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Agrément Certificate 86/1671

Product Sheet 3

ALUMASC RAINWATER SYSTEMS

ALUMASC GX JOGGLE, SMOOTH, MOULDED GUTTER SYSTEMS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Alumasc GX Joggle, Smooth, Moulded Gutter Systems, mill-finished or polyester-coated aluminium eaves guttering for conveying rainwater from roofs.

(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

Performance of joints — joints between gutter sections and fittings are watertight under conditions of thermal movement in excess of those expected to occur in practice (see section 6).

Resistance to loading — gutters have adequate resistance to snow loading (see section 7).

Durability — the systems will have a life expectancy of 40 years in rural and suburban conditions and 25 years in industrial and coastal conditions (see section 10).



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

Date of Third issue: 28 September 2020

Originally certificated on 28 November 1988

Hardy Giesler
Chief Executive Officer

The BBA is a UKAS accredited certification body – Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

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

British Board of Agrément Bucknalls Lane

Watford Herts WD25 9BA

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Regulations

In the opinion of the BBA, Alumasc GX Joggle, Smooth, Moulded Gutter 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 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: H3 Rainwater drainage

Comment: See section 8 of this Certificate.

Regulation: 7(1) Materials and workmanship

Comment: The systems are acceptable. See section 10 and the *Installation* part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)(2) Durability, workmanship and fitness of materials

Comment: The systems can contribute to a construction satisfying this Regulation. See sections 9

and 10 and the Installation part of this Certificate.

Regulation: 9 Building standards applicable to construction

Standard: 3.6 Surface water drainage

Comment: The systems can satisfy the relevant requirements of this Standard. See section 8 of this

Certificate.



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

Regulation: 23 Fitness of materials and workmanship

Comment: The systems are acceptable. See section 10 and the *Installation* part of this Certificate.

Regulation: 82 Rainwater drainage

Comment: See section 8 of this Certificate.

Construction (Design and Management) Regulations 2015 Construction (Design and Management) Regulations (Northern Ireland) 2016

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

Additional Information

NHBC Standards 2020

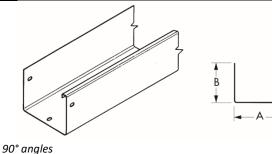
In the opinion of the BBA, Alumasc GX Joggle, Smooth, Moulded Gutter Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Part 7 *Roofs* (Chapters 7.1.12 and 7.2.22).

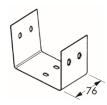
Technical Specification

1 Description

1.1 Alumasc GX Joggle, Smooth, Moulded Gutter Systems are available in a range of sizes and comprise the items listed in Tables 1 and 2.

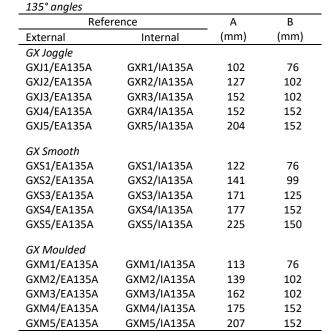
Standard gutter le	engths			Union Clips		
Reference	Length	Α	В	Reference	Α	В
	(mm)	(mm)	(mm)		(mm)	(mm)
GX Joggle				GX Joggle		
GXJ1/3MA	3000	102	76	None required		
GXJ2/3MA	3000	127	102	None required		
GXJ3/3MA	3000	152	102	None required		
GXJ4/3MA	3000	152	152	None required		
GXJ5/3MA	3000	204	152	None required		
GX Smooth				GX Smooth		
GXS1/3MA	3000	122	76	GXS1/UCA	122	76
GXS2/3MA	3000	141	99	GXS2/UCA	141	99
GXS3/3MA	3000	171	125	GXS3/UCA	171	125
GXS4/3MA	3000	177	152	GXS4/UCA	177	152
GXS5/3MA	3000	225	150	GXS5/UCA 225		150
GX Moulded				GX Moulded		
GXM1/3MA	3000	113	76	GXM1/UCA	113	76
GXM2/3MA	3000	139	102	GXM2/UCA	139	102
GXM3/3MA	3000	162	102	GXM3/UCA	162	102
GXM4/3MA	3000	175	152	GXM4/UCA	175	152
GXM5/3MA	3000	207	152	GXM5/UCA	207	152

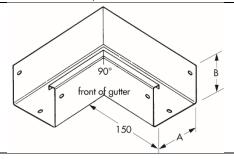


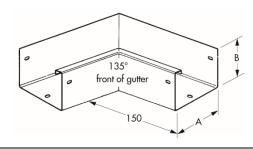


Refe	Α	Е	
External	Internal	(mm)	(m
GX Joggle	•	•	
GVI1/EAGOA	GVP1/IAQQA	102	7

Refe	rence	Α	В
External	Internal	(mm)	(mm)
GX Joggle			
GXJ1/EA90A	GXR1/IA90A	102	76
GXJ2/EA90A	GXR2/IA90A	127	102
GXJ3/EA90A	GXR3/IA90A	152	102
GXJ4/EA90A	GXR4/IA90A	152	152
GXJ5/EA90A	GXR5/IA90A	204	152
GX Smooth			
GXS1/EA90A	GXS1/IA90A	102	76
GXS2/EA90A	GXS2/IA90A	141	99
GXS3/EA90A	GXS3/IA90A	171	125
GXS4/EA90A	GXS4/IA90A	177	152
GXS5/EA90A	GXS5/IA90A	225	150
GX Moulded			
GXM1/EA90A	GXM1/IA90A	113	76
GXM2/EA90A	GXM2/IA90A	139	102
GXM3/EA90A	GXM3/IA90A	162	102
GXM4/EA90A	GXM4/IA90A	175	152
GXM5/EA90A	GXM5/IA90A	207	152







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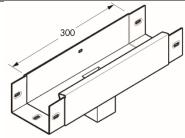
Table 1 Pressed aluminium box gutters and fittings (continued)

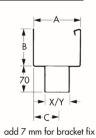
Stop ends				
Reference		Α	В	
		(mm)	(mm)	
GX Joggle				
GXJ1/SEA		98	72	0
GXJ2/SEA		123	98	
GXJ3/SEA		148	98	
GXJ4/SEA		148	148	
GXJ5/SEA		200	148	A 40
				Y X
GX Smooth				
GXS1/SELA	GXS1/SERA	122	76	
GXS2/SELA	GXS2/SERA	141	99	
GXS3/SELA	GXS3/SERA	171	125	Note: all dimensions in millimetre
GXS4/SELA	GXS4/SERA	177	152	
GXS5/SELA	GXS5/SERA	225	150	
GX Moulded				
GXM1/SELA	GXM1/SERA	113	76	
GXM2/SELA	GXM2/SERA	139	102	
GXM3/SELA	GXM3/SERA	162	102	
GXM4/SELA	GXM4/SERA	175	152	
GXM5/SELA	GXM5/SERA	207	152	

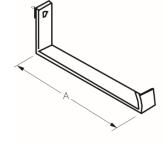
Table 2 Outlets, downpipes and brackets

Fascia brackets (wrought aluminium strip 100 mm wide x 3 mm thick)

						(11.0 aB a.a	
Reference	Α	В	С	Х	Υ	Reference	A
	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)
GXJ3/SO43A	162	102	76	102	76	GX Smooth	
GXJ4/SO43A	175	152	76	102	76	GXS1/BRKA	122
GXJ5/SO43A	207	152	102	102	76	GXS2/BRKA	141
GXJ1/SO44A	113	76	51	102	102	GXS3/BRKA	171
GXJ2/SO44A	139	102	64	102	102	GXS4/BRKA	177
GXJ3/SO44A	162	102	76	102	102	GXS5/BRKA	225
GXJ4/SO44A	175	152	76	102	102		
GXJ5/SO44A	207	152	102	102	102	^	



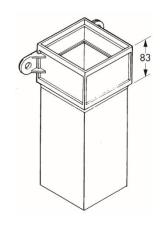




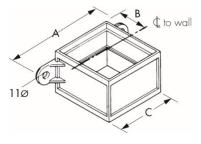
X, Y – dimension of the section of the square/rectangular pipe

Table 2 Outlets, downpipes and brackets (continued)				
Outlets and circ	ular downpip	es compati	bilities for jo	ointing
Reference	Diameter	Α	В	С
	(mm)	(mm)	(mm)	(mm)
GX Joggle				
GXJ1/RO25A	63	102	76	51
GXJ2/RO25A	63	127	102	64
GXJ3/RO25A	63	152	102	76
GXJ4/RO25A	63	152	152	76
GXJ5/RO25A	63	204	152	102
GXJ1/RO30A	75	102	76	51
GXJ2/RO30A	75	127	102	64
GXJ3/RO30A	75	152	102	76
GXJ4/RO30A	75	152	152	76
GXJ5/RO30A	75	204	152	102
GXJ1/RO40A	100	102	76	51
GXJ2/RO40A	100	127	102	64
GXJ3/RO40A	100	152	102	76
GXJ4/RO40A	100	152	152	76 76
GXJ5/RO40A	100	204	152	102
GX Smooth				
GXS1/RO25A	63	122	76	51
GXS2/RO25A	63	141	99	64
GXS3/RO25A	63	171	125	76
GXS4/RO25A	63	177	152	76
GXS5/RO25A	63	225	150	102
GXS1/RO30A	75	122	76	51
GXS2/RO30A	75	141	99	64
GXS3/RO30A	75	171	125	76
GXS4/RO30A	75	177	152	76
GXS5/RO30A	75	225	150	102
GXS1/RO40A	100	122	76	51
GXS2/RO40A	100	141	99	64
GXS3/RO40A	100	171	125	76
GXS4/RO40A	100	177	152	76
GXS5/RO40A	100	225	150	102
GX Moulded				
GXM1/RO25A	63	113	76	51
GXM2/RO25A	63	139	102	64
GXM3/RO25A	63	162	102	76
GXM4/RO25A	63	175	152	76
GXM5/RO25A	63	207	152	102
GXM1/RO30A	75	113	76	51
GXM2/RO30A	75	139	102	64
GXM3/RO30A	75	162	102	76
GXM4/RO30A	75	175	152	76
GXM5/RO30A	75	207	152	102
GXM1/RO40A	100	113	72	51
CVN12/PO40A	100	120	102	64

Standard squ	uare/rectangular p	oipe lengths (inc	l. sockets)
Effective	72 x 72	102 x 76	102 x 102
length			
(mm)	(mm)	(mm)	(mm)
3000	RW33/3M	RW43/3M	RW44/3M
2000	RW33/2M	RW43/2M	RW44/2M
1000	RW33/1M	RW43/1M	RW44/1M

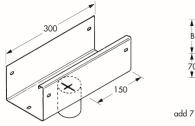


Reference	Α	В	С
	(mm)	(mm)	(mm)
RW33/PS	162	52	912
RW44/PS	191	67	121



Pipe clips (wrought aluminium sections 30 mm x 3 mm with 4 mm extruded base)

Reference	Α	В	С
	(mm)	(mm)	(mm)
RW33/PS	130	160	52
RW33/PS	160	190	54
RW33/PS	160	190	67

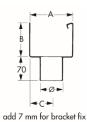


GXM2/RO40A

GXM3/RO40A

GXM4/RO40A

GXM5/RO40A



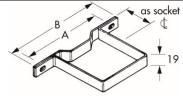
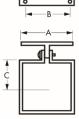


Table 2 Outlets, downpipes and brackets (continued)

Pipe clips with small base bracket (wrought aluminium sections 30 mm x 3 mm with 4 mm extruded base)

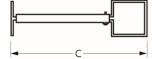
sections 30 mm x 3 r	•	Ü		Shoes			
Reference	Α	В	С	Reference	Pipe size	А	В
	(mm)	(mm)	(mm)		(mm)	(mm)	(mm)
RW33/SB/PC	84	47	78	RW33/SH	72 x 72	82	106
RW43/SB/PC	84	47	80	RW43/SH	102 x 76	83	106
RW44/SB/PC	84	47	94	RW44/SH	102 x 102	82	148

Bends



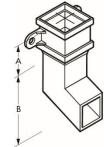
Pipe clips with extension base (wrought aluminium sections 30 mm x 3 mm with 4 mm fabricated base)

Reference	С
	(mm)
RW33/EX/PC	87 min to 290 max
RW43/EX/PC	87 min to 290 max
RW44/EX/PC	102 min to 305

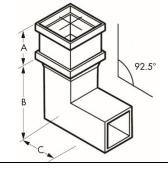


Offsets

Reference	Α	В	С
	(mm)	(mm)	(mm)
Pipe 72 mm x 72 mm			
RW33/PO/3 one-part	82	220	76
RW33/AO/12 two-part	82	310	305
RW33/AO/21 two-part	82	390	533
RW33/AO/30 two-part	82	470	762
Pipe 102 mm x 72 mm			
RW43/PO/3 one-part	82	220	76
RW43/AO/12 two-part	82	310	305
RW43/AO/21 two-part	82	390	533
RW43/AO/30 two-part	82	470	762
Pipe 102 mm x 102 mm			
RW43/PO/3 one-part	82	113	72
RW43/AO/12 two-part	82	139	102
RW43/AO/21 two-part	82	162	102



Reference	Pipe size	Α	В	С	Hand
	(mm)	(mm)	(mm)	(mm)	
RW33/B/92R	72 x 72	82	67	137	right
RW33/B112R	72 x 72	82	57	127	right
RW33/B/135R	72 x 72	82	47	117	right
RW43/B/92R	102 x 76	82	80	150	right
RW43/B/92R	102 x 76	82	66	136	right
RW43/B/92R	102 x 76	82	58	128	right
RW44/B/92R	102 x 102	82	81	151	right
RW44/B/112R	102 x 102	82	66	136	right
RW44/B/135R	102 x 102	82	53	123	right
RW33/B/92L	72 x 72	82	67	137	left
RW33/B/112L	72 x 72	82	57	127	left
RW33/B/135L	72 x 72	82	47	117	left
RW43/B/92L	102 x 76	82	80	150	left
RW43/B/112L	102 x 76	82	66	136	left
RW43/B/135L	102 x 76	82	58	128	left
RW44/B/92L	102 x 102	82	81	151	left
RW44/B/112L	102 x 102	82	66	136	left
RW44/B/135L	102 x 102	82	53	123	left
RW33/B/135L	72 x 72	82	47	117	left



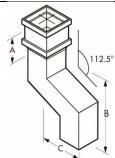
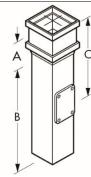


Table 2 Outlets, downpipes and brackets (continued)

Access pipes

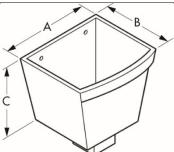
' '				
Reference	Pipe size	Α	В	С
	(mm)	(mm)	(mm)	(mm)
RW33/ACP	72 x 72	82	266	153
RW43/ACP	102 x 76	82	266	153
RW44/ACP	102 x 102	82	266	153



all dimensions in millimetres

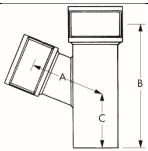
Rectangular rain-water heads

Nectangular rain water neads				
Reference	Pipe size	Α	В	С
	(mm)	(mm)	(mm)	(mm)
RW33/RH	72 x 72	258	190	178
RW43/RH	102 x 76	258	190	178
RW44/RH	102 x 102	258	190	178



all dimensions in millimetres

	a a			
Branches				
Reference	Pipe size	Α	В	С
	(mm)	(mm)	(mm)	(mm)
RW33/BR/92	72 x 72	82	230	85
RW43/BR/112	72 x 72	82	248	118
RW44/BR/135	72 x 72	82	310	190



1.2 Outlets, downpipes and fittings are available in the sections and sizes given in Table 3. Circular downpipes and fittings as covered in Product Sheets 1 and 2 of this Certificate.

Table 3 Available sizes	
Square and	Circular — nominal
rectangular section	diameter
(mm)	(mm)
72 x 72	63
102 x 76	75
102 x 102	100
	150

1.3 All components are manufactured from aluminium (see Table 4) and are available mill finished or polyester coated (see Product Sheet 4 of this Certificate).

Table 4 Specifications of aluminium components				
Component	Type of	Standard		
	aluminium			
Gutter lengths, fittings and washers	1200	BS EN 485 ⁽¹⁾ , BS EN 515, BS EN 573 ⁽²⁾ , BS EN 612, BS EN 1462		
Downpipes	6063 T6	BS EN 573 ⁽²⁾ , BS EN 755 ⁽³⁾ , BS EN 12020 ⁽⁴⁾		
Downpipe fittings	EN AC 46-100 (LM2)	BS EN 1559 ⁽⁵⁾ , BS EN 1676		
	EN AC 44-100 (LM6)			
Screws 5	251	BS EN 1301 ⁽⁶⁾		

- (1) Parts 1 to 4.
- (2) Parts 1 to 3.
- (3) Parts 1 to 3 and 7.
- (4) Parts 1 and 2.
- (5) Parts 1 and 4.
- (6) Parts 1 to 3.
- 1.4 Downpipes are extruded and are bought in to the required specification. Downpipe fittings are cast and extruded; screws, nuts, washers and other accessories are bought in to the required specification and supplied as required.
- 1.5 The gutter sections are butt jointed and overlapped by a 76 mm wide internal or external union clip. A 4 mm wide gap is left between each section. Slots may be provided for fixing with screws, nuts and washers. Each joint is sealed using a suitable silicone sealant⁽¹⁾.
- (1) External union clips are available on request.
- 1.6 Brackets and top straps are formed from wrought or pressed aluminium.

2 Manufacture

- 2.1 The products are manufactured from aluminium, and powder coated to BS EN 12206-1: 2004, if required.
- 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 Alumasc Building Products Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Centre for Assessment Ltd (Certificate 02/1832).

3 Delivery and site handling

- 3.1 Mill-finished gutters, downpipes and fittings are delivered to site unprotected, and coated components are wrapped in polythene. Reasonable care should be taken to avoid damage during storage, handling and installation.
- 3.2 In accordance with normal good practice, the components should be stored under cover and away from the risk of impact and the effects of weather.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Alumasc GX Joggle, Smooth, Moulded Gutter Systems.

Design Considerations

4 General

Alumasc GX Joggle, Smooth, Moulded Gutter Systems are satisfactory for use as eaves guttering for conveying rainwater from roofs.

5 Practicability of installation

The systems are designed to be installed by a competent general builder, or a contractor, experienced with this type of system.

6 Performance of joints

Correctly made joints between adjacent gutter sections, and between gutter sections and fittings, are watertight under conditions of thermal movement in excess of those expected to occur in practice.

7 Resistance to loading

The systems have adequate resistance to impacts and snow, water and other loads likely to occur during and after installation.

8 Flow characteristics



The flow capacities, when calculated in accordance with BS EN 12056-3: 2000, are given in Table 5 of this Certificate.

Table 5 Freeflow capacities ⁽¹⁾	
Box gutter	Flow capacity
	(I·s ⁻¹)
100 x 75 mm (4" x 3")	2.18
125 x 100 mm (5" x 4")	4.28
150 x 100 mm (6" x 4")	5.16

⁽¹⁾ The flow capacity of downpipes can be found in Table 8 in BS EN 12056-3 : 2000.

9 Maintenance



- 9.1 The systems can be supplied uncoated or painted as required.
- $9.2\,$ The gutters can be cleared easily of debris.

9.3 Damaged sections may be removed and replaced.

10 Durability



In the opinion of the BBA, the gutter system will have a minimum maintenance-free life of 40 years in rural and suburban conditions and 25 years in industrial and coastal conditions. However, when in contact with some materials, corrosion may occur (see sections 12.2 and 12.3).

11 Reuse and recyclability

The systems components contain polyester coated aluminium, which can be recycled.

Installation

12 General

- 12.1 Installation must be carried out in accordance with the Certificate holder's instructions, and BS EN 12056-3: 2000 where applicable.
- 12.2 The guttering system will be corroded by contact with copper, or water run-off from copper, in any environment and should not be installed on a building with a copper roof and other contacts with copper and its alloys should be avoided.
- 12.3 The contact areas should be coated with bitumen paint if the product will be:
- · embedded in concrete or mortar, or
- in contact with lead or stainless steel in a marine environment.

13 Procedure

13.1 The rafter and fascia bracket supports for the gutters should be fitted using No 12 by 38 mm zinc-plated, cadmium plated or sherardized screws as detailed in Table 6.

Table 6 Details of screws				
System	Screw	Centres		
	head	(maximum)		
	type	(mm)		
GX Joggle	roundhead	1000		
GX Smooth	roundhead	1000		
GX Moulded	roundhead	600		

- 13.2 To make the joint watertight, sufficient suitable silicone sealant should be applied between the spigot and socket onto clean and dry surfaces so that some of the sealant is squeezed out of the joint as the pieces are brought together. The excess sealant should be removed and the surrounding area cleaned. Aluminium nuts and bolts should be bedded in sealant (the head covered but the nut visible).
- 13.3 The aluminium screws, nuts and washers are fitted using the overlapping slots in the gutter lengths and the union clips; overtightening should be avoided.
- 13.4 If the gutter has to be trimmed to length, it can be cut with normal metalworking tools. Slots must then be formed to match the socket to which the gutter is to be fixed.
- 13.5 Circular downpipes are supplied with loose drive-fit sockets; square and rectangular cross-section downpipes have welded sockets. If a watertight joint is required, sealant should be applied to the lower part of the socket, and the pipe pushed home. The pipe socket should then be packed with suitable caulking, eg polyethylene foam, and a small bead of sealant introduced at the top of the joint.

13.6 Two-part square and rectangular section offsets are available which can be cut to the required length on site.

Minimum projections are:

- 105 mm (72 by 72 mm and 107 by 76 mm offsets)
- 125 mm (102 by 102 mm offsets).

Technical Investigations

14 Tests

Tests were conducted and the results assessed to determine:

- resistance of brackets to 200 kg load
- resistance of gutter to loading
- dimensional accuracy
- · watertightness of joints
- flow capacity
- · resistance to impact and loading
- · ease of cleaning
- thermal movement.

15 Investigations

- 15.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- 15.2 Site visits were carried out to assess the practicability of installation and the performance in use.

Bibliography

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EN AW-6063 — Technical conditions for inspection and delivery

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BS EN 12206-1 : 2004 Paints and varnishes — Coating of aluminium and aluminium alloys for architectural purposes — Coatings prepared from coating powder

BS EN ISO 9001: 2015 Quality management systems — Requirements

Conditions of Certification

16 Conditions

16.1 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
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16.3 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.

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

16.5 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:

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- 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.

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