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Agrément Certificate
08/4516
Product Sheet 1

ARGETON CLADDING SYSTEMS

ARGETON TERRACOTTA RAINSCREEN CLADDING SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to ArGeTon Terracotta Rainscreen Cladding System for use as a decorative/protective façade over the external walls of 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

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

Behaviour in relation to fire — the system is classified as non-combustible in accordance with the national Building Regulations (see section 7).

Air and water penetration — the baffled vertical and horizontal joints between the tiles will minimise water entering the cavity. Any water collecting in the cavity will be removed by drainage and ventilation (see section 8).

Durability — in normal UK conditions, 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. The system 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 Third issue: 12 October 2015

Originally certificated on 21 January 2008

Certificate amended on 14 January 2019 to include Regulation 7(2) for England and associated text.

Certificate amended on 13 January 2020 to include new regulatory guidance for fire in Scotland and Wales.

Brian Chamberlain

Head of Technical Excellence

Claire Curtis-Thomas

Chief Executive

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, ArGeTon Terracotta Rainscreen Cladding 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	Loading
Comment:	The system is acceptable for use as set out in sections 4.2 and 6.1 to 6.6 of this Certificate.	
Requirement:	B4(1)	External fire spread
Comment:	The system is unrestricted by this Requirement. See section 7.1 of this Certificate.	
Requirement:	C2(b)(c)	Resistance to moisture
Comment:	The system will satisfy the stated requirements. See sections 8.1 to 8.5 of this Certificate.	
Regulation:	7(1)	Materials and workmanship
Comment:	The system is acceptable. See section 10.1 and the <i>Installation</i> 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)(2)	Durability, workmanship and fitness of materials
Comment:		The system can contribute to a construction satisfying this Regulation. See section 9.1, 10.1 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The system is acceptable, with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See sections 4.2 and 6.1 to 6.6 of this Certificate.
Standard:	2.4	Cavities
Comment:		The system, 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 7.1 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The system is unrestricted by this Standard, with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ , 2.6.5 ⁽¹⁾ and 2.6.6 ⁽²⁾ . See section 7.1 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The system is unrestricted by this Standard, with reference to clause 2.7.1 ⁽¹⁾⁽²⁾ . See sections 7.1 to 7.3 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system 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 sections 8.1 to 8.5 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The system 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.
		(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 system is acceptable. See section 10.1 and the <i>Installation</i> part of this Certificate.	
Regulation:	28	Resistance to ground moisture and weather
Comment:	The system will contribute to satisfying this Regulation. See sections 8.1 to 8.5 of this Certificate.	
Regulation:	30	Stability
Comment:	The system is acceptable as set out in sections 4.2 and 6.1 to 6.6 of this Certificate.	
Regulation:	36	External fire spread
Comment:	The system is judged to satisfy the Class 0 requirements. See section 7.1 of this Certificate.	

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See sections: 1 *Description* (1.2) and 3 *Delivery and site handling* (3.5 and 3.6) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of the ArGeTon Terracotta Rainscreen Cladding System, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.9 *Curtain walling and cladding*, Clause D8.

CE marking

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

Technical Specification

1 Description

1.1 The ArGeTon Terracotta Rainscreen Cladding System comprises ceramic tiles (see Figure 1) which are fixed onto the substrate via vertical or horizontal aluminium support rails and purpose-made aluminium clamps or clips.

1.2 The tiles are of one basic design in the dimensions shown as follows:

Height (mm)	150, 175, 187.5, 200, 212.5, 225, 237.5, 250, 257, 275, 300, 350 and 400
Length (mm)	150 to 1500
Nominal thickness (mm)	30
Maximum dry mass (kg·m ⁻²)	50
Tile lip thickness (mm)	8 and 12.

1.3 The tiles are available in standard smooth, glazed, engobe, riven, brushed or wire dragged finishes in 26 natural mineral colours.

Figure 1 Tile cross-sections

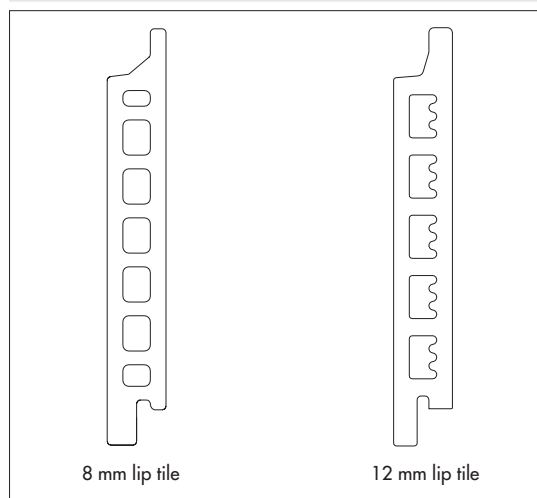
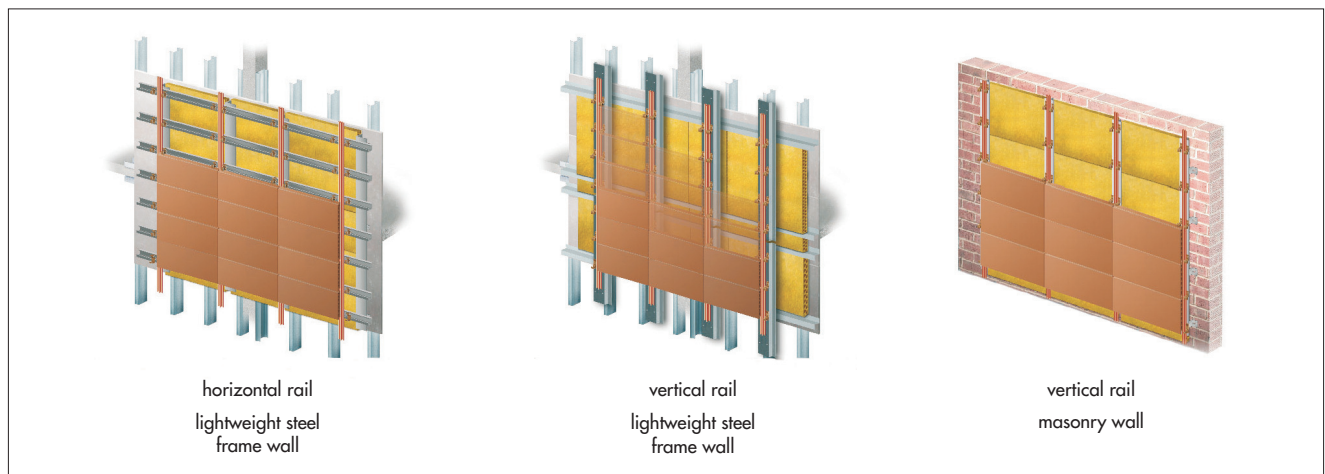


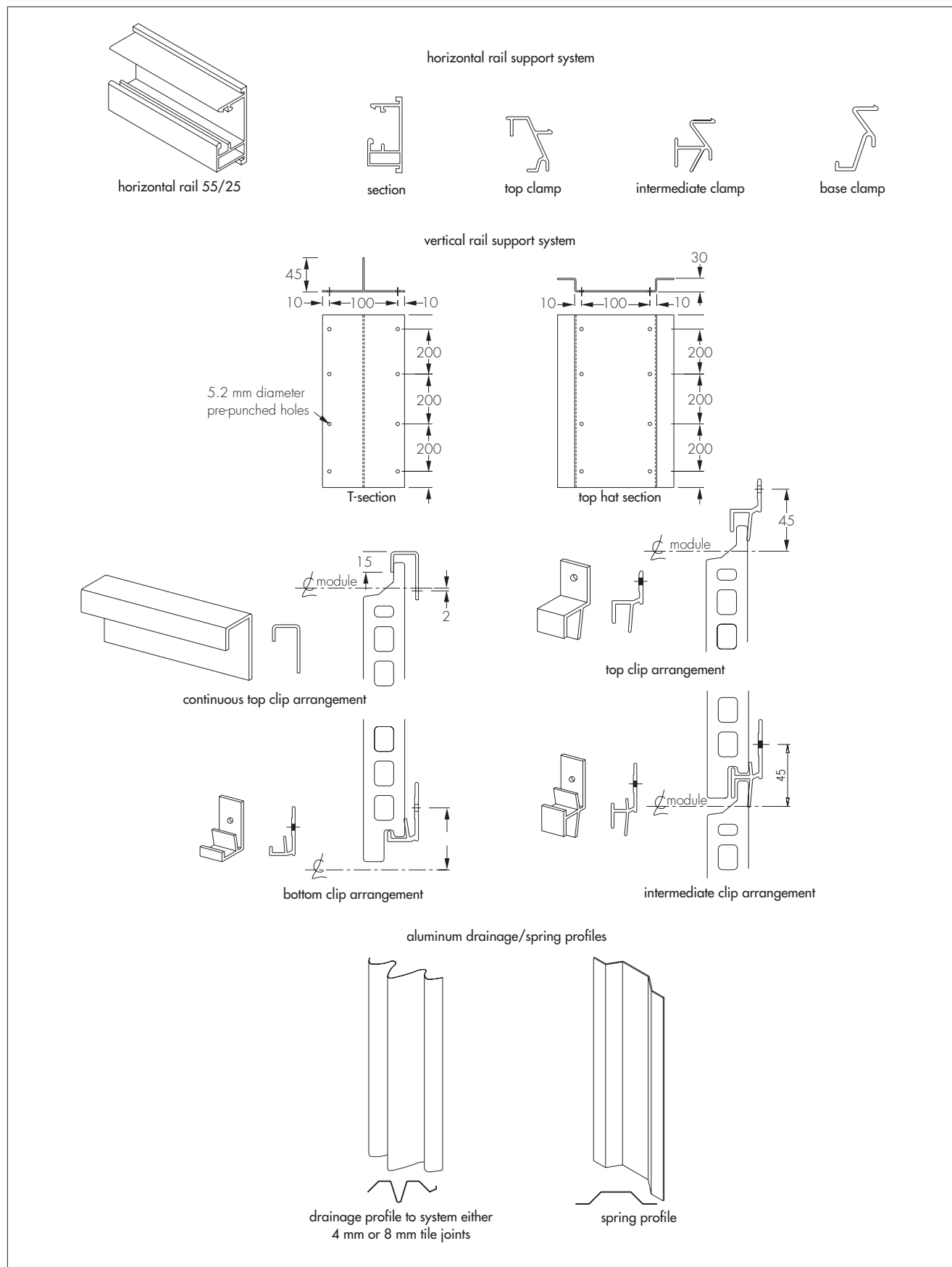
Figure 2 General arrangement of support systems



1.4 All components of the sub-frame (ie clamps, clips, rails and brackets)⁽¹⁾ are designed and supplied by Telling Architectural Limited to support the tiles, and are manufactured from aluminium grade 6063-T6 (see Figure 3). Slotted holes are provided in the brackets to allow correct alignment of sub-frame attachment systems.

(1) Outside the scope of this Certificate

Figure 3 Ancillary components (dimensions in mm)



1.5 Other components used with the system but are outside the scope of this Certificate, include:

- insulation — non combustible rigid type, eg batts or boards
- breather membrane — permeable type.

2 Manufacture

2.1 The tiles are produced from an extrusion process and fired at high temperatures from clay materials and natural pigments and treated to a defined finish.

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 Telling Architectural Limited has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by SGS International Certification Services GmbH (Certificate DE 06/4163).

2.4 The tiles are manufactured in Germany and marketed/distributed in the UK by the Certificate holder.

3 Delivery and site handling

3.1 The tiles are delivered to site in packs of five, with each pack separated by thin strips of oil-free non-adhesive resin beads and stacked, no more than five tile-widths high, onto pallets and shrink wrapped. The pallets bear product details such as type, size, quantity, identification code, manufacturing references and colour.

3.2 To prevent damage to the tiles, the pallets should not be stacked on top of each other.

3.3 The aluminium support rails are delivered to site banded onto a wooden pallet with ancillary items in separate cardboard boxes.

3.4 Packs of rails should be stacked horizontally on sufficient bearers to prevent distortion, to a maximum height of 1 m. Other components should be safely stored until ready for use.

3.5 The tiles should be handled with care to avoid damage or breakage. Care is required when handling long lengths of rail, particularly at height.

3.6 Protective clothing should be worn as required and all Health and Safety Regulations observed.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the ArGeTon Terracotta Rainscreen Cladding System.

Design Considerations

4 Use

4.1 The ArGeTon Terracotta Rainscreen Cladding System is satisfactory for use with back ventilation and drainage as a decorative/protective façade over the external walls of buildings and must be provided. The cavity behind the cladding should be as wide as possible (see section 8.5 of this Certificate), with a minimum ventilation area of 100 cm² per metre run of cladding. The ventilation openings, where wider than 10 mm, should be suitably protected, or baffled, to prevent the ingress of birds, vermin and rain.



4.2 The wall and the sub-frame to which the cladding is fixed should be structurally sound and constructed in accordance with the requirements of the relevant national Building Regulations and national Standards.

4.3 The wall to which the cladding is fixed should be watertight and resistant to the transmission of heat and sound.

4.4 As the rainscreen is open jointed, the insulation behind the cladding needs 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 or batts). The ventilation pathway behind the cladding must not be allowed to become blocked nor the insulation dislodged where it may be vulnerable to wetting.

4.5 To allow for thermal expansion, a gap of 2 mm gap per metre length of aluminium support rail between adjacent rails should be provided.

4.6 The fixing of rainwater goods, satellite dishes, clothes lines, hanging baskets and similar items to the panels is outside the scope of this Certificate.

4.7 External plumbing should be removed before installation and alterations made to underground drainage, where appropriate, to accommodate repositioning of the plumbing to the finished face of the system.

4.8 It is essential that this system is installed and maintained in accordance with the conditions set out in this Certificate. For advice on specific construction details, eg flue pipe penetrations, the Certificate holder should be consulted.

5 Practicability of installation

The system is designed to be installed by cladding contractors provided they have undergone suitable training by the Certificate holder.

6 Strength and stability

Wind loading



6.1 A suitably qualified and experienced individual must check the design and installation of the cladding system.

6.2 Wind loads should be calculated in accordance with BS EN 1991-1-4 : 2005.

6.3 When calculating wind loads, higher pressure coefficients applicable to corners of the building should be used.

6.4 As the rainscreen is open-jointed, the supporting wall must be able to take the full wind, as well as any racking loads on its own. No contribution from the cladding may be assumed in this regard.

6.5 Fixing of the support rails to the substrate should ensure adequate tensile pull-out and corrosion resistance (not covered by this Certificate).

6.6 Based on full scale tests and calculations, the characteristic wind load resistance of the system may be taken as 2.4 kPa and the ultimate wind load resistance as 3.6 kPa provided the designer ensures that:

- for the horizontal rail system, the clamps do not exceed 600 mm apart along the rail and the rails are no more than 400 mm centres
- for the vertical rail system, the clips do not exceed 400 mm apart along the rail and the rails are no more than 600 mm centres
- design of the horizontal and vertical rails should be such as to limit the mid-span deflections to $L/200$ and cantilever deflections to $L/150$
- fixing of the support rails to the substrate has adequate pull-out resistance.

Impact

6.7 When tested for hard and soft body impacts, the ArGeTon Terracotta Rainscreen Cladding System achieved adequate resistance. Therefore the tiles are considered suitable for use categories II, III and IV in accordance with ETAG 034 : 2012, Part 1, Table 4 (see Table 1 of this Certificate) provided the distances between the clamps (or clips) and rails are as stated in section 6.6 of this Certificate.

Table 1 Definition of use Categories

Use category ⁽¹⁾	Description
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.

Notes:

(1) Previously covered by withdrawn standard BS 8200. The ArGeTon system is suitable for use in categories from B to F for all tile format sizes (as indicated in section 1.2 of this Certificate). Further information relating to BS 8200 can be found in *The Centre for Windows and Cladding Technology (CWCT) Technical Note 75 : 2012*, for hard and soft body impacts.

7 Behaviour in relation to fire



7.1 The ceramic tiles, support rails, clamps and clips are classified as 'non-combustible' in accordance with national Building Regulations and are not subject to any restriction on building height or proximity to boundaries.

7.2 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, service penetrations and combustibility limitations for other materials and components used in the overall wall construction, for example, thermal insulation.

8 Air and water penetration



8.1 The system is not watertight, but intentionally open-jointed, back ventilated and drained.

8.2 The supporting wall must be watertight and reasonably airtight.

8.3 The 4 mm and 8 mm vertical joints, coinciding with the vertical sub-frame rail, and the 12 mm baffled horizontal joint should minimise water penetration into the cavity. Any water collecting in the cavity due to rain or condensation will be removed by ventilation and drainage.

8.4 To protect the supporting wall or insulation from wind-driven rain, an appropriate vapour permeable membrane should be applied (outside the scope of this Certificate).

8.5 The air space between the back of the tiles and supporting wall or insulation must be 38 mm and 50 mm minimum for baffled and open joints respectively as given in *NHBC Standards 2014*, Chapter 6.9, while allowing for conventional building tolerances.

9 Maintenance



9.1 Cleaning at regular intervals should be undertaken. For normal soiling, the surface may be cleaned using hot water/household detergent mixture, 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 all drainage channels are in good order and that the tiles, flashings and seals are in place and are secure.

9.3 Damaged tiles should be replaced as soon as practicable following the Certificate holder's instructions and observing all necessary health and safety regulations. The specially designed metal clips allow individual tiles to be replaced without disturbing adjacent tiles.

10 Durability



10.1 The tiles will have a service life in excess of 35 years when used in normal exposure conditions in the United Kingdom.

10.2 After natural weathering, a slight change in colour shade may occur, particularly on dark-coloured materials. However, this process is not likely to be progressive.

10.3 The aluminium sub-frame components will have a service life at least commensurate with that of the tiles they are supporting, provided that contact with corrosive substances such as wet mortar is avoided.

11 Reuse and recyclability

The ceramic panels are readily recyclable.

Installation

12 General

12.1 It is important for the designers, planners, contractors and/or installers to ensure that the installation of ArGeTon Rainscreen Cladding System is in accordance with the Certificate holder's recommendations, the requirements of this Certificate and specifications laid down by the consulting engineer.

12.2 Installers must be trained and approved by the Certificate holder who can provide technical assistance at the design stage and at the start of the installation.

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

12.4 If significant colour variations between batches are likely, it may be necessary to mix the tiles from different pallets so as to obtain a uniform shade over the façade.

13 Procedure

13.1 Based on the architectural and design specifications, a grid layout is first prepared. Accurate grid positioning and installation of the sub-frame is essential.

13.2 Depending on the substrate wall and the support system adopted, the aluminium tile support rails or clips should be attached to the sub-frame and correctly aligned to receive the tiles.

13.3 The breather membrane must be installed and properly overlapped in accordance with the instructions of the membrane manufacturer and the building designer.

13.4 The tiles are then secured to the support rails via the clamps or clips.

14 Investigations

- 14.1 Using test data from accredited facilities, an assessment was made of the system's resistance to wind loading and impact.
- 14.2 An assessment was made of the system's durability, behaviour in relation to fire and practicability of installation.
- 14.3 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 1991-1-4 : 2005 *Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 14411 : 2012 *Ceramic tiles — Definitions, classification, characteristics, evaluation of conformity and marking*
- BS EN ISO 9001 : 2008 *Quality management systems — Requirements*
- ETAG 034 : 2012 *Part I — Guideline for European Technical Approval of kits for external wall claddings — Ventilated claddings kits comprising cladding components and associated fixings*

15 Conditions

15.1 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.

15.2 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.

15.3 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.

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

15.5 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.

15.6 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.