Unilin Insulation Ireland Ltd
Liscarton Industrial Estate
Kells Road, Navan
Co Meath C15 NP79

Tel: 0371 222 1033
e-mail: info.ui@unilin.com
website: www.unilininsulation.co.uk

Agrément Certificate
23/6874
Product Sheet 3 Issue 1

UNILIN XTROLINER (XO)

UNILIN XTROLINER SOFFIT PLUS (XO/STP)

This Agrément Certificate Product Sheet(1) relates to Unilin XtroLiner Soffit Plus (XO/STP), a rigid polyisocyanurate (PIR) foam board with a textured aluminium-foil-facing on both sides, adhesively bonded to a calcium silicate board, or magnesium oxide board, on one side. The product is for use as directly fixed soffit insulation for semi-exposed concrete floor decks in car parks, storage areas, loading bays and similar areas beneath new and existing domestic and non-domestic buildings.

(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 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 issue: 20 June 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 should be read in full as it may be misleading to read clauses in isolation.

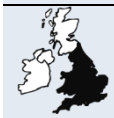
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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 XtroLiner Soffit Plus (XO/STP), 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:	**A1**	**Loading**
Comment:		The product can contribute to satisfying this Requirement. See section 1 of this Certificate.
Requirement:	**B2(1)**	**Internal fire spread (linings)**
Comment:		The product is unrestricted by this Requirement. See section 2 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The product 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 product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**25B**	**Nearly zero-energy requirements for new buildings**
Regulation:	**26**	**CO2 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)**
Regulation:	**26C**	**Target primary energy rates for new buildings (applicable to England only)**
Regulation:	**26C**	**Energy efficiency rating (applicable to Wales only)**
Comment:		The product can contribute to satisfying these Regulations; however, compensating fabric/services 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 product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	1.1(b)	Structure
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 1.1.1[(1)(2)], 1.1.2[(1)(2)] and 1.1.3[(1)(2)]. See section 1 of this Certificate.
Standard:	2.5	Internal linings
Comment:		Use of the product is unrestricted under this Standard, with reference to clause 2.5.1[(1)(2)]. See section 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 section 3 of this Certificate.
Standard:	6.1(b)(c)	Energy demand
Comment:		The product 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 product can contribute to satisfying this Standard, with reference to clauses, or parts of, 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(1)(2), 6.2.11(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 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.
Regulation:	**12**	**Building standards – conversion**
Comment:		Comments in relation to 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(1)(a)(i) (iii)(b)(i)(ii)**	**Fitness of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**30**	**Stability**
Comment:		The product can contribute to satisfying this Regulation. See section 1 of this Certificate.
Regulation:	**34**	**Internal fire spread – linings**
Comment:		The product can contribute to satisfying this Regulation. See section 2 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Comment:		The product can contribute to satisfying this Regulation; however, compensating fabric measures will 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:	**43(b)**	**Nearly zero-energy requirements for new buildings**
Comment:		The product can contribute to satisfying these Regulations; however, compensating fabric/service measures may be required. See section 6 of this Certificate.

Fulfilment of Requirements

The BBA has judged Unilin XtroLiner Soffit Plus (XO/STP) to be satisfactory for use as described in this Certificate. The product has been assessed for use as directly fixed soffit insulation for semi-exposed concrete floor decks in car parks, storage areas, loading bays and similar areas beneath new and existing domestic and non-domestic buildings.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Unilin XtroLiner Soffit Plus (XO/STP) comprises rigid PIR insulation boards, faced with a textured aluminium-foil-facing on both sides, adhesively bonded to a 6 mm calcium silicate board, or magnesium oxide board, on one side.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Length (mm)	2400
Width (mm)	1200
Thickness (mm)(1)(2)	50, 60, 75, 80, 100, 120, 150
Edge profile	Square

(1) PIR only. Calcium silicate board, or magnesium oxide board, adds 6 mm to the overall board thickness.
(2) Other thicknesses are available upon request.

Ancillary items

The Certificate holder recommends stainless steel fixings with a shank diameter of minimum 5.2 mm, and a head diameter of minimum 35 mm, as ancillary items for use with the product, but these materials have not been assessed by the BBA and are outside the scope of this Certificate.

Product assessment – key factors

The product was 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

Data were assessed for the following characteristics.

1.1 Wind loading

1.1.1 The product was assessed against performance values appropriate to the principles of BS EN 1991-1-4 : 2005 and its UK National Annex. Results of the wind load resistance tests are given in Tables 2 and 3 of this Certificate.

1.1.2 The resistance forces data given in Tables 2 and 3 are the results of calculations based upon pull-through resistances determined by the BBA from tests on stainless steel anchors with 35 mm diameter plates.

Table 2 Data for calculation of wind load capacity – Unilin XtroLiner Soffit Plus XO/STP with calcium silicate board

Factor (unit)	Product[1]
Product thickness (mm)	All
Characteristic pull-through resistance[2][3] (per anchor) (N)	483
Partial material factor	3
Design pull-through resistance[4] (N)	161

(1) Calculation based on insulation board 2.4 by 1.2 m (total area 2.88 m^2) attached by 12 fixings (ie, 4.16 fixings per m^2).
(2) Tested in accordance with ETAG 004 : 2011, Section 5.1.4.3.1 *Pull-through tests of fixings.*
(3) Pull-through resistance of the product over the head of the fixing (see section 9.1.3).
(4) The partial material factor of 3 is applied and based on the assumption that all boards are quality control tested to ensure consistency of the tensile strength perpendicular to the face of the board.

Table 3 Data for calculation of wind load capacity – Unilin XtroLiner Soffit Plus XO/STP with magnesium oxide board

Factor (unit)	Product[1]
Product thickness (mm)	All
Characteristic pull-through resistance[2][3] (per anchor) (N)	1136
Partial material factor	3
Design pull-through resistance[4] (N)	379

(1) Calculation based on insulation board 2.4 by 1.2 m (total area 2.88 m^2) attached by 12 fixings (ie, 4.16 fixings per m^2).
(2) Tested in accordance with EAD 090062-00-0404 : 2018, Annex I.1.
(3) Pull-through resistance of the product over the head of the fixing (see section 9.1.3).
(4) The partial material factor of 3 is applied and based on the assumption that all boards are quality control tested to ensure consistency of the tensile strength perpendicular to the face of the board.

1.1.3 The product was tested for bending strength and shear resistance, and the results are given in Table 4.

Table 4 Bending strength and shear resistance

Product assessed	Assessment method	Requirement	Result
25 mm Unilin XtroLiner Soffit Plus (XO/STP) with calcium silicate board	Bending strength to BS EN 12089 : 2013	Value achieved	Maximum load 797 N
			Flexural stress 2074 kPa
			Flexural modulus 272 kPa
	Adhesion/cohesion to BS EN 13950 : 2014		Maximum load 597 N
			Tensile stress at max. load 60 kPa
25 mm Unilin XtroLiner Soffit Plus (XO/STP) with magnesium oxide board	Bending strength to BS EN 12089 : 1997		Maximum load 1159 N
			Flexural stress 1812 kPa
			Deflection at max. load 9.9 mm
	Tensile strength perpendicular to faces to BS EN 1607 : 1997		Maximum load 3361 N
			Tensile stress at max. load 149 kPa

1.1.4 The product is mechanically fixed to the structural floor with a minimum of 12 fixings per board, with the fixing pattern as shown in Figure 1.

1.1.5 When attached to a structural floor with an appropriate number of fixings, the product can adequately resist the design loads applicable in the UK (see sections 9.1.4 to 9.1.6).

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The product was tested for reaction to fire and the classifications are given in Table 5.

Table 5 Reaction to fire classification

Component	Assessment method	Requirement	Result
Unilin XtroLiner (XO) PIR insulation	NF EN 13501-1 : 2018	Value achieved	C-s2, d0[(1)]
Unilin XtroLiner Soffit Plus (XO/STP) with calcium silicate board	BS EN 13501-1 : 2018		B-s1, d0[(2)]
Unilin XtroLiner Soffit Plus (XO/STP) with magnesium oxide board	NF EN 13501-1 : 2018		B-s1, d0[(3)]

(1) CREPIM, Report no. DO-19-1319\A-R1-AMDT1, 4 March 2020. Copies can be obtained from the Certificate holder on request. This classification is valid for thicknesses of 25 to 160 mm.
(2) Efectis UK/Ireland, Report no. EUI-23-000912, 30 January 2024. Copies can be obtained from the Certificate holder on request. This classification is valid for thicknesses of 25 to 150 mm.
(3) CREPIM, Report no. DO-23-5130\A-R1, 14 August 2023. Copies can be obtained from the Certificate holder on request. This classification is valid for thicknesses of 36 to 156 mm.

2.1.2 On the basis of data assessed, the product, when used as soffit insulation for semi-exposed floor decks, will be unrestricted under the documents supporting the national Building Regulations in relation to internal fire spread over linings.

2.1.3 If the product is painted or covered, the performance is outside the scope of this Certificate and the reaction to fire classification and permissible area of use must be determined in accordance with the documents supporting the national Building Regulations.

2.1.4 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 floor construction.

2.2 Resistance to fire

2.2.1 Where the product is incorporated in a floor construction where fire resistance is required by the documents supporting the national Building Regulations, the fire resistance must be confirmed by a suitably experienced and competent individual.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Water vapour permeability

3.1.1 The product was tested for water vapour permeability and the results are given in Table 6.

Table 6 Water vapour resistivity/resistance

Product assessed	Assessment method	Requirement	Result
PIR insulation	BS EN ISO 10456 : 2007	Value achieved	300 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$
Foil facing	BS 5250 : 2021		1000 $MN \cdot s \cdot g^{-1}$
Calcium silicate board	BS EN 12086 : 1997		0.98 $MN \cdot s \cdot g^{-1}$
Magnesium oxide board			1.33 $MN \cdot s \cdot g^{-1}$

3.1.2 For the purposes of assessing the risk of interstitial condensation, the water vapour resistance and water vapour resistivity values may be taken as stated in Table 6.

3.2 Condensation

3.2.1 The BBA has assessed the product for the risk of interstitial condensation and the following factors must be implemented.

3.2.2 An assessment of the risk of interstitial condensation for specific constructions and use must be carried out in accordance with BS EN ISO 13788 : 2012. If a risk of condensation is identified, then a dynamic condensation risk analysis for the specific location must also be carried out in accordance with BS EN 15026 : 2023. Further guidance may be obtained from section 9.1.12 of this Certificate.

3.2.3 To limit the risk of interstitial condensation, floor decks must be designed and constructed in accordance with the relevant parts of BS 5250 : 2021 and section 9.1.5 of this Certificate.

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

6.1.1 The product was tested for thermal conductivity and thermal resistance, and the results are given in Table 7.

Table 7 Thermal conductivity and thermal resistance

Component assessed	Thickness	Assessment method	Requirement	Result
Unilin XtroLiner (XO) PIR insulation	All	Thermal conductivity to BS EN 13165 : 2012	Declared value (λ_D)	0.021 $W \cdot m^{-1} \cdot K^{-1}$
Calcium silicate board	6 mm	Thermal resistance to BS EN 12667 : 2001	Declared value	0.028 $m^2 \cdot K \cdot W^{-1}$
Magnesium oxide board				0.033 $m^2 \cdot K \cdot W^{-1}$

6.2 Conservation of fuel and power

6.2.1 The U value of a completed soffit will depend on the insulation thickness, and its structure. Example U values are given in Table 8.

Table 8 Example U values for Unilin XtroLiner Soffit Plus (XO/STP) fixed directly to the uninsulated floor(1)

U value ($W \cdot m^{-2} \cdot K^{-1}$)	Insulation thickness (mm)
0.11	—(2)
0.12	—(2)
0.13	—(2)
0.15	150
0.18	120
0.22	100
0.25	100

(1) Construction (internal to external): 150 mm reinforced concrete deck with 2 % steel (λ = 2.5 $W \cdot m^{-1} \cdot K^{-1}$) and Unilin XtroLiner Soffit Plus (XO/STP) (insulation + 6 mm calcium silicate board, or magnesium oxide board). Insulation secured using 4.17 stainless steel fixings per m^2, λ = 17 $W \cdot m^{-1} \cdot K^{-1}$ and cross-sectional area of 21.24 mm.
(2) See section 6.2.3.

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

6.2.3 For improved energy or carbon savings, designers must consider appropriate fabric/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 the product were assessed.

8.2 The product was tested for dimensional stability and the results are given in Table 9.

Table 9 Dimensional stability

Product assessed	Assessment method	Requirement	Result
Unilin XtroLiner (XO) PIR insulation	BS EN 1604 : 1997 (70°C and 90 % RH for 48 hours)	Length and width ≤ 1% change Thickness ≤ 4% change	Pass
	BS EN 1604 : 1997 (-20°C for 48 hours)	Length and width ≤ 0.5 % change Thickness ≤ 2% change	Pass

8.3 Service life

Under normal service conditions, the product will have a life equivalent to the structure in which it is incorporated, provided it is 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 Positive wind load (pressure) is transferred to the substrate directly via bearing and compression of the product.

9.1.3 Negative wind load (suction) is resisted by the stainless steel fixings which retain the product.

9.1.4 The wind loads on the structural floor must be calculated by a suitably experienced and competent individual in accordance with the principles of BS EN 1991-1-4 : 2005 and its UK National Annex. Special consideration must be given to locations with high wind-load pressure coefficients as additional fixings may be necessary. In accordance with BS EN 1990 : 2002 and its UK National Annex, it is recommended that a load factor of 1.5 is used to determine the ultimate wind load to be resisted by the product.

9.1.5 Assessment of structural performance for individual buildings must be carried out by a suitably experienced and competent individual to confirm that:

- the structural floor is designed in accordance with the principles of BS EN 1991-1-1 : 2002 and BS EN 1992-1-1 : 2004 and their UK National Annexes, and has adequate strength to resist any additional loads that may be applied as a result of installing the product
- the proposed product and associated fixing layout provide adequate resistance to negative wind loads (based on the results of the site investigation)
- an appropriate number of site-specific pull-out tests are conducted on the substrate of the building to determine the minimum resistance to failure of the fixings. The characteristic pull-out resistance must be determined in accordance with the guidance given in EAD 330196-00-0604 : 2016 and EOTA TR051 : 2018.

9.1.6 The number and centres of fixings must be determined by a suitably experienced and competent individual. Provided the structural floor is suitable and an appropriate fixing and depth of embedment is selected, the mechanical fixings will transfer the weight of the product to the structural floor.

9.1.7 Care must be taken in the detailing of the product at the floor perimeter to ensure adequate protection against precipitation. Proprietary products must be used to adequately seal the product edges from precipitation (outside the scope of this Certificate).

9.1.8 Recessed lighting must not be used.

9.1.9 Calculations of the thermal transmittance (U value) of a floor 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 Floors will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2021 and the relevant guidance.

9.1.12 The product is intended for use in car parks, storage areas, loading bays and similar areas, which are classified as 'humidity class 1' in accordance with BS 5250 : 2021. When designing buildings with humidity class higher than 'humidity class 1', an assessment will need to be made, in accordance with BS EN 15026 : 2023 using the values given in Table 6 of this Certificate, and the result will be construction and location specific.

Surface Condensation

9.1.13 In England and Wales, floors 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 walls are designed in accordance with the guidance referred to in section 9.1.10 of this Certificate.

9.1.14 For buildings in Scotland, floors will adequately limit the risk of surface condensation when the thermal transmittance (U value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and floors are designed and constructed in accordance with the relevant parts of BS 5250 : 2021 and this Certificate. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.10 of this Certificate.

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 are provided in Annex A of this Certificate.

9.2.3 Existing constructions must be in a good state of repair, with no evidence of rain penetration or damp. Defects must be made good prior to installation.

9.2.4 De-rating of electric cables must be considered in areas where the product restricts the flow of air.

9.3 Workmanship

9.3.1 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 product must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

9.4.1 The product does not require maintenance. Minor surface damage can be repaired with proprietary fillers; further advice should be sought from the Certificate holder, but such advice is outside the scope of this Certificate. Major damage may require the replacement of boards. The Certificate holder can advise on suitable measures for a particular application, but such advice is outside of the scope of this Certificate.

10 Manufacture

10.1 The production processes for the product 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 on pallets, in polythene-wrapped packs. Each pack contains a label with the Certificate holder's name, board dimensions 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 Ideally, the boards should be stored inside. If outside storage cannot be avoided, boards must be stacked clear of the ground and covered with an opaque polythene sheet or weatherproof tarpaulin and protected from rain, snow and prolonged exposure to sunlight.

11.2.2 Boards that have been allowed to get wet or that are damaged must not be used. Nothing must be stored on top of the boards.

11.2.3 Boards must not be exposed to a naked flame or other ignition sources, or to solvents or other chemicals.

11.2.4 When using power saws and sanders for cutting, dust extraction equipment must be used to control dust levels. The occupational exposure limit(1) for both the calcium silicate board and the magnesium oxide board must not exceed 10 $mg \cdot m^{-3}$ for inhalable dust and 4 $mg \cdot m^{-3}$ for fume and respirable dust.

(1) EH40/2005 *Workplace exposure limits*.

ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the product 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.

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 EN ISO 45001 : 2018, by BRE (Certificates 718 QMS, 718 EMS and 718 HS respectively).

Additional information on installation

Installation must be in accordance with the Certificate holder's instructions and this Certificate.

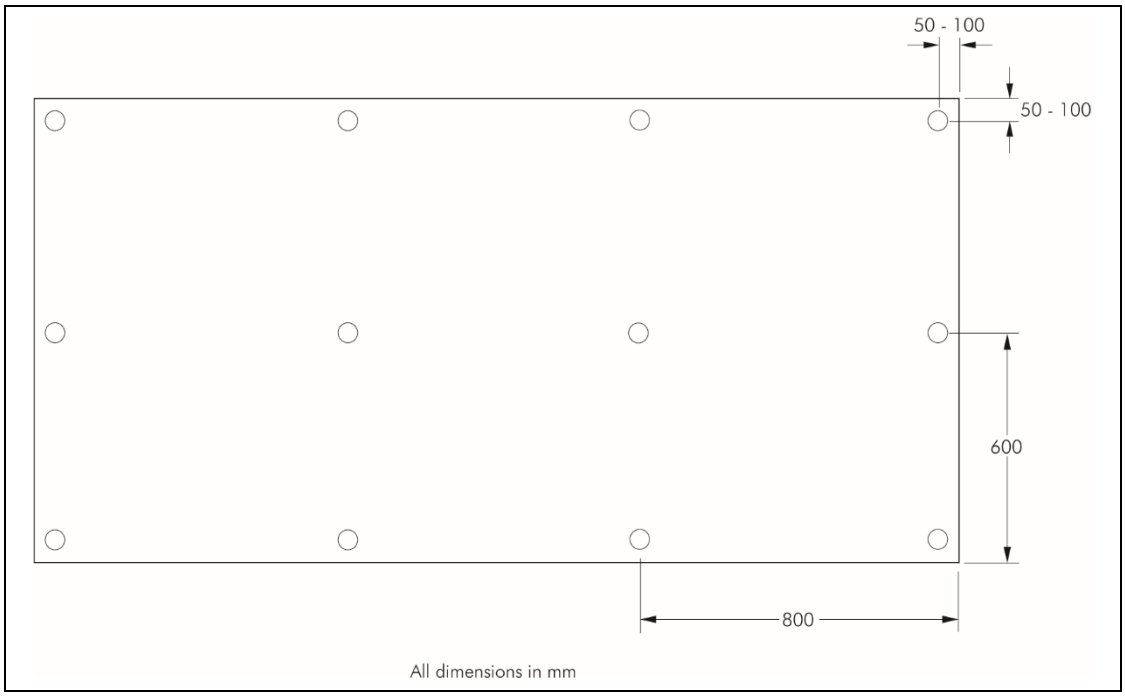
A.1 The product is fixed directly to a concrete soffit.

A.2 The product may be cut using a fine-toothed saw with a hardened blade.

A.3 Board joints should preferably be staggered.

A.4 The board should be fixed to the soffit using a minimum of 12 approved fasteners. See recommended layout in Figure 1.

Figure 1 Fixing layout 2400 by 1200 mm board – minimum fixing numbers



A.5 The distance between the fixings and the board edge should not be less than 50 mm, nor greater than 100 mm.

A.6 The fasteners must penetrate into the concrete soffit to a minimum distance as recommended by the fixing manufacturer for the installation in question.

A.7 Care should be taken in the detailing of the product at the floor perimeter to ensure adequate protection against precipitation. Proprietary products must be used to adequately seal the product edges from precipitation (outside the scope of this Certificate).

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 EN 1604 : 1997 *Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions*

BS EN 1607 : 1997 *Thermal insulating products for building applications — Determination of tensile strength perpendicular to faces*

BS EN 1990 : 2002 *Eurocode — Basis of structural design*
NA to BS EN 1990 : 2002 UK National Annex for *Eurocode. Basis of structural design*

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 1991-1-4 : 2005 *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 1992-1-1 : 2004 + A1 : 2014 *Eurocode 2 : Design of concrete structures — General rules and rules for buildings*
NA + A2 : 2014 TO BS EN 1992-1-1 : 2004 + A1 : 2014 *UK National Annex to Eurocode 2 — Design of concrete structures — General rules and rules for buildings*

BS EN 12086 : 1997 *Thermal insulating products for building applications — Determination of water vapour transmission properties*

BS EN 12089 : 1997 *Thermal insulating products for building applications — Determination of bending behaviour*
BS EN 12089 : 2013 *Thermal insulating products for building applications — Determination of bending behaviour*

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

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

BS EN 13950 : 2014 *Gypsum board thermal/ acoustic insulation composite panels — Definitions, requirements and test methods*

BS EN 15026 : 2023 *Hygrothermal performance of building components and building elements — Assessment of moisture transfer by numerical simulation*

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

BS EN ISO 10456 : 2007 *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*

BS EN ISO 13788 : 2012 *Hygrothermal performance of building components and building elements — Internal surface temperature to avoid critical surface humidity and interstitial condensation — Calculation methods*

EAD 090062-00-0404 : 2018 *Kits for external wall claddings mechanically fixed*

EH40/2005 *Workspace exposure limits*

EOTA TR051 : 2018 *Recommendations for job-site tests of plastic anchors and screws*

ETAG 004 : 2011 *Guideline for European technical approval of external thermal insulation composite systems with rendering*

ISO 9001 : 2015 *Quality management systems — Requirements*

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

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

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

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- relates only to the product that is named and described on the front page
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- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
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British Board of Agrément
Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG
tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk