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Agrément Certificate

20/5776

Product Sheet 1

PARKLEX INTERNATIONAL CLADDING SYSTEMS

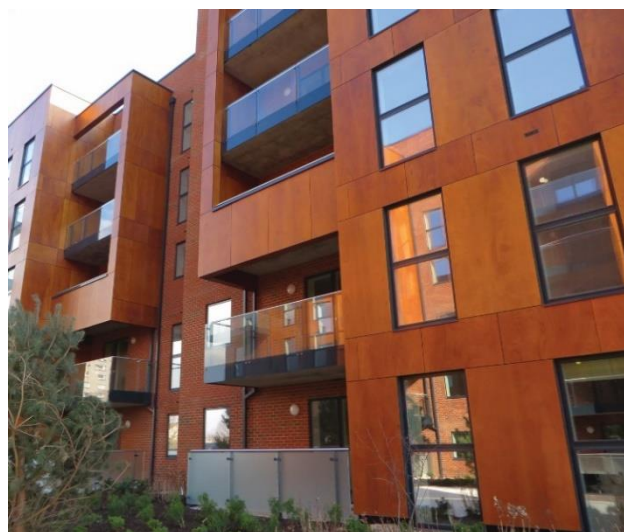
PARKLEX FAÇADE WALL CLADDING PANELS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Parklex Façade Wall Cladding Panels, comprising wood-fibre laminate fixed to a timber or aluminium sub-frame, for use as a protective/decorative façade over external walls of timber stud, masonry or steel framework of domestic and non-domestic buildings subject to height restrictions.

(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

Strength and stability — the product can be designed to resist wind actions normally encountered in the UK (see section 6).

Behaviour in relation to fire — the product has a B-s1, d0 or a C-s1, d0 reaction to fire classification depending on the grade chosen, and its use is restricted in some cases (see section 7).

Air and water penetration — the product is suitable for use as a drained and back-ventilated cladding system, provided additional ventilation and vapour permeable membranes are incorporated where necessary (see section 8).

Durability — in normal UK conditions, the product will have a life expectancy in excess of 30 years (see section 10).

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: 29 September 2020

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.

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Regulations

In the opinion of the BBA, Parklex Façade Wall Cladding Panels, 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	Loading
Comment:		The product is acceptable for use as set out in sections 6.1 and 6.6 of this Certificate.
Requirement:	B3(4)	Internal fire spread (structure)
Comment:		The product is restricted by this Requirement. See section 7.2 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The product is restricted by this Requirement. See sections 7.1, 7.3, 7.4 and 7.7 of this Certificate.
Requirement:	C2(b)(c)	Resistance to moisture
Comment:		The product will satisfy this Requirement. See section 8 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The product is acceptable. See sections 10.1 and 10.2 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship
Comment:		The product is restricted by this Regulation. See section 7.1 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The use of the product satisfies the requirements of this Regulation. See sections 9, 10.1 and 10.2 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(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 sections 6.1 and 6.6 of this Certificate.
Standard:	2.4	Cavities
Comment:		The product is restricted by this Standard, with reference to clauses 2.4.1 ⁽¹⁾⁽²⁾ , 2.4.2 ⁽¹⁾⁽²⁾ , 2.4.5 ⁽¹⁾⁽²⁾ and 2.4.9 ⁽¹⁾⁽²⁾ . See section 7.2 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The product is restricted by this Standard, with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See sections 7.1, 7.3, 7.5, 7.6, 7.8 and 7.9 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The product is restricted by this Standard, with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ , 2.6.6 ⁽²⁾ and 2.7.1 ⁽¹⁾⁽²⁾ respectively. See sections 7.1, 7.3, 7.5, 7.6, 7.8 and 7.9 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product will contribute to satisfying this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ to 3.10.3 ⁽¹⁾⁽²⁾ , 3.10.5 ⁽¹⁾⁽²⁾ and 3.10.6 ⁽¹⁾⁽²⁾ . See section 8 of this Certificate.

Standard: 7.1(a) **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 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(a)(i) **Fitness of materials and workmanship**
Comment: (iii) The product is acceptable. See sections 10.1 and 10.2 and the *Installation* part of this Certificate.

Regulation: 28 **Resistance to moisture and weather**
Comment: The product will contribute to satisfying this Regulation. See section 8 of this Certificate.

Regulation: 30 **Stability**
Comment: The product is acceptable. See sections 6.1 and 6.6 of this Certificate.

Regulation: 35(a) **Internal fire spread – Structure**
Comment: The product is restricted by this Regulation. See section 7.2 of this Certificate.

Regulation: 36(a) **External fire spread**
Comment: The product is restricted by this Regulation. See sections 7.1, 7.3, 7.4 and 7.7 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: 13 *Procedure* (13.5) of this Certificate.

Additional Information

NHBC Standards 2020

In the opinion of the BBA, Parklex Façade Wall Cladding Panels, 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*.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 438-7 : 2005.

1 Description

1.1 Parklex Façade Wall Cladding Panels comprise a wood-fibre core impregnated with thermosetting resin, with a wood veneer on either side, compressed at high pressure and temperature to form a ‘high-pressure laminate’ (HPL) panel. The panels can be fixed to a timber or aluminium sub-frame, to provide a decorative/protective façade over the external walls of buildings (see Figure 1).

1.2 The panels have the following characteristics and dimensions:

Size (mm)	2440 by 1220 (panels can be cut to smaller sizes to suit project requirements) ⁽¹⁾
Thickness (mm)	8, 10
Mean density (kg·m ⁻³)	1416
Colours	Gold, Ambar, Rubí, Antra, Copper, Onix, Silver, Bronze, Moss, Quartz
Finishes	Smooth.

(1) See section 13.5.

1.3 Two panel grades are available, the standard panel ‘Parklex Façade S’ and the fire-retardant panel ‘Parklex Façade F’.

Figure 1 Panel

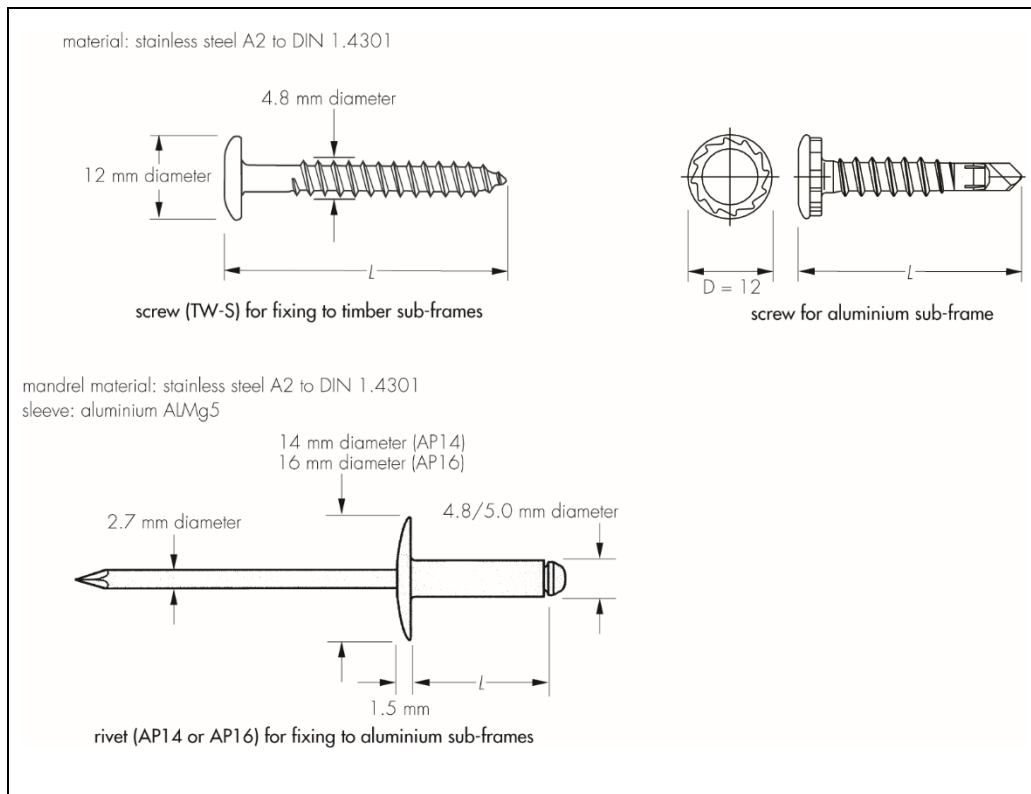


1.4 The product is fixed to timber sub-frames using stainless steel screws, and to aluminium sub-frames using stainless steel screws or aluminium rivets with stainless steel mandrels (see Table 1 and Figure 2).

Table 1 Panel fixing requirements

Panel thickness (mm)	Fixing type	Length of fixing (mm)	
		timber sub-frame	aluminium sub-frame
8, 10,	screw	38	32
8	rivet	—	16
10	rivet	—	18

Figure 2 Fastener details



1.5 The sub-frame and its attachment to the substrate wall, as well as other components such as insulation, cavity barriers and vapour permeable membrane and miscellaneous products required to create a cladding system, are outside the scope of this Certificate.

1.6 The panel characteristics are given in Table 2 (checked by testing in accordance with BS EN 438-6 : 2005 and BS EN 438-7 : 2005).

Table 2 Panel characteristics

Property	Panel grade	Thickness (mm)	Value
Tensile strength	F	10	>60 MPa
	S	8	
Flexural strength	F	10	>80 MPa
	S	8	
Flexural modulus	F	10	>9000 MPa
	S	8	
Resistance to wet conditions	F	10	increase in mass <5% appearance grade 5
	S	8	
Dimensional stability at elevated temperature	F	10	accumulated dimensional variation longitudinal < 0.30% transversal < 0.60%
	S	8	
Shatter resistance	F	10	drop height 1800 mm (Pass)
	S	8	
Density	F	10	>1350 kg·m ⁻³
	S	8	

2 Manufacture

2.1 The product is manufactured from wood-fibre layers and thermosetting resins which are compressed at high pressure and temperature to form an HPL panel. Parklex Façade F panels incorporate an inorganic salt flame-retardant agent, which is added to the core.

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 Parklex International has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by AENOR (Certificate ER-0120/2018).

2.4 The product is manufactured in Spain and marketed in the UK by Parklex International S.L.U. Tel: +44 333 123 1121, e-mail: uk@parklex.com, website: www.parklex.com.

3 Delivery and site handling

3.1 The product is delivered on pallets, with the external face protected with a layer of polythene film. Every panel carries an imprint bearing the Certificate holder's name and production batch number and a label bearing the BBA logo incorporating the number of this Certificate.

3.2 The pallets must be stored on a dry, flat and level surface and must be protected from the weather at all times, preferably in an internal environment. Extremes of temperature, humidity and exposure to UV prior to installation must be avoided. To prevent distortion, panels must not be stacked upright or angled to one side.

3.3 The product should be handled with care to avoid damage, and lifted off rather than slid across each other.

3.4 The protective film on the product should not be exposed to extremes of temperature or humidity and must be removed immediately after installation.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Parklex Façade Wall Cladding Panels.

Design Considerations

4 Use

4.1 Parklex Façade Wall Cladding Panels are satisfactory for use as a protective/decorative façade fixed to a timber or aluminium sub-frame on the external walls of timber frame, masonry, or steel frame of domestic and non-domestic buildings.

4.2 The substrate wall and the sub-frame to which the cladding Panels are fixed must be structurally sound and satisfy the requirements of the relevant national Building Regulations and European or national Standards.

4.3 For substrate walls, the designer must ensure:

- brickwork or blockwork walls are constructed in accordance with the relevant sections of BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their UK National Annexes, and PD 6697 : 2010 or one of the technical specifications given in the relevant national Building Regulations guidance

- timber or timber frame walls are constructed in accordance with the relevant sections of BS EN 1995-1-1 : 2004 and its UK National Annex, and preservative-treated in accordance with BS 8417 : 2011. Guidance on recommended wood preservation is given in *NHBC Standards 2018, Part 3 General, Chapter 3.3 Timber preservation (natural solid timber)*
- metal framework walls are constructed in accordance with the relevant sections of BS EN 1993-1-1 : 2005 and its UK National Annex. The installation of vertical timber battens or metal support rails must be aligned and fixed directly through to the vertical structural metal framework.

4.4 The wall to which the cladding panels are fixed must be watertight and resistant to the transmission of sound.

4.5 As the rainscreen is open-jointed, ventilation and drainage must be provided behind the cladding. All ventilation openings around the periphery of the system should be suitably protected with mesh to prevent the ingress of birds, vermin and insects. Additional guidance on minimum recommended cavity widths is given in *NHBC Standards 2020, Chapters 6.2 and 6.9* (see also section 8.2 of this Certificate).

4.6 All insulation installed behind the cladding panels must to be suitably fixed to the supporting wall and protected to resist the forces of wind suction. Insulation should be of a rigid type (eg boards) and, where its performance could be diminished by moisture, a breather membrane should be provided over its outer face.

5 Practicability of installation

The panels are designed to be installed by competent façade contractors, carpenters or other building specialists. The Certificate holder can provide on-site or remote training.

6 Strength and stability



6.1 Design wind actions should be calculated in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. Due consideration should be given to higher pressure coefficients applicable to corners of the building as recommended in this Standard. In accordance with BS EN 1990 : 2002, it is recommended that a wind load factor of 1.5 is used to determine the ultimate wind load to be resisted by the system.

6.2 The supporting wall must be able to take the full wind and any racking loads on its own. It can be assumed that the panels do not contribute in this regard.

6.3 A suitably qualified engineer must check the design and installation of the cladding panels and must ensure that:

- the sub-frames are designed to limit mid-span deflections in accordance with the relevant codes and standards (ie length span deflections to L/200 and cantilever length span deflections to L/150).
- the product is fixed to timber or aluminium sub-frames using the specified fixings (see Table 1 and Figure 2). When checking the design, the pull-through resistance values of the fixings shown in Table 3 should be used. Edge and corner fixings should be positioned at no less than 20 mm and no more than 40 mm from panel edges.

Table 3 Design pull-through capacity of fixings⁽¹⁾⁽²⁾ (N)

Panel thickness (mm)	Fixing centres ⁽³⁾ (mm)	Fixing positions		
		middle	edge	corner
8	≤400	500	260	195
	≤600	400	235	190
10	≤600	600	410	245
	≤700	600	380	230

(1) A limiting pull-out value of 600 N has been considered for the screw specified in Figure 2 with a 25 mm minimum embedment in timber.

(2) A partial factor of 3.5 has been applied to the ultimate load obtained by testing.

(3) For intermediate fixing centres, linear interpolation may be used.

6.4 Fixing of the sub-frame to the supporting wall must have adequate pull-out resistance (not covered by 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 should be determined in

accordance with the guidance given in EOTA TR055, using 50% of the mean value of the five smallest measured values at the ultimate load.

6.5 Design wind resistances (positive or negative) for two stud spacings (600 and 400 mm), using the specified fixings (see Table 1 and Figure 2) at 20 to 25 mm edge distance, are given in Tables 4 and 5 respectively.

Table 4 Design wind resistance ($N \cdot m^{-2}$)⁽¹⁾ — 600 mm timber stud spacing

Fixings layout ⁽²⁾ V x H	Panel thickness (mm)	Fixing centres along studs (mm)				
		300	400	500	600	700
2 x 2	8	1310	1310	1310	1060	670
	10	2560	2560	2560	2080	1310
n x 2	8	1310	1310	1210	1010	870
	10	2560	2560	2100	1760	1410
2 x n	8	1840	1420	1160	980	670
	10	>3000	2480	2020	1710	1310
n x n	8	1420	1070	850	710	610
	10	2140	1600	1280	1070	920

(1) The design resistance values are the lesser of those based on the design pull-through capacity of fixings (see Table 3) or those obtained by limiting the maximum deflection of the panels to $\leq \text{span}/100$.

(2) V = vertical, H = horizontal, n = number of fixings ≥ 3 .

Table 5 Design wind resistance ($N \cdot m^{-2}$)⁽¹⁾ — 400 mm timber stud spacing

Fixings layout ⁽²⁾ V x H	Panel thickness (mm)	Fixing centres along studs (mm)				
		300	400	500	600	700
2 x 2	8	>3000	>3000	1840	1060	670
	10	>3000	>3000	>3000	2080	1310
n x 2	8	>3000	2480	1810	1520	1310
	10	>3000	3000	>3000	2650	2110
2 x n	8	>3000	>3000	1840	1060	670
	10	>3000	>3000	>3000	2080	1310
n x n	8	2500	1910	1230	1030	890
	10	>3000	2290	1850	1550	1340

(1) The design resistance values are the lesser of those based on the design pull-through capacity of fixings (see Table 3) or those obtained by limiting the maximum deflection of the panels to $\leq \text{span}/100$.

(2) V = vertical, H = horizontal, n = number of fixings ≥ 3 .

Impact resistance

6.6 When tested for soft and hard body impacts resistance in accordance with EAD 090062-00-0404 : 2018, the panel achieved suitable resistance for use; all thicknesses of the panel can be used in zones classified as categories I, II, III and IV as defined in Table G.2 of EAD 090062-00-0404 : 2018, an abstract of which is shown in Table 6 of this Certificate.

Table 6 Definition of impact use categories (reproduced from EAD 090062-00-0404, Table G.2)

Use category	Description
I	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.

6.7 For installations with a sub-frame other than those described in this Certificate, impact resistance tests must be carried out in accordance with EAD 090062-00-0404 : 2018 by a UKAS-accredited laboratory, and appropriate impact Use Categories determined in accordance with this Standard. The classification determined from the tests will depend on the distance between the centres of support and will establish the areas where the completed cladding system can be used.

7 Behaviour in relation to fire



7.1 The external surface of the cladding panels achieved a reaction to fire classification in accordance with BS EN 13501-1 : 2007 as shown in Table 7 of this Certificate. The reaction to fire classification for specific build-ups may vary and must be confirmed by an appropriately qualified fire expert, or testing at a laboratory accredited by UKAS or a mutually recognised accreditation scheme.

7.2 The reverse side of the panels (facing into the cavity) has not been assessed or classified in this Certificate. Cavity barriers should be incorporated behind the cladding in accordance with the requirements of the documents supporting the national Building Regulations.

7.3 The fixings and the support system are not classified as ‘non-combustible’ in accordance with the documents supporting the national Building Regulations and are subject to any restrictions on building height and proximity to boundaries.

Table 7 Reaction to fire classification of panels to BS EN 13501-1 : 2007

Panel Type ⁽¹⁾	Thickness ⁽²⁾ (mm)	Fire classification	Reaction to fire classification report reference ⁽³⁾
Parklex Façade F	6 mm	B-s1, d0	CSTB, RA17-0079 April 10 2017
Parklex Façade S	6 mm	C-s1, d0	CSTB, RA17-0077 April 10 2017

(1) Various colours fixed to wooden or metal subframe with any A1 or A2-s1,d0 substrate and minimum air gap of 30 mm.

(2) The fire classification can be achieved by nominal panel thicknesses greater than 6 mm, as specified in the fire reports. However, it is recommended that fire classifications of particular thicknesses should be confirmed through assessment or test by a UKAS-accredited body or suitably recognised laboratory.

(3) Copies are available from the Certificate holder on request

Parklex Façade F



7.4 In England, Wales and Northern Ireland, the panels are not classified as ‘non-combustible’ or ‘of limited combustibility’ and may be used on buildings at any proximity to a boundary and with no storey 18 m or more above the ground.



7.5 In Scotland, the panels are not classified as ‘non-combustible’, and may be used on buildings more than 1 m from a boundary and, on houses, 1 m or less from a boundary. With minor exceptions, the panels should be included in calculations of unprotected area, except on houses where the external wall behind has the appropriate fire resistance.

7.6 In Scotland, the panels should not be used on any building with a storey more than 11 m above the ground, or on any entertainment or assembly building with a total storey area more than 500 m², or on any hospital or residential care building with a total storey area more than 200 m².

Parklex Façade S



7.7 In England, Wales and Northern Ireland the panels are not classified as 'non-combustible' or 'of limited combustibility' and may be used on buildings with no storey more than 18 m above the ground and 1 m or more from a boundary. With minor exceptions, the panels should be included in calculations of unprotected area.



7.8 In Scotland the panels are not classified as 'non-combustible' and may be used on buildings more than 1 metre from a boundary. With minor exceptions, the panels should be included in calculations of unprotected area.

7.9 In Scotland, the panels should not be used on any building with a storey more than 11 m above the ground, or on any entertainment or assembly building with a total storey area more than 500 m², or on any hospital or residential care building with a total storey area more than 200 m².

7.10 Designers should refer to the relevant national Building Regulations and guidance for alternative approaches and 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, breather membrane, timber battens).

8 Air and water penetration



8.1 The panels are suitable for use in back-ventilated and drained cladding systems.

8.2 To satisfy NHBC requirements (see *NHBC Standards 2020*, Chapters 6.2, 6.9 and 6.10.18), panels must satisfy the minimum opening joint required between panels and the minimum drained and ventilated cavity gap behind the cladding where baffle jointed (ie used in conjunction with horizontal joint profiles) or open jointed. In addition, a minimum 500 mm² ventilation slots per metre wall length, in accordance with BS 5250 : 2011, must be provided for a minimum 38 or 50 mm cavity behind cladding installed over timber- and steel-framed backing walls.

8.3 The panels are not weathertight and when used on timber frame walls must be backed by a wall breather membrane (see section 1.5) acting as a vapour-permeable water barrier, incorporated behind the cladding under the supporting battens.

9 Maintenance



9.1 Annual maintenance inspections should be carried out to ensure that rainwater goods are complete and in good order and that flashings, seals and fastenings are in place and secure, and to establish whether cleaning is necessary.

9.2 For normal soiling, the surface may be cleaned using hot water/household detergent applied with a suitable cleaning pad or sponge. Abrasive cleaners should not be used. For more difficult chemical soiling, the Certificate holder's advice must be sought.

9.3 Damaged panels should be replaced as soon as practicable following the Certificate holder's instructions and observing all necessary health and safety regulations.

10 Durability



10.1 The durability and service life of the product will depend upon the building location, façade aspect and immediate environment.

10.2 Provided regular maintenance is carried out, as described in section 9 and in accordance with the Certificate holder's instructions, the product should have a service life in excess of 30 years.

10.3 In general, there will be some colour change. However, this should not be excessive and will be uniform on any one elevation.

11 Reuse and recyclability

The wood-fibre core and thermosetting resin-impregnated wood veneer can be readily recycled.

Installation

12 General

12.1 Parklex Façade Wall Cladding Panels must be installed in accordance with the Certificate holder's recommendations, the requirements of this Certificate and specifications laid down by the consulting engineer. Typical installations are shown in Figure 3.

12.2 The Certificate holder can provide training in the correct handling, storage and general installation of the panel. The Certificate holder can also provide basic technical guidance at the design stage. However, the façade design must be engineered and completed by a competent person familiar with current UK building regulations and (if appropriate) building insurer requirements.

12.3 As the product is manufactured from fine timber veneers, colour variations within single or multiple batches are inevitable. It is, therefore, necessary to mix the panels from different pallets in order to obtain a uniform shade over the façade.

13 Procedure

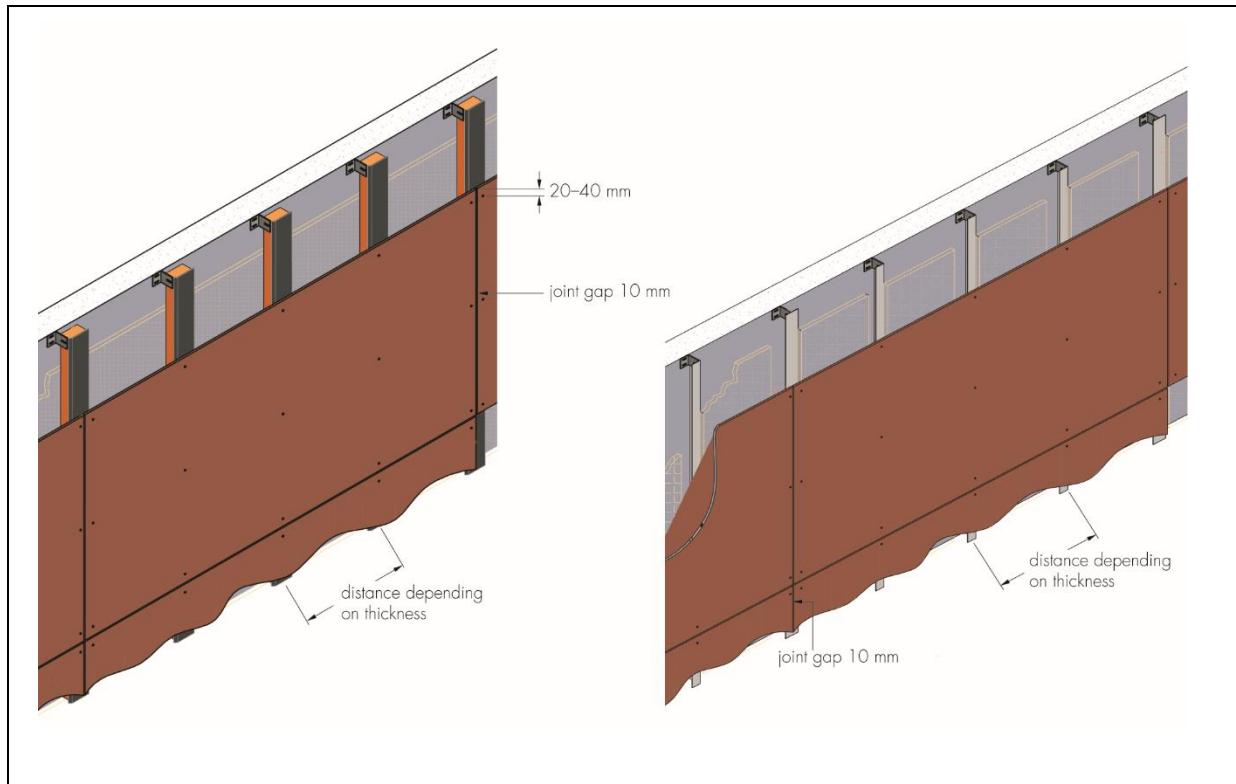
13.1 A grid layout for the sub-frame is first prepared, based on a preliminary survey of the wall and architectural/structural design.

13.2 The timber or metal studs are fixed to the substrate wall at no more than 600 mm centres, either directly or via adjustable metal cleats.

13.3 A suitable rigid insulation is applied, if required.

13.4 A suitable vapour permeable membrane (not covered by this Certificate) should be applied to the substrate wall or insulation to protect it from wind-driven rain. The timber or metal studs should be similarly protected using an aluminium or EPDM strip.

Figure 3 Typical installation detail: panel mounting on timber sub-frame, and aluminium sub-frame



13.5 Owing to the high density of the product, cutting is achieved using conventional commercial-grade carpentry machines equipped with hard metal accessories. Cutting is carried out at a slower speed than with natural wood, and circular saw blades must have characteristics similar to those used to machine high-pressure laminate or melamine panels (more information is available from the manufacturer). When handling the panels, protective gloves must always be worn owing to the possible presence of sharp edges. Contact with dust from high-pressure laminates does not normally pose a health risk, but may present a problem for those sensitive to allergies.

13.6 Panels are fixed to the sub-frame using the appropriate fixings or screws, as specified.

13.7 To locate a panel accurately on the sub-frame, one fixing at the centre of the panel should be of close tolerance type. To allow for expansion, all other fixings should be in clearance holes 3 mm larger than the diameter of the screw or rivet used.

14 Repair

Damaged products must be replaced. Minor surface damage may be repaired using an appropriate paint; the Certificate holder may be contacted for advice.

Figure 4 Typical installation detail: window and corner details

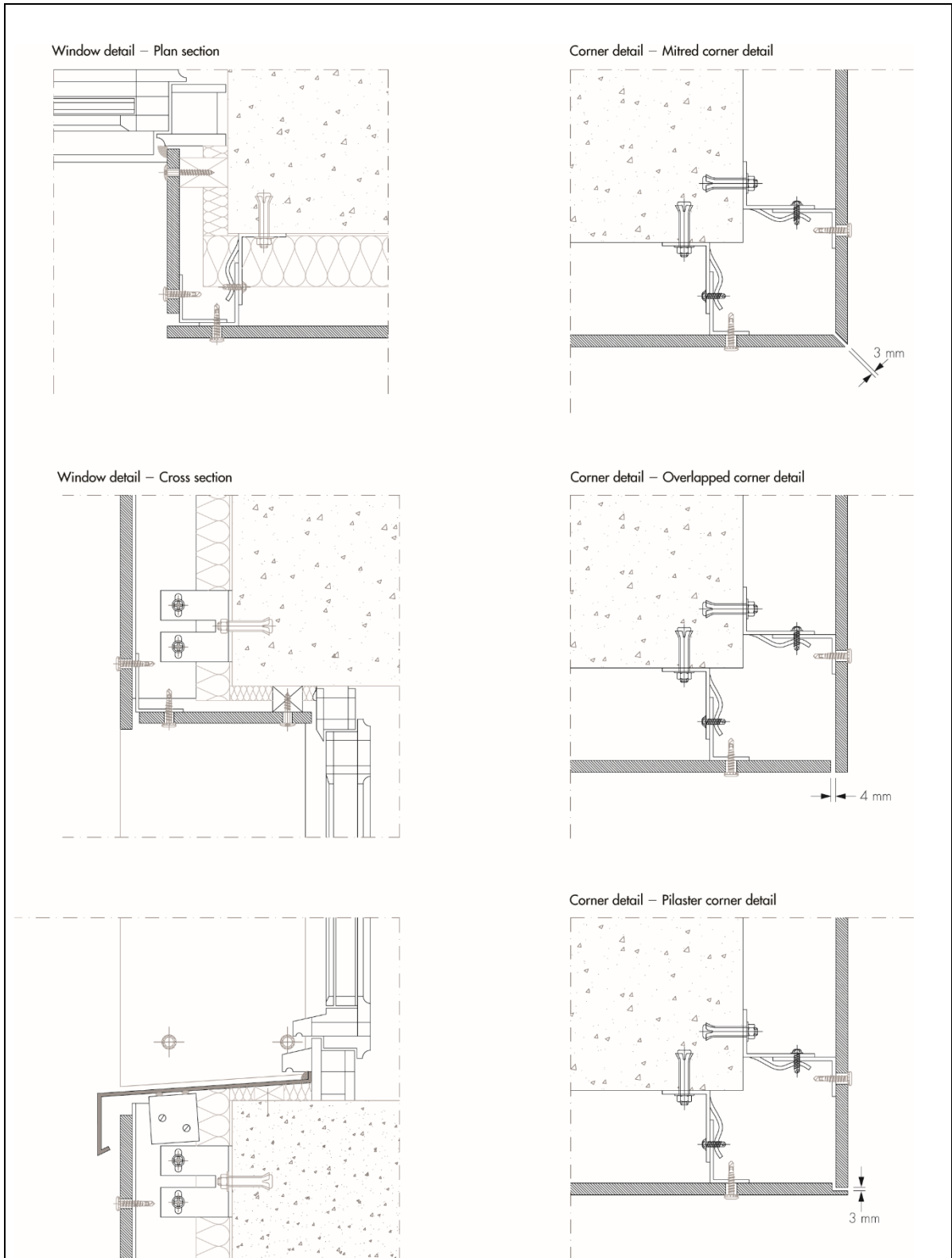


Figure 5 Typical Installation detail: fixed and floating point

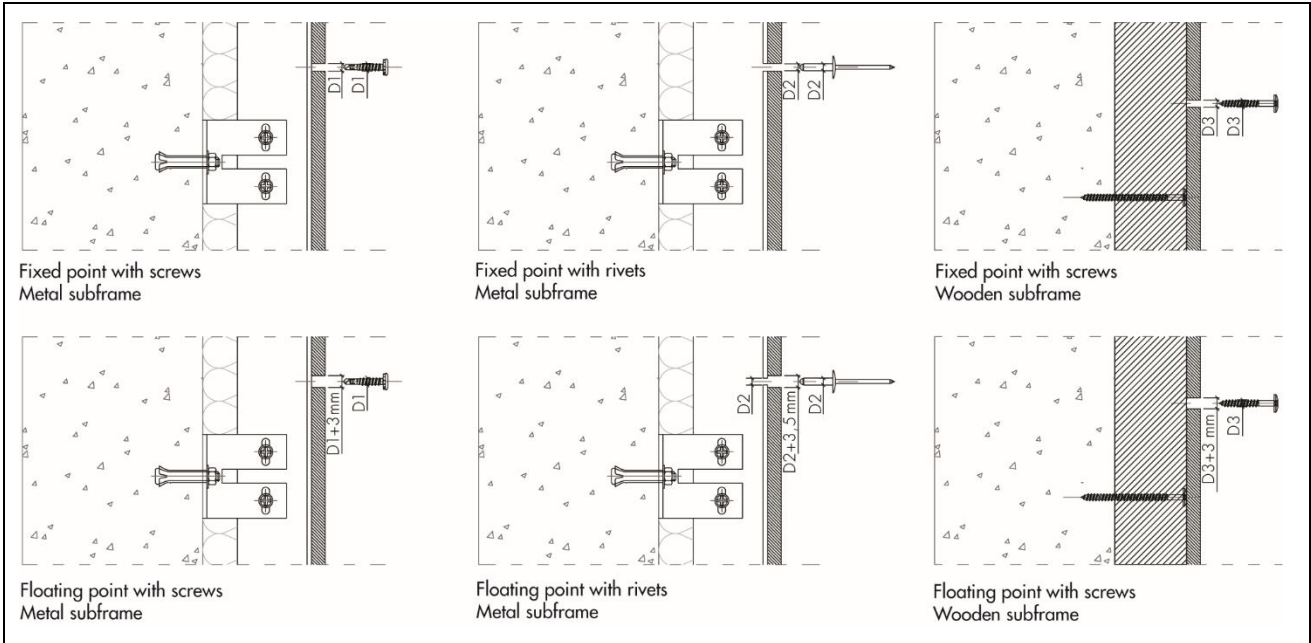
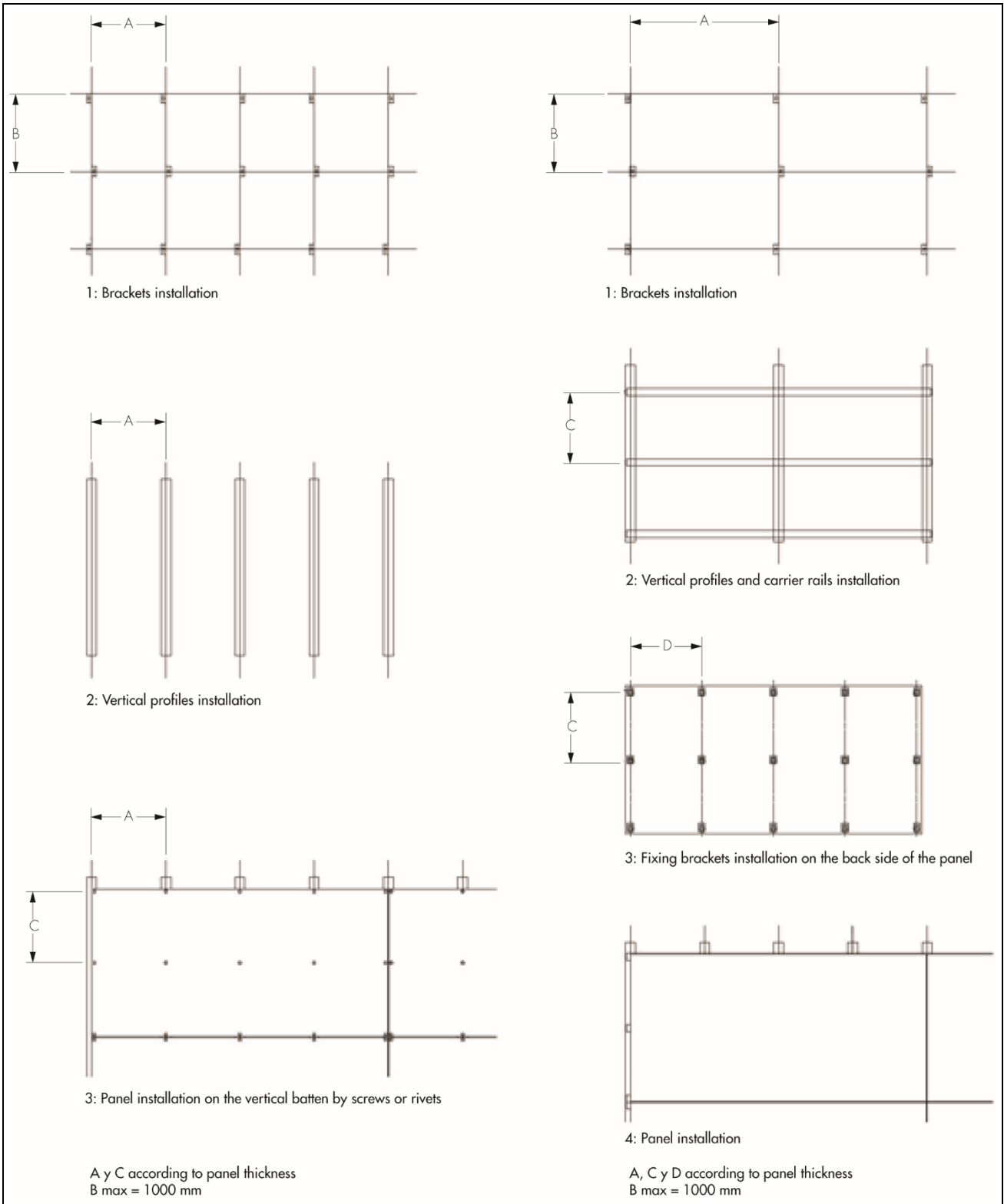


Figure 6 Typical installation detail: installation process



15 Tests

15.1 Test reports on the product were assessed to determine:

- resistance to wind loading
- impact resistance
- durability
- behaviour in relation to fire.

15.2 From test data, the panel exceeded the minimum requirements for:

- climatic shock (BS EN 438-2 : 2005)
- artificial weathering (BS EN ISO 4892-2 : 2006)
- exposure to UV light (BS EN 438-2 : 2005).

16 Investigations

16.1 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.

16.2 An assessment was made of test reports relating to the reaction to fire classification of the product to BS EN 13501-1 : 2007.

16.3 An assessment was made of the product's practicability of installation and performance in use.

Bibliography

- BS EN 438-2 : 2005 *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Determination of properties*
- BS EN 438-6 : 2005 *Decorative high-pressure laminates (HPL) sheets based on thermosetting resins — Classification and specifications for exterior-grade compact laminates of thickness 2 mm and greater*
- BS EN 438-7 : 2005 *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Compact laminate and HPL composite panels for internal and external wall and ceiling finishes*
- 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 1993-1-1 : 2005 + A1 : 2014 *Eurocode 3 — Design of steel structures — General rules and rules for buildings*
- UK NA to BS EN 1993-1-1 : 2005 + A1 : 2014 UK National Annex to *Eurocode 3 — Design of steel structures — General rules and rules for buildings*
- BS EN 1996-1-1 : 2005 + A1 : 2012 *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- BS EN 13501-1 : 2007 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
- BS EN ISO 4892-2 : 2006 *Plastics — Methods of exposure to laboratory light sources — Xenon-arc lamps*
- BS EN ISO 9001 : 2015 *Quality management systems — Requirements*
- BRE Report BR 135 : 2013 *Fire performance of external insulation for walls of multi-storey buildings*
- EAD 090062-00-0404 – 2018 *European Assessment Document — Kits for external wall claddings mechanically fixed*
- EOTA TR055 *Design of fastenings based on EAD 330232-00-0601, EAD 330499-00-0601 and EAD 330747-00-06-01. 2018.*

17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.