Technical Investigations

15 Investigations

15.1 Tests and assessments were carried out Alreflex Platinum on steel framed walls to determine:

- ageing characteristics of the foil component
- emissivity
- thermal resistance
- thermal transmittance and condensation risk analysis.

15.2 A condensation risk analysis was carried out.

15.3 A series of U value calculations were carried out.

15.4 A calculation was undertaken to confirm the declared thermal conductivities.

15.5 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 476-7 : 1997 *Fire tests on building materials and structures — Method of test to determine the classification of the surface spread of flame of products*

BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*

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 : 2001 *Workmanship on building sites — Code of practice for masonry*

BS EN 634-2 : 2007 *Cement-bonded particleboards — Specifications — Requirements for OPC bonded particleboards for use in dry, humid and external conditions*

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

BS EN 1991-1-1 : 2002 *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 — Actions on structures — General actions — Snow loads*
NA + A1 : 2015 to BS EN 1991-1-3 : 2003 + A1 : 2015 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Snow loads*
BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures. General actions — Wind actions*
NA to BS EN 1991-1-4 : 2005 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Wind actions*

BS EN 1993-1-1 : 2005 + A1 : 2014 *Eurocode 3 — Design of steel structures — General rules and rules for buildings*
BS EN 1993-1-2 : 2005 + A1 : 2012*Eurocode 3 — Design of steel structures — General rules — Structural fire design*

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*
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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 + A1 : 2014 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 10346 : 2009 *Continuously hot-dip coated steel flat products for cold forming — Technical delivery conditions*

BS EN 13163 : 2012 + A1 : 2015 *Thermal insulation products for buildings — Factory made expanded polystyrene (EPS) products — Specification*

BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements —Classification using test data from reaction to fire tests*

BS EN 13914-1 : 2005 *Design, preparation and application of external rendering and internal plastering — External rendering*

BS EN ISO 6946 : 2007 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

BS EN ISO 14001 : 2004 *Environmental Management systems — Requirements with guidance for use*

BBA Information Bulletin No 3 *Reflective foil insulation — Conventions for U value calculations*

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

BRE Report BR 443 : 2006 *Conventions for U-value calculations*

16 Conditions

16.1 This Certificate:

- relates only to the product/system that is 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
- is copyright of the BBA
- is subject to English Law.

16.2 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.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and its 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.

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

16.5 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 product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

16.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is 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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