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Agrément Certificate
16/5346
Product Sheet 1

COSENTINO CERAMIC PANELS

DEKTON RAINSCREEN CLADDING PANELS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Dekton⁽²⁾ Rainscreen Cladding Panels, dry-pressed ceramic panels for fixing to an aluminium support sub-frame, and for use as a drained and back-ventilated façade on external masonry, concrete or steel frame walls of new and existing buildings.

(1) Hereinafter referred to as 'Certificate'.

(2) Dekton is a registered trademark.

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

Structural performance — a system incorporating the products can be designed to resist wind loads normally encountered in the UK (see section 6).

Air and water penetration — the products will minimise water entering the cavity. Any water collecting in the cavity will be removed by drainage and ventilation (see section 7).

Behaviour in relation to fire — the panels have an A1 reaction to fire classification to BS EN 13501-1 : 2007 (see section 8).

Durability — in normal UK conditions, the products should 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 products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Brian Chamberlain
Head of Technical Excellence

Claire Curtis-Thomas
Chief Executive

Date of First issue: 31 August 2016

Certificate amended on 22 January 2019 to include Regulation 7(2) for England and associated text.



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 are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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, Dekton Rainscreen 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 products are acceptable for use as set out in sections 4.4 and 6 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The products are unrestricted by this Requirement. See sections 8.1, 8.2 and 8.4 of this Certificate.
Requirement:	C2(b)(c)	Resistance to moisture
Comment:		The products will satisfy the stated requirements. See section 7 of this Certificate.
Regulation:	7	Materials and workmanship (Applicable in Wales only)
Regulation:	7(1)	Materials and workmanship (Applicable in England only)
Comment:		The products are acceptable. See sections 10.1 to 10.3 and the <i>Installation</i> part of this Certificate.
Regulation:	7(2)	Materials and workmanship (Applicable in England only)
Comment:		The products are unrestricted by this Regulation. See sections 8.1 and 8.4 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The products can contribute to a construction satisfying this Regulation. See sections 9 and 10.1 to 10.3 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The products are acceptable, with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See sections 4.4 and 6 of this Certificate.
Standard:	2.4	Cavities
Comment:		The products, when used in conjunction with fire-resistant materials, can satisfy this Standard, with reference to clauses 2.4.1 ⁽¹⁾⁽²⁾ , 2.4.2 ⁽¹⁾⁽²⁾ and 2.4.9 ⁽¹⁾⁽²⁾ . See section 8.5 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The products are unrestricted by this Standard with respect to clauses 2.6.4 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See sections 8.1, 8.2 and 8.4 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The systems are unrestricted by this Standard with respect to clause 2.7.1(1)(2). See sections 8.1, 8.2 and 8.4 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products 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 7 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The products can contribute to satisfying the relevant Requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards applicable to conversions
Comment:		All comments given for the products under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23(a)(i)(iii)(b)	Fitness of materials and workmanship
Comment:		The products are acceptable. See sections 10.1 to 10.3 and the <i>Installation</i> part of this Certificate.
Regulation:	28	Resistance to moisture and weather
Comment:		The products will contribute to satisfying this Regulation. See section 7 of this Certificate.
Regulation:	30	Stability
Comment:		The products are acceptable as set out in sections 4.4 and 6 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The products are unrestricted by this Regulation. See sections 8.1, 8.2 and 8.4 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 sections:

3 *Delivery and site handling* (3.1, 3.3 and 3.4), 9 *Maintenance and repair* (9.3), 11 *Installation-General* (11.5) and 12 *Procedure* (12.5) of this Certificate.

Additional Information

NHBC Standards 2016

NHBC accepts the use of Dekton Rainscreen Cladding Panels, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.9 *Curtain walling and cladding*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 14411 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Dekton Rainscreen Cladding Panels comprise a range of ceramic cladding elements, incorporating an anti-shatter mesh glued on the back face to prevent loose chippings in the event of tile damage. The panels are fixed onto a vertical sub-frame via purpose-made aluminium hangers, horizontal aluminium support rails and horizontal steel profiles⁽¹⁾.

(1) Aluminium hangers and support rails and horizontal steel profiles are outside the scope of this Certificate.

1.2 The panels are manufactured from a mixture of clays and feldspars in accordance with the requirements of BS EN 14411 : 2012. The dimensions and characteristics of the panels are given in Table 1.

Table 1 Characteristics of Dekton Rainscreen Cladding Panels

Product group	Colour	Finish	Design	Thickness (mm)	Dimensions (mm x mm)	Density (kg·m ⁻³)
Family I	Domoos	Smooth matte	Grooved edges (at the top and the bottom) or undercut drill holes (at the rear)	12 and 20	3200 x 1440 ⁽¹⁾	2540 ± 100
	Popular Dark					
	Sirocco					
	Strato					
	Kadum					
	Keranium					
	Vegha					
	Kelya					
	Galema					
	Ventus	Textured slate-like				
	Korus					
	Keon					
	Sirius	Textured wood-like				
	Valterra					
	Ananke	Polished				
Aldem						
Borea						
Odin						
Spectra	Polished					
Lumina						
Splendor						
Blaze						
Family II	Zenith	Smooth matte	Grooved edges (at the top and the bottom) or undercut drill holes (at the rear)	12 and 20	3200 x 1440 ⁽¹⁾	2540 ± 100
	Aura 1.5					
	Kairos					
	Entzo					
	Ariane	Textured wood-like				
	Halo					
	Glacier	Polished				
Fiord						
Tundra						
Family III	Danae	Smooth matte	Grooved edges (at the top and the bottom) or undercut drill holes (at the rear)	12 and 20	3200 x 1440 ⁽¹⁾	2540 ± 100
	Popular					
	Warm					
	Sterling					
	Sarey					
	Irok					
	Blanc	Textured slate-like				
	Concrete					
	Dove					
	Gada					
	Edora	Textured wood-like				
	Makai					
Aged Timber						
Bento						
Family IV	Trilium	Smooth matte				

(1) Smaller sizes (eg corner panels) are available on request.

1.3 Groove-edged panels have a groove cut along the top and bottom sections of the panel and are either fully supported along the width by horizontal aluminium rails (two per cladding element, one at the top and one at the bottom) or secured onto each vertical rail with steel clips (a minimum of four per cladding element, two at the top and two at the bottom). Details and dimensions are shown in Figure 1 and Table 2.

Figure 1 Groove-edged panel details

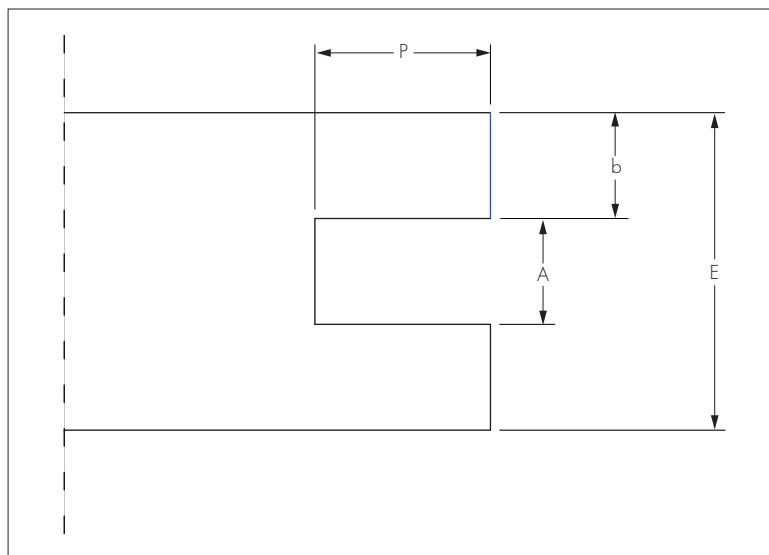


Table 2 Groove-edged panels — dimensions

Cladding fixing	Thickness E (mm)	Groove dimensions (mm)		
		B	A	P
Aluminium rails	12	4	4	10
	20	8	4	10
Steel clips	12	4	4	15
	20	8	4	15

1.4 Square-edged panels are provided with undercut drill holes at the rear for attachment of Keil undercut anchors⁽¹⁾ (see Figure 2), which are used to secure the panels to purpose-made aluminium hangers fixed onto the vertical sub-frame. A minimum of four anchors is needed to support one cladding element.

(1) Included in the scope of this Certificate.

Figure 2 Panels with Keil Anchors fixed into undercut drill holes



1.5 The specifications of the recommended fasteners and support rails are:

- Keil KH 7,0 undercut anchor (see Figure 3) — to specifications as detailed in ETA 12/0583. The anchor sleeve is stainless steel 1.4404 (X2CrNiMo17-12-2) while the screw is manufactured in the following stainless steel grades:
 - 1.4401 (X5CrNiMo17-12-2)
 - 1.4404 (X2CrNiMo17-12-2)
 - 1.4578 (X3CrNiCuMo 17-11-3-2)

- horizontal aluminium rails (see Figure 4) — aluminium alloy AW 6063 T5 in accordance with BS EN 755-2 : 2016
- horizontal steel clips (see Figure 5) — stainless steel 1.4301 (X5CrNi18-10) in accordance with BS EN 10088-1 : 2014 and BS EN 10088-2 : 2014.

Figure 3 Form and dimensions of the Keil KH 7,0 anchor

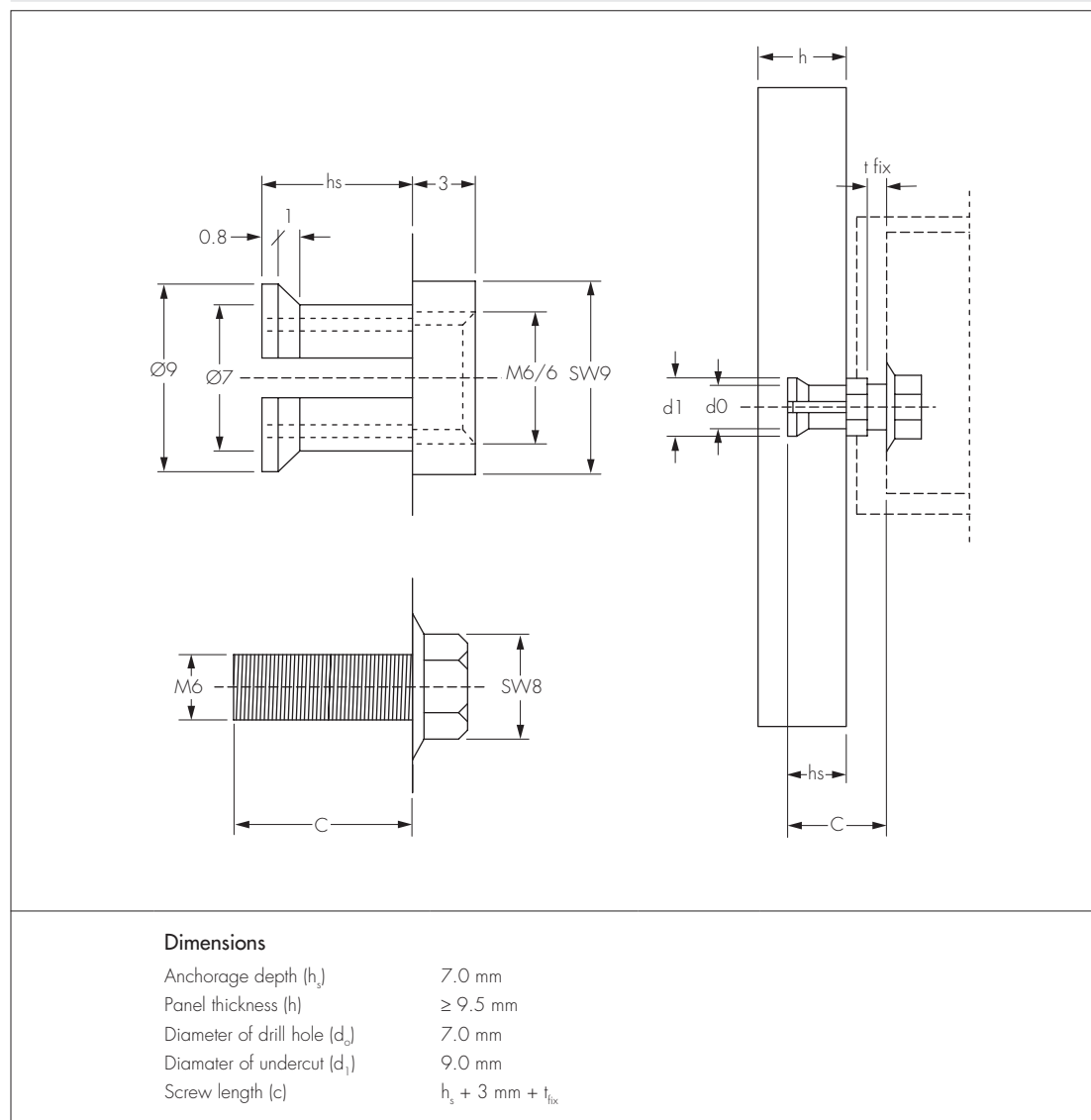


Figure 4 Form and dimensions of the horizontal aluminium rails (standard length 6 m)

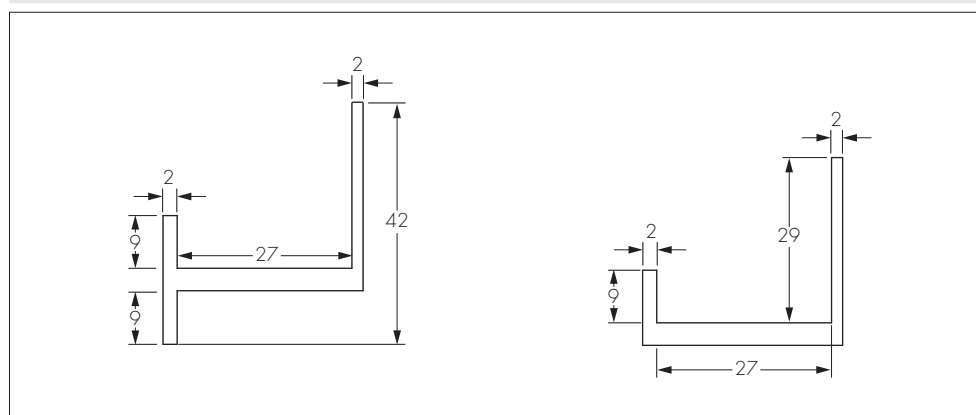
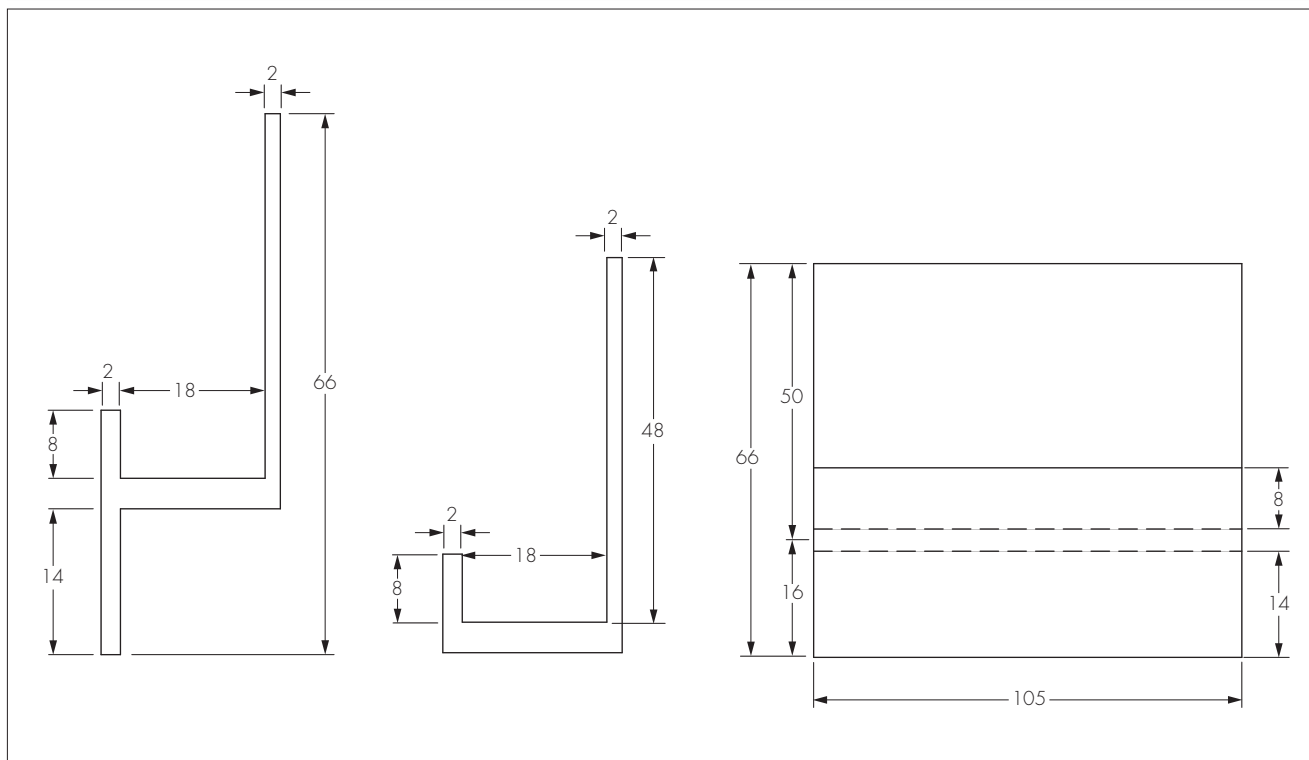


Figure 5 Form and dimensions of the horizontal steel clips



1.6 Other ancillary components used with the products, but outside the scope of this Certificate, include:

- wall bracket — used to fix sub-frame to wall
- wall bracket fixing — used to fix bracket to wall
- cavity barriers — to limit risk of fire spread between floors (see section 8.5)
- insulation (where specified)
- vapour-permeable membrane — to protect insulation from wind-driven rain.

2 Manufacture

2.1 The panels are manufactured in accordance with the requirements of BS EN 14411 : 2012 by sintering the inorganic raw materials to give the required finish. Glassfibre mesh is applied to the back of each panel.

2.2 Cutting to size and provision of undercut recesses to the project specification are carried out in the factory.

2.3 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.

2.4 The management system of the manufacturer, Cosentino S A, has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by Bureau Veritas (Certificate ES054048-1).

3 Delivery and site handling

3.1 The panels are delivered wrapped in polythene sheeting and banded on wooden pallets, provided with polythene supports with anti-slip grooves. At least four wooden strips are used to support the panels and separate the packages.

3.2 Each panel carries a label bearing product details such as colour code and tone, dimensions, batch number and date of production. Each panel is additionally marked with an identification code including manufacturing references and colour.

3.3 Panels should be handled with care to avoid damage or breakage. The use of an alligator clip or a conventional clip (with rubber application) is recommended to handle single panels.

3.4 Good site practice should be observed to prevent damage to the panels. Protective clothing such as safety gloves should be worn as required, and all Health and Safety rules observed.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Dekton Rainscreen Cladding Panels.


Design Considerations

4 General

4.1 Dekton Rainscreen Cladding Panels are satisfactory for use in cladding systems providing open-jointed, back-ventilated, decorative façades on external walls of new and existing buildings.

4.2 It is important for designers, planners, contractors and/or installers to ensure that the installation of the products is in accordance with the Certificate holder's instructions and the information given in this Certificate. All design aspects of the installation should be checked by a suitably-qualified and experienced individual.

4.3 Ventilation and drainage must be provided behind the cladding. The cavity behind the cladding should be at least 50 mm wide, to ensure that a minimum ventilation area of 1000 mm² per metre run of cladding is achieved. The joint gaps between the panels should not be less than 10 mm wide. All ventilation openings around the periphery of the system should be suitably protected with mesh to prevent the ingress of birds, vermin and insects.

 4.4 The wall to which the cladding is fixed must be watertight, resistant to the transmission of heat and sound, structurally sound and constructed in accordance with the requirements of the relevant national Building Regulations and Standards.


4.5 As the rainscreen cladding is open-jointed, any insulation installed behind the cladding needs to be suitably fixed to the supporting wall and protected to resist the forces of wind suction. Where insulation is used it should be of a rigid type (eg boards) and incorporate a breather membrane over its outer face to prevent its performance being diminished by moisture.

5 Practicability of installation

The panels are designed to be installed by competent cladding contractors experienced with these types of products.

6 Structural performance

General actions

 6.1 The design and installation of the cladding system must be checked by a suitably-qualified and experienced individual in accordance with the requirements of the relevant national Building Regulations and Standards.

6.2 Wind loads 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 as recommended in this Standard.

6.3 The supporting substrate wall must have sufficient strength to resist the general actions imparted directly by the cladding system and wind actions normally experienced in the UK, as well as any racking loads, on its own. No contribution from the cladding may be assumed in this regard.

6.4 The designer should ensure the following:

- the design of the sub-frame should be in accordance with the relevant Codes and Standards, and should be such as to limit mid-span deflections to L/200 and cantilever deflections to L/150
- the panels should be fixed to the aluminium sub-frame using the specified fixing mechanisms (see section 1.5 of this Certificate)
- fixing of the support brackets to the supporting frame or wall should ensure adequate tensile pull-out and corrosion resistance (not covered by this Certificate). Site-specific tests should be conducted on the substrate of the building to determine the minimum pull-out resistance to failure of the fixings.

6.5 Both 12 mm and 20 mm thick Dekton Panels were tested for dynamic wind load resistance in accordance with ETAG 034 : 2012, Part 1. The design wind load resistance values were evaluated applying a safety factor of 1.5 to the ultimate wind load resistance and are given in Table 4.

Table 4 Design wind load resistance

Type of fixing	12 mm panel		20 mm panel	
	Wind load resistance (KPa)	Distance between vertical support rails (mm)	Wind load resistance (KPa)	Distance between vertical support rails (mm)
Keil anchor and aluminium bracket	1.6	600	1.6	600
Aluminium profile	1.2	560	1.2	560
Steel clip	1.1	460	1.3	620

Impact loading

6.6 Both 12 mm and 20 mm thick panels were tested for soft and hard body impacts in accordance with ETAG 034 : 2012, Part 1. The classifications achieved during the impact tests are given in Table 5.

Table 5 Impact test results

Type of fixing	12 mm panel		20 mm panel	
	Impact classification	Distance between vertical support rails (mm)	Impact classification	Distance between vertical support rails (mm)
Keil anchor and aluminium bracket	IV	600	III	600
Aluminium profile	III	560	III	560
Steel clip	IV	460	III	800

6.7 In common with all natural stone and ceramic tiles, the panels are susceptible to damage from hard and soft body impacts. Depending on the thickness and the type of fixing used, the panels are restricted for use in zones classified as categories III or IV as defined in Table 4 of ETAG 034 : 2012 (an abstract of which is shown in Table 6 of this Certificate).

Table 6 Definition of all categories from ETAG 034, 6.4.4, Table 4

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

7 Air and water penetration



7.1 The panels have a water absorption value of $E_b < 0,5\%$ to BS EN ISO 10545-3 : 1997.

7.2 The products are suitable for use in back-ventilated and drained cladding systems.

7.3 The supporting wall must be watertight and reasonably airtight.

7.4 Open joints between panels should have a minimum opening of 10 mm as recommended by *NHBC Standards*. As the open joints ensure pressure equalisation, the air cushion within the cavity will reduce the amount of water passing through the joints. Any water collecting in the cavity owing to rain or condensation will be removed by drainage and ventilation.

7.5 The air space between the back of the boards and the supporting wall (or insulation where specified) should be at least 50 mm for open-jointed systems as recommended by *NHBC Standards*.

8 Behaviour in relation to fire



8.1 When tested to BS EN 13501-1 : 2007 the panels achieved an A1 reaction to fire classification and as such may be regarded as non-combustible in relation to the national Building Regulations.

8.2 The panels are suitable for use on, or at any distance from, the boundary.

8.3 For resistance to fire, the performance of a wall incorporating the panels can only be determined by tests, or assessment, from a suitably-accredited laboratory and has not been assessed as part of this Certificate.



8.4 The panels are not subjected to any height restriction when used on a substrate and with components that meet the non-combustibility requirement of materials in the relevant national Building Regulations. When used in conjunction with combustible materials, the whole wall construction should meet the requirements of BRE Report BR 135 : 2013 *Fire performance of external thermal insulation for walls of multistorey buildings* or, for certain high rise buildings in England, the specific requirements of Regulation 7(2).

8.5 To limit the risk of fire spread between floors in buildings subject to national Building Regulations, fire barriers must be incorporated in the cavity behind the products as required under these Regulations, but should not block essential ventilation pathways. Guidance on fire barriers can be found in BRE Report BR 135 : 2013.

8.6 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.

9 Maintenance and repair



9.1 For normal soiling, the surface of the panels may be cleaned using a mixture of hot water and neutral soap, applied with a suitable cleaning pad or sponge. For more difficult chemical soiling, the Certificate holder's specialist advice must be sought.

9.2 Annual maintenance inspections should be carried out to ensure that ventilation and drainage pathways remain clear, that rainwater goods are complete and in good order, and that flashings, seals and fastenings are in place and secure.

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

10 Durability



10.1 The durability and service life of the products will depend upon the building location, immediate environment and general conditions of the components.

10.2 When tested, the ceramic panels meet all the requirements of class B₁ as defined in BS EN 14411 : 2012, Annex G.

10.3 In normal UK exposure conditions, the products should have a service life in excess of 35 years⁽¹⁾.

(1) The Keil undercut anchors used for mechanically attaching the panels to the product support framework have a service life expectancy of 50 years as described in European Technical Assessment ETA 12/0583.

10.4 After natural weathering, a slight colour change in the panels may occur. However, this should be uniform on any one elevation and is not likely to be progressive.

Installation

11 General

11.1 It is important for the designers, planners, contractors and/or installers to ensure that the installation of Dekton Rainscreen Cladding Panels is in accordance with the Certificate holder's recommendations, the requirements of this Certificate and the specifications laid down by a suitably-qualified and experienced individual.

11.2 Reference should be made to Figures 1 and 2 when reading the installation details given in section 13 of this Certificate.

11.3 As minor colour variations between batches may occur, it is recommended to use panels from the same production batch so as to obtain a uniform shade over the façade.

11.4 Owing to manufacturing tolerances, some unevenness on the ceramic surface may occur, but this is unlikely to be excessive or obtrusive.

11.5 The standard panels are heavy, and corners and borders can be chipped if they are not manipulated with care and by at least by two people. Extra care must be taken when installing the panels at heights above two metres.

12 Procedure

General

12.1 Based on the architectural and design specifications, a grid layout is first marked out for the vertical support rails (not covered by this Certificate) and brackets. Accurate grid positioning and installation of the sub-frame is essential to receive the panels. The fixings used to secure the support brackets and the size of the brackets used will depend on the substrate and are outside the scope of this Certificate.

12.2 A suitable rigid insulation (outside the scope of this Certificate) is applied, if required.

12.3 A suitable vapour-permeable membrane (outside the scope of this Certificate) should be applied to the substrate wall or insulation to protect from wind-driven rain. The metal studs should be similarly protected using an aluminium or EPDM strip.

12.4 The panels are secured to the vertical support rails via the anchor system, the steel clips or the aluminium horizontal rails.

12.5 The use of a triple suction lifter is recommended for lifting and installing the panels manually (see Figure 6a). Where the dimensions of the panels do not allow for manual installation, the use of manual glazing trolley mules and vacuum lifting devices is recommended (see Figure 6b).

Figure 6a Manual handling of Dekton Panel for installation



Figure 6b Installation of Dekton Panel with vacuum lifting device



12.6 As all panels are delivered cut to size according to the project specifics, no machining is required on site.

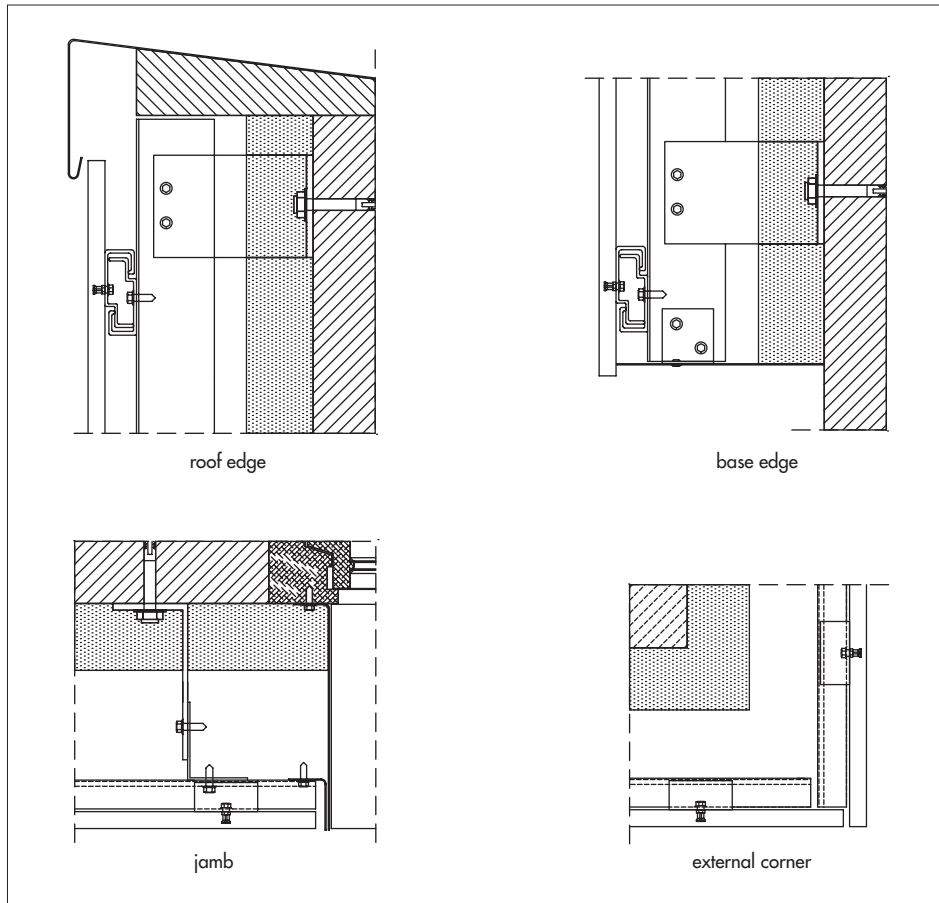
Anchor system

12.7 Anchor undercut holes are factory-drilled in accordance with the specific project design. Undercut holes are positioned at no less than 60 mm and no more than 120 mm from the panel edge.

12.8 On site, the anchor sleeves are placed in the pre-cut holes and the aluminium hangers are fixed to the panel with the anchor screw. The mating hanger is fixed to the vertical support rail through appropriate fixings (outside the scope of the Certificate) and in accordance with the project specifics.

12.9 Working from the bottom and from one of the sides, the ceramic panels are installed by hooking in the mating hangers. Adjustments to the position of the panel are made using the bolt on top of the upper hangers. Once the desired position of the panel is reached, the fixing screw on top of one of the upper clamps is secured to the upper horizontal rail. The procedure is repeated, ensuring that a joint gap of approximately 10 mm is provided between the façade panels (see sections 4.3 and 7.4).

Figure 7 Typical installation details for Dekton Panel with anchor system



Steel clip system and horizontal aluminium rails

12.10 The stainless steel clip system and horizontal aluminium rails are fixed to the vertical rails with appropriate fixings (outside the scope of the Certificate) and in accordance with the project specifics. The height of the panel used is such to fit the vertical span between the aluminium rails or the steel clips.

12.11 Working from the bottom, installation is carried out by sliding the panels into the upper and lower horizontal support rails or clips. The procedure is repeated for each row, ensuring that a joint gap of at least 10 mm is provided between the façade panels (see sections 4.3 and 7.4).

12.12 At least four stainless steel clips per panel are required, the distance between the clips being determined on a project-by-project basis.

Figure 8 Typical installation details for Dekton Panel with aluminium rails

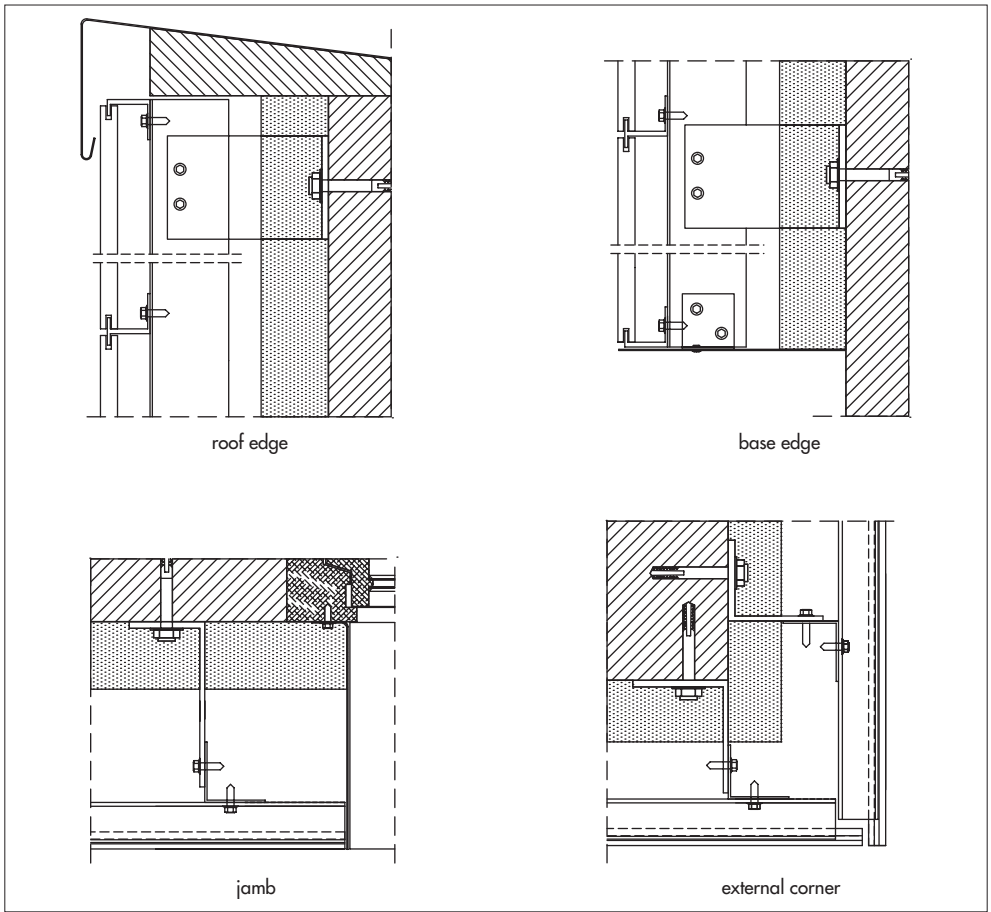
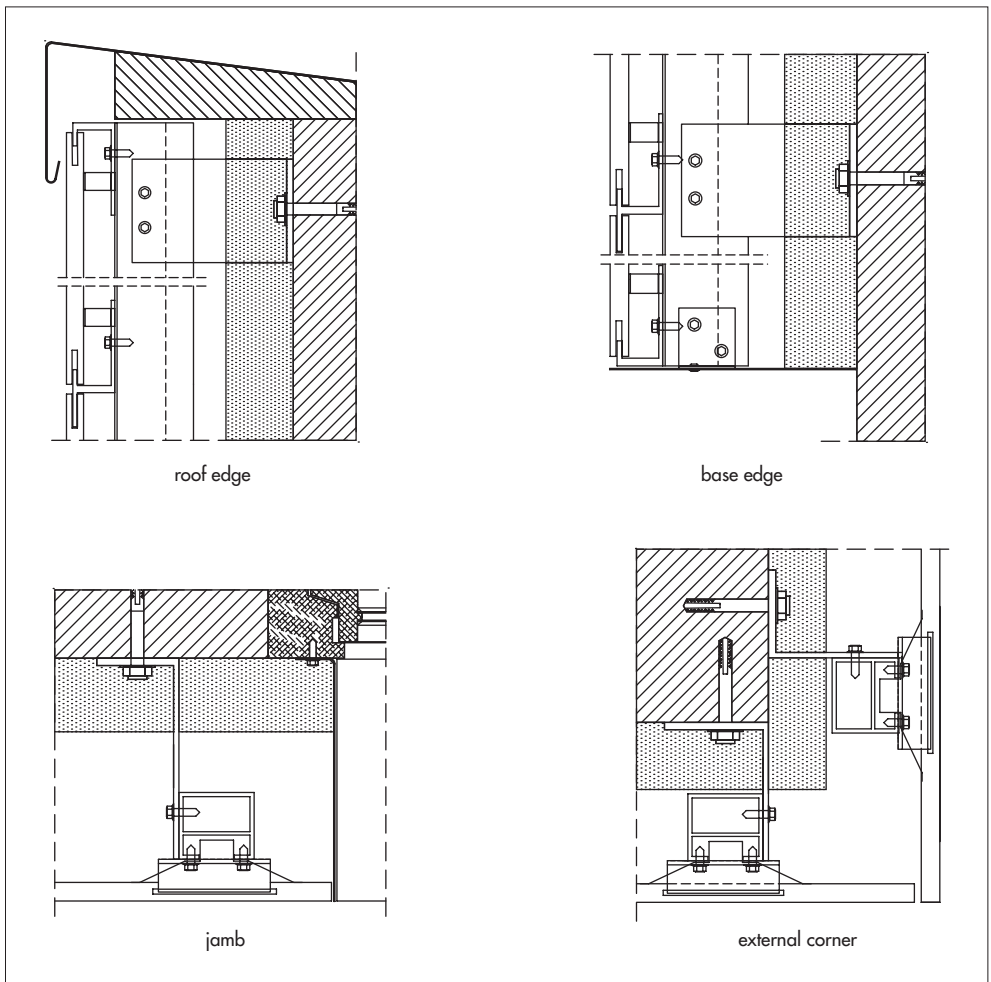


Figure 9 Typical installation details for Dekton Panel with steel clips



13 Test and investigations

13.1 Test reports from independent test laboratories were assessed to determine:

- wind resistance
- impact resistance
- mechanical resistance of fixings
- physical and mechanical characteristics of the panels.

13.2 An assessment was made of the products' durability, behaviour in relation to fire and practicability of installation.

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

Bibliography

BS EN 755-2 : 2016 *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles — Mechanical properties*

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 10088-1 : 2014 *Stainless steels — List of stainless steels*

BS EN 10088-2 : 2014 *Stainless steels — Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

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

BS EN 14411 : 2012 *Ceramic panels — Definitions, classification, characteristics and marking*

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

BS EN ISO 10545-3 : 1997 *Ceramic panels — Determination of water absorption, apparent porosity, apparent relative density and bulk density*

ETAG 034 — Part I : 2012 *Guideline for European Technical Approval of Kits for External Wall Claddings - Ventilated Cladding Kits Comprising Cladding Components and Associated Fixings*

14 Conditions

14.1 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.

14.2 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.

14.3 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.

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

14.5 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.

14.6 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.