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**Agrément Certificate**

**13/5063**

Product Sheet 2 Issue 1

### HILTI AUSTRIA INDUSTRIE RAINSCREEN SYSTEMS

### HILTI AUSTRIA INDUSTRIE RAINSCREEN CLADDING STEEL SUPPORT SYSTEMS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Hilti Austria Industrie Rainscreen Cladding Steel Support Systems, comprising a range of stainless steel L shaped brackets and aluminium L, Z, T and Omega rail profiles used as a vertical sub-frame to support cladding on the external or internal steel-frame, masonry or concrete substrate walls of new or existing buildings.

(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

The BBA has awarded this Certificate to the company named above for the systems described herein. These systems 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

Date of issue: 29 March 2023



#### 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

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. 3537).*

*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.*

#### British Board of Agrément

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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 Hilti Austria Industrie Rainscreen Cladding Steel Support Systems, 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 systems can be designed to adequately transfer the design loads from the cladding to the substrate wall structure. See section 1 of this Certificate.
<b>Requirement:</b>	<b>B4(1)</b>	<b>External fire spread</b>
Comment:		The systems are unrestricted by this Requirement. See section 2 of this Certificate.
<b>Requirement:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The systems are acceptable. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>7(2)</b>	<b>Materials and workmanship</b>
Comment:		The systems are unrestricted by this Regulation. See section 3 of this Certificate.



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

<b>Regulation:</b>	<b>8(1)</b>	<b>Fitness and durability of materials and workmanship</b>
Comment:		The systems are acceptable. See sections 8 and 9 this Certificate.
<b>Regulation:</b>	<b>8(3)</b>	<b>Fitness and durability of materials and workmanship</b>
Comment:		The systems can contribute to a construction satisfying this Regulation. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	1.1(a)(b)	Structure
Comment:		The systems can be designed to adequately transfer the design loads from the cladding to the substrate wall structure, with reference to clause 1.1.1 <sup>(1)(2)</sup> of this Standard. See sections 1 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Comment:		The systems are 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 3 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The systems are unrestricted by this Standard, with reference to clause 2.7.1 <sup>(1)(2)</sup> . See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The systems 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)

<b>Regulation:</b>	<b>23(1)</b>	<b>Fitness of materials and workmanship</b>
Comment:	The systems are 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 systems are unrestricted by this Regulation. See section 3 of this Certificate.	
<b>Regulation:</b>	<b>30</b>	<b>Stability</b>
Comment:	The systems can be designed to adequately transfer the design loads from the cladding to the substrate wall structure. See section 1 of this Certificate.	
<b>Regulation:</b>	<b>36(a)</b>	<b>External fire spread</b>
Comment:	The systems are unrestricted by this Regulation. See section 3 of this Certificate.	

### Additional Information

#### NHBC Standards 2023

In the opinion of the BBA, Hilti Austria Industrie Rainscreen Cladding Steel Support Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 6.9 *Curtain walling and cladding*.

### Fulfilment of Requirements

The BBA has judged Hilti Austria Industrie Rainscreen Cladding Steel Support Systems to be satisfactory for use as described in this Certificate. The systems have been assessed as a vertical sub-frame to support cladding on the external or internal steel-frame, masonry or concrete substrate walls of new or existing buildings.

### ASSESSMENT

#### Product description and intended use

The Certificate holder provided the following description for the product under assessment. Hilti Austria Industrie Rainscreen Cladding Steel Support Systems consists of:

- MFT VTR brackets — L shaped medium and large stainless-steel brackets with or without a polypropylene or PVC thermal isolator pad fitted to the back, used for vertical rail assembly
- rails — aluminium rails of L, Z, T and Omega rail profiles fixed to the steel wall brackets using self-drilling screws (see Table 2)
- self-drill screws S-AD01S 5.5 x 19 and S-AD01SS 5.5 x 19.

The system components have the nominal characteristics given in Table 1. Details of the system components are shown in Figure 1.

*Table 1 Nominal characteristics of system components*

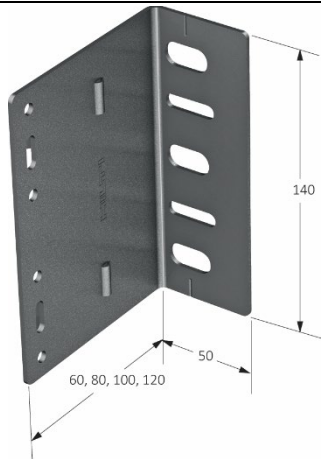
Component	Material/grade	Standard
MFT VTR brackets	stainless steel/EN 1.4404 (X2CrNiMo 17-12-2)	BS EN 10088-2 : 2014
L, Z, T and Omega rail profiles	aluminium/EN AW – 6063T66 (Al Mg 0.7Si)	BS EN 573-3 : 2019

*Table 2 Rail to bracket fixings*

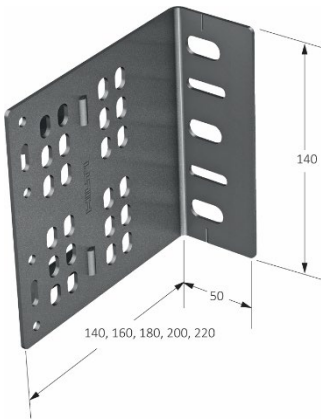
Fixing name	Fixing code	Grade of stainless steel to EN 10088-1 : 2014	Screw diameter (mm)	Length (mm)	Screw head diameter (mm)	Maximum fastened thickness (mm)
S-AD01S	2039265	1.4567	5.5	19	8	10
S-AD01SS	2039266	1.4578	5.5	19	8	10

Figure 1 Component details

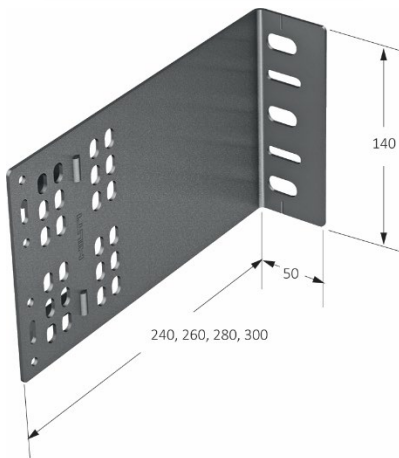
MFT VTR VI/V 6.5/11 L bracket – large



Bracket leg length (mm)	Bracket base width/height (mm)	Product Code
60	50/140	2349275
80	50/140	2349276
100	50/140	2349277
120	50/140	2349278



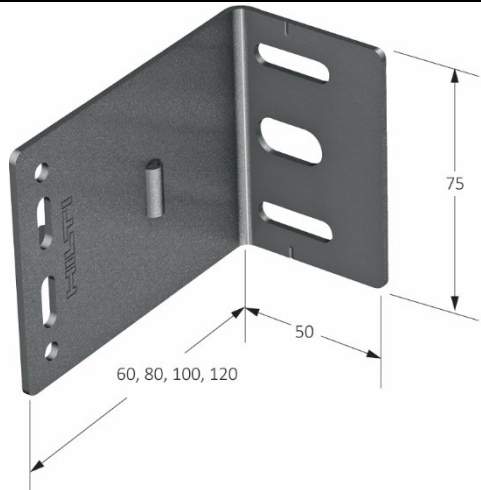
140	50/140	2349279
160	50/140	2349280
180	50/140	2349281
200	50/140	2349282
220	50/140	2349283



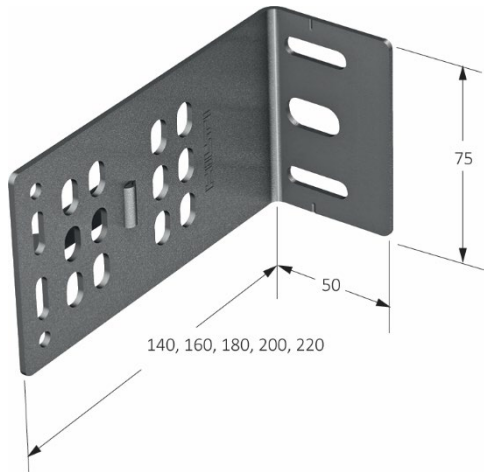
240	50/140	2349284
260	50/140	2349285
280	50/140	2349286
300	50/140	2349287

Figure 1 Component details (continued)

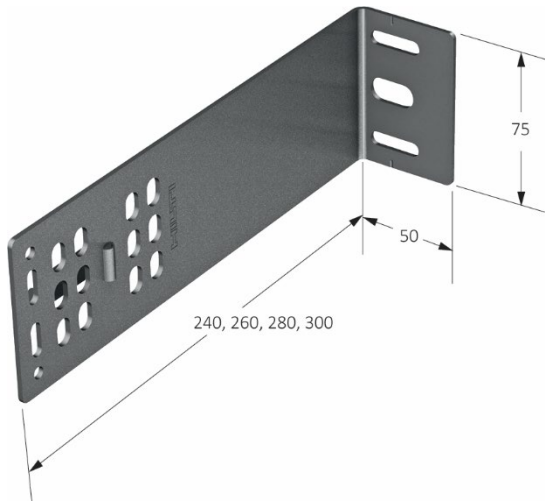
MFT VTR M 6.5/11 bracket – medium



Bracket leg length (mm)	Bracket base width/height (mm)	Product Code
60	50/75	2349162
80	50/75	2349163
100	50/75	2349164
120	50/75	2349165



140	50/75	2349166
160	50/75	2349167
180	50/75	2349168
200	50/75	2349169
220	50/75	2349270



240	50/75	2349271
260	50/75	2349272
280	50/75	2349273
300	50/75	2349274

Figure 1 Component details (continued)

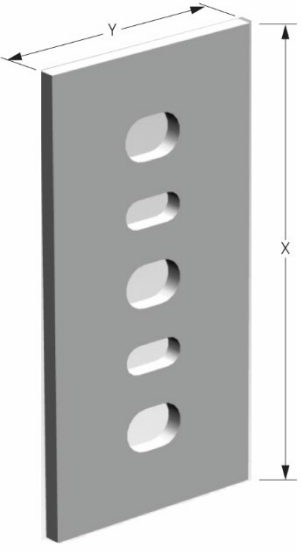
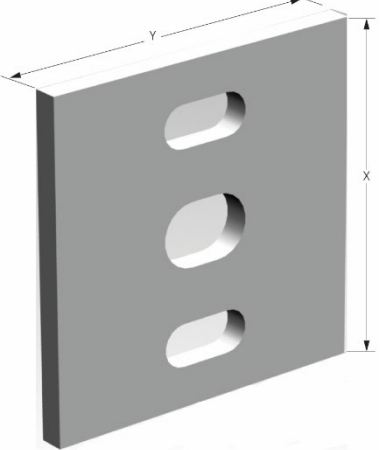
<i>MFT VTR Isolator – large</i>				
	Y (mm)	X (mm)	thickness (mm)	Product Code
	79	159	6	2081300
<i>MFT VTR Isolator – medium</i>				
	Y (mm)	X (mm)	thickness (mm)	Product Code
	79	79	6	2081301

Figure 1 Component details (continued)


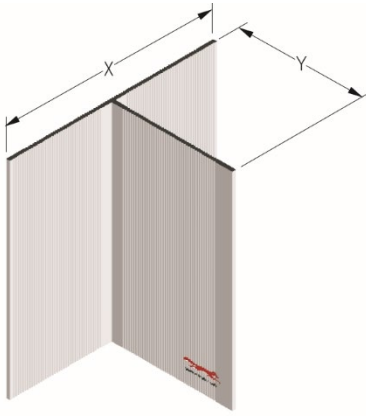


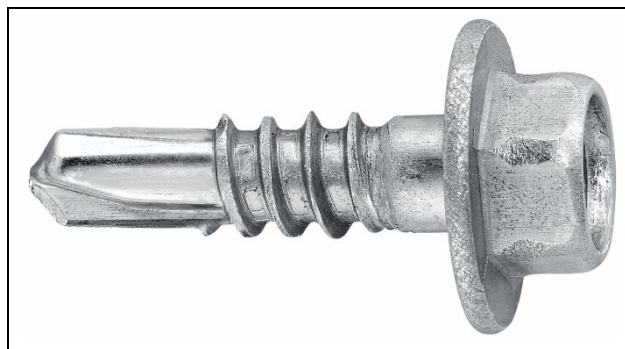
<b>L Profile</b>					
	Y (mm)	X (mm)	thickness (mm)	surface	Product Code
	40	40	1.8	fluted	2029783
	60	40	2	flat	2029372
	60	40	2	flat, black	2050781
	60	40	1.8	flat	2029370
	60	40	1.8	flat, black	2050780
	60	40	2.2	fluted	2029785
	60	50	2	fluted	2029786
<b>T-Profile</b>					
	X (mm)	Y (mm)	thickness (mm)	surface	Product Code
	80	40	1.8	fluted	2029787
	80	60	1.8	fluted	2029788
	100	60	2	flat	2029375
	100	60	2	flat, black	2050783
	100	60	1.8	flat	2029374
	100	60	1.8	flat, black	2050782
	100	60	2.2	fluted	2029789
	120	40	2	flat	2050268
	120	60	2	flat	2029378
	120	60	2	flat, black	2050785
	120	60	1.8	flat	2029377
	120	60	1.8	flat, black	2050784
	140	60	2.2	flat	2029792
	140	60	2	fluted	2029791

Figure 1 Component details (continued)

Z-Profile						
	Y	X	thickness	Product Code		
	(mm)	(mm)	(mm)			
	40	29.8	1.9	2029382		
	40	55	2.2	2029796		
	40	70	2.2	2029797		
Omega-Profile						
	U	Y	X	thickness	surface	Product Code
	(mm)	(mm)	(mm)	(mm)		
	35	86	25	1.9	flat	2029794
	40	110	29.8	1.9	flat, perforated	2029380
	40	110	29.8	1.9	flat	2029379

The MFT-VTR systems rails are fixed to the wall brackets using Hilti self-drill screws S-AD01S 5.5 x 19 and S-AD01SS 5.5 x 19 as described in Table 2 (see also Figure 2), with a minimum edge distance of 10 mm.

Figure 2 Self-drilling screws – rail to bracket





## Ancillary Items

The Certificate holder recommends the following ancillary items<sup>(1)</sup> for use with the systems, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- S-MD, S-MS and S-MP fastening screws
- Isolator MFT-ISO
- HRD frame anchors
- HST and HSA ultimate-performance wedge anchors
- HUS ultimate/high-performance screw anchors.

(1) Contact the Certificate holder for further details.

## Applications

The system is intended for use in in back ventilated and drained cavity rainscreen cladding systems as a sub-frame to support cladding on the external or internal steel-frame, masonry, or concrete substrate walls of new or existing buildings. They are effective in transferring the wind loading and weight of cladding to the substrate wall.

The systems are applied to the outside on the external or internal steel-frame, masonry or concrete substrate walls of new or existing buildings. Application must be carried out strictly in accordance with this Certificate and the Certificate holder's instructions, by installers approved by the Certificate holder.

## Product assessment – key factors

The system was assessed for the following key factors, and the outcomes of the assessments are 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 Structural and mechanical properties**

1.1.1 The geometric properties of the rails (L, Z, T and Omega rail profiles) can be found in detail in Table 3, for use by the structural designer for the rail design.

Table 3 L, Z, Tand Omega rail profile vertical rail section details

Profile name	Profile code	Dimension		Thickness	Area	Second moment of area		Product of Inertia	Radius of gyration		Distance to centre of gravity		Shape <sup>(1)</sup>
		x	y	t	A	I <sub>xx</sub>	I <sub>yy</sub>	I <sub>xy</sub>	x-x	x-y	x	y	
		(mm)		(mm)	(mm <sup>2</sup> )	(mm <sup>4</sup> )	(mm <sup>4</sup> )	(mm <sup>4</sup> )	(mm)		(mm)		
MFT-L 60x40x1,8 6m	2029370	40	60	1.8	154	62541	22822	22105	20.15	12.17	31.094	31.09	L
MFT-L 60x40x2,0 6m	2029372	40	60	2	174.36	69793	25482	24688	20.00	12.08	31.037	31.03	L
MFT-L 40x40x1,8 6m	2029783	40	40	1.8	122.9	20409	20449	12042	12.88	12.89	29.112	29.11	L
MFT-L 60x40x1,8 6m RAL9005	2050780	40	60	1.8	154	62541	22822	22105	20.15	12.17	31.094	31.09	L
MFT-L 60x40x2,0 6m RAL9005	2050781	40	60	2	174.36	69793	25482	24688	20.00	12.08	31.037	31.03	L
MFT-L 60x50x2,0 R 6m	2029786	50	60	2	2345.99	78201	73928	41168	5.77	5.61	36.01	36.01	L
MFT-T 60x100x1,8 6m	2029374	100	60	1.8	284.76	81427	138193	-2.4	16.91	22.02	50	50	T
MFT-T 60x100x2,0 6m	2029375	100	60	2	316	86846	155591	-47.4	16.57	22.18	50	50	T
MFT-T 60x120x1,8 6m	2029377	120	60	1.8	320.76	84792	238709	-2.47	16.25	27.27	60	60	T
MFT-T 60x120x2,0 6m	2029378	120	60	2	356	90398	268597	-50.2	15.93	27.46	60	60	T
MFT-T 40x80x1,8 6m	2029787	80	40	1.8	212.76	22957	64792	-16.35	10.38	17.45	40	40	T
MFT-T 60x80x1,8 6m	2029788	80	60	1.8	248.76	75397	67593	-2.04	17.40	16.48	40	40	T
MFT-T 60x100x2,2 6m	2029789	100	60	2.2	347.16	93674	158156	-52.1	16.42	21.34	50	50	T
MFT-T 60x140x2,0 6m	2029791	140	60	2	396	96012	400174	-2.84	15.57	31.78	70	70	T
MFT-T 60x140x2,2 6m	2029792	140	60	2.2	435.16	102200	465342	3.3	15.32	32.70	70	70	T
MFT-T 40x120x2,0 6m	2050268	120	40	2	316	28033	266114	-2.29	9.41	29.01	60	60	T
MFT-T 60x100x1,8 6m RAL9005	2050782	100	60	1.8	284.76	81427	138193	-2.4	16.91	22.02	50	50	T
MFT-T 60x100x2,0 6m RAL9005	2050783	100	60	2	316	86846	155591	-47.4	16.57	22.18	50	50	T
MFT-T 60x120x1,8 6m RAL9005	2050784	120	60	1.8	320.76	81400	13500	-2.32	15.93	6.48	60	60	T
MFT-T 60x120x2,0 6m RAL9005	2050785	120	60	2	356	90398	268597	-50.2	15.93	27.46	60	60	T
MFT-O 40x29,8x1,9 6m	2029379	29.8	40	1.9	389.66	41580	232964	0	10.32	24.45	55	55	O
MFT-O 86x25x1,9 6m	2029794	25	86	1.9	244.11	25133	117908	0	10.14	21.97	43	43	O
MFT-O 40x29,8x2,5 6m	2062591	29.8	40	2.5	427.37	58968	339944	0	11.74	28.20	55	55	O
MFT-Z 40x29,8x1,9 6m	2029382	29.8	40	1.9	200.21	33044	81179	41104	12.84	20.13	38.85	38.85	Z
MFT-Z 40x55x2,2 6m	2029796	55	40	2.2	280.65	142764	93971	91113	22.55	18.29	39	39	Z
MFT-Z 40x70x2,2 6m	2029797	70	40	2.2	310.08	257262	93985	116522	28.80	17.40	39	39	Z
MFT-L 60x40x1,8 6m	2029370	40	60	1.8	154	62541	22822	22105	20.15	12.17	31.094	31.09	L

(1) Refer to Figure 1 for location of x and y dimension.

1.1.2 The designer must ensure that the design resistance (including pull-out and pull-through) of the fixings attaching the brackets to the substrate wall is not less than the design resistance of the brackets given in Table 4 including a partial material factor of 1.1.

**Table 4 Bracket design resistance<sup>(1)</sup>**

Product assessed:	Assessment method	Requirement	Results		
Code <sup>(2)</sup>	<i>BS EN 1993-1-4:2006</i>	Reached Failure criteria	Design resistance <sup>(3)</sup> (F <sub>RD</sub> ) (kN)		
			Horizontal		Vertical
			Tension	Compression	Shear
<i>MFT VTR L 6.5/11 bracket – large</i>					
2349275			3.09	14.03	3.37
2349276			3.16	12.09	3.49
2349277			3.03	9.80	3.50
2349278			3.12	8.60	4.03
2349279			3.23	7.25	4.44
2349280			3.19	5.86	3.75
2349281			3.34	7.45	4.19
2349282			3.27	6.13	3.85
2349283			3.30	5.11	3.42
2349284			3.41	5.84	3.50
2349285			3.38	5.01	3.16
2349286			3.31	4.34	2.87
2349287			3.47	4.19	2.73
<i>MFT VTR M 6.5/11 bracket – medium</i>					
2349162			2.99	13.01	3.57
2349163			2.95	10.10	3.36
2349164			2.79	7.62	3.07
2349165			2.85	6.56	2.81
2349166			2.84	5.28	2.32
2349167			2.77	3.97	1.95
2349168			3.04	4.70	2.24
2349169			3.12	3.77	1.93
2349270			3.16	3.08	1.68
2349271			3.27	3.50	1.81
2349272			3.04	2.95	1.60
2349273			3.20	2.54	1.43
2349274			3.21	2.42	1.36

(1) Achieved with anchor fixings.

(2) Refer to Figure 1 for bracket size corresponding to the stated product code.

(3) Includes a partial material factor of 1.1.

1.1.3 On the basis of data assessed, the systems can be designed to support the cladding and to transfer the design loads to the substrate wall structure.

1.1.4 The supporting substrate wall must be able to resist the full wind, as well as any racking loads, on its own. No contribution from the cladding and the systems may be assumed in this respect.

1.1.5 The number of wall brackets used will also be dependent on the weight of the cladding to be supported and must be determined on a project-specific basis by the designer.

1.1.6 The design of the rails and associated connections must be such as to satisfy the requirements of BS EN 1999-1-1 : 2007, using the mechanical properties of the aluminium grade specified in section 1. Mid-span deflections must be limited to L/200 and cantilever deflections limited to L/150, where L is distance between two adjacent brackets.

1.1.7 In general, the rails should be fixed at mid-length using normal clearance holes (fixed point) and allowed to expand toward the ends using slotted holes (flexible or sliding point) (see Figure 1). To allow for expansion, a minimum gap of 2.5 mm per metre length must be provided. For standard three-metre-long rails, a gap of 10 mm between

adjacent rails is adequate. 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 rail systems.

## 2 Safety in case of fire

Data were assessed for the following characteristics.

### 2.1 Behaviour in relation to fire

2.1.1 The stainless steel brackets, aluminium rails, and associated rail-to-bracket fixings have an A1 reaction to fire classification in accordance with BS EN 13501-1 : 2018 and are not subject to any restriction in building height or proximity to boundary as defined in the documents supporting the national Building Regulations.

2.1.2 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for cavity barriers, service penetrations, substrate fire performance and combustibility limitations for other materials and components used in the overall wall construction (for example, thermal insulation).

## 3 Hygiene, health and the environment

Not applicable.

## 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

### 7.1 Reuse and recyclability

7.1.1 The systems components contain polypropylene, aluminium and stainless steel, all of which can be recycled.

## 8 Durability

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

### 8.2 Service life

8.2.1 Under normal service conditions, the systems will have a life of at least 35 years in normal UK conditions, provided they are 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 The substrate walls to which the systems are fixed must be structurally sound, and designed and constructed in accordance with the requirements of the relevant national Building Regulations and Standards:

- timber-frame walls must be designed and constructed in accordance with the principles of PD 6693-1 : 2019, BS EN 1995-1-1 : 2004 and BS EN 1995-1-2 : 2004 and their UK National Annexes, with workmanship in accordance with BS 8000-5 : 1990, and preservative-treated in accordance with BS EN 351-1 : 2007 and BS 8417 : 2011
- steel-frame walls must be structurally sound, and designed and constructed in accordance with the principles of BS EN 1993-1-1 : 2005, BS EN 1993-1-2 : 2005 and BS EN 1993-1-3 : 2006, and their UK National Annexes
- masonry walls must be designed and constructed in accordance with the principles of BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005 and BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006, and their UK National Annexes, and BS 8000-0 : 2014 and BS 8000-3 : 2020
- concrete walls must be designed and constructed in accordance with the principles of BS EN 1992-1-1 : 2004 and BS EN 1992-1-2 : 2004, and their UK National Annexes.

9.1.3 Designers, planners, contractors and/or installers must ensure that the systems have adequate structural capacity to support cladding panels in accordance with the design and installation requirements of the cladding panel supplier.

9.1.4 Designers, planners, contractors and/or installers must ensure that the systems have adequate structural capacity to support cladding panels in accordance with the design and installation requirements of the cladding panel supplier.

9.1.5 A suitably qualified and experienced individual must ensure that:

- any thermal expansion effects of both the system and the cladding to be supported are taken into account in the design and detailing
- the specified fixings have adequate tensile, shear and pull-out strength to resist the design actions
- the fixing of the support brackets to the supporting wall has adequate tensile, shear and pull-out strength, and corrosion resistance (outside the scope of this Certificate)
- a check is carried out on the combinations of horizontal and vertical actions, in accordance with the principles of BS EN 1999-1-1 : 2007, BS EN 1999-1-3 : 2007, BS EN 1993-1-1 : 2005 and BS EN 1993-1-4 : 2006, and their UK National Annexes, in conjunction with BS EN 1990 : 2002 and its UK National Annex.

9.1.6 Design wind actions must be calculated by a suitably experienced and competent individual in accordance with the principles of BS EN 1991-1-4 : 2005 and its UK National Annex. Due consideration must be given to higher pressure coefficients applicable to corners of the building, as recommended in this Standard. In accordance with BS EN 1990 : 2002, a partial load factor of 1.5 must be applied to determine the design wind load to be resisted by the systems.

9.1.7 The assessment of structural performance of the systems for individual buildings must be carried out by a suitably qualified and experienced individual to confirm that:

- the substrate wall to which the brackets are fixed has adequate strength to resist additional loads that may be applied as a result of installing the cladding system
- the proposed system, associated fixings and layout provide adequate resistance to wind actions and self-weight of the chosen cladding
- the bearing capacity of the fixings between the brackets and rails is not exceeded
- an appropriate number of site-specific pull-out tests are conducted on the substrate of the building to determine the minimum pull-out resistance to failure of the fixings used to attach the systems to the substrate. The characteristic pull-out resistance should be determined in accordance with the guidance given in EAD 330284-00-0604, parts 1 to 5
- thermal expansion effects of both the system and the cladding to be supported are taken into consideration in the design and detailing.

9.1.8 The impact resistance of a cladding system is a function of the support framing arrangement and the cladding panel used. The building designer must ensure that the cladding system incorporating the system has adequate impact resistance for the support frame arrangement and cladding panels used and must be evaluated through testing by a UKAS accredited (for the test) body, in accordance with EAD 090062-00-0404, and the appropriate impact Use Category classification determined in accordance with the same Standard. The classification will establish the areas where the completed cladding system can be used (see EAD 090062-00-0404, Table G.2).

9.1.9 The cavity width created by the systems between the back of the specified cladding panels and the supporting wall (or insulation, if installed within the cavity) must be a minimum of 38 and 50 mm for cladding panels with baffled or labyrinth joints, and open joints, respectively, in accordance with the requirements of the *NHBC Standards 2023*, Chapter 6.9.

9.1.10 The ventilation pathways behind the cladding must not be allowed to become blocked, or the insulation dislodged, where it may be vulnerable to wetting.

9.1.11 On the basis of data assessed, the amount of water entering the cavity depends on the cladding and the joint type. Provided provision for drainage and ventilation is made, the systems will remove any water collecting in the cavity due to rain and condensation.

9.1.12 For the effective removal of moisture from the cavity, a minimum ventilation area of 5000 mm<sup>2</sup> per metre run of cladding must be provided at the building base point and at the roof edge. To prevent the ingress of birds, vermin or insects, all ventilation openings should be suitably protected with a ventilation protection mesh, perforated sheet or similar, or should be baffled.

## 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 are provided in Annex A of this Certificate.

Figure 3 Typical vertical rail/bracket arrangement



### 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 systems must be carried out by installer who has been trained and approved by the Certificate holder.

### 9.4 Maintenance and repair

9.4.1 The systems themselves do not require special maintenance.

## 10 Manufacture

10.1 The production processes for the product 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 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.

†10.1.5 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 systems are delivered to site in packaging bearing the product name, Certificate holder's name, the BBA logo incorporating the number of this Certificate, batch number, health and safety information and weight of contents in kilograms.

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

11.2.1 Packs of rails must be stacked horizontally on sufficient bearers to prevent distortion to a maximum height of one metre.

11.2.2 Pallets must be stored on a dry, flat and level surface, suitably protected from the weather. Ancillary items should be stored in separate boxes.

## ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the product 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 has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Quality Austria Training, Certification and Evaluation Ltd. (Certificate 08055/0).

### Additional information on installation

A.1 The systems, when incorporated in back-ventilated and drained cavity rainscreen cladding systems, will not have an adverse effect on the removal of water from the cavity by drainage and ventilation.

A.2 The brackets' insulating pads (isolators) act as thermal breaks.

A.3 Based on a preliminary survey of the wall and architectural/structural design, a grid layout for the sub-frame is first prepared

A.4 The brackets (with/without the isolator pad) are fixed to the substrate wall using fixings of appropriate type and size as determined by design application.

A.5 The rails are inserted into the brackets and, after adjustment for line and level, are fixed to them using self-drilling stainless-steel screws or rivets, as determined by design.

A.6 Where rails are installed, they are normally attached to the substrate wall to span one storey height. They are normally anchored at mid-span using the round holes in the brackets (fixed point/dead loads) and allowed to expand at the ends using the elongated holes in the brackets (flexible point).



## Bibliography

- BS 8000-0 : 2014 *Workmanship on construction sites — Instruction and general principle*  
BS 8000-3 : 2020 *Workmanship on construction sites — Code of practice for masonry*  
BS 8000-5 : 1990 *Workmanship on construction sites — Code of practice for carpentry, joinery and general fixings*
- BS 8417 : 2011 + A1 : 2014 *Preservation of wood – Code of practice*
- BS EN 351-1 : 2007 *Durability of wood and wood-based products — Preservative-treated solid wood — Classification of preservative penetration and retention*
- BS EN 573-3 : 2019 + A1 : 2022 *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Chemical composition and form of products*
- BS EN 1990 : 2002 + A1 : 2005 *Eurocode — Basis of structural design*  
NA to BS EN 1990 : 2002 + A1 : 2005 UK National Annex for *Eurocode — Basis of structural design*
- BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*  
NA to BS EN 1991-1-4 : 2005 + A1 : 2010 UK National Annex for *Eurocode 1 — Actions on structures — General actions — Wind actions*
- BS EN 1992-1-1 : 2004 *Eurocode 2: Design of concrete structures — General rules and rules for buildings*  
NA to BS EN 1992-1-1 : 2004 UK National Annex to *Eurocode 2: Design of concrete structures — General rules and rules for buildings*  
BS EN 1992-1-2 : 2004 *Eurocode 2: Design of concrete structures — General rules — Structural fire design*  
NA to BS EN 1992-1-2 : 2004 UK National Annex to *Eurocode 2: Design of concrete structures — General rules — Structural fire design*
- BS EN 1993-1-1 : 2005 + A1 2014 *Eurocode 3 — Design of steel structures — General rules and rules for buildings*  
NA to BS EN 1993-1-1 : 2005 + A1 2014 UK National Annex for *Eurocode 3 — Design of steel structures — General rules and rules for buildings*  
BS EN 1993-1-2 : 2005 *Eurocode 3 — Design of steel structures — General rules — Structural fire design*  
NA to BS EN 1993-1-2 : 2005 UK National Annex to *Eurocode 3 — Design of steel structures — General rules — Structural fire design*  
BS EN 1993-1-3 : 2006 *Eurocode 3. Design of steel structures — General rules — Supplementary rules for cold-formed members and sheeting*  
NA to BS EN 1993-1-3 : 2006 UK National Annex to *Eurocode 3. Design of steel structures — General rules — Supplementary rules for cold-formed members and sheeting*  
BS EN 1993-1-4 : 2006 + A2 : 2020 *Eurocode 3 — Design of steel structures — General rules — Supplementary rules for stainless steels*  
NA to BS EN 1993-1-4 : 2006 + A1 2015 UK National Annex for *Eurocode 3 — Design of steel structures — General rules — Supplementary rules for stainless steels*
- BS EN 1995-1-1 : 2004 + A2 : 2014 *Eurocode 5 — Design of timber structures — General — Common rules and rules for buildings*  
NA to BS EN 1995-1-1 : 2004 + A2 : 2008 UK National Annex to *Eurocode 5 — Design of timber structures — General — Common rules and rules for buildings*  
BS EN 1995-1-2 : 2004 *Eurocode 5 — Design of timber structures — General — Structural fire design*  
NA to BS EN 1995-1-2 : 2004 UK National Annex to *Eurocode 5 — Design of timber structures — General — Structural fire design*
- BS EN 1996-1-1 : 2005 + A1 : 2012 *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*  
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BS EN 1996-2 : 2006 *Eurocode 6 — Design of masonry structures — Design considerations, selection of materials and execution of masonry*  
NA to BS EN 1996-2 : 2006 UK National Annex to *Eurocode 6 — Design of masonry structures — Design considerations, selection of materials and execution of masonry*

BS EN 1996-3 : 2006 *Eurocode 6 — Design of masonry structures — Simplified calculations methods for unreinforced masonry structures*

NA + A1 : 2014 to BS EN 1996-3 : 2006 UK National Annex to *Eurocode 6 — Design of masonry structures — Simplified calculations methods for unreinforced masonry structures*

BS EN 1999-1-1 : 2007 + A2 : 2013 *Eurocode 9 — Design of aluminium structures — General structural rules*

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

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NA to BS EN 1999-1-3 : 2007 + A1 : 2011 UK National Annex for *Eurocode 9 — Design of aluminium structures — Structures susceptible to fatigue*

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

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

BS EN 13501-1 : 2018 *Fire classification of construction products and building elements – Classification using test data from reaction to fire tests*

BS EN ISO 9001 : 2015 *Building management systems — Requirements*

EAD 330284-00-0604 : 2021 *European Assessment Document — Plastic anchors for multiple use in concrete and masonry for non-structural applications*

EAD 090062-00-0404 : 2018 *European Assessment Document — Kits for external wall claddings, mechanically fixed*

PD 6693-1 : 2019 — *Recommendations for the design of timber structures to Eurocode 5 – Design of timber structures – General – Common rules and rules for building*

## 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.

**British Board of Agrément**

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