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**Agrément Certificate**

**24/7144**

Product Sheet 1 Issue 1

## CLADMATE CLADDING SYSTEMS

### CMS40 MF BRICK SLIP CLADDING SYSTEM

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the CMS40 MF Brick Slip Cladding System, comprising clay brick slips mechanically supported on an aluminium subframe system, for use as a back ventilated and drained rainscreen cladding system, to provide a protective and decorative façade over external masonry, concrete, steel-frame and timber-frame walls of new and existing domestic and non-domestic buildings above the damp proof course.

(1) Hereinafter referred to as 'Certificate'.

#### The assessment includes

##### Product factors:

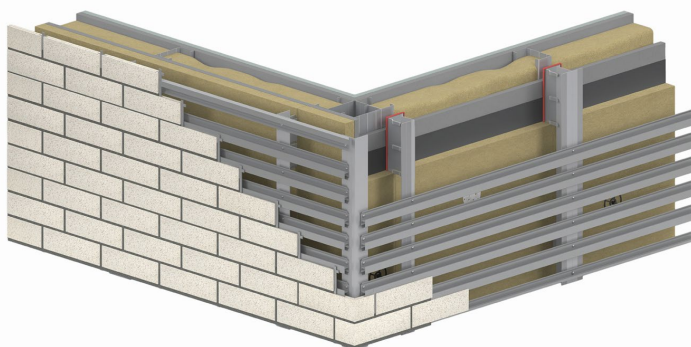
- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

##### Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

##### Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



#### KEY FACTORS ASSESSED

- Section 1. Mechanical resistance and stability
- Section 2. Safety in case of fire
- Section 3. Hygiene, health and the environment
- Section 4. Safety and accessibility in use
- Section 5. Protection against noise
- Section 6. Energy economy and heat retention
- Section 7. Sustainable use of natural resources
- Section 8. Durability

The BBA has awarded this Certificate to the company named above for the system described herein. This 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 issue: 7 May 2024

Hardy Giesler  
Chief Executive Officer

*This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.*

*The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).*

*Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

*The Certificate should be read in full as it may be misleading to read clauses in isolation.*

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

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## SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

### Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that the CMS40 MF Brick Slip 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 Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	<b>A1</b>	<b>Loading</b>
Comment:		The system is acceptable. See section 1 of this Certificate.
<b>Requirement:</b>	<b>B3(4)</b>	<b>Internal fire spread (structure)</b>
Comment:		The system can contribute to satisfying this Requirement. See section 2 of this Certificate.
<b>Requirement:</b>	<b>B4(1)</b>	<b>External fire spread</b>
Comment:		The system is unrestricted by this Requirement. See section 2 of this Certificate.
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:		The system is not designed to be watertight but will limit the passage of rainwater to the supporting structure. See section 3 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>7(2)</b>	<b>Materials and workmanship</b>
Comment:		The system is unrestricted by this Regulation. See sections 2 of this Certificate.



#### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Fitness and durability of materials and workmanship</b>
Comment:		The system can contribute to a construction satisfying this Regulation. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>8(3)</b>	<b>Fitness and durability of materials and workmanship</b>
Comment:		The system is unrestricted by this Regulation. See section 2 of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards – construction</b>
Standard:	1.1 (a)(b)	Structure
Comment:		The system is acceptable, with reference to clause 1.1.1 <sup>(1)(2)</sup> of this Standard. See section 1 of this Certificate.
Standard:	2.4	Cavities
Comment:		The system can contribute to satisfying this Standard, with reference to clause 2.4.2 <sup>(1)(2)</sup> . See section 2 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 <sup>(1)(2)</sup> , 2.6.5 <sup>(1)</sup> and 2.6.6 <sup>(2)</sup> . See section 2 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 <sup>(1)(2)</sup> . See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system is not designed to be watertight but will resist the passage of rainwater to the supporting structure, with reference to clauses 3.10.1 <sup>(1)(2)</sup> , 3.10.5 <sup>(1)(2)</sup> and 3.10.6 <sup>(1)(2)</sup> of this Standard. See section 3 of this Certificate.
Standard:	7.1(a)	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.
<b>Regulation:</b>	<b>12</b>	<b>Building standards – conversion</b>
Comment:		Comments in relation to the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .
		(1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



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

<b>Regulation:</b>	<b>23(1)(a)(i)</b>	<b>Fitness of materials and workmanship</b>
Comment:	<b>(iii)(b)(i)</b>	The system is acceptable. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>23(2)</b>	<b>Fitness of materials and workmanship</b>
Comment:		The system is unrestricted by this Regulation. See section 2 of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture and weather</b>
Comment:		The system is not designed to be watertight but will resist the passage of rainwater to the supporting structure. See sections 3 of this Certificate.
<b>Regulation:</b>	<b>30</b>	<b>Stability</b>
Comment:		The system is acceptable. See sections 1 of this Certificate.
<b>Regulation:</b>	<b>35(4)</b>	<b>Internal fire spread – structure</b>
Comment:		The system can contribute to satisfying this Regulation. See section 2 of this Certificate.
<b>Regulation:</b>	<b>36(a)</b>	<b>External fire spread</b>
Comment:		The system is unrestricted by this Regulation. See section 2 of this Certificate.

## Additional Information

### NHBC Standards 2024

In the opinion of the BBA, the CMS40 MF Brick Slip Cladding System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards, Part 6 Superstructure (excluding roofs), Chapter 6.9 Curtain walling and cladding*.

## Fulfilment of Requirements

The BBA has judged the CMS40 MF Brick Slip Cladding System to be satisfactory for use as described in this Certificate. The system has been assessed as a back-ventilated and drained rainscreen cladding system to provide a protective and decorative façade over external masonry, concrete, steel-frame and timber-frame walls of new and existing domestic and non-domestic buildings above the damp proof course (DPC).

### Product description and intended use

The Certificate holder provided the following description for the system under assessment. The CMS40 MF Brick Slip Cladding System (see Figure 1) consists of:

Supporting subframe:

- Cladmate Fortis Brackets – L-shaped wall brackets, extruded from aluminium grade 6063-T6 to BS EN 573-3 : 2019, and in the profile and sizes shown in Figures 2 and 3, with 10 micron anodised coating to BS EN ISO 7599 : 2018. They come with an acrylonitrile butadiene styrene thermal isolator pad (outside the scope of this Certificate) at the back of the shorter leg. The brackets are installed at maximum 600 mm centres horizontally, and maximum 1200 mm centres vertically. For each vertical rail, the cladding system build-up uses one double bracket with the rest of the brackets being single.
- T/L Rails — uncoated L- and T-profile vertical rails, made from aluminium grade 6063-T6 to BS EN 573-3 : 2019, in the sizes shown in Figure 4, and installed at maximum 600 mm centres. The rails come in standard lengths of 3 m and 6 m.
- Horizontal Support Rails — extruded from aluminium grade 6063-T6 to BS EN 573-3 : 2019, with 9 micron anodising to BS EN ISO 7599 : 2018 and 7 micron electrophoresis coating, and in the three profiles and dimensions shown in Figure 5. The rails come in standard lengths of 3 m and 6 m.

Cladding:

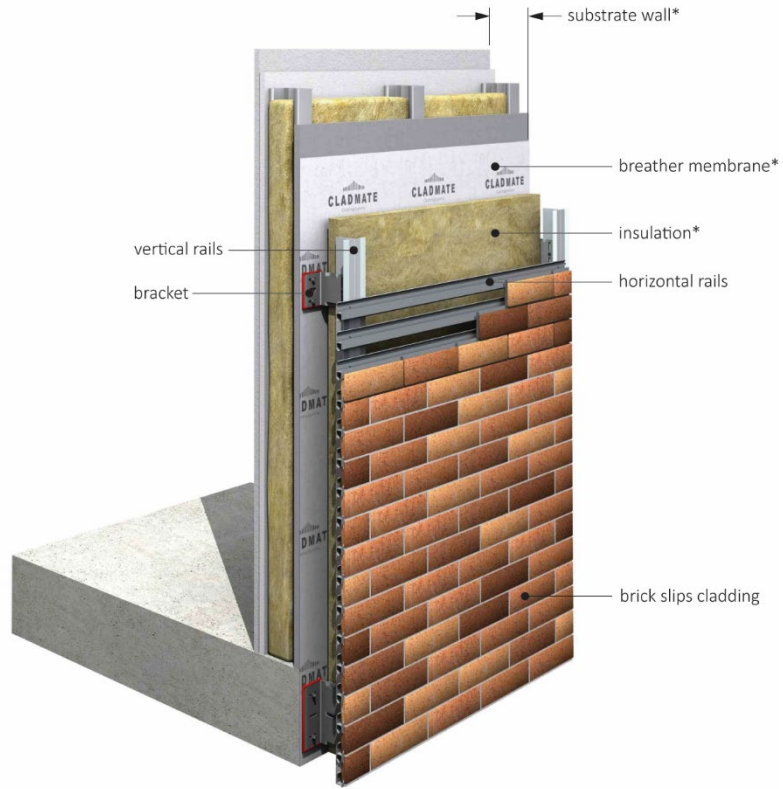
- Profiled brick slips — rectangular and L shaped corner clay brick slips in accordance with BS EN 771-1 : 2011, and available in a range of colours and textures. The brick slips must have a reaction to fire classification of A1, be frost resistant with a durability rating of F2 and soluble salts rating of S2 in accordance with BS EN 771-1 : 2011, and with a maximum water absorption of 21%. They are to the following dimensions:
  - i) Rectangular brick – up to 510 mm in length to the tolerances specified in BS EN 771-1 : 2011, up to 65 ±3 mm in height, 22 ±2 mm to 65 ±2 mm thickness and slotted along the top and bottom edges (see Figure 6)
  - ii) Corner brick – L shaped, 102.5 mm and 215 mm lengths for the short and long legs respectively to the tolerances specified in BS EN 771-1 : 2011, up to 65 ±3 mm in height, 22 ±2 mm to 65 ±2 mm thickness, slotted along the top and bottom edges (see Figure 7)
- Pointing mortar<sup>(1)</sup>: —
  - i) Parex Historic — a blend of traditional hydrated lime (to BS EN 459-1 : 2015), sand (to BS EN 13139 : 2013) and ground granulated furnace slag (to BS EN 15167-1 : 2006), cement-free pointing mortar manufactured to BS EN 998-2 : 2016, in the following colours – Dark Grey (629231), Natural (629233), Light Grey (629235), Mid Grey (629237), Bathstone (629238), Charcoal (629239), Portland (629240) and Stone Grey (629241)
  - ii) Cempoint — a blend of specialist cements and graded fillers, manufactured to BS EN 998-2 : 2016, in the following colours – Natural, Light Brown, Light Grey, Dark Grey, Sandstone, Yorkstone, White, Dark Brown, Brick Red and Black.

(1) For areas with the possibility of severe exposure to chemicals, such as locations near the sea, only pointing mortar which has a durability declaration suitable for constructions subjected to “Severe Exposure” in accordance with BS EN 998-2 : 2016 or equivalent, must be used.

Fixings:

- Horizontal rail to vertical rail — Ejot JT3 LT3 5.5, stainless steel grade 304 self-drilling screws (1 No. per connection)
- Vertical rail to wall bracket — Ejot JT4 4 4.8 x 19, stainless steel grade 304 self-drilling screws (2 No. per connection).

Figure 1 CMS40 MF Brick Slip Cladding System



\*Outside the scope of this Certificate

Figure 2 Fortis Single Brackets (all dimensions in mm)

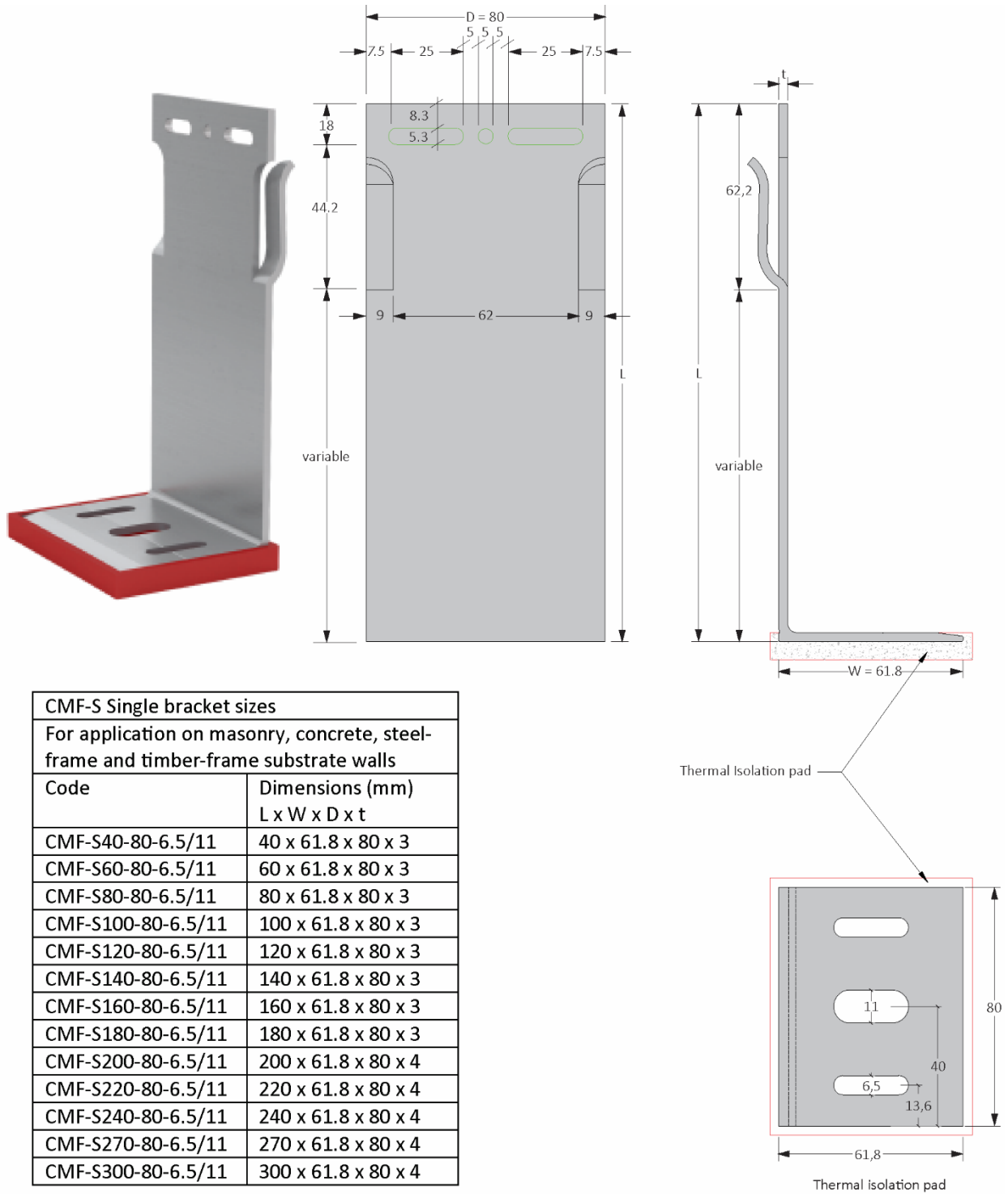
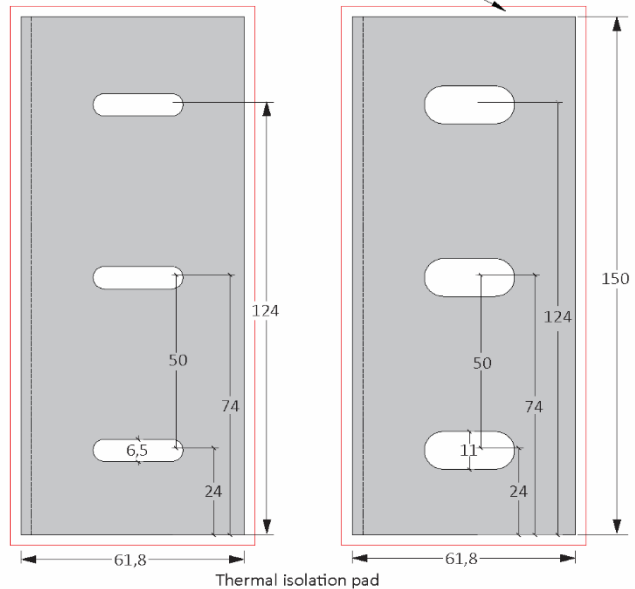
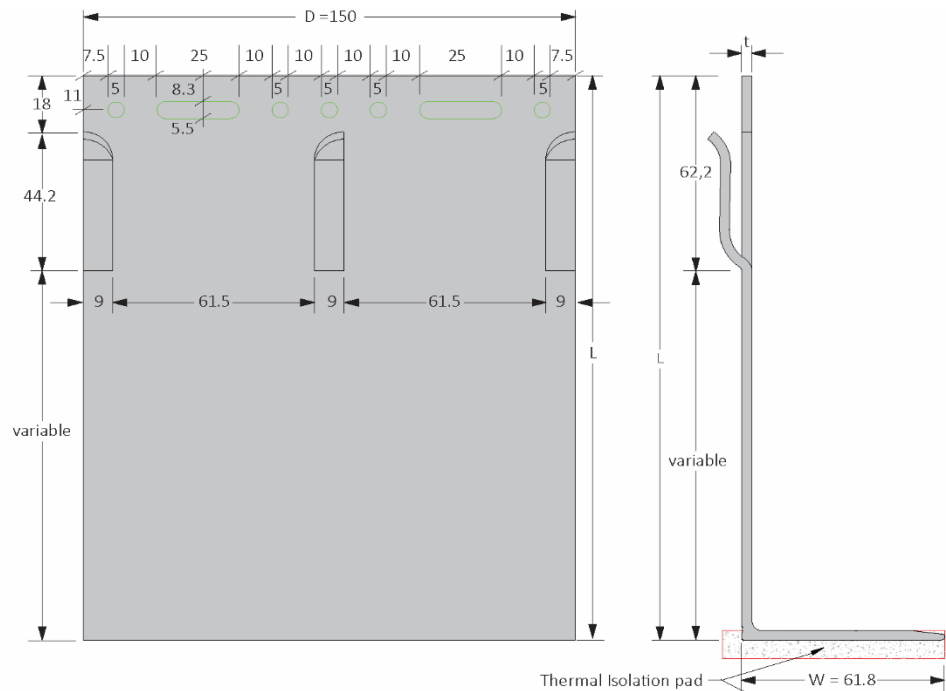


Figure 3 Fortis Double Brackets (all dimensions in mm)



CMF-D Bracket sizes			
For application on steel and timber frame substrate walls		For application on concrete and masonry substrate walls	
Code	Dimensions (mm) L x W x D x t	Code	Dimensions (mm) L x W x D x t
CMF-D40-150-6.5	40 x 61.8 x 150 x 3	CMF-D40-150-11	40 x 61.8 x 150 x 3
CMF-D60-150-6.5	60 x 61.8 x 150 x 3	CMF-D60-150-11	60 x 61.8 x 150 x 3
CMF-D80-150-6.5	80 x 61.8 x 150 x 3	CMF-D80-150-11	80 x 61.8 x 150 x 3
CMF-D100-150-6.5	100 x 61.8 x 150 x 3	CMF-D100-150-11	100 x 61.8 x 150 x 3
CMF-D120-150-6.5	120 x 61.8 x 150 x 3	CMF-D120-150-11	120 x 61.8 x 150 x 3
CMF-D140-150-6.5	140 x 61.8 x 150 x 3	CMF-D140-150-11	140 x 61.8 x 150 x 3
CMF-D160-150-6.5	160 x 61.8 x 150 x 3	CMF-D160-150-11	160 x 61.8 x 150 x 3
CMF-D180-150-6.5	180 x 61.8 x 150 x 3	CMF-D180-150-11	180 x 61.8 x 150 x 3
CMF-D200-150-6.5	200 x 61.8 x 150 x 4	CMF-D200-150-11	200 x 61.8 x 150 x 4
CMF-D220-150-6.5	220 x 61.8 x 150 x 4	CMF-D220-150-11	220 x 61.8 x 150 x 4
CMF-D240-150-6.5	240 x 61.8 x 150 x 4	CMF-D240-150-11	240 x 61.8 x 150 x 4
CMF-D270-150-6.5	270 x 61.8 x 150 x 4	CMF-D270-150-11	270 x 61.8 x 150 x 4
CMF-D300-150-6.5	300 x 61.8 x 150 x 4	CMF-D300-150-11	300 x 61.8 x 150 x 4

Figure 4 Vertical rails (all dimensions in mm)

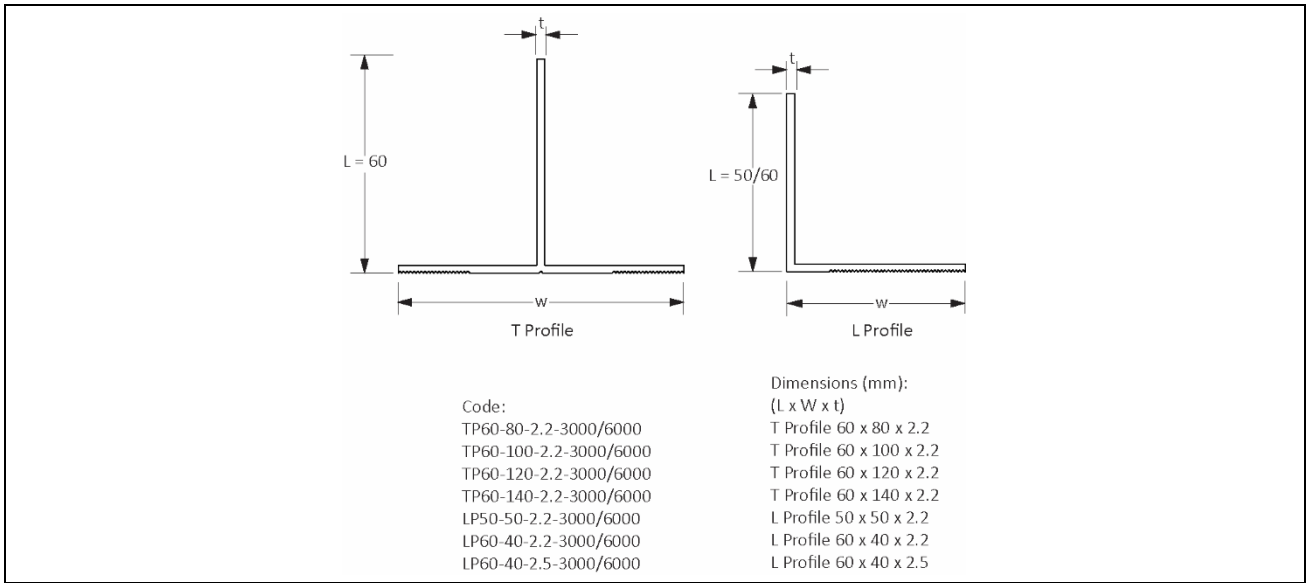


Figure 5 Horizontal Support Rails (all dimensions in mm)

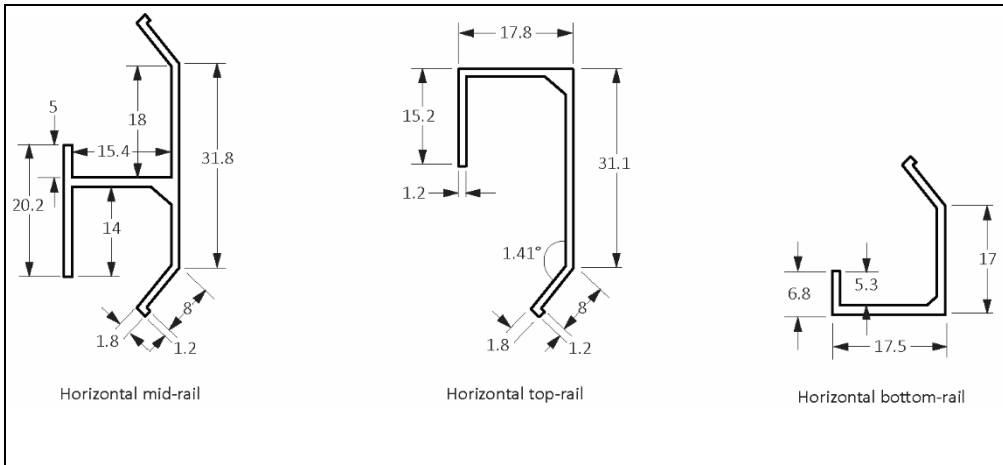




Figure 6 Rectangular brick slips (all dimensions in mm)

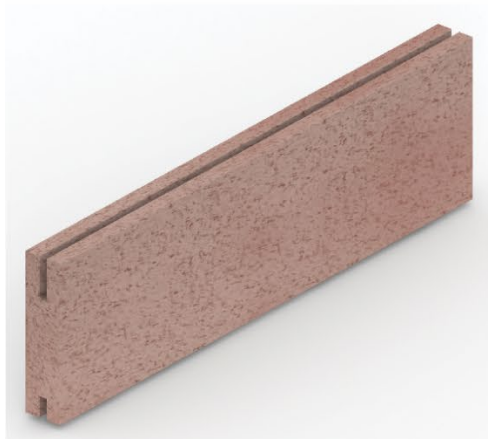
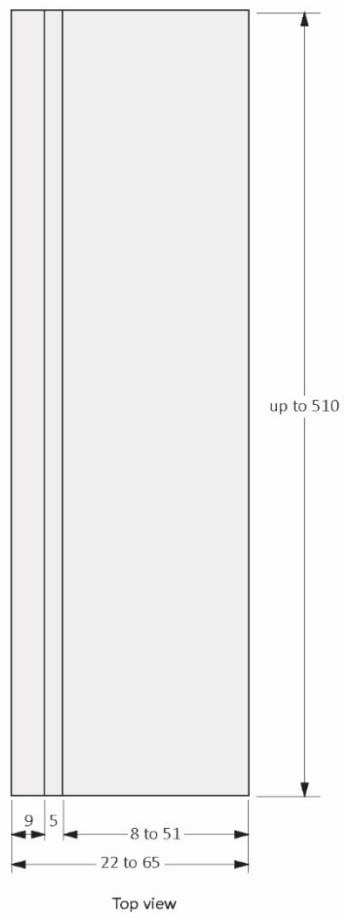
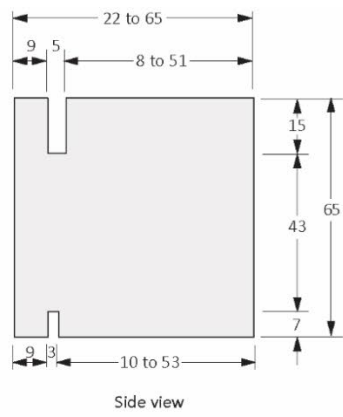
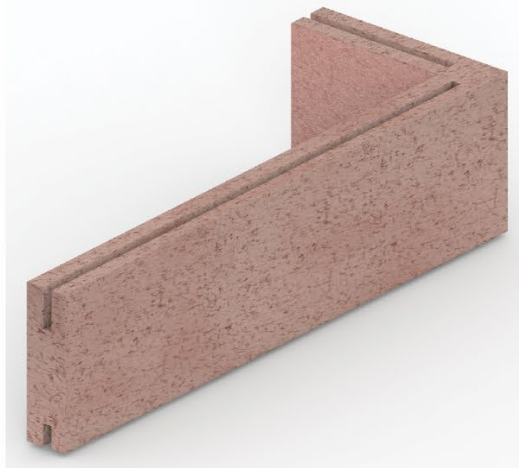
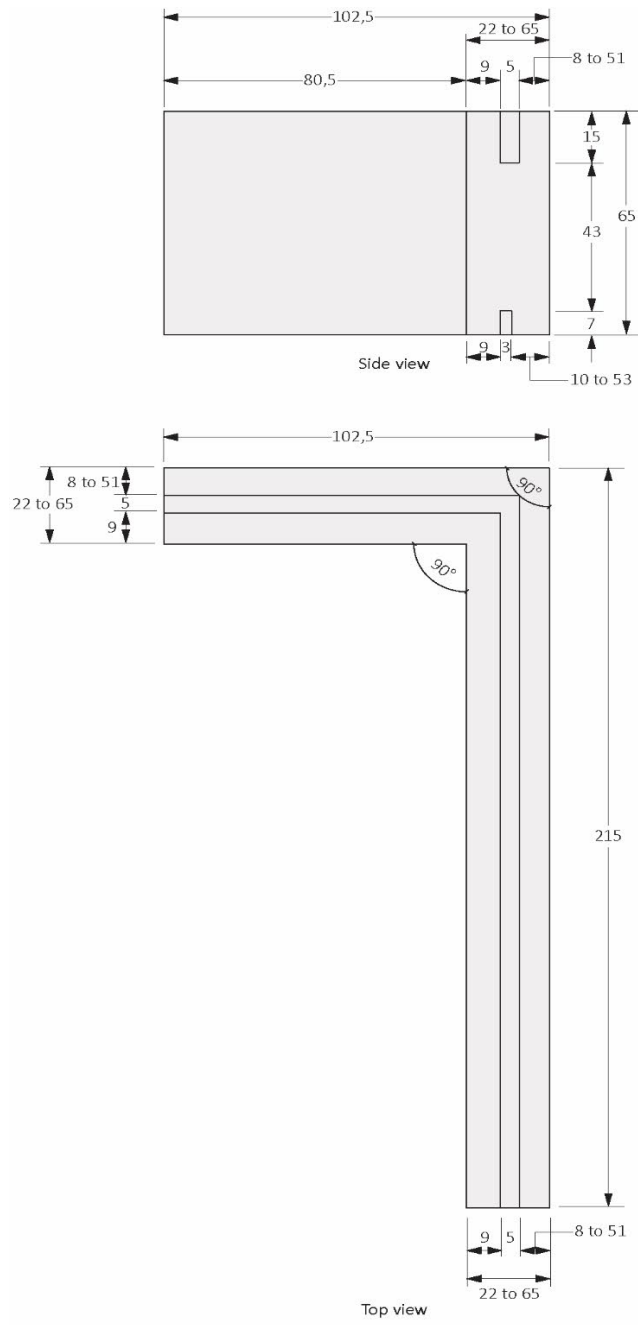


Figure 7 Corner brick slips (all dimensions in mm)



Ancillary Items

The Certificate holder recommends the following ancillary items for use with the system, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- fixings attaching the brackets to the substrate wall, and to suit the wall in question
- brick spacer
- thermal isolator pad at the back of the wall brackets
- breather membranes
- insulation (within the cavity behind the cladding)
- mesh to protect ventilation openings
- substrate walls.

## Product assessment – key factors

The system was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

### 1 Mechanical resistance and stability

Data were assessed for the following characteristics.

#### 1.1 Resistance to impact

1.1.1 Results of hard and soft body impact tests are given in Table 1.

*Table 1 Resistance to hard and soft body impact*

System assessed	Assessment method	Requirement	Result
CMS40 MF Brick Slip Cladding System – with wall brackets at 600 mm centres horizontally and 600 mm centres vertically, 22 mm brick slips, and Cempoint Pointing Mortar.	CWCT Technical Note No. 75 : 2012 and Technical Note No. 76 : 2012	CWCT Technical Note No. 76 : 2012, Tables 1 and 2	<p><u>Hard body impact:</u></p> <ul style="list-style-type: none"> <li>• 3 joules impact – Class 1 serviceability performance, negligible risk safety performance</li> <li>• 6 joules impact – Class 1 serviceability performance, negligible risk safety performance</li> <li>• 10 joules impact – Class 2 serviceability performance, negligible risk safety performance</li> </ul> <p><u>Soft body impact:</u></p> <ul style="list-style-type: none"> <li>• 120 joules impact – Class 1 serviceability performance</li> <li>• 350 joules impact – negligible risk safety performance</li> <li>• 500 joules impact – negligible risk safety performance</li> </ul>
CMS40 MF Brick Slip Cladding System – with wall brackets at 600 mm centres horizontally and 1200 mm centres vertically, 22 mm brick slips, and Cempoint Pointing Mortar.	CWCT Technical Note No. 75 : 2012 and Technical Note No. 76 : 2012	CWCT Technical Note No. 76 : 2012, Tables 1 and 2	<p><u>Hard body impact:</u></p> <ul style="list-style-type: none"> <li>• 3 joules impact – Class 3 serviceability performance, low risk safety performance</li> <li>• 6 joules impact – Class 3 serviceability performance</li> <li>• 10 joules impact – Class 3 serviceability performance, low risk safety performance</li> </ul> <p><u>Soft body impact:</u></p> <ul style="list-style-type: none"> <li>• 120 joules impact – Class 1 serviceability performance</li> <li>• 350 joules impact – low risk safety performance</li> <li>• 500 joules impact – low risk safety performance</li> </ul>

#### 1.2 Wind loading

1.2.1 Results of wind load resistance tests are given in Table 2.

<i>Table 2 Wind loading</i>			
System assessed	Assessment method	Requirement	Result
CMS40 MF Brick Slip Cladding			
System comprising:	Wind resistance		
<ul style="list-style-type: none"> <li>• 22 mm brick slips</li> <li>• Horizontal brick slip support rails</li> <li>• Pointing mortar</li> <li>• 60 x 100 x 2.2 mm vertical T rails at 600 mm centres</li> </ul>	serviceability (CWCT Standard for systemised building envelopes : 2006, Test 11 & BS EN 12179 : 2000)	2.4 kN·m <sup>-2</sup>	Pass
<ul style="list-style-type: none"> <li>• 140 x 61.8 x 150 x 3 mm brackets (bottom row) at 600 mm horizontal centres</li> <li>• 140 x 61.8 x 80 x 3 mm brackets (rest of the wall) at 600 mm vertical centres and 600 mm horizontal centres</li> </ul>	Wind resistance safety (CWCT Standard for systemised building envelopes : 2006, Test 12 & BS EN 12179 : 2000)	3.6 kN·m <sup>-2</sup>	Pass

1.2.2 An assessment of structural calculations against the requirements of BS EN 1999-1-1 : 2007 and its UK National Annexes was performed. The outcome of assessment was that the CMS40 MF Brick Slip Cladding System build-up with any of the system’s vertical rail sizes, and wall bracket sizes (double brackets in bottom row and single brackets elsewhere) at 600 mm maximum horizontal spacing and 1200 mm maximum vertical spacing, and 22 or 65 mm brick slips, will have adequate resistance to wind actions of 2.4 kN·m<sup>-2</sup> (serviceability) and 3.6 kN·m<sup>-2</sup> (safety).

## 2 Safety in case of fire

Data were assessed for the following characteristics.

### 2.1 Reaction to fire

2.1.1 The system components have the reaction to fire classification given in Table 3.

**Table 3 Reaction to fire classification**

Product	Construction	Method	Result
<ul style="list-style-type: none"> <li>Aluminium vertical rails</li> <li>Aluminium wall brackets</li> </ul>	—	96/603/EC	A1
<ul style="list-style-type: none"> <li>Horizontal rails</li> </ul>	On any substrate with reaction to fire classification A2-s1,d0 or better with a minimum density of 525 kg·m <sup>-3</sup>	EN 13501-1 : 2018	A1 <sup>(1)</sup>
<ul style="list-style-type: none"> <li>Ejot JT3 LT3 5.5 screws, stainless steel grade 304.</li> <li>Ejot JT4 4 4.8 x 19 screws, stainless steel grade 304.</li> </ul>	—	96/603/EC	A1
Clay brick slips (organic content <1.0%)	—	96/603/EC	A1
Parex Historic pointing mortar	—	BS EN 13501-1 : 2018	A1 <sup>(2)</sup>
Cempoint pointing mortar	Density = 2000 to 2100 kg·m <sup>-3</sup>	BS EN 13501-1 : 2018	A1

(1) Report reference 691-A issued by System Laboratories UK, copies available from the Certificate holder on request.

(2) Report reference 544-A issued by System Laboratories UK, copies available from the Certificate holder on request.

2.1.2 On the basis of data assessed, the system is not subject to any restrictions on building height or proximity to boundaries.

2.1.3 Designers must refer to the relevant national Building Regulation guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, service penetrations and combustibility limitations for other materials and components used in the overall wall.

## 2.2 Resistance to fire

Where a wall incorporating the system is required to achieve a period of fire resistance, its performance must be confirmed by a suitably experienced and competent individual or by a test from a suitably accredited laboratory.

## 3 Hygiene, health and the environment

Data were assessed for the following characteristics.

### 3.1 Weathertightness

3.1.1 Results of watertightness tests are given in Table 4.

**Table 4 Watertightness test**

System assessed	Assessment method	Requirement	Result
CMS40 MF Brick Slip Cladding System comprising: <ul style="list-style-type: none"> <li>• 22 mm brick slips</li> <li>• Horizontal brick slip support rails</li> <li>• Cempoint pointing mortar</li> <li>• 60 x 100 x 2.2 mm vertical T rails at 600 mm centres</li> <li>• 140 x 61.8 x 150 x 3 mm brackets (bottom row) at 600 mm horizontal centres</li> <li>• 140 x 61.8 x 80 x 3 mm brackets (rest of the wall) at 600 mm vertical centres and 600 mm horizontal centres</li> </ul>	Static watertightness at 600 Pa pressure (to CWCT Standard for systemised building envelopes : 2006, Test 6 & BS EN 12155 : 2000)	CWCT Standard: <ul style="list-style-type: none"> <li>• No water penetration to the internal face of the backing wall throughout the test</li> <li>• At the completion of the test, there must be no standing water in locations intended to remain dry</li> </ul>	Pass
	Dynamic watertightness (to CWCT Standard for systemised building envelopes : 2006, Test 7)		Pass

3.1.2 On the basis of the data assessed, the system achieves a water penetration class of R7 in accordance with BS EN 12154 : 2000.

3.1.3 The design of the system was assessed against the requirements of EAD 090062-00-0404 : 2018. The system is suitable for use in back-ventilated and drained cladding systems.

3.1.4 The system is not airtight or watertight, but will minimise water entering the cavity. Any water passing through the system and collecting in the cavity due to rain or condensation will be removed by drainage and ventilation.

3.1.5 Designers and installers must take particular care in detailing around openings, penetrations and movement joints to minimise the risk of rain ingress

3.1.6 The substrate wall to which the system is fixed must be weathertight and reasonably airtight, to satisfy the requirements of the relevant national Building Regulations and Standards.

#### **4 Safety and accessibility in use**

Not applicable.

#### **5 Protection against noise**

Not applicable.

#### **6 Energy economy and heat retention**

Not applicable.

#### **7 Sustainable use of natural resources**

Data were assessed for the following characteristics.

##### 7.1 Reuse and recyclability

The aluminium rails and brackets, and clay brick slips are produced from materials that can be recycled.

#### **8 Durability**

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in this system were assessed.

Specific test data were assessed for the following.

## 8.2 Durability

8.2.1 Results of hygrothermal behaviour tests are given in Table 5.

**Table 5 Hygrothermal behaviour**

System assessed	Assessment method	Requirement	Result
CMS40 MF Brick Slip Cladding System with 22 mm thick extruded and handmade clay brick slips, and Parex Historic mortar (Natural)	EAD 090062-00-0404 : 2018	<ul style="list-style-type: none"> <li>No deterioration such as cracking or delamination of the cladding element that allows water penetration</li> </ul>	Pass
CMS40 MF Brick Slip Cladding System with 22 mm thick extruded and handmade clay brick slips, and Cempoint pointing mortar		<ul style="list-style-type: none"> <li>No detachment of cladding element</li> <li>No irreversible deformation</li> </ul>	Pass

8.2.2 Results of horizontal rails resistance to mortar tests are given in Table 6.

**Table 6 Resistance to mortar (effect of materials in contact)**

Product assessed	Assessment method	Requirement	Result
Cladmate aluminium horizontal rail and Parex Historic pointing mortar	BS EN 12206-1 : 2021, Section 5.10	BS EN 12206-1 : 2021, Section 4.3.3.8 – mortar must be easily removed and there must be no detachment of the coating nor any staining	Pass
Cladmate aluminium horizontal rail and Cempoint pointing mortar		Pass	

## 8.3 Service life

Under normal service conditions, the system will have a life of at least 30 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

# PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

## 9 Design, installation, workmanship and maintenance

### 9.1 Design

9.1.1 The design process was assessed by the BBA, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Design wind actions must be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. Due consideration must be given to the higher-pressure coefficients applicable to corners of the building as recommended in this Standard (see Annex A.1 of this Certificate).

9.1.3 The adequacy of the substrate wall to which the system is fixed is outside the scope of this Certificate and must be verified by a suitably experienced and competent individual. It must have sufficient strength to resist independently the loads imparted directly by the system, and the wind actions normally experienced in the UK, as well as any in-plane force effects. It must be weathertight and reasonably airtight and designed and constructed in accordance with the requirements of the national Building Regulations and Standards given below. The contribution of the system to the stability of the substrate wall is assumed to be negligible.

- masonry walls must be designed and constructed in accordance with the relevant recommendations of BS EN 1996-1-1 : 2022, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2023, and their UK National Annexes, PD 6697 : 2019, and BS 8000-0 : 2014 and BS 8000-3 : 2020
- concrete walls must be designed and constructed in accordance with BS EN 1992-1-1 : 2023 and BS EN 1992-1-2 : 2023, and their UK National Annexes
- steel-frame walls must be structurally sound, and designed and constructed in accordance with BS EN 1993-1-1 : 2022, BS EN 1993-1-2 : 2005 and BS EN 1993-1-3 : 2006, and their UK National Annexes
- timber-frame walls must be designed and constructed in accordance with BS EN 1995-1-1 : 2004 and BS EN 1995-1-2 : 2004 and their UK National Annexes, and PD 6693-1 : 2019, with workmanship in accordance with BS 8000-5 : 1990, and preservative-treated in accordance with BS EN 351-1 : 2023 and BS 8417 : 2011.

9.1.4 The designer must ensure that:

- the sub-frame (layout and profile sizes chosen) is designed in accordance with the relevant codes and Standards, has adequate resistance to the applied actions and is such as to limit mid-span deflections to span/200 and cantilever deflections to span/150.
- the fixings between subframe components have adequate resistance to the applied actions.
- the fixing of the subframe support to the supporting wall has adequate tensile pull-out strength and corrosion resistance (outside the scope of this Certificate). An appropriate number of site-specific pull-out tests must be conducted on the wall as appropriate to determine the minimum pull-out resistance to failure of the fixings, as well as their characteristic pull-out resistance in accordance with the guidance given in BS EN 1990 : 2023.
- the cladding system is designed with appropriate compartmentation of the cavity, and in accordance with the requirements of the NHBC Standards 2024, Chapter 6.9.

9.1.5 Thermal and moisture movement must be considered and accommodated by the inclusion of movement joints. Movement joints must be detailed by a suitably experienced and competent design engineer in accordance with the structural movement of the building, the appropriate Codes and Standards and the Certificate holder's recommendations.

9.1.6 Horizontal movement joints must be provided through brick, mortar and horizontal support rails at a maximum of 12 m centres in the façade system (see Figure 8). The actual spacing and position of the joints must coincide with movement joints in the substrate wall and allow for the same degree of movement. They must extend throughout the full height of the building including parapets etc. Movement joints in the structure of the building must be carried through to the face of the cladding.

9.1.7 Vertical movement joints must be located in the cladding system to suit the movement requirements of the building, substrate wall and subframe support system (see Figure 8).

9.1.8 For standard three-metre long vertical and horizontal rails, a gap of 10 mm between the ends of adjacent rails must be incorporated to allow for longitudinal expansion. For other rail lengths, the gap must be proportionally increased. For calculation purposes, the coefficient of thermal expansion for aluminium may be taken as  $23 \times 10^{-6} \text{K}^{-1}$ . Existing movement joints in the supporting structure must be maintained through the subframe support system. The brick slips must not be installed across the gap.

9.1.9 Ventilation and drainage must be provided behind the cladding. A minimum 50 mm wide clear cavity must be provided between the back of the horizontal rail and the substrate wall (or insulation, if installed on the external face of the substrate wall). It must be ensured that a minimum ventilation area of 5000 mm<sup>2</sup> per metre run is provided at the building base point and at the roof edge. All ventilation openings around the periphery of the cladding system must be suitably protected with a mesh or a perforated metal sheet or similar, to prevent the ingress of birds, vermin and insects.



9.1.10 As the system incorporates a minimum 50 mm clear ventilated cavity between the back of the horizontal rail and the substrate wall (or insulation, if installed within the cavity), the risk of interstitial condensation within the system is reduced.

9.1.11 Designers must ensure that an appropriate condensation risk analysis has been carried out for all parts of the construction to minimise the risk of condensation. The recommendations of BS 5250 : 2021 must be followed.

9.1.12 Any insulation installed in the cavity behind the cladding must be suitably fixed to the supporting wall. Insulation must be of a rigid or semi-rigid type (eg boards) and must be resistant to or be protected from weather conditions during the complete life cycle of the cladding system and, where its performance could be diminished by moisture, a suitable breather membrane must be provided over its outer face. The performance of these ancillary components is outside the scope of this Certificate.

## 9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A.

## 9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the system must be carried out by installers who have been approved by the Certificate holder.

## 9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the system in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.2.1 Regular checks of the installed systems must include visual inspections:

- of the brick slips and mortar, for signs of damage
- of ventilation and drainage pathways, to ensure they remain clear. Blockages must be cleared immediately
- of sealants around openings for signs of detachment/damage – if found, the sealant must be replaced.

9.4.2.2 Damaged brick slips, pointing mortar or horizontal supporting rails must be replaced as soon as practicable and in accordance with the Certificate holder's instructions. Damaged brick slips can be replaced by carefully removing the pointing mortar around the slip, lifting it upward to free the bottom from the support rail, and sliding it out base first.

## **10 Manufacture**

10.1 The production processes for the system have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

## **11 Delivery and site handling**

11.1 The Certificate holder stated that the brackets and rails are delivered to site in packaging bearing the product name and size, quantity, order number, Certificate holder's name and QR code taking the customer to the Cladmate Facade Systems website, batch number, and health and safety information.

11.2 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 Rails must be stored horizontally or on bearers. Due to rail lengths, special care needs to be taken when handling.

11.2.2 Brackets must be handled one box at a time, to ensure correct manual handling procedures can be maintained.

11.2.3 Personal protective equipment (PPE) must be worn at all times when handling the system components.

Supporting information in this Annex is relevant to the system but has not formed part of the material assessed for the Certificate.

### Construction (Design and Management) Regulations 2015

### Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

### Management Systems Certification for production

The management system of the manufacturer (bracket and rail fabrication) has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 and BS EN ISO 14001 : 2015 by First Quality Certification (Certificate 01.23.11235.116443.D) and QRS Quality (Certificate EMS-22-2804-CLA) respectively.

### Additional Guidance

A.1 In accordance with BS EN 1990 : 2023 and its UK National Annex, it is recommended that a partial load factor of 1.5 is applied to the calculated wind actions to determine the design wind load to be resisted by the cladding system (see section 9.1.2 of this Certificate).

### Additional information on installation

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

A.2 It is essential that the system is installed and maintained in accordance with the conditions set out in this Certificate. The fixing of rainwater goods, satellite dishes, clothes lines, hanging baskets and similar items is outside the scope of this Certificate. In all cases the Certificate holder's advice must be sought, but such advice is outside the scope of this Certificate.

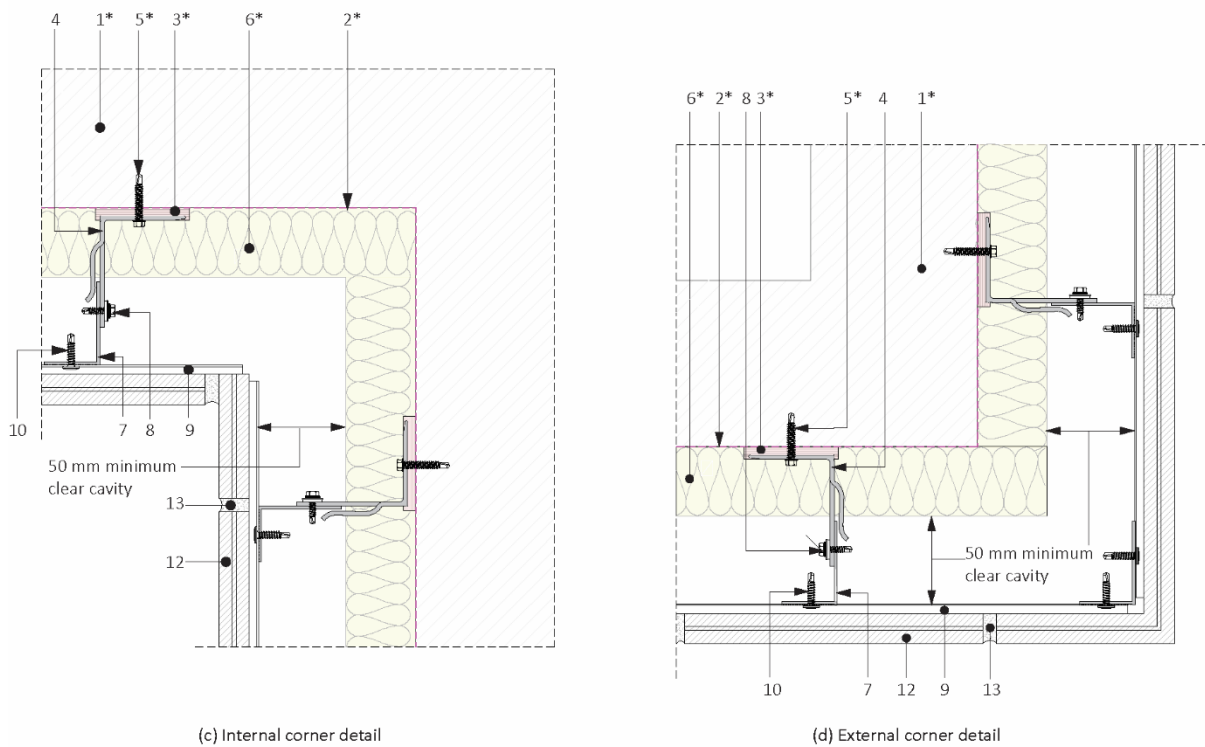
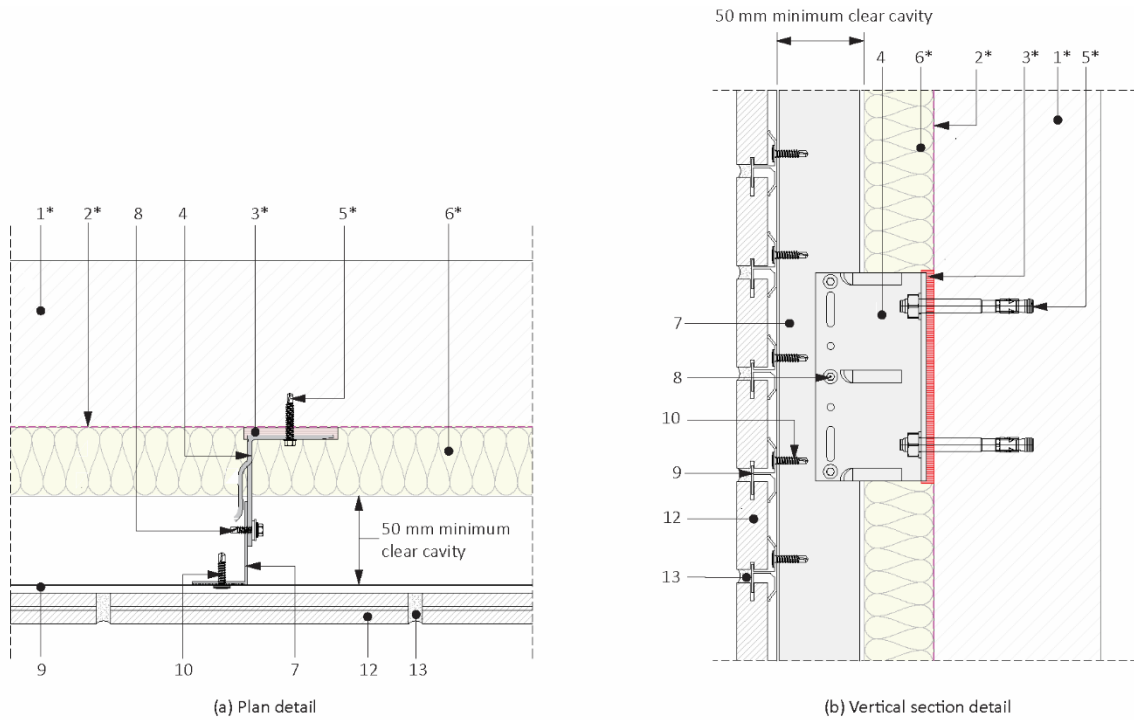
A.3 The support brackets, incorporating thermal isolator pad, are fixed to the specified location on the substrate wall and fixed using the specified fixings.

A.4 Vertical rails are secured between support wall brackets. The horizontal brick support rails are fixed to the vertical rails.

A.5 The brick slips are slotted into place between the horizontal rails by first pushing the brick at an angle onto the rail above, ensuring the rail goes onto the slot in the brick, followed by sitting the bottom brick slot onto the rail below. Bricks slips are separated using the provided brick spacer to create a 10 mm vertical joints. The vertical and horizontal joints are finished off with pointing mortar using a pointing gun.

A.6 Typical installation details are shown in Figure 8.

Figure 8 Typical installation details (all dimensions in mm)



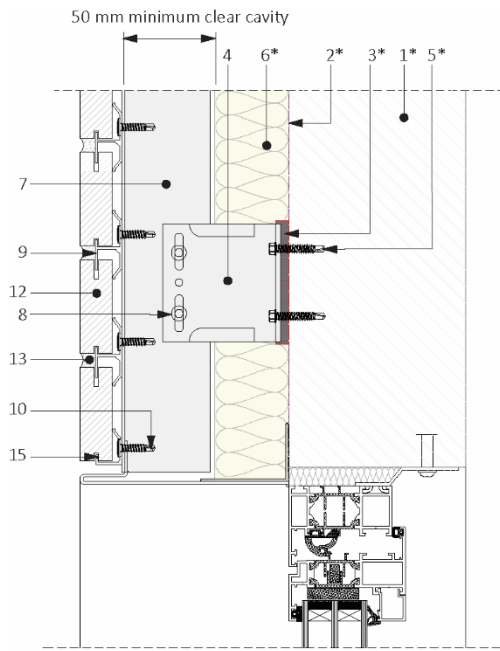
- 1 substrate wall\*
- 2 breather membrane\*
- 3 thermal isolator pad\*
- 4 bracket
- 5 fixing to substrate wall\*
- 6 insulation\*

- 7 vertical rail
- 8 vertical rail to bracket screw fixing
- 9 horizontal mid-rail
- 10 horizontal rail to vertical rail screw fixing
- 12 brick slip

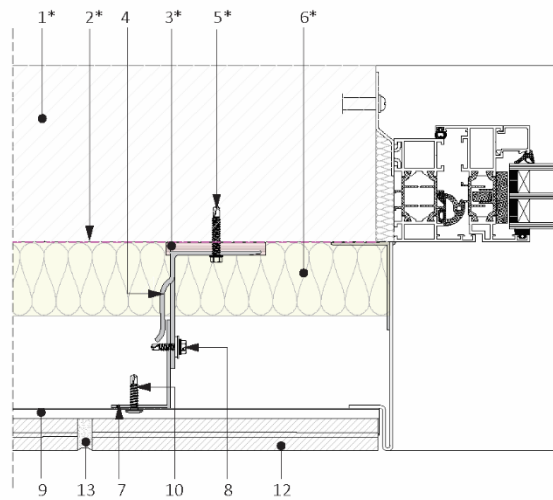
- 13 pointing mortar
- 14 horizontal top-rail
- 15 horizontal bottom-rail
- 16 fire rated silicone joint sealant\*
- 17 joint sealant\*

\*Outside the scope of this Certificate.

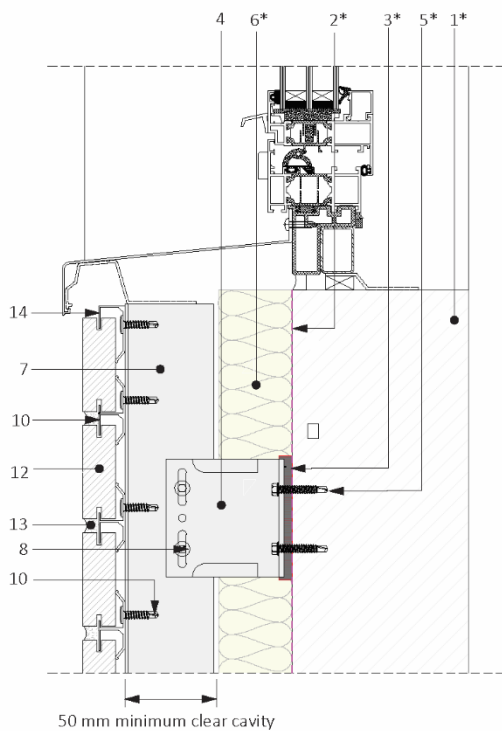
Figure 8 Typical installation details (all dimensions in mm) (continued)



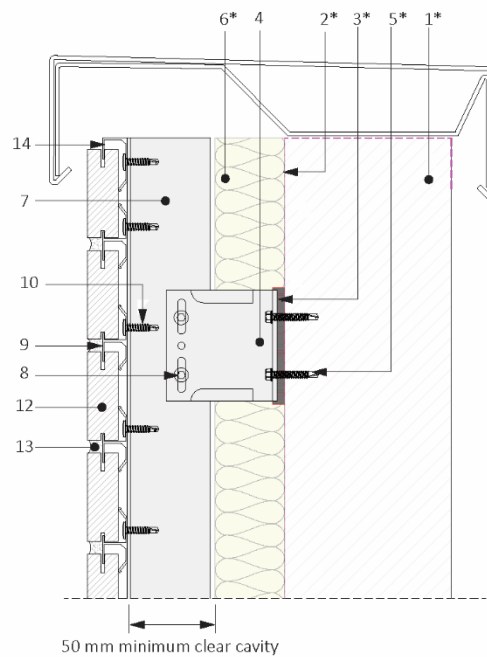
(e) Window head detail



(f) Window jamb detail



(g) Window sill detail



(h) Parapet detail

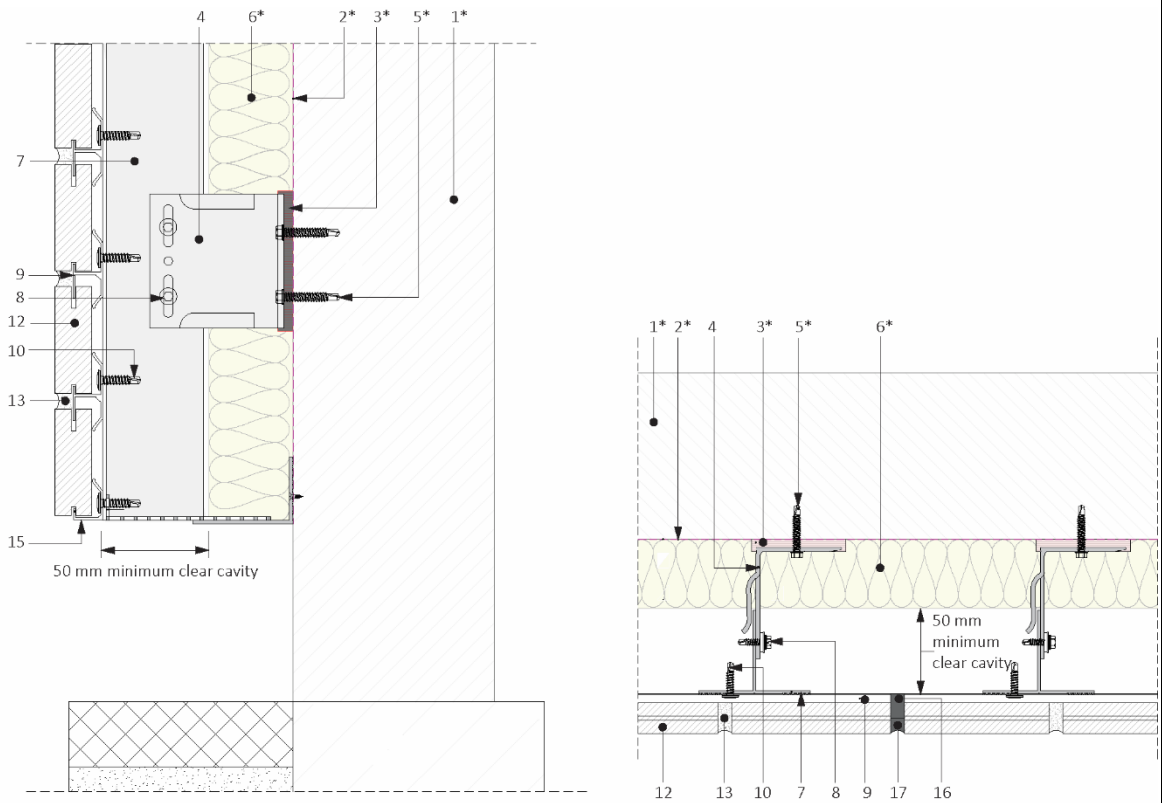
- 1 substrate wall\*
- 2 breather membrane\*
- 3 thermal isolator pad\*
- 4 bracket
- 5 fixing to substrate wall\*
- 6 insulation\*

- 7 vertical rail
- 8 vertical rail to bracket screw fixing
- 9 horizontal mid-rail
- 10 horizontal rail to vertical rail screw fixing
- 12 brick slip

- 13 pointing mortar
- 14 horizontal top-rail
- 15 horizontal bottom-rail
- 16 fire rated silicone joint sealant\*
- 17 joint sealant\*

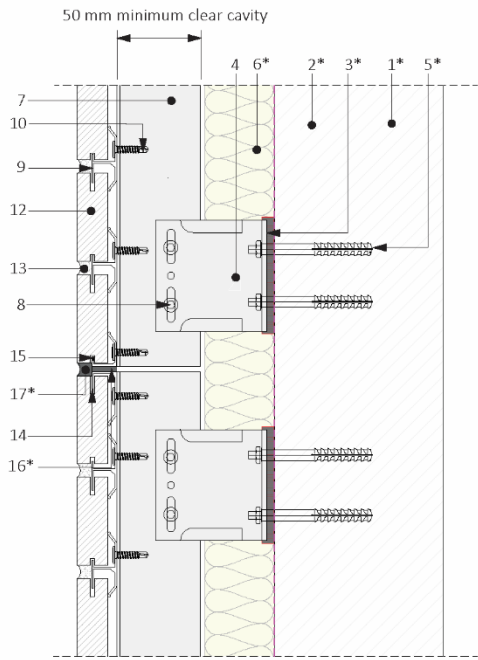
\*Outside the scope of this Certificate.

Figure 8 Typical installation details (all dimensions in mm) (continued)



(i) Base detail

(j) Vertical joint detail



(k) Horizontal joint detail

- 1 substrate wall\*
- 2 breather membrane\*
- 3 thermal isolator pad\*
- 4 bracket
- 5 fixing to substrate wall\*
- 6 insulation\*
- 7 vertical rail
- 8 vertical rail to bracket screw fixing
- 9 horizontal mid-rail
- 10 horizontal rail to vertical rail screw fixing
- 12 brick slip
- 13 pointing mortar
- 14 horizontal top-rail
- 15 horizontal bottom-rail
- 16 fire rated silicone joint sealant\*
- 17 joint sealant\*

\*Outside the scope of this Certificate.

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## Conditions of Certificate

### Conditions

1 This Certificate:

- relates only to the product 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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 or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.

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