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Agrément Certificate 19/5671

Product Sheet 3

NVELOPE RAINSCREEN SYSTEMS

NVELOPE NH3 RAINSCREEN CLADDING SUPPORT SYSTEM

This Agrément Certificate Product Sheet ⁽¹⁾ relates to the Nvelope NH3 Rainscreen Cladding Support System, for use as a horizontal framing system to support and fix cladding panels on the external or internal wall structure of new or existing buildings.

(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

Mechanical resistance and stability — the system can be designed to support the cladding and to transfer the design loads to the substrate wall structure safely (see section 6).

Behaviour in relation to fire — the system (fixings, brackets, and rails) has an A1 reaction to fire classification in accordance with BS EN 13501-1 : 2018 (see section 7).

Drainage and ventilation — provided correct details are adopted, the system can provide adequate drainage and ventilation behind the cladding (see section 8).

Durability — the system will have a service life in excess of 35 years (see section 10).

The BBA has awarded this Certificate to the company named above for the system described herein. This system have 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: 10 June 2022

Hardy Giesler

Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

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

British Board of Agrément

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Regulations

In the opinion of the BBA, the Nvelope NH3 Rainscreen Cladding Support System, 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: A1

Comment: The system can be designed to adequately transfer the design loads from the cladding to

the substrate wall structure. See sections 6.7 to 6.9 of this Certificate.

Requirement: B4(1) External fire spread

Comment: The system is unrestricted by this Requirement. See section 7.1 of this Certificate.

Regulation: 7(1) Materials and workmanship

Comment: The system is acceptable. See section 10.1 and the *Installation* part of this Certificate.

Regulation: 7(2) Materials and workmanship

Comment: The system is unrestricted by this Regulation. See section 7.1 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1) Durability, workmanship and fitness of materials

Comment: The system is acceptable. See section 10.1 and the *Installation* part of this Certificate.

Regulation: 9 Building standards applicable to construction

Standard: 1.1(a)(b) Structure

Comment: The system can be designed to adequately transfer the design loads from the cladding to

the substrate wall structure, with reference to clause 1.1.1⁽¹⁾⁽²⁾ of this Standard. See

sections 6.7 to 6.9 of this Certificate.

Standard: 2.6 Spread to neighbouring buildings

Comment: The system can contribute to satisfying this Standard, with reference to clause 2.6.4⁽¹⁾⁽²⁾.

See section 7.1 of this Certificate.

Standard: 2.7 Spread on external walls

Comment: The system can contribute to satisfying this Standard, with reference to clause 2.7.1⁽¹⁾⁽²⁾.

See section 7.1 of this Certificate.

Standard: 7.1(a)(b) Statement of sustainability

Comment: The system can contribute to meeting 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.

(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 system is acceptable. See section 10.1 and the *Installation* part of this Certificate.

Regulation: 30 Stability

Comment: The system can be designed to adequately transfer the design loads from the cladding to

the substrate wall structure. See sections 6.7 to 6.9 of this Certificate.

Regulation: 36(a) External fire spread

Comment: The system is unrestricted by this Regulation. See section 7.1 of this 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.

See section: 3 Delivery and site handling (3.2 and 3.6) of this Certificate.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, the Nvelope NH3 Rainscreen Cladding Support System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards, Part 6 Superstructure (excluding roofs), Chapter 6.9 Curtain walling and cladding, Clauses 6.9.4 Loads, 6.9.5 Supports and fixings, and 6.9.6 Durability.

Technical Specification

1 Description

1.1 The NH3 Rainscreen Cladding Support System is a horizontal framing system to support and fix cladding panels to (see Figure 1) walls of new and existing buildings, and consists of:

- NH3 Brackets aluminium brackets fitted to the substrate using appropriate fixings (outside the scope of this Certificate):
 - brackets have a leg length of 75 to 300 mm (see Figure 2 and Table 1)
 - brackets have a height of 100 mm. They are supplied with base hole-diameter sizes of either 22 x 11 mm (for masonry / concrete substrates) or 22 x 6.5 mm (for steelwork / timber substrates)
 - brackets have a thickness of 3.3 mm, with a standard foot width of 62 mm
 - brackets feature a 5 mm thick polypropylene isolator/thermal break (insulating properties outside the scope of this Certificate) fitted to the foot
- Nvelope L Rails rails of 'L' profile, 60 x 40 mm with a 2.2 mm thickness, fixed to the NH3 Brackets using self-drilling screws, which provide a fixing area for the cladding panels (see Figure 1). 60 or 40 mm leg can be used to the NH3 Bracket. Additional guidance on the L rails can be found in Product Sheet 1 of this Certificate. Standard lengths are 3000, 3600, 4850 or 6000 mm
- Nvelope Lipped L Rails rails of 'L' profile with a 12.5 mm return with a 2.5 mm thickness and the dimensions shown in Figure 2, fixed to the NV Brackets using self-drilling screws, which provide a fixing area for the cladding panels. Standard lengths are 3000 or 6000 mm
- L Rails and Lipped L Rails can be factory or site cut to size
- brackets and rails are uncoated as standard.

Figure 1 Typical rail/bracket arrangement



1.2 The system components (see Figure 2) are manufactured from aluminium alloy, to a minimum grade of EN AW 6005A T6 to BS EN 573-3: 2019, with the exception of the isolator/thermal breaks, which are manufactured from green injection moulded polypropylene.

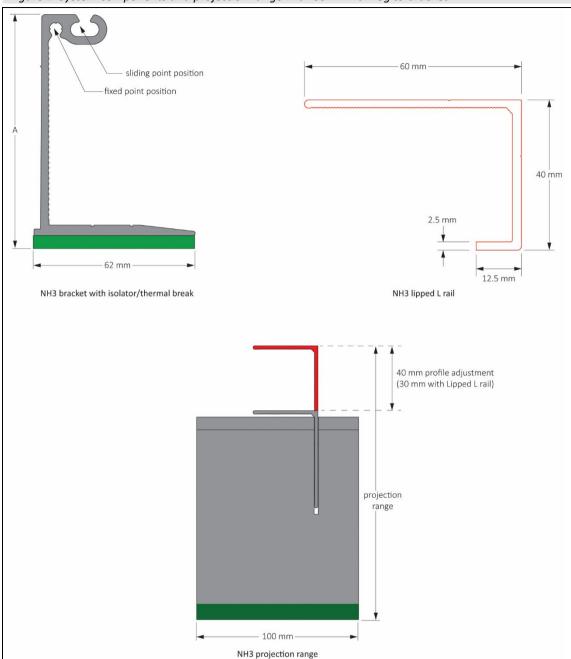


Figure 2 System components and projection range with 60 mm rail leg to bracket

- 1.3 The system components have the characteristics described in Tables 1 and 2 (see section 6 of this Certificate).
- 1.4 The brackets are fixed to the substrate wall structure using stainless steel anchors of a predetermined size. The support rails are secured to the brackets using stainless steel screws as specified in section 1.5.
- 1.5 Components specified for use with the systems, recommended by the Certificate holder but outside the scope of this Certificate, include:
- rails can be ordered with anodised or polyester powder coated finishes (uncoated as standard)
- 10 mm Diameter Primary Fixing a plastic anchor consisting of a plastic sleeve made of polyamide and an accompanied specific screw of stainless steel, used as primary fixing to concrete, block work and brick substrate walls
- SX3 or SX5 Fastening Screws self-drilling and self-tapping screws made of austenitic stainless steel grade A4 with
 a washer made of aluminium, or stainless steel A4 with vulcanised EPDM sealant, used as primary fixing to steel
 frame

- TDA Fastening Screws self-drilling and self-tapping screws made of austenitic stainless steel grade A4 with a
 washer made of aluminium, or stainless steel A4 with vulcanised EPDM sealant, used as primary fixing to timber
 frame
- SDA5/5.5x45 Fastening Screws stainless steel screws grade A4, used as horizontal L or Lipped L rail fixings to brackets
- vapour permeable membrane (also known as breather membrane) in line with BS 5250: 2021
- insulation
- cavity
- cavity barriers
- protection to ventilation openings eg mesh, perforated sheet, or similar
- external cladding (and fixings).

2 Manufacture

- 2.1 The system components are manufactured from extruded sections of aluminium alloy with the exception of the isolator/thermal breaks which are made from green injection moulded polypropylene.
- 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 manufacturer's management systems have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015.

3 Delivery and site handling

- 3.1 The aluminium rails are wrapped on pallets. Every pallet carries a label bearing the manufacturer's name.
- 3.2 Packs of rails should be stacked horizontally, on sufficient bearers to prevent distortion, to a maximum height of one metre. Other components should be stored safely until ready for use.
- 3.3 The pallets should be stored on a dry, flat and level surface, suitably protected from the weather. Ancillary items should be stored in separate boxes.
- 3.4 The brackets are delivered to site in cartons of a size suitable for manual handling. Isolation pads, when required, are supplied attached to the base of the aluminium brackets. The cartons are palleted and shrink-wrapped.
- 3.5 The system components should be handled with care. Damaged items should be discarded.
- 3.6 Protective clothing should be worn, as required, and all health and safety regulations observed. Care should be taken when handling long lengths of rail, especially at height.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Nvelope NH3 Rainscreen Cladding Support System.

Design Considerations

4 Use

- 4.1 The Nvelope NH3 Rainscreen Cladding Support System, when installed in accordance with this Certificate, is satisfactory for use in back-ventilated and drained cavity rainscreen cladding systems, as well as for internal cladding systems as a sub-frame to support cladding on the external or internal wall structure, of new and existing buildings.
- 4.2 The system is applied to the outside of the external or internal wall structures of new or existing buildings. Application must be carried out strictly in accordance with this Certificate and the Certificate holder's instructions, by installers who are suitably qualified.
- 4.3 The substrate wall to which the system is to be fixed must be structurally sound, and satisfy the requirements of the relevant national Building Regulations and Standards
- 4.4 It is important for designers, planners, contractors and/or installers to ensure that the systems and the substrate wall have adequate structural capacity to support cladding panels in accordance with the design and installation requirements of the cladding panel supplier.

5 Practicability of installation

The system is designed to be installed by cladding contractors who are suitably qualified.

6 Mechanical resistance and stability

- 6.1 The substrate wall to which the cladding components are to be fixed should be designed and constructed in accordance with the requirements of the relevant national Building Regulations and Standards.
- 6.2 Assessment of structural performance of the system for individual buildings must be carried out by a designer or a suitably qualified and experienced individual to ensure that:
- the support system and cladding to be supported are compatible
- any thermal expansion effects of both the support system and the cladding to be supported are taken into account in the design and detailing.
- the specified fixings have adequate tensile and pull-out strength to resist the applied actions
- the fixing of the support brackets to the supporting wall has adequate tensile, shear and pull-out strength, and
 corrosion resistance (outside the scope of this Certificate). An appropriate number of site-specific pull-out tests
 must be conducted on the substrate wall to determine the minimum pull-out resistance to failure of the fixings
- the characteristic pull-out resistance to concrete should be determined in accordance with the guidance given in EOTA TR055: 2018, using 50% of the mean value of the five smallest measured values at the ultimate load.
- 6.3 The supporting wall must be able to resist the gravity load from the self-weight of the cladding, the wind actions and any racking loads, on its own. No contribution from the cladding system may be assumed in this respect.
- 6.4 The wind actions on the wall should be calculated in accordance with BS EN 1991-1-4: 2005 and its UK National Annex. Due consideration should be given to the high-pressure coefficients applicable to corners of the building as recommended in this Standard. In accordance with BS EN 1990: 2002 and its UK National Annex, it is recommended that partial load factors are used to determine the ultimate wind load to be resisted by the system.

- 6.5 A combination of horizontal and vertical actions must be checked by an appropriately qualified design engineer, in accordance with BS EN 1999-1-1: 2007, and their UK National Annexes, in conjunction with BS EN 1990: 2002 and all relevant standard parts and its corresponding UK National Annex.
- 6.6 For combined loads, check that (actual vertical load/allowable vertical load) + (actual horizontal load/allowable horizontal load) \leq 1.0, in line with BS EN 1999-1-1 : 2007 and the UK National Annex.



6.7 Details of the brackets, with their design loadbearing resistances, are shown in Table 1. The design loadbearing resistance of the connections should be greater than that of the bracket and adaptor as tabulated.

Table 1 Aluminium NH3 Bracket — design resistances (for bracket out-stand leg)

Bracket leg	L Rail	Lipped L Rail	Design resistance (kN) ⁽³⁾⁽⁴⁾	
length (A) ⁽¹⁾	Projection	Projection	Vertical	Horizontal
(mm)	range ⁽²⁾	range ⁽²⁾	(shear)	(compression)
	(mm)	(mm)		
75	77 – 117	87 – 117	4.77	2.82
90	92 – 132	102 – 132	4.36	2.66
120	122 – 162	132 – 162	3.35	2.45
150	152 – 192	162 – 192	1.64	2.09 ⁽⁵⁾
180	182 – 222	192 – 222	1.23	1.70
210	212 – 252	222 – 252	0.91	1.45 ⁽⁵⁾
240	242 – 282	252 – 282	0.73	1.18 ⁽⁵⁾
270	272 – 312	282 - 312	0.68	0.91(5)
300	302 - 342	312 - 342	0.45	0.45(5)

- (1) Includes 5 mm isolator/thermal break (See Figure 2).
- (2) Distance between back face of isolator pad to face of rail profile (see Figure 2).
- (3) Unfactored loads limited to lower of tested ULS or 5 mm maximum deflection.
- (4) Partial material factor of 1.1 applied in line with BS EN 1999-1-1: 2007 and its national annex.
- (5) Unfactored load has been rationalised by Certificate holder to less than actual test performance.
- 6.8 The geometric properties of the NH3 rail sections can be found in detail in Table 2, and used by the structural designer for the rail design.

Table 2 NH3 Rail section details

		dimensions			second moment of area		product of inertia	radius of gyration		distance to centre of gravity	
	Χ	Υ	thickness	area	I_{xx}	I_{yy}	I_{xy}	Axis x-x	Axis y-y	x	У
	(mm)	(mm)	(mm)	(mm²)	(mm ⁴)	(mm ⁴)	(mm ⁴)	(mm)	(mm)	(m	ım)
NV L Rail section ⁽¹⁾ 60 x 40 mm	60	40	2.2	203	89342	16201	27272	11.83	19.49	41.45	31.31
NH3 Lipped L Rail section ⁽²⁾ 60 x 40 mm		40	2.5	241	26620	106373	36218	14.38	18.58	43.53	27.67

- (1) 60 mm leg to bracket. See Figures 1, 2 and Product Sheet 1.
- (2) Including 12.5 mm lip, see Figure 2.
- 6.9 An aluminium plank system, tested in accordance with CWCT Standard Test Methods for building envelopes, 2005, using 90 mm NH3 brackets with NV L rail sections ($60 \times 40 \times 2.2 \text{ mm}$)⁽¹⁾, achieved $\pm 1.5 \text{ kN·m}^{-2}$ serviceability wind loads, and $\pm 2.25 \text{ kN·m}^{-2}$ safety wind loads.
- (1) Maximum 800 mm bracket centres at 600 mm spacings.
- 6.10 Details of the screws for connecting the support rails to the brackets are given in section 1.5.

- 6.11 The design of the rails and associated connections must satisfy the requirements of BS EN 1999-1-1: 2007, using the mechanical properties of the aluminium grade adopted. Mid-span deflections should be limited to span/200 and cantilever deflections limited to span/150.
- 6.12 In general, the rails should be fixed at mid-length using the fixed point holes on the brackets, and allowed to expand at the ends using the sliding/flexible point holes on the brackets (see Figures 1 and 2). To allow for expansion, a minimum gap of 2.5 mm per metre length should be provided. For calculation purposes, the coefficient of thermal expansion for aluminium may be taken as 23 x 10–6·K–1. Existing movement joints in the supporting structure should be maintained through the rail system. For standard three-metre-long rails, a gap of 10 mm between adjacent rails is recommended.
- 6.13 The design and the installation must be checked by a suitably competent and experienced engineer or other appropriately qualified person.
- 6.14 Any insulation behind the cladding must be suitably fixed to the supporting wall and protected, to resist the forces of wind suction. Insulation should be, at least, of the semi-rigid type (eg boards or batts).

Impact loading

- 6.15 An aluminium plank system, tested in accordance with CWCT Technical Note 76, using 90 mm NH3 brackets with NV L rail sections (60 x 40 x 2.2 mm)⁽¹⁾, achieved Class 1 soft body serviceability (120 Nm), and negligible risk soft body safety (350 and 500 Nm).
- (1) Maximum 800 mm bracket centres at 600 mm spacings.
- 6.16 The impact resistance of a cladding system is a function of the support framing arrangement and the cladding panel used. The structural engineer should ensure that the cladding system incorporating the Nvelope NH3 Rainscreen Cladding Support System has adequate impact resistance for the support frame arrangement and cladding panels used, for the intended Use Category as defined in EAD 090062-00-0404 : 2018, Table G.2, which is reproduced (in part) in Table 3 of this Certificate.

Table 3 Definition of impact Use Categories (reproduced from EAD 090062-00-0404 : 2018)				
Use Category	Description			
T	A zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use.			
II	A zone liable to impacts from thrown or kicked objects, but in public locations where the height of the kit will limit the size of the impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care.			
III	A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.			
IV	A zone out of reach from ground level.			

7 Behaviour in relation to fire



- 7.1 The aluminium brackets, rails and associated rail-to-bracket fixings have a reaction to fire classification of A1 accordance with BS EN 13501-1: 2018, and are not subject to any restriction on building height or proximity to boundaries.
- 7.2 NH3 brackets feature polypropylene isolator/thermal breaks, used for isolation and to reduce the risk of thermal bridging across the bracket/wall interface. They are largely protected by the cladding panels and, considered to be present in relatively small quantities, so unlikely to significantly affect the overall fire performance of the cladding.
- 7.3 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 barriers and combustibility limitations for other materials and components used in the overall wall construction (for example, thermal insulation and cladding).

8 Drainage and ventilation

- 8.1 The system, when incorporated in back-ventilated and drained cavity rainscreen cladding systems, will not have an adverse effect on the removal of water from the cavity by drainage and ventilation.
- 8.2 For the effective removal of moisture from the cavity, a minimum ventilation area of 5000 mm² per metre run of cladding must be provided at the building base point and at the roof edge. To prevent the ingress of birds, vermin, insects and/or rain, all ventilation openings should be suitably protected with a ventilation protection mesh, perforated sheet or similar, or should be baffled.
- 8.3 The air space between the back of the cladding panels and the supporting wall (or insulation where installed within the cavity) should be as wide as possible, allowing for normal building tolerances. Guidance on recommended cavity widths is given in *NHBC Standards* 2022, Chapter 6.9, Clause 6.9.18 *Rainscreen Cladding*.
- 8.4 The ventilation pathways behind the cladding must not be allowed to become blocked, or the insulation dislodged, where it may be vulnerable to wetting.

9 Maintenance

The system is confined behind the cladding panels and does not require special maintenance.

10 Durability



10.1 The system, when used as prescribed in this Certificate, can be expected to have a service life in excess of 35 years in normal UK conditions.

10.2 The aluminium rails can be powder coated or anodised on request (outside the scope of this Certificate).

11 Reuse and recyclability

The polypropylene and aluminium components can be recycled.

Installation

12 General

- 12.1 The system must be installed in accordance with the manufacturer's recommendations, the requirements of this Certificate, and any specifications laid down by the project consulting engineer or designer.
- 12.2 The Certificate holder can provide technical assistance at the design stage, and installation assistance at the start of the installation.

13 Procedure

- 13.1 Based on a preliminary survey of the wall and architectural/structural design, a grid layout for the sub-frame is first prepared.
- 13.2 The NH3 brackets (with isolator pad, if required) are fixed to the substrate wall using stainless steel fixings of an appropriate size as determined by design (see sections 1.5, 6.2 and 6.4), to the centre of both slots. The bracket should be installed with the rail slot towards the top of the bracket (see Figure 1).

- 13.3 The NH3 rails are inserted into the brackets and, after adjustment for line and level, fixed to the brackets using self-drilling stainless steel screws, as determined by design (see sections 1.5, 6.8 and 13.4).
- 13.4 The NH3 rails are normally anchored at mid-span using the fixed point holes on the brackets, and allowed to expand at the ends using the sliding/flexible point holes on the brackets (see Figures 1 and 2).
- 13.5 Where specified, insulation should be tightly butted around the brackets and secured to the substrate wall using the appropriate fixings.
- 13.6 Where required to protect the substrate wall or insulation from wind-driven rain, an appropriate vapour permeable membrane should be applied to the surface.
- 13.7 Cladding panels (outside the scope of this Certificate) deemed to be compatible with the system are fixed to the NH3 rails, ensuring cladding panels do not bridge the expansion gap between NH3 rails.

Technical Investigations

14 Tests

Tests were carried out and the results assessed to determine:

- bracket ultimate limit strength
- bracket compression and shear strength when deflection limited
- system wind load performance for safety and serviceability
- system soft body impact performance for safety and serviceability.

15 Investigations

- 15.1 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.
- 15.2 An assessment was made of the system in relation to:
- resistance to permanent and variable actions
- section properties for profiles
- behaviour in relation to fire
- durability.
- 15.3 Based on a visit to a site installation, an assessment was made of the system's practicability of installation and performance in use.

Bibliography

BS 5250: 2021 Management of moisture in buildings. Code of practice

BS EN 573-3 : 2019 Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 3: Chemical composition and form of products

BS EN 1990: 2002 + A1: 2005 Eurocode — Basis of structural design

NA to BS EN 1990 : 2002 + A1 : 2005 UK National Annex for Eurocode — Basis of structural design

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 + A1 : 2010 UK National Annex to Eurocode 1 — Actions on structures — General actions — Wind actions

BS EN 1999-1-1 : 2007 + A2 : 2013 Eurocode 9 Design of aluminium structures — General structural rules NA to BS EN 1999-1-1 : 2007 + A1 : 2009 UK National Annex to Eurocode 9 — Design of aluminium structures — General structural rules

CWCT Standard Test Methods for building envelopes, 2005

CWCT Technical Note 76: Impact Performance of Building Envelopes: Method for Impact Testing Cladding Panels

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

EOTA TR055: 2018 Design of fasteners based on EAD 330232-00-0601

Conditions of Certification

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.