

Aluminium, Cast Iron & Steel Rainwater Systems

Technical Brochure



Featuring Harmer LCC Soil & Waste Systems

Maintaining a Flow of Information

www.alumascrainwater.co.uk

The Alumasc Rainwater website provides a wealth of information on all aspects of rainwater solutions, including gutters, downpipes and associated fittings. Also included are FAQs, file downloads for NBS specification clauses, COSHH information and a CAD library.



ALUMASC RAINWATER SYSTEMS

Reference: CALC1

Sizing Method: **Automatic** Manual

Stage 2: Gutter Type | HERITAGE CAST ALUMINIUM

Gutter Style: **Half Round** Banded Half Round Ogee **Moulded**

100 x 75 125 x 100 150 x 100

Outlet Size: 63 75 **100** 75 x 75 100 x 75 100 x 100

Stage 3: Project Data

Roof length: 10 m Gutter run: 10 m

Roof width: 10 m Number of Outlets: 1

Roof Angle: 35 Degrees Additional Area draining to this gutter: m2

Roof Pitch Eaves to Ridge Curved Roof Leaf Guard/Strainer Corner Between Outlets

Gutter Location: **External** Internal

Results

Design Rainfall	0.023	l/s/m2	Required Flow	3.2	l/s
Catchment Area	135	m2	Achieved Flow	3.8	l/s

Gutter: 1.6 l/s **PASS** Download the NBS Specification



Drainage Design Calculator

Architects and building service engineers can now design and quantify all their Rainwater Drainage requirements using Alumasc's dedicated design software.

Key Features

- Eaves drainage gutter sizing and pipe calculator for cast and contemporary gutter types
- Category 2 and 3 Flat Roof Drainage Calculator linked to local rainfall data
- Hyperlinks to product literature, DWF files and application specific NBS Specification Clauses

Technical Support

Alumasc Rainwater products are backed-up by comprehensive technical literature and by hands-on project support starting with technical and design advice, and extending through site installation to recommendation of appropriate maintenance regimes. Implementation is led by the Alumasc Rainwater Manager appointed to the project.

Alumasc - An Introduction

The Alumasc Group plc has over 600 employees, generating a turnover of around £100 million. The aim is to focus on high quality, environmentally responsible building products within the construction arena in order to deliver first class customer service, technical support, long-term solutions and lasting relationships.

About Alumasc

Alumasc is a UK-based supplier of premium building products. The majority of the group's business is in the area of sustainable building products which enable customers to manage energy and water use in the built environment.

All Alumasc businesses have strong UK market positions within their own individual market niches and several are market leaders. Alumasc sustains this strong strategic positioning by offering customers quality products, service and trust. For certain brands, Alumasc is seeking to leverage UK successes in international markets, with particular focus in America, the Middle and Far East, and Europe.

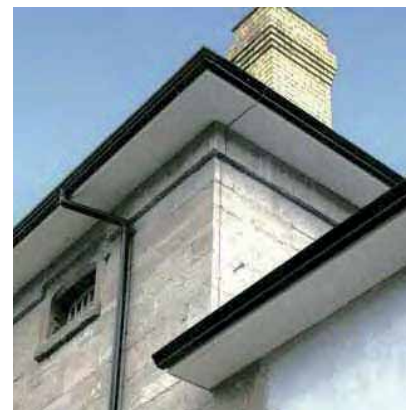
Alumasc fosters an entrepreneurial, achievement orientated culture whereby businesses are encouraged to innovate and respond quickly to local market needs within a cohesive group strategic and management framework. Alumasc businesses also benefit from the group's financial strength.



Alumasc Water Management Solutions (AWMS) is the new name in the industry for proven water management. It's a new joined-up brand that harnesses the expertise of four trusted brands in water management:



Alumasc has been promoting the efficient use, retention, recycling and disposal of water within the built environment for over 80 years. Now, it combines the knowledge and unique benefits of these four brands to provide one simple solution in water management.



Services and Support

Alumasc leads the way in the field of construction product and system manufacture and the delivery of proven solutions. This success is founded on four key areas:

Premium Products

A constantly evolving range of quality proven, world class products and systems, fully accredited to UK, European and North American Standards.

Technical Support

Comprehensive data for specification and use of all products and systems is available in published form, and on the company website. This is backed up by proactive support on a project basis, led by specialist area managers and using the latest CAD and calculation technology.

Approved Stockists

Delivery of Alumasc products is controlled through a network of approved suppliers. This allows close control over all matters to ensure first class customer service.

Warranties

All Alumasc products come with a company backed assurance as to their quality, life expectancy and suitability for purpose ensuring specifiers and end users long-term peace of mind.



Quality and Sustainability

In addition to complying with environmental legislation, Alumasc is committed to developing its own measures to limit the adverse effects of its activities on the environment. To this end, Alumasc operates an environmental policy that fully integrates all aspects of company activities.

Quality

ISO 9001: 2008

Alumasc operates a quality management system which is independently audited to ISO 9001: 2008. The ISO 9001 framework governs the management of many aspects of Alumasc support services, manufacturing and transport operations. Alumasc extends quality management to its network of approved installers for single source accountability and peace of mind.



Sustainability

Alumasc actively pursues sustainability in the full range of products it offers and, with its partners and its suppliers, is committed to putting consideration for the built and wider environment at the core of all aspects of current business and future development.

ISO 14001: 2004

Alumasc's manufacturing sites at St Helens, Merseyside and at Burton Latimer, Northamptonshire are audited to the ISO 14001:2004 Environmental Management Standard. Alumasc is committed to achieving improvements across all of its operating sites, not only as a good neighbour to the surroundings of manufacturing plants, but in the responsible sourcing of raw materials and monitoring of the impact on the environment as a whole.



BREEAM Standards

BREEAM points, as a framework for analysis and scoring, allow easy comparison of the relative merits of different construction types and also comparisons between different construction product groups. The BREEAM points system promotes the use of materials with a proven sustainable message and allows designers to differentiate between products with true ecological credentials and those not achieving the benchmark.

Indicative ratings for building materials given in the BRE Green Guide to Specification also allows designers to choose those products or construction methods that will be most beneficial in contributing to a high BREEAM points score.

Aluminium rainwater goods and fascia soffit systems are part of the range of high scoring Alumasc solutions. Promotion of these responsibly sourced materials brings clarity to the specification process thus achieving the desired effect of minimising the environmental impact of the construction process.



Testing and Certification

Applicable Standards

BS EN 12056-3

Gravity drainage systems inside buildings, Part 3 Roof drainage layout and calculation.

BS EN 8530 (Formerly BS 2997)

Specification for traditional-style half round, beaded half round, victorian ogee and moulded aluminium rainwater systems.

BS EN 755

Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles.

BS EN 1706:2010

Aluminium and aluminium alloys - Castings - Chemical composition and mechanical properties.

BS EN 1559

Founding - Technical conditions of delivery.

BS EN 1462:2004

Brackets for eaves gutters - Requirements and testing.

BS EN 12206-1:2004

Paints and varnishes - Coating of aluminium and aluminium alloys for architectural purposes.

BS 460: 2002

Cast iron rainwater goods. Specification.

BS 437: 2008

Specification for cast iron drain pipes, fittings and their joints for socketed and socketless systems.

British Board of Agrément

Certificate No. 86/1671

Alumasc Rainwater Systems.

RIBA Assessed CPD Seminar

Rainwater Disposal from Pitched Roofs.



Alumasc Rainwater Systems - Project Gallery

Alumasc aluminium and cast iron rainwater systems offer specifiers functional and stylistically appropriate solutions to rainwater drainage across all styles of building from traditional to contemporary.

Alumasc has a long and successful track record in architectural rainwater design.

Private House, Heritage



Broomlands, Heritage



The Lancasters, Apex Heritage



Queens University, Apex Heritage



Alumasc Rainwater Systems - Project Gallery

Mi-Space, Steel



Marriotts Walk shopping Centre, Heritage, Aqualine & Flushjoint



St. Pancras, Apex Heritage



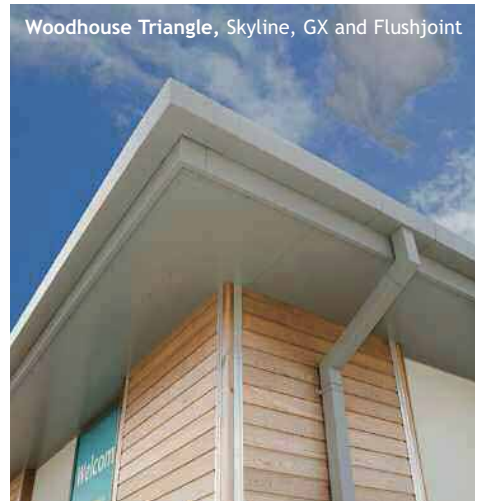
Princesshay, Skyline, GX and Flushjoint



Waterstone Park, GX and Skyline



Woodhouse Triangle, Skyline, GX and Flushjoint



Alumasc Rainwater Systems

The Traditional Aluminium Range

This premium, high performance rainwater range features the Heritage cast aluminium system, available as extensive stock components or as non-standard bespoke items.



Traditional Aluminium Rainwater Range - Introduction

Heritage Cast Aluminium is a range of traditional profiles, fittings and accessories in cast aluminium. Designed to provide all the key architectural features appropriate to traditionally designed buildings either new build or refurbishment, in a lightweight fully finished product.



Heritage Cast Aluminium Rainwater System - Product Summary



Heritage - Half Round Gutter



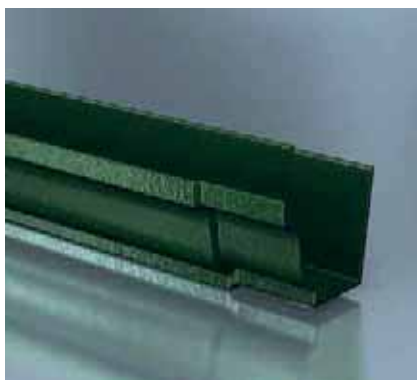
Heritage - Beaded Half Round Gutter



Heritage - Beaded Deep Run Gutter



Heritage - Victorian Ogee Gutter



Heritage - Moulded Gutter



Heritage - Circular Pipe



Heritage - Square Pipe



Heritage - Rectangular Pipe

Heritage Cast Aluminium Rainwater System - Product Summary

Heritage is a comprehensive range of traditional gutter profiles, round, square and rectangular pipes and all associated fittings and accessories. Designed to provide all the essential architectural features appropriate to traditionally designed buildings, the Heritage range is also fully in tune with modern fast track building contracts.

Applications

- Ideal for traditionally designed buildings, in both new build and refurbishment applications
- Can be used as a direct replacement of cast iron
- For both flush and projecting eaves applications

Features & Performance

- 5 gutter and 3 downpipe profiles available in a choice of sizes
- Pipes available in 1, 2 and 3 metre lengths
- Lightweight, durable and non-corrodible
- Life expectancy of aluminium: 40 years (rural/suburban areas); up to 25 years (industrial/marine areas)
- Easy to handle and fix
- BBA approved
- Aluminium is 100% recyclable

Colours & Finishes

- BBA approved polyester powder coatings, factory applied at Alumasc
- 26 standard colours with additional BS or RAL colours available to special order
- Can be supplied to resemble cast iron surface texture (black only)
- Also available in plain mill finish for on-site painting

Manufacture

- UK manufactured by Alumasc
- Gutters and fixings made from LM6 marine grade aluminium alloy.
- Gutters are gravity diecast, fittings are pressure diecast and downpipes are extruded aluminium
- Manufactured in accordance with BS 8530 (formerly BS 2997)

Installation & Fixing

- Gutters are wet sealed with bolted joints, with a range of fixing options
- Gutter joints are secured with screws or bolts through integral holes/slots
- Victorian Ogee and Moulded gutters provided with slots in rear for direct fixing
- Brackets and fittings provided with fixing holes where appropriate
- Circular pipe jointing up to 100mm diameter is by separate sockets giving maximum flexibility for installation. 150mm circular pipes and all square and rectangular pipes have welded on sockets
- Simple fixing to wall by eared sockets or by a choice of pipe clips
- Minimal maintenance requirements



Gutter Profiles & Sizes



Half Round
100mm (4")
113mm (4.5")
125mm (5")
150mm (6") HR6



Beaded Half Round
113 (4.5)
125mm (5")



Beaded Deep Run
113 x 75mm (4.5 x 3")



Victorian Ogee
100mm (4")
113mm (4.5")
125mm (5")



Moulded
100 x 75mm (4 x 3")
125 x 100mm (5 x 4")
150 x 100mm (6 x 4")

Pipe Profiles & Sizes



Circular Pipe
63mm (2.5")
75mm (3")
100mm (4")
150mm (6")



Square Pipe
75 x 75mm (3 x 3")
100 x 100mm (4 x 4")



Rectangular Pipe
100 x 75mm (4 x 3")

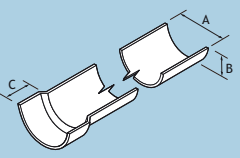
Heritage - Half Round Gutters and Fittings



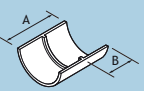
Heritage Half Round cast aluminium gutters are available in 4 sizes and 2 gutter lengths, together with a complete range of fittings. A classic socketed system, which can be finished to replicate cast iron or with BBA certificated powder coatings in a choice of colours.

Notes: All dimensions are in mm unless shown otherwise.
Gutter sizes shown are nominal.

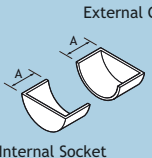
Gutters

	Gutter Size	Gutter Length	A	B	C	T	Weight (kg)	Product Code
	100 (4")	1830mm	108	47	47	4	2.6	HR1/1
	113 (4.5")	"	122	52	47	4	4.0	HR2/16
	125 (5")	"	134	56	47	4	4.0	HR3/132
	150 (6")	"	xx	xx	xx	xx	xx	HR6/1830
	100 (4")	610mm	108	47	47	4	0.9	HR1/153
	113 (4.5")	"	122	52	47	4	1.4	HR2/154
	125 (5")	"	134	56	47	4	1.4	HR3/155
Note: T = Gutter Thickness (nominal +/- 1mm)								

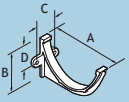
Union Clips

	Gutter Size	A	B	Product Code
	100	96	46	HR1/11
	113	96	46	HR2/26
	125	96	46	HR3/148
	150	96	46	HR6/UC

Stop-Ends

	Gutter Size	Type	A	Product Code
	100	External	51	HR1/13
	113	"	51	HR2/28
	125	"	51	HR3/150
	150	"	51	HR6/SE/EXT
	100	Internal	45	HR1/12
	113	"	45	HR2/27
	125	"	45	HR3/149
	150	"	45	HR6/SE/INT

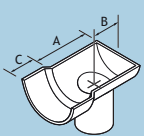
Fascia Brackets

	Gutter Size	A	B	C	D	Product Code
	100	127	65	38	35	HR1/14
	113	140	70	38	40	HR2/29
	125	155	85	38	45	HR3/151
	150	xx	xx	38	xx	HR6/FB

Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

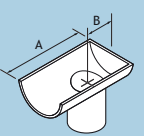
Heritage - Half Round Gutters and Fittings

Stop End Outlet - with Socket

 External	Gutter Size	Pipe Size	A	B	C	Product Code
	100	63 dia	125	61	47	HR1/9
	113	"	125	61	47	HR2/24
	125	"	125	61	47	HR3/144
	125	75 dia	125	61	47	HR3/143

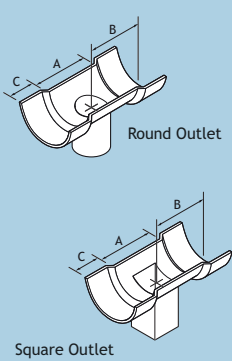
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES

Stop End Outlet - with Spigot

 Internal	Gutter Size	Pipe Size	A	B	Product Code
	100	63 dia	172	64	HR1/10
	113	"	172	64	HR2/25
	125	"	172	64	HR3/147
	125	75 dia	172	64	HR3/146

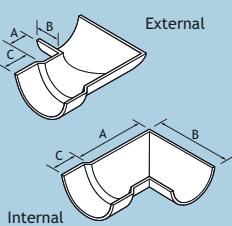
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES

Running Outlet - with Double Socket

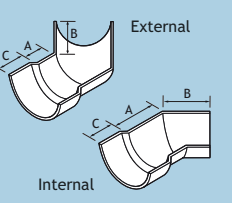
 Round Outlet Square Outlet	Gutter Size	Pipe Size	A	B	C	Product Code
	100	63 dia	148	121	47	HR1/8
	113	"	148	121	47	HR2/23
	125	"	148	121	47	HR3/141
	150	"	148	121	47	HR6/RO25
	100	75 dia	148	121	47	HR1/367
	113	"	148	121	47	HR2/3/23
	125	"	148	121	47	HR3/140
	150	"	148	121	47	HR6/RO30
	125	100 dia	148	121	47	HR3/139
	150	"	148	121	47	HR6/RO40
	100	75 x 75	148	121	47	HR1/381
	113	"	148	121	47	HR2/382
	125	"	148	121	47	HR3/383

NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES

90° Angles

 External Internal	Gutter Size	Type	A	B	C	Product Code
	100	External	27	77	47	HR1/5
	113	"	27	77	47	HR2/20
	125	"	27	77	47	HR3/136
	150	"	27	77	47	HR6/90EXT
	100	Internal	132	183	47	HR1/4
	113	"	146	197	47	HR2/19
	125	"	157	210	47	HR3/135
	150	"	xx	xx	47	HR6/90INT

135° Angles

 External Internal	Gutter Size	Type	A	B	C	Product Code
	100	External	27	77	47	HR1/7
	113	"	27	77	47	HR2/22
	125	"	27	77	47	HR3/138
	100	Internal	70	120	47	HR1/6
	113	"	70	120	47	HR2/21
	125	"	70	120	47	HR3/137

Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Beaded Half Round Gutters and Fittings



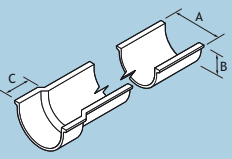
Heritage Beaded Half Round socketed cast aluminium gutters are available in 2 sizes and 2 gutter lengths, together with a complete range of fittings. There is a pronounced feature bead on both lips. Can be finished to replicate cast iron or with BBA certificated powder coatings in a choice of colours.

Notes: Beaded Half Round is an all socketed system and Union Clips are only available by special order.

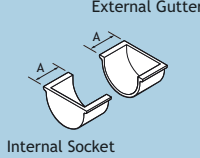
All dimensions are in mm unless shown otherwise.

Gutter sizes shown are nominal.

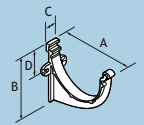
Gutters

	Gutter Size	Gutter Length	A	B	C	T	Weight (kg)	Product Code
	113 (4.5")	1830mm	131	52	47	4	3.0	BHR5/300
	125 (5")	"	143	56	47	4	3.0	BHR6/325
	113 (4.5")	610mm	131	52	47	4	1.0	BHR5/303
	125 (5")	"	143	56	47	4	1.0	BHR6/328
Note: T = Gutter Thickness (nominal +/- 1mm)								

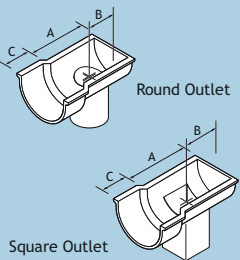
Stop-Ends

	Gutter Size	Type	A	Product Code
	113	External	51	BHR5/306
	125	"	51	BHR6/331
	113	Internal	45	BHR5/318
	125	"	45	BHR6/149

Fascia Brackets

	Gutter Size	A	B	C	D	Product Code
	113	155	75	38	35	BHR5/315
	125	165	79	38	37	BHR6/337

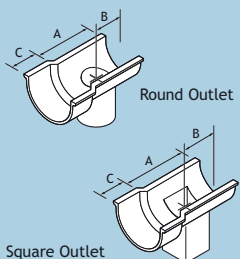
Stop End Outlet - with Socket

	Gutter Size	Pipe Size	A	B	C	Product Code
	113	63 dia	213	106	47	BHR5/RO25SE
	125	"	213	106	47	BHR6/RO25SE
	113	75 dia	213	106	47	BHR5/RO30SE
	125	"	213	106	47	BHR6/RO30SE
	113	75 x 75	213	106	47	BHR5/SO33SE
	125	"	213	106	47	BHR6/SO33SE
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES						

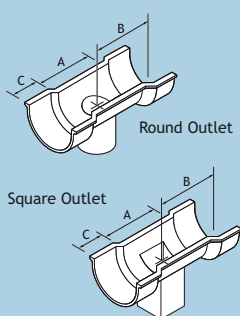
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Heritage - Beaded Half Round Gutters and Fittings

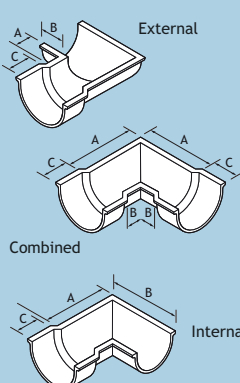
Running Outlet - with Single Spigot/Socket

	Gutter Size	Pipe Size	A	B	C	Product Code
	113	63 dia	213	106	47	BHR5/305
	125	"	213	106	47	BHR6/330
	113	75 dia	213	106	47	BHR5/308
	125	"	213	106	47	BHR6/333
	113	75 x 75	213	106	47	BHR5/SO33
	125	"	213	106	47	BHR6/SO33
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES						

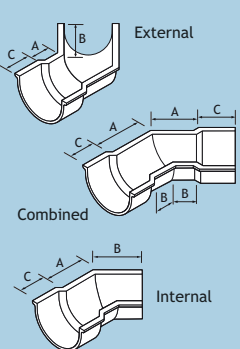
Running Outlet - with Double Socket

	Gutter Size	Pipe Size	A	B	C	Product Code
	113	63 dia	213	160	47	BHR5/304
	125	"	213	160	47	BHR6/329
	113	75 dia	213	160	47	BHR5/307
	125	"	213	160	47	BHR6/332
	113	75 x 75	213	160	47	BHR5/384
	125	"	213	160	47	BHR6/385
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES						

90° Angles

	Gutter Size	Type	A	B	C	Product Code
	113	External	62	62	47	BHR5/311
	125	"	62	62	47	BHR6/336
	113	Combined	192	62	47	BHR5/309
	125	"	192	62	47	BHR6/334
	113	Internal	192	192	47	BHR5/310
	125	"	192	192	47	BHR6/335

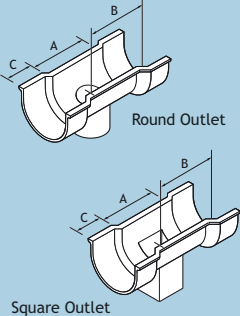
135° Angles

	Gutter Size	Type	A	B	C	Product Code
	113	External	62	62	47	BHR5/EA135
	125	"	62	62	47	BHR6/EA135
	113	Combined	192	62	47	BHR5/IA135D
	125	"	192	62	47	BHR6/IA135D
	113	Internal	192	192	47	BHR5/IA135
	125	"	192	192	47	BHR6/IA135

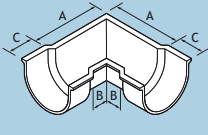
Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Beaded Deep Run Gutters and Fittings

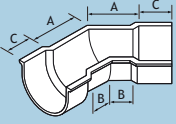
Running Outlet - with Double Socket

 Round Outlet Square Outlet	Gutter Size	Pipe Size	A	B	C	Product Code
	113 x 75	63 dia	208	151	47	HR4/248
	113 x 75	75 dia	208	151	47	HR4/369
	113 x 75	75 x 75	208	151	47	HR4/410
	113 x 75	100 x 75	208	151	47	HR4/411
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES						

90° Angles - with Double Socket

 Combined	Gutter Size	Type	A	B	C	Product Code
	113 x 75	Combined Internal/External	200	55	47	HR4/247

135° Angles - with Double Socket

 Combined	Gutter Size	Type	A	B	C	Product Code
	113 x 75	Combined Internal/External	112	55	47	HR4/371

Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Victorian Ogee Gutters and Fittings

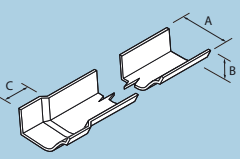


Heritage Victorian Ogee gutters are available in 3 sizes and 2 gutter lengths, together with a complete range of fittings. The traditional Ogee gutter profile is ideal for period applications and restoration. A left-hand socketed system, which can be finished to replicate cast iron or with BBA certificated powder coatings in a choice of colours.

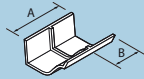
Notes: All dimensions are in mm unless shown otherwise.

Gutter sizes shown are nominal.

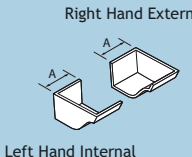
Gutters

	Gutter Size	Gutter Length	A	B	C	T	Weight (kg)	Product Code
	100 (4")	1830mm	110	54	47	4	2.6	OG1/31
	113 (4.5")	"	121	60	47	4	4.0	OG2/45
	125 (5")	"	135	68	47	4	4.0	OG3/173
	100 (4")	610mm	110	54	47	4	0.9	OG1/156
	113 (4.5")	"	121	60	47	4	1.4	OG2/157
	125 (5")	"	135	68	47	4	1.4	OG3/176
Note: Victorian Ogee is a left hand socket system T = Gutter Thickness (nominal +/- 1mm)								

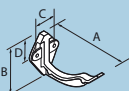
Union Clips

	Gutter Size	A	B	Product Code
	100	98	47	OG1/41
	113	98	47	OG2/55
	125	98	47	OG3/184

Stop-Ends

	Gutter Size	Type	A	Product Code
	100	Right Hand External	51	OG1/43
	113	"	51	OG2/57
	125	"	51	OG3/186
	100	Left Hand Internal	45	OG1/42
	113	"	45	OG2/56
	125	"	45	OG3/185

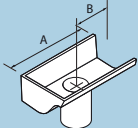
Fascia Brackets

	Gutter Size	A	B	C	D	Product Code
	100	125	80	38	32	OG1/44
	113	137	85	38	38	OG2/58
	125	150	92	38	38	OG3/187

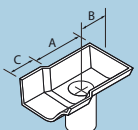
Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Victorian Ogee Gutters and Fittings

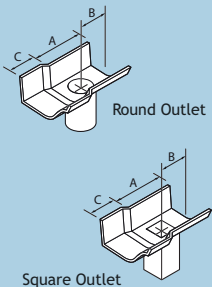
Left Hand Stop End Outlet - with Spigot

	Gutter Size	Pipe Size	A	B	Product Code
	100	63 dia	172	64	OG1/40
	113	"	172	64	OG2/54
	125	"	172	64	OG3/183
	125	75 dia	172	64	OG3/3/183
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES					

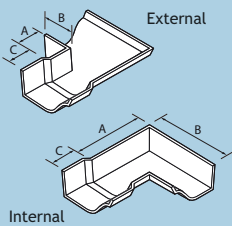
Right Hand Stop End Outlet - with Socket

	Gutter Size	Pipe Size	A	B	C	Product Code
	100	63 dia	126	64	47	OG1/39
	113	"	126	64	47	OG2/53
	125	"	126	64	47	OG3/182
	125	75 dia	126	64	47	OG3/3/182
NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES						

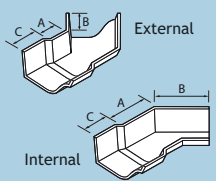
Running Outlet - with Single Spigot/Socket

	Gutter Size	Pipe Size	A	B	C	Product Code
	100	63 dia	194	121	47	OG1/38
	113	"	194	121	47	OG2/52
	125	"	194	121	47	OG3/181
	113	75 dia	194	121	47	OG2/368
	125	"	194	121	47	OG3/3/181
	100	75 x 75	194	121	47	OG1/386
	113	"	194	121	47	OG2/387
	125	"	194	121	47	OG3/388
	NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES					

90° Angles

	Gutter Size	Type	A	B	C	Product Code
	100	External	25	75	47	OG1/34
	113	"	25	75	47	OG2/48
	125	"	25	75	47	OG3/177
	100	Internal	133	184	47	OG1/35
	113	"	146	197	47	OG2/49
	125	"	159	210	47	OG3/178

135° Angles

	Gutter Size	Type	A	B	C	Product Code
	100	External	25	75	47	OG1/36
	113	"	25	75	47	OG2/50
	125	"	25	75	47	OG3/179
	100	Internal	70	121	47	OG1/37
	113	"	75	126	47	OG2/51
	125	"	80	134	47	OG3/180

Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

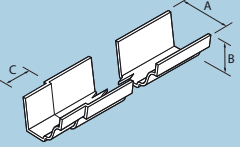
Heritage - Moulded Gutters and Fittings



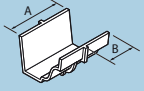
Heritage Moulded gutters are available in 3 sizes and 2 gutter lengths, together with a complete range of fittings. A socketed system, which can be finished to replicate cast iron or with BBA certificated powder coatings in a choice of colours. Ideal for restoration or contemporary applications.

Notes: All dimensions are in mm unless shown otherwise.
Gutter sizes shown are nominal.

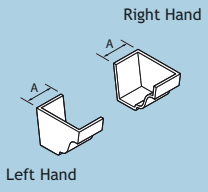
Gutters

	Gutter Size	Gutter Length	A	B	C	T	Weight (kg)	Product Code
	100 x 75 (4" x 3")	1830mm	108	76	50	4	4.0	MG2/217
	125 x 100 (5" x 4")	"	140	102	50	4	5.4	MG1/196
	150 x 100 (6" x 4")	"	162	102	50	4	5.6	MG3/259
	100 x 75 (4" x 3")	610mm	108	76	50	4	1.4	MG2/220
	125 x 100 (5" x 4")	"	140	102	50	4	1.8	MG1/199
	150 x 100 (6" x 4")	"	162	102	50	4	1.9	MG3/262
Note: 100 x 75 and 125 x 100 moulded gutters are left hand spigot. 150 x 100 moulded gutter is right hand spigot T = Gutter Thickness (nominal +/- 1mm)								

Union Clips

	Gutter Size	A	B	Product Code
	100 x 75	100	46	MG2/231
	125 x 100	100	46	MG1/213
	150 x 100	100	46	MG3/269

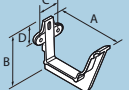
Stop-Ends

	Gutter Size	Type	A	Product Code
	100 x 75	External Left Hand	50	MG2/233
	125 x 100	"	50	MG1/215
	150 x 100	External Right Hand	50	MG3/271
	100 x 75	Internal Right Hand	50	MG2/232
	125 x 100	"	50	MG1/214
	150 x 100	Internal Left Hand	50	MG3/270

Fixing Supports

	Gutter Size	A	B	C	Product Code
	100 x 75	70	10	36	MG2/373
	125 x 100	94	12	36	MG1/374
	150 x 100	94	12	36	MG3/375

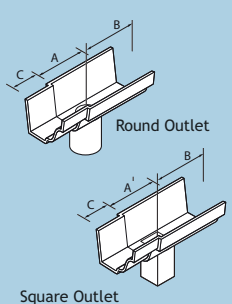
Fascia Brackets

	Gutter Size	A	B	C	D	Product Code
	100 x 75	136	135	38	38	MG2/234
	125 x 100	135	136	38	39	MG1/216
	150 x 100	162	125	38	39	MG3/268

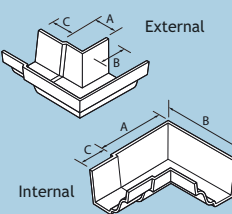
Note: See footer on page 33.

Heritage - Moulded Gutters and Fittings

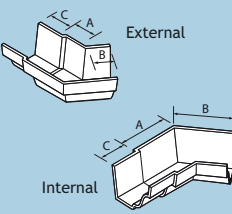
Running Outlet - with Single Spigot

 Round Outlet Square Outlet NOTE: DESIGNED TO FIT HERITAGE SOCKETED ALUMINIUM PIPES. ADD SUFFIX /F TO PRODUCT CODE TO FIT FLUSHJOINT OR GUARDIAN PIPES	Gutter Size	Pipe Size	A	B	C	Spigot	Product Code
	100 x 75	63 dia	190	120	50	Left Hand	MG2/225
	125 x 100	"	190	120	50	Left Hand	MG1/205
	150 x 100	"	190	120	50	Right Hand	MG3/267
	100 x 75	75 dia	190	120	50	Left Hand	MG2/370
	125 x 100	"	190	120	50	Left Hand	MG1/204
	150 x 100	"	190	120	50	Right Hand	MG3/266
	125 x 100	100 dia	190	120	50	Left Hand	MG1/253
	150 x 100	"	190	120	50	Right Hand	MG3/265
	100 x 75	75 x 75	190	120	50	Left Hand	MG2/356
	125 x 100	"	190	120	50	Left Hand	MG1/358
	150 x 100	"	190	120	50	Right Hand	MG3/361
	100 x 75	100 x 75	190	120	50	Left Hand	MG2/357
	125 x 100	"	190	120	50	Left Hand	MG1/359
	150 x 100	"	190	120	50	Right Hand	MG3/362
	125 x 100	100 x 100	190	120	50	Left Hand	MG1/360
	150 x 100	"	190	120	50	Right Hand	MG3/363

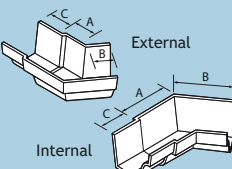
90° Angles

 External Internal	Gutter Size	Type	A	B	C	Spigot	Product Code
	100 x 75	External	25	75	50	Left Hand	MG2/221
	125 x 100	"	25	75	50	Left Hand	MG1/200
	150 x 100	"	25	75	50	Right Hand	MG3/263
	100 x 75	Internal	127	183	50	Left Hand	MG2/222
	125 x 100	"	158	215	50	Left Hand	MG1/201
	150 x 100	"	185	238	50	Right Hand	MG3/264

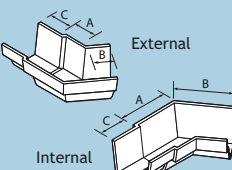
135° Angles

 External Internal	Gutter Size	Type	A	B	C	Spigot	Product Code
	100 x 75	External	25	75	50	Left Hand	MG2/223
	125 x 100	"	25	75	50	Left Hand	MG1/202
	150 x 100	"	25	75	50	Right Hand	MG3/272
	100 x 75	Internal	62	120	50	Left Hand	MG2/224
	125 x 100	"	79	130	50	Left Hand	MG1/203
	150 x 100	"	90	144	50	Right Hand	MG3/273

145° Angles

 External Internal	Gutter Size	Type	A	B	C	Spigot	Product Code
	125 x 100	External	25	75	50	Left Hand	MG1/329
	150 x 100	"	25	75	50	Right Hand	MG3/333
	125 x 100	Internal	97	47	50	Left Hand	MG1/330
	150 x 100	"	118	68	50	Right Hand	MG3/334

150° Angles

 External Internal	Gutter Size	Type	A	B	C	Spigot	Product Code
	125 x 100	External	25	75	50	Left Hand	MG1/331
	150 x 100	"	25	75	50	Right Hand	MG3/335
	125 x 100	Internal	94	44	50	Left Hand	MG1/332
	150 x 100	"	118	68	50	Right Hand	MG3/336

Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Cast Aluminium Bracketry

Alumasc can provide traditional style Bracketry for all of its standard gutter profiles. Where building detailing dictates, Alumasc can provide bespoke Bracketry to meet individual project requirements.

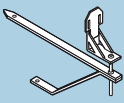
Universal Brackets

For use with standard Fascia Bracket (purchased separately).

Universal Rafter Arm

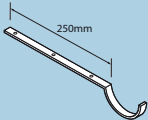
	Type	Angle	Product Code
	Top Fix	26°	UNI632915
	Top Fix	40°	UNI632916
	Side Fix	26°	UNI632917
	Side Fix	40°	UNI632918

Universal Drive in Rise & Fall

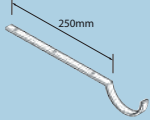
	Gutter Size	Product Code
	Universal	UNI632919

Traditional 'Old' Style Gutter Brackets

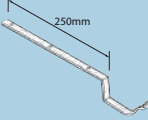
Top Fix Rafter Arm - Half Round

	Gutter Size	Product Code
	100	HR1/RB/TF
	113	HR2/RB/TF
	125	HR3/RB/TF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

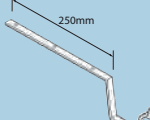
Top Fix Rafter Arm - Beaded Half Round/Deep Run

	Gutter Size	Product Code
	113	BHR5/RB/TF
	125	BHR6/RB/TF
	113 x 75 Deep Run	HR4/RB/TF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

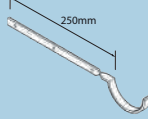
Top Fix Rafter Arm - Victorian Ogee

	Gutter Size	Product Code
	100	OG1/RB/TF
	113	OG2/RB/TF
	125	OG3/RB/TF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

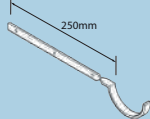
Top Fix Rafter Arm - Moulded

	Gutter Size	Product Code
	100 x 75	MG2/RB/TF
	125 x 100	MG1/RB/TF
	150 x 100	MG3/RB/TF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

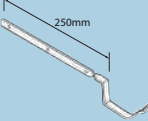
Side Fix Rafter Arm - Half Round

	Gutter Size	Product Code
	100	HR1/RB/SF
	113	HR2/RB/SF
	125	HR3/RB/SF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

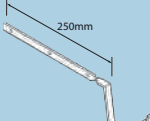
Side Fix Rafter Arm - Beaded Half Round/Deep Run

	Gutter Size	Product Code
	113	BHR5/RB/SF
	125	BHR6/RB/SF
	113 x 75 Deep Run	HR4/RB/SF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

Side Fix Rafter Arm - Victorian Ogee

	Gutter Size	Product Code
	100	OG1/RB/SF
	113	OG2/RB/SF
	125	OG3/RB/SF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

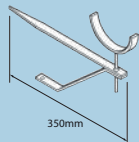
Side Fix Rafter Arm - Moulded

	Gutter Size	Product Code
	100 x 75	MG2/RB/SF
	125 x 100	MG1/RB/SF
	150 x 100	MG3/RB/SF
	Note: Supplied with 40° angle of pitch as standard. Other pitches catered for on request - please specify pitch angle required.	

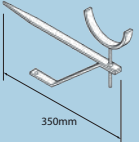
Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Cast Aluminium Bracketry

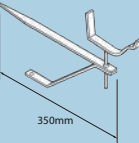
Rise & Fall - Half Round

	Gutter Size	Product Code
	100	HR1/R&F/ASSY
	113	HR2/R&F/ASSY
	125	HR3/R&F/ASSY

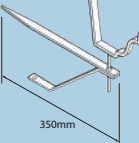
Rise & Fall - Beaded Half Round/Deep Run

	Gutter Size	Product Code
	113	BHR5/R&F/ASSY
	125	BHR6/R&F/ASSY
	113 x 75 Deep Run	HR4/R&F/ASSY

Rise & Fall - Victorian Ogee

	Gutter Size	Product Code
	100	OG1/R&F/ASSY
	113	OG2/R&F/ASSY
	125	OG3/R&F/ASSY

Rise & Fall - Moulded

	Gutter Size	Product Code
	100 x 75	MG2/R&F/ASSY
	125 x 100	MG1/R&F/ASSY
	150 x 100	MG3/R&F/ASSY



Bespoke Bracketry

Alumasc can design and manufacture a variety of Bracketry solution for gutters and pipes to create an integrated system solution. Such detailing can often be used to support fascia and soffit configurations.

Ornate holderbats and earbelts can be detailed to provide a unique, distinguished appearance to a rainwater stack.

Where standard fitting dimensions do not suit the project's requirements, Alumasc can fabricate its gutter and pipe Bracketry systems to accommodate building design.

Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Circular Pipes and Fittings

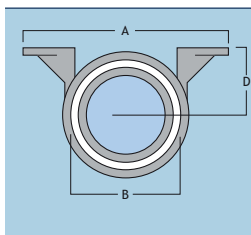


Heritage Circular Pipes are available in 4 pipe diameters and 3 pipe lengths, together with a complete range of fittings. Complementary rainwater heads are also available. Can be factory finished to replicate cast iron or with BBA certificated powder coatings in a range of colours.

Notes: Pipes are extruded sections with cast sockets. The majority of fixings are cast, however certain fittings are fabricated. Contact Alumasc for further details

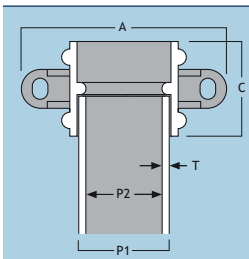
All dimensions are in mm unless shown otherwise.

Pipe sizes shown are nominal.



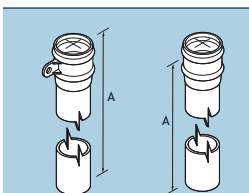
Sockets (Nominal)	63	75	100	150
A Length of flange overall	144	160	187	245
B Internal diameter	73.5 to 70	85 to 81.5	110 to 108	163 to 160
C Height of socket	89	95	90	125
D Distance from centre line of pipe to wall	65	71	90	118

Note: All circular sockets are an interference fit with exception of 150mm which are factory welded



Pipes (Nominal)	63	75	100	150
P1 External Diameter	63	76.5	102	152
P2 Internal Diameter	60.5	74	98.5	147
T Thickness	1.22	1.22	1.6	2.5

Pipes - With and Without Ears



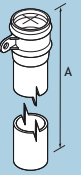
Note: The codes given above are for pipes with ears. For pipes without ears suffix codes with /NE 63, 75 and 100mm pipes are supplied with separate interference-fit cast sockets

Pipe Size	A	Product Code
63 (2.5")	3000mm	RW1/3M
"	2000mm	RW1/2M
"	1000mm	RW1/1M
75 (3")	3000mm	RW2/3M
"	2000mm	RW2/2M
"	1000mm	RW2/1M
100 (4")	3000mm	RW3/3M
"	2000mm	RW3/2M
"	1000mm	RW3/1M
150 (6")	3000mm	RW60/3M
"	2000mm	RW60/2M
"	1000mm	RW60/1M

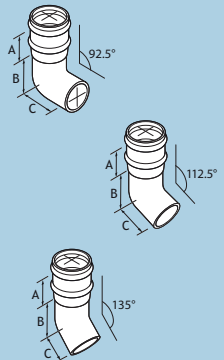
Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Heritage - Circular Pipes and Fittings

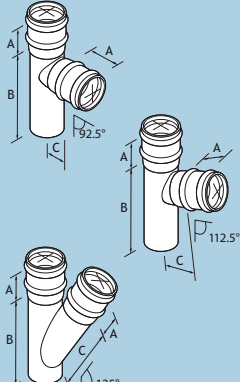
Thickwall Pipes - With Ears

	Pipe Size	A	Thickness	Product Code
	63 dia	2000mm	3	RWT/25/2M
	75 dia	2000mm	3	RWT/30/2M
	100 dia	2000mm	3	RWT/40/2M
Note: The codes given above are for pipes with ears. For pipes without ears suffix codes with /NE 63, 75 and 100mm pipes are supplied with separate interference-fit cast sockets				

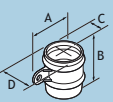
Bends - Without Ears

	Pipe Size	Type	A	B	C	Product Code
	63 dia	92.5 Degree	89	21	140	RW1/69
	75 dia	"	95	15	146	RW2/83
	100 dia	"	90	80	159	RW3/128
	150 dia	"	125	114	109	RW60/B/92
	63 dia	112.5 Degree	89	32	110	RW1/70
	75 dia	"	95	26	120	RW2/84
	100 dia	"	90	43	110	RW3/129
	150 dia	"	125	85	144	RW60/B/112
	63 dia	135 Degree	89	41	107	RW1/165
	75 dia	"	95	35	120	RW2/327
	100 dia	"	90	43	110	RW3/328
	150 dia	"	125	85	144	RW60/B/135

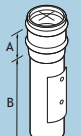
Branches - Without Ears

	Pipe Size	Type	A	B	C	Product Code
	63 dia	92.5 Degree	70	200	79	RW1/67
	75 dia	"	70	220	85	RW2/81
	100 dia	"	90	240	108	RW3/126
	150 dia	"	125	315	206	RW60/BR/92
	63 dia	112.5 Degree	70	200	79	RW1/68
	75 dia	"	70	220	85	RW2/82
	100 dia	"	65	265	108	RW3/127
	150 dia	"	125	135	206	RW60/BR/112
	63 dia	135 Degree	70	200	79	RW1/BR/135
	75 dia	"	70	220	85	RW2/BR/135
	100 dia	"	90	300	180	RW3/BR/135
	150 dia	"	125	375	245	RW60/BR/135

Round Pipe Sockets - With Ears

	Pipe Size	A	B	C	D	Product Code
	63 dia	144	89	65	73.5 to 70	RW1/240
	75 dia	160	95	71	86.5 to 81	RW2/241
	100 dia	187	90	90	110 to 108	RW3/242
	150 dia	245	125	118	163 to 160	RW60/PS
Note: The codes given above are for sockets with ears. For sockets without ears suffix codes with /NE						

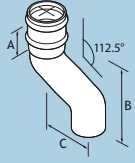
Access Pipes - Without Ears

	Pipe Size	A	B	Product Code
	63 dia	95	245	RW1/256
	75 dia	95	245	RW2/257
	100 dia	95	245	RW3/258
	150 dia	125	295	RW60/ACP

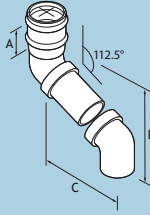
Note: See footer on page 36.

Heritage - Circular Pipes and Fittings

112.5° One Part Offsets - Without Ears

 Note: Offsets in the 150mm Rainwater pipe range are fabricated, cut and mitred.	Pipe Size	Offset	A	B	C	Product Code
	63 dia	75 (3")	70	184	76	RW1/87
	"	113 (4.5")	70	200	114	RW1/163
	"	150 (6")	70	215	152	RW1/62
	"	225 (9")	70	247	228	RW1/63
	"	300 (12")	70	279	304	RW1/64
	"	375 (15")	70	310	381	RW1/65
	"	450 (18")	70	342	457	RW1/88
	"	525 (21")	70	373	533	RW1/89
	"	600 (24")	70	405	609	RW1/164
	"	675 (27")	70	436	685	RW1/190
	"	750 (30")	70	468	762	RW1/191
	75 dia	75 (3")	70	187	76	RW2/90
	"	113 (4.5")	70	203	114	RW2/168
	"	150 (6")	70	218	152	RW2/76
	"	225 (9")	70	250	228	RW2/77
	"	300 (12")	70	282	304	RW2/78
	"	375 (15")	70	313	381	RW2/79
	"	450 (18")	70	345	457	RW2/91
	"	525 (21")	70	376	533	RW2/92
	"	600 (24")	70	408	609	RW2/169
	"	675 (27")	70	438	685	RW2/192
	"	750 (30")	70	471	762	RW2/193
	100 dia	75 (3")	69	205	76	RW3/118
	"	113 (4.5")	69	221	114	RW3/171
	"	150 (6")	69	236	152	RW3/119
	"	225 (9")	69	268	228	RW3/120
	"	300 (12")	69	300	304	RW3/121
	"	375 (15")	69	331	381	RW3/122
	"	450 (18")	69	363	457	RW3/123
	"	525 (21")	69	394	533	RW3/124
	"	600 (24")	69	426	609	RW3/172
	"	675 (27")	69	457	685	RW3/194
	"	750 (30")	69	489	762	RW3/195
	150 dia	75 (3")	125	318	76	RW60/PO/3
	"	150 (6")	125	334	152	RW60/PO/6
	"	225 (9")	125	349	228	RW60/PO/9
	"	300 (12")	125	413	304	RW60/PO/12
	"	375 (15")	125	444	381	RW60/PO/15
	"	450 (18")	125	476	457	RW60/PO/18
	"	525 (21")	125	539	533	RW60/PO/21
	"	600 (24")	125	570	609	RW60/PO/24

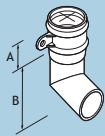
112.5° Two Part Offsets - Without Ears

	Pipe Size	Offset	A	B	C	Product Code
	63 dia	225 (9")	70	247	229	RW1/350
	"	375 (15")	70	310	381	RW1/351
	"	450 (18")	70	342	457	RW1/352
	"	675 (27")	70	436	685	RW1/353
	"	900 (36")	70	529	914	RW1/354
	75 dia	225 (9")	70	250	229	RW2/343
	"	375 (15")	70	313	381	RW2/344
	"	450 (18")	70	345	457	RW2/345
	"	675 (27")	70	438	685	RW2/346
	"	900 (36")	70	534	914	RW2/347

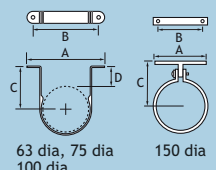
Note: See footer on page 39.

Heritage - Circular Pipes and Fittings

Shoes - With and Without Ears

	Pipe Size	A	B	Product Code
	63 dia	55	105	RW1/66
	75 dia	64	112	RW2/80
	100 dia	69	135	RW3/125
	150 dia	125	215	RW60/SH
Note: The codes given above are for pipes with ears. For pipes without ears suffix codes with /NE				

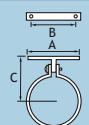
Standard Base Clips

	Pipe Size	A	B	C	D	Product Code
	63 dia	124	100	65	33.5	RW1/236
	75 dia	137	112	71	33	RW2/237
	100 dia	163	138	90	39	RW3/238
	150 dia	255	215	121		RW60/PC

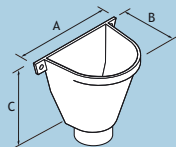
Extended Base Clips

	Pipe Size	A	B	C	Product Code
	63 dia	87	47	279	RW1/364
	75 dia	87	47	285	RW2/365
	100 dia	87	47	304	RW3/366

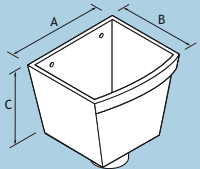
Small Base Clips

	Pipe Size	A	B	C	Product Code
	63 dia	87	47	74	RW1/SB/PC
	75 dia	87	47	80	RW2/SB/PC
	100 dia	87	47	92	RW3/SB/PC

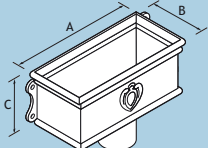
Flat Back Rainwater Heads

	Pipe Size	A	B	C	Product Code
	63 dia	194	168	184	RW1/72
	75 dia	194	168	184	RW2/86
	100 dia	194	168	184	RW3/131
Note: Designed to fit Heritage socketed aluminium pipes. Add suffix /F to product code to fit Flushjoint or Guardian pipes					

Rectangular Rainwater Heads

	Pipe Size	A	B	C	Product Code
	63 dia	258	190	178	RW1/111
	75 dia	258	190	178	RW2/112
	100 dia	258	190	178	RW3/113
Note: Designed to fit Heritage socketed aluminium pipes. Add suffix /F to product code to fit Flushjoint or Guardian pipes					

Ornamental Rainwater Heads

	Pipe Size	A	B	C	Product Code
	63 dia	410	186	178	RWOH/25
	75 dia	410	186	178	RWOH/30
	100 dia	410	186	178	RWOH/40
Note: Designed to fit Heritage socketed aluminium pipes. Add suffix /F to product code to fit Flushjoint or Guardian pipes					

Note: The products are available in a plain mill finish or with a BBA accredited polyester powder coated finish. Product codes in the tables refer to the mill finish. For polyester powder coated finish please add the suffix /PPC. Sundry items are not included as standard unless otherwise stated. Please order sundry items separately.

Alumasc Rainwater Systems Aluminium Range Installation Procedures

Preparatory requirements and installation methods for the Heritage gutter and pipe system, Aqualine gutter system, GX gutter system, Flushjoint pipe system and Guardian security pipe system.

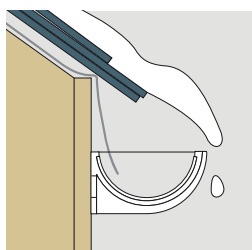


Aluminium Rainwater System Installation - Introduction

For safe and satisfactory installation of Alumasc rainwater systems, the following good practice guidelines should be reviewed before installation commences. Where unusual or special conditions arise contact Alumasc Technical Services for assistance.

General Preparation and Good Practice

Securely fixed fascia boards must be painted and capable of supporting a fully loaded gutter. Check fascia for straightness and whether shims will be necessary to align brackets without creating stress at gutter joints. Where fascia boards are not being used Alumasc provide top and side fix rafter arm brackets as well as masonry drive-in brackets.

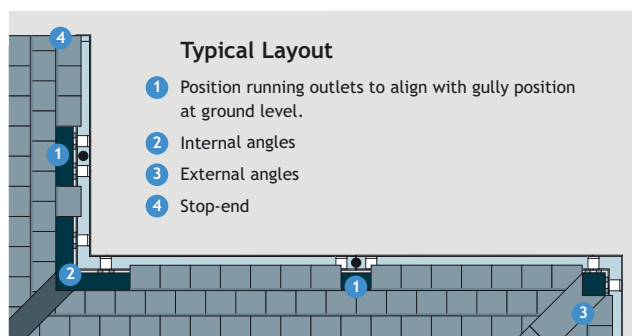


Fix brackets so as to position the gutter centrally and as close below the roof edge as possible, taking into consideration locality and roof slope finish. If there is a risk of sliding snow, adjust the bracket positions to prevent snow hitting the front of the gutter. Extra fixings, brackets and snowboards should be considered where appropriate.

Where high winds are expected, a small bead of sealant must be applied between gutter and brackets a flexible adhesive. An occasional screw, fixed through a slot in the back of the gutter and into the fascia may be preferred, at a minimum of two per length.

Alumasc advise that the designer and contractor satisfy themselves that the application is suitable.

Setting Out



After setting out angles and outlets, fit gutters and brackets according to installation procedures for the specific rainwater system being used, as detailed in this brochure.

Cutting and Drilling

Aluminium can be cut and drilled on site with regular metalworking tools. Pencil cut lines and apply masking tape either side of cut line to protect against accidental saw damage.

Site Painting

Degrease with white spirit and clean thoroughly. Prime with zinc phosphate or similar aluminium primer, followed by at least two coats of full gloss paint on all exposed surfaces. Undercoating is not required. Where powder coated materials have been cut, it is necessary to deburr exposed edges and follow the above painting procedure.

Health and Safety

Always refer to current Health and Safety legislation, safe systems of work and the relevant material safety data sheets.

Storage and Handling

Colour coated rainwater gutters and pipes must be handled with care to prevent scratches and dents. Materials should be stored on a level surface or racking, preferably under secure cover. Uneven fading or water marks on coated and mill finish surfaces may occur if water enters protective packing or goods are stored exposed to sunlight.

Mill finish goods will have manufacturing blemishes such as grinding and fettling marks, welding will be visible on fabricated items and extruded/pressed aluminium items may also be vulnerable to scratch marks or blemishes caused in-transit. It is recommended mill finish material is painted on-site.

Store seals and sealants under cover and make secure and separate provision for solvents. Dispose of packing materials responsibly.

Testing

Allow sufficient time for sealant joints to fully cure. Check all bracket and gutter fixings are secure and plug outlets. Fill up to overflow level (but not beyond). Allow 5 minutes before inspecting all joints for leaks.

Care and Maintenance

Regularly clean out rainwater heads and gutters and ensure that downpipes are clear. Check joints and fixings are secure by periodic inspection no less than twice a year, preferably at the start of Autumn and end of Winter.

Mill finish goods will develop a protective grey aluminium oxide, however it is recommended mill finish material is painted on-site. Polyester powder coated surfaces can be cleaned by washing with warm detergent solution and leathering off.

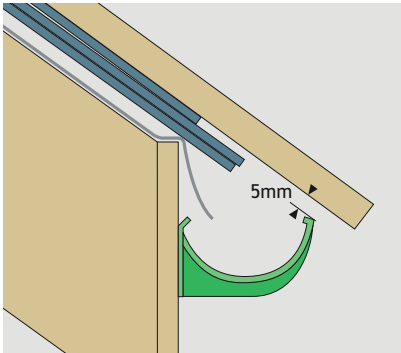
Aluminium rainwater systems installed in a coastal environment can be subject to harsh atmospheric conditions that can accelerate the oxidation process. Alumasc do not normally recommend using aluminium rainwater systems in such locations. However, applying a double coat of polyester powder coating prior to despatch, together with a strict and frequent maintenance regime, should result in the product having a life expectancy in excess of 15 years.

NB: This life expectancy depends on any installation damage being repaired immediately with appropriate touch-up paint, as should any site-cut ends exposing bare metal, which must be de-burred and then repainted in accordance with Alumasc's site painting procedure.

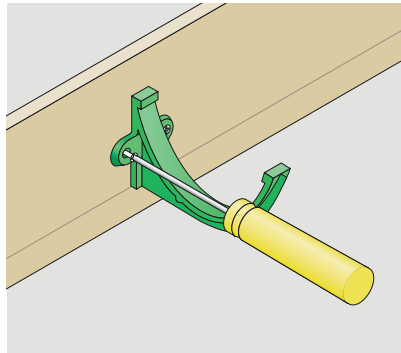
Please contact Alumasc Technical Services for further information.

Installation - Heritage Gutters

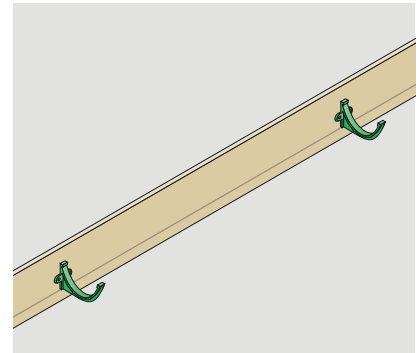
Heritage gutters are available in a choice of five profiles with a range of brackets to accommodate all types of eaves condition. Each profile range can be connected to aluminium pipework systems in either round, square or rectangular sections secured by standard and offset brackets. Assembly and installation of each profile range must be considered individually, although general aspects of preparation are common to them all as shown below.



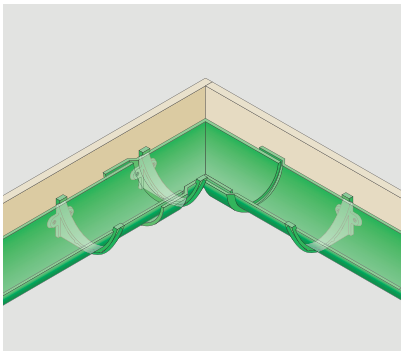
1. Using a straight edge or ruler, shim gutter brackets with 5mm clearance so that the last roof tile or slate will align with the mid point of the gutter.



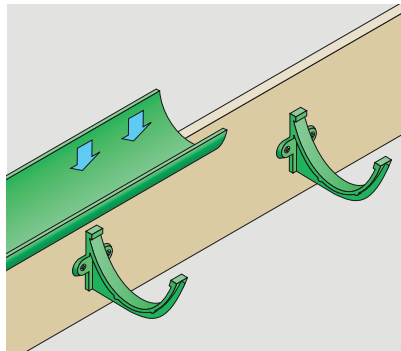
2. Generally, position brackets at 915mm centres. Allow at least 2 brackets per gutter length, 1 per angle and outlet.



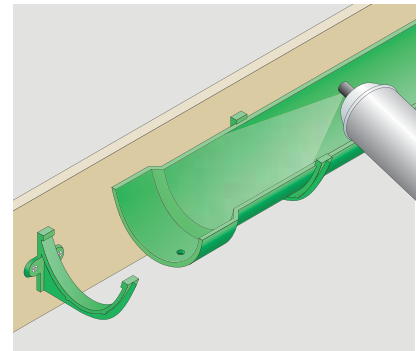
3. Use a string line to set out brackets to a fall of 1:600 to 1:350 (max) or if not possible, level.



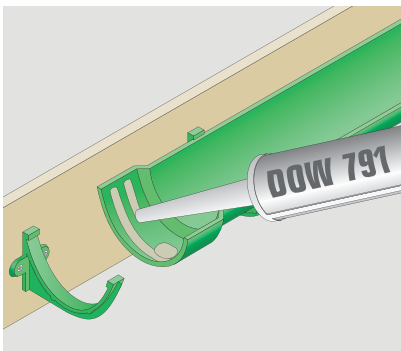
4. Plumb line outlets with gullies at ground level. Position angles, allowing an additional bracket adjacent to the joint with the gutter length.



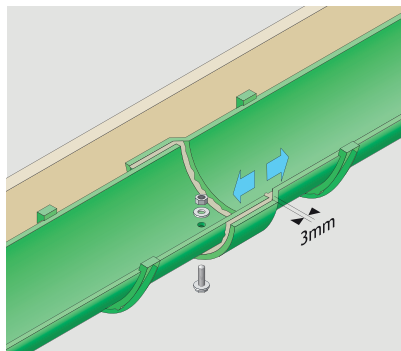
5. Lower the gutter onto the brackets ensuring sufficient clearance for the gutter joint. Clip gutter into bracket.



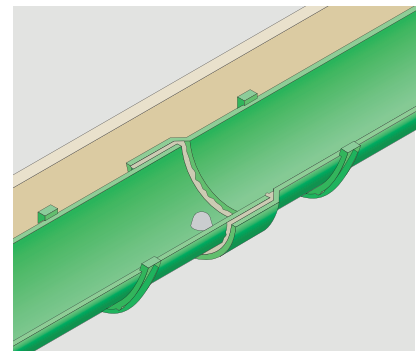
6. Cast gutters overlap at the joint with a spigot and socket. Thoroughly clean and degrease the ends that must be jointed.



7. Apply two 6mm beads of DOW 791 silicone sealant either side of, and around the fixing hole.



8. Insert the spigot end of the gutter allowing a 3mm expansion gap. Secure joint using aluminium M6 x 20mm nut, bolt and washer provided. (Bolt head preferably to underside).



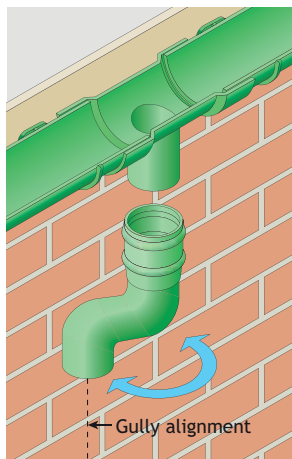
9. Finally, cone-off the exposed bolt stud and nut inside the gutter with a generous application of silicone sealant. Tool off excess silicone around the joint and from external surfaces.

Installation - Heritage Rainwater Pipes

Heritage traditional rainwater pipes have cast pipe sockets either with ears for wall fixing or without for use with pipe clips. Installation is generally from the eaves downward.

Where sockets are supplied separately these must be lightly driven home into the rainwater pipe using a softwood block or adequate protection at the pipe end to prevent damage. Saw cuts must be square and free from dents and burrs. A light application of silicone sealant must be applied to both surfaces to ensure a waterproof seal.

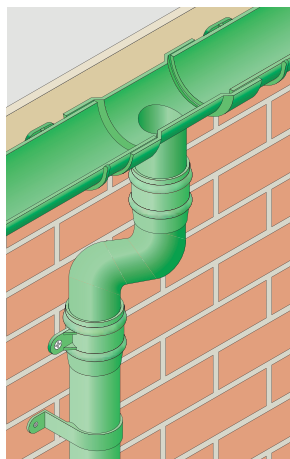
Pipe Alignment



Where square or rectangular pipes are being installed and offsets are required, alignment between the gutter outlet and gully must be exact.

Round pipe systems are more flexible to install and offsets can be adjusted and "swung" into alignment with the gully position.

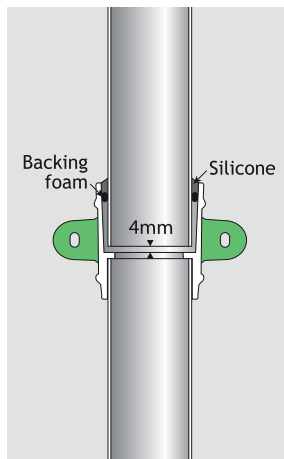
Outlets and Offsets



Commence installation from the gutter outlet by fitting and adjusting the one part or two part offsets.

Check vertical plumb line positioning and seal spigot and socket joints using DOW 791 silicone sealant.

Pipe Jointing and Fixing



Allow a 4mm expansion gap between pipe end and socket, and insert a 6mm backing foam into the pipe joint. Seal with DOW 791 silicone sealant.

Fix to wall at 2m centres using No12 x 50mm screws. Eared sockets have elongated fixing holes to permit the use of pipe nails.

Tools Required

- String or plumb line
- Tape measure
- Drill
- File
- Masonry bit
- Wall fixing (e.g raw plug)
- Cleaning rags
- Marker pen
- Solvent cleaner
- Posi and plain screwdriver
- Paintbrush
- Hacksaw
- Masking tape
- Mastic gun
- Spirit level
- Protective gloves
- Adjustable spanner

General Installation Sequence

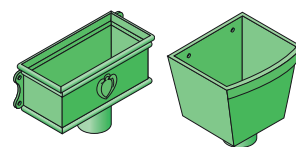
- Complete installation of gutters; alternatively, locate rainwater heads
- Position offsets, bends and branches
- Fit pipes and brackets
- Fit plinth offsets
- Fit access doors and shoes

Sealant

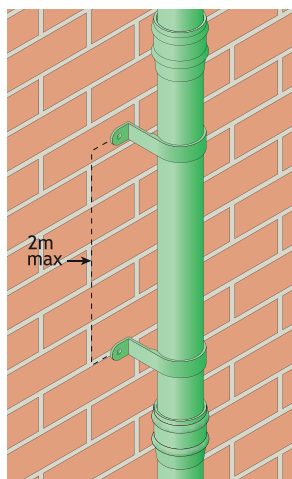
For durable all weather seals and best results, Alumasc recommend the use of DOW 791 silicone sealant.

Rainwater Heads

Fix to masonry through external lugs or preformed holes in back.



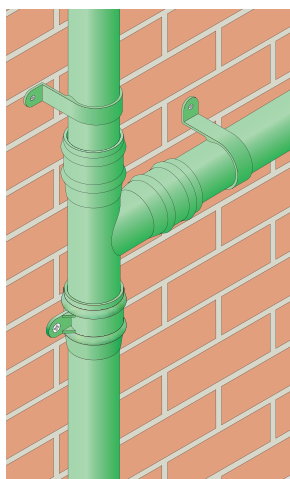
Pipe Clips



Where uneared pipework is being used it must be secured at maximum 2m centres.

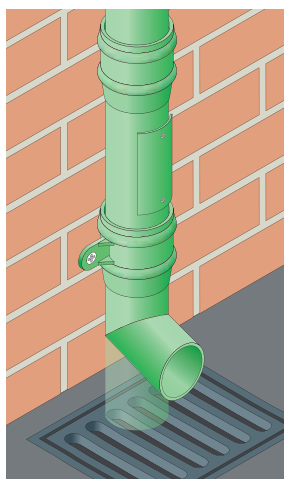
Pipe clips should be chosen according to visual or practical considerations and comprise Standard Base, Small Base and Extended Base options.

Bends and Branches



Bends and branches are secured into the pipe socket. Where additional fixing is required e.g a change of direction at a bend, use additional pipe clips.

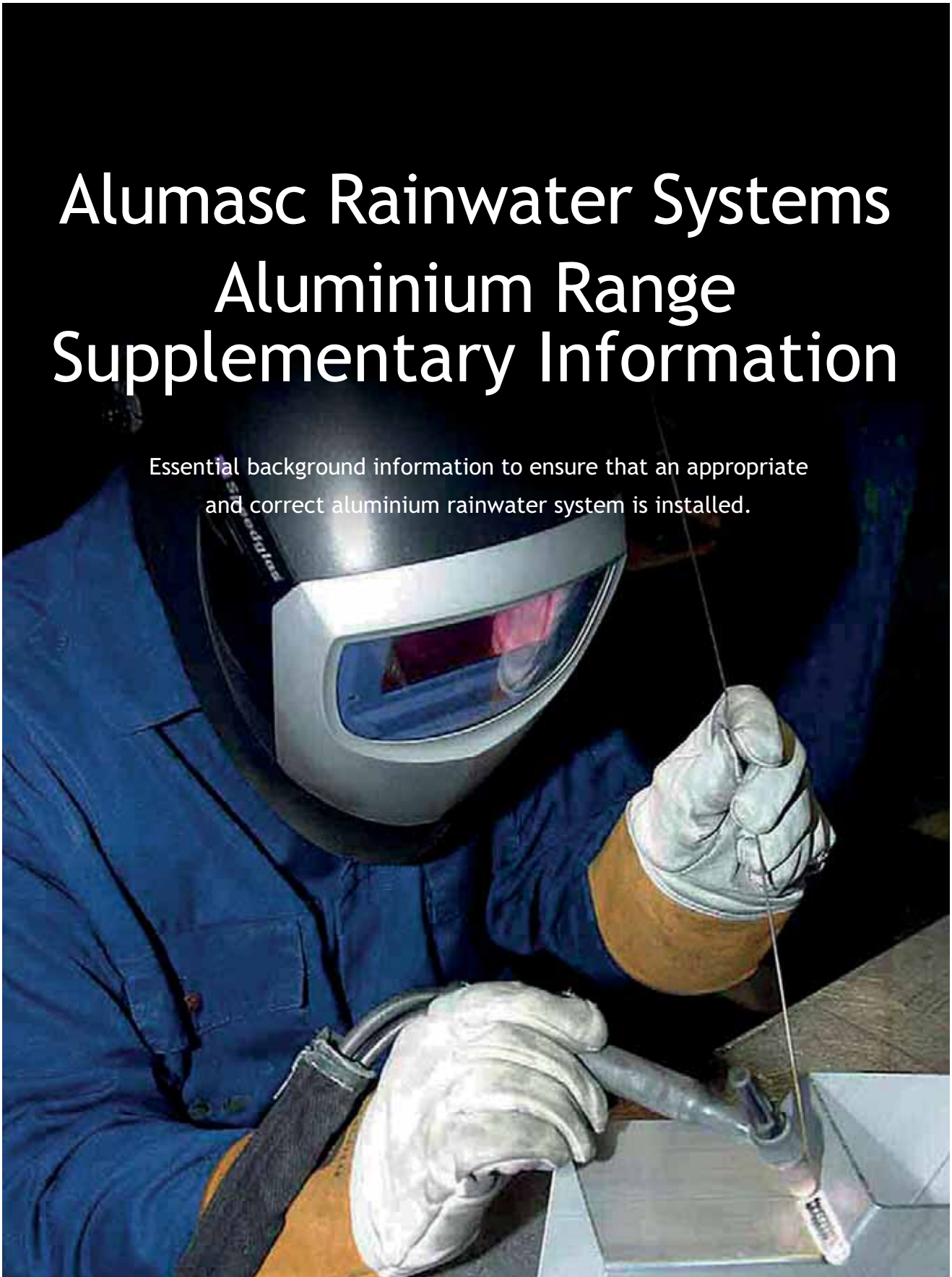
Shoes and Access Pipes



At ground level rainwater pipes can terminate with a shoe for free discharge over a gully or be directly connected into the gully. In the case of direct connections it is recommended that an access pipe fitting is included within 750mm of ground level.

Alumasc Rainwater Systems Aluminium Range Supplementary Information

Essential background information to ensure that an appropriate and correct aluminium rainwater system is installed.



Non-Standard Items

Alumasc can tailor designs to meet individual project requirements, whether it is exact matching of rainwater products on restoration projects or stylish design solutions for new, contemporary buildings.



Alternative Gutter Profiles

Alumasc design and supply engineered rainwater systems and have the ability to develop patterns that are tailored to individual buildings' specific needs.

Whether the aim is to match an existing profile or simply to differentiate a building's appearance, Alumasc can offer bespoke gutter profiles to suit.

Radiused Gutter Sections

Where gutters are required to follow a particular roof radius, patterns can be engineered from detailed dimensions or existing gutter installations to yield a fully cast gutter that can be installed to suit the roof parameters. These are generally supplied in 1m lengths.

As an alternative to fully cast sections, Heritage and Aqualine profiles can be fabricated by cutting, mitring and welding to create a segmented radii gutter. GX profiles can be fabricated by mitring and seam-welding sections to create a segmented radii gutter. This often provides a cost effective solution for such architectural detailing.



Fabricated Gutter Sections

Standard gutter profiles can be fabricated into non-standard plan angles that can suit a host of different building geometries. Transition pieces for jointing mismatch gutter shapes, back outlets for drainage through parapet walls can all be expertly manufactured by Alumasc.

Rainwater Heads (Hoppers)

Ornate rainwater heads can be supplied to match existing design or one-off, personalised designs that will add enduring character and value to the building.

Rainwater heads can be manufactured from new patterns by the casting process. Alternatively, due to the flexibility afforded by the use of pressed aluminium sheet, fabricated items can be supplied to suit a whole range of requirements and applications.

Alumasc rainwater heads can also be enhanced by adding ornate enrichments or detailing, such as place names or initials onto the rainwater heads.



Bespoke Bracketry

Alumasc can design and manufacture a variety of bracketry solutions for gutters and pipes to create an integrated system. Such detailing can often be used to support fascia and soffit configurations.

Ornate holderbats and earbells can be detailed to provide a unique, distinguished appearance to a rainwater stack.

Where standard fitting dimensions do not suit the project's requirements, Alumasc can fabricate pipe systems to accommodate building design.

Ornate pipes can be supplied to match existing designs or one-off, personalised designs. Special enrichments can be added to create enduring character and value to the building.

Sundry Items

Touch Up Paint

RAL Code	Description	Size	Product Code
 RAL 1011m	Brown Beige	125ml	TUP/RAL1011M/125
 RAL 1013m	Pearl White	125ml	TUP/RAL1013M/125
 RAL 1021m	Cadmium Yellow	125ml	TUP/RAL1021M/125
 RAL 2002m	Vermilion	125ml	TUP/RAL2002M/125
 RAL 3003m	Ruby Red	125ml	TUP/RAL3003M/125
 RAL 3005m	Wine Red	125ml	TUP/RAL3005M/125
 RAL 5003m	Sapphire Blue	125ml	TUP/RAL5003M/125
 RAL 5010m	Flower Blue	125ml	TUP/RAL5010M/125
 RAL 6005m	Moss Green	125ml	TUP/RAL6005M/125
 RAL 6018m	Yellow Green	125ml	TUP/RAL6018M/125
 RAL 7005m	Mouse Grey	125ml	TUP/RAL7005M/125
 RAL 7006m	Beige Grey	125ml	TUP/RAL7006M/125
 RAL 7012m	Basalt Grey	125ml	TUP/RAL7012M/125
 RAL 7015m	Slate Grey	125ml	TUP/RAL7015M/125
 RAL 7016m	Anthracite Grey	125ml	TUP/RAL7016M/125
 RAL 7024m	Graphite Grey	125ml	TUP/RAL7024M/125
 RAL 7036m	Platinum Grey	125ml	TUP/RAL7036M/125
 RAL 7037m	Dusty Grey	125ml	TUP/RAL7037M/125
 RAL 7038m	Agate Grey	125ml	TUP/RAL7038M/125
 RAL 8017m	Chocolate Brown	125ml	TUP/RAL8017M/125
 RAL 8019m	Grey Brown	125ml	TUP/RAL8019M/125
 RAL 9006m	Metallic Silver	125ml	TUP/RAL9006M/125
 * RAL 9006g	Metallic Silver	125ml	TUP/RAL9006G/125
 RAL 9016m	White	125ml	TUP/RAL9016M/125
 RAL 9017m	Black	125ml	TUP/RAL9017M/125
	Black (Spray can)	400ml	TUP/BLACK/TXT

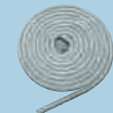
Note: The colours reproduced on this page are for general guidance only.

* 80% gloss

Lightning Link

Type	Product Code
 Flexible Type	Flexible Flat Braid Assembly LL635007
 Rigid Type	Rigid Type Assembly LL632914
	Oxide Inhibitor Compound (50 joints per tube) LL991972
Note: Provides an earth continuity bond intended for connection across joints on-site thereby providing electrical continuity throughout the entire metal gutter system. Extra pre-drilled fixing holes in gutter and fittings can be provided.	

Backing Foam

Type	Product Code
 10m Roll x 6mm dia Backing Foam	BF991408

Solvent Cleaner

Type	Product Code
 Fast Drying Solvent Cleaner	SC991281

Silicone Sealant

Type	Colour	Size	Product Code
 Dow Corning 791	White	310ml Cartridge	SS991558
Dow Corning 791	Grey	310ml Cartridge	SS991559
Dow Corning 791	Bronze	310ml Cartridge	SS991560
Dow Corning 791	Black	310ml Cartridge	SS991561
Dow Corning 791	Limestone	310ml Cartridge	SS991562

Gutter Bolts (Nut, Bolt & Washer)

Type	Size	Notes	Product Code
 Aluminium Nut/Bolt/Washer	M6 x 12mm	For use with the GX Gutter Range	NBW 630308
Aluminium Nut/Bolt/Washer	M6 x 20mm	For use with the Heritage Gutter Range	NBW 630307

Woodcrew

Type	Size	Notes	Product Code
 Countersunk	No.12 x 1.5"	To fix rafter arms to GX Brackets	ZNBW969041
Roundhead	No.12 x 1.5" With Washer	To fix Heritage Fascia Brackets or for 'direct fix' Gutter range	NBW 630362
Roundhead	No.12 x 2" With Washer	To fix pipe sockets with ears or pipe clips	NBW 630361

Rainwater System Design

Alumasc Technical Services is a fully experienced team of Rainwater specialists who use the latest CAD technology and calculation tools to provide an unrivalled support service to Architects, Designers and Contractors.

The Alumasc Rainwater Drainage Design Service

Alumasc Technical Services use dedicated design software in conjunction with the requirements of *BS EN 12056:2000: Gravity drainage systems inside buildings - Part 3* to calculate the most appropriate Alumasc rainwater system to suit project requirements.

The gutter flow software automatically checks the capacity of downpipes used and suggests the minimum size to which downpipes can be sized. Contact Alumasc for further information.

Sizing of Gutters and Downpipes

The level of rainfall a given roof drainage system should cope with is based on the position of the gutter, the potential use of the building and its projected lifespan. All true eaves gutters (external) are designed using a 1 year storm event. This is generally accepted because overflow from an external eaves gutter will fall clear of the building, which is not normally a problem. Any gutter which is classed internal, even if it is at the eaves, should be designed for an intensity based on the building life and a suitable factor of safety.

Calculation Criteria

Calculation of the most efficient drainage solution takes into consideration the following criteria:

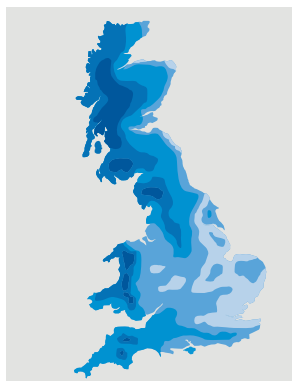
- Catchment area
- Local rainfall intensity
- Building life and safety factor
- Size and flow rate of gutters
- Frequency and size of outlets and downpipes

This factor will vary from 1.5 for conventional buildings to 4.5 for very important structures. For most buildings a 60 year life and safety factor of 1.5 would be the most suitable (90 year protection life).

All the parameters of flow calculations cannot be captured using a single formula. The guide below provides a basic method for calculating flow requirements. For accurate project specific specification advice on rainwater flow calculations contact Alumasc Technical Services.

Step 1

Geographical Location and Rainfall Intensity Maps

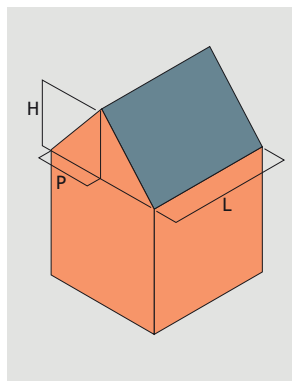


BS EN 12056-3: 2000 contains maps showing rainfall intensity in litres/second per m² for 1, 5, 50 and 500 year storms of 2 minute duration.

(All external gutters designed for 1 year event).

Step 2

Calculating Catchment Area



$$CA = (P+H/2) \times L$$

CA = Catchment area in square metres

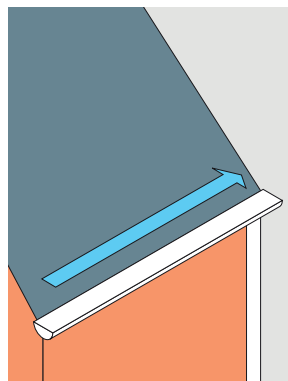
P = Horizontal distance between eaves and ridge

H = Height of roof

L = Length of eaves

Step 3

Frequency and Positioning of Outlets/Downpipes



Calculate the number of outlets per run.

Step 4

Calculate Flow Requirements

Overall Rainfall

$$\text{Catchment area (CA)} \times \text{Rainfall intensity (RI)} = \text{Overall Rainfall (OR)}$$

Flow Rate Per Outlet

$$\text{Overall Rainfall (OR)} \div \text{Number of Outlets} = \text{Flow Rate Per Outlet}$$

Choose Gutter/Outlets according to published Flow Rate capacities.

Note:

Depending on building type, a safety factor should be allowed for the sizing of internal gutters. Contact Alumasc Technical Services for further information.



Technical Support

Alumasc's new Drainage Design Calculators are available as a download from the Alumasc Rainwater website.
www.alumascrainwater.co.uk

Gutter Flow Rates

All Flow Rates quoted on this page are shown in litres per second. Gutter capacities are based on BS EN 12056-3:2000, assuming a maximum distance of 50 x gutter depth, from high point to outlet. Longer gutters or gutters with corners exceeding 10° will have a reduced capacity. For further information contact Alumasc Technical Services.

Rainwater Gutter Flow Rates (l/s)

Gutter Range	Profile	Size (mm)	Pipe/Outlet Diameter (mm)			Pipe outlet size (mm)		
			63	75	100	75x75	100x75	100x100
Heritage	Half Round	100	1.14	1.24	-	1.24	1.24	-
		113	1.14	1.62	-	1.62	1.62	-
		125	1.24	2.08	-	2.08	2.08	-
	Beaded Half Round	113	1.62	1.62	-	1.62	1.62	-
		125	1.77	1.90	-	2.08	2.08	-
	Beaded Deep Run	113x75	1.77	1.90	-	2.10	3.06	-
	Victorian Ogee	100	1.32	1.32	-	1.32	1.32	-
		113	1.35	1.82	-	1.82	1.82	-
		125	1.35	2.12	-	2.10	2.34	-
	Moulded	100x75	1.40	1.64	-	2.10	2.44	-
		125x100	1.52	1.97	3.81	2.10	4.62	4.62
		150x100	2.42	2.84	3.81	2.10	4.65	5.12
Aqualine	Half Round	100x50	0.99	1.12	-	1.12	1.12	-
		120x60	0.99	1.71	-	1.86	1.86	-
		150x75	0.99	1.71	3.44	2.10	3.44	3.44
	Deep Run	110x85	0.99	1.71	2.88	2.10	2.88	2.88
	Modern	100x85	0.99	1.71	-	2.10	2.38	-
		150x120	0.99	1.71	3.81	2.10	3.63	5.41
	Moulded	140x100	0.99	1.71	-	2.10	3.52	-
		160x100	0.99	1.71	3.81	2.10	3.63	4.38
	Box	120x80	1.39	2.08	2.72	2.38	3.32	3.72
		140x100	1.55	2.32	4.21	2.66	4.02	5.32
		160x100	1.55	2.33	4.26	2.67	4.04	5.39
GX	Joggle	100x75	1.32	1.95	-	2.28	-	-
		125x100	1.52	2.31	4.14	2.64	3.99	5.23
		150x100	1.52	2.31	4.14	2.64	3.99	5.23
		150x150	1.89	2.83	5.16	3.24	4.89	6.59
		200x150	1.89	2.83	5.16	3.24	4.89	6.59
	Smooth	120x75	1.32	1.93	-	2.27	2.87	-
		140x100	1.52	2.28	3.99	2.61	3.95	5.04
		170x125	1.73	2.59	4.73	2.97	4.48	6.04
		175x150	1.90	2.84	5.20	3.26	4.92	6.63
		225x150	1.88	2.82	5.15	3.23	4.88	6.57
	Moulded	113x75	0.99	1.71	-	2.10	-	-
		140x100	0.99	1.71	3.81	2.10	3.63	5.41
		160x100	0.99	1.71	3.81	2.10	3.63	5.41
		175x150	0.99	1.71	3.81	2.10	3.63	5.41
		200x150	0.99	1.71	3.81	2.10	3.63	5.41

Rainwater Pipe Flow Rates

Note: The capacity of a rainwater system is usually dependent upon the capacity of the gutter outlet or flat roof outlet rather than the rainwater pipe. Please refer to BS EN 12056-3:2000, Section 6, Table 8 for capacities of vertical rainwater pipes.

NBS Specification

A typical NBS Specification for Alumasc aluminium gutters and downpipes is provided below. A full range of NBS specifications are available via Alumasc's online NBS Specification Builder at www.alumascrainwater.co.uk. For project specific specification advice, contact Alumasc Technical Services.

NBSPlus

R10 Rainwater Drainage Systems

GENERAL

- Gravity Rainwater Drainage System.
- Rainwater outlets, gutters, pipework and accessories as per detail sections below.

SYSTEM PERFORMANCE

- Design Standard: To BS EN 12056-3:2000, clauses 3-7 and National Annexes.
- Collection and Distribution of Rainwater: Complete, and without leakage or noise nuisance.
- Design Parameters: Design rate of rainfall as per BS EN 12056-3:2000, National Annex NB.2 - Category 1

PRODUCTS (TYPICAL SPECIFICATION)

HERITAGE ALUMINIUM HALF ROUND GUTTER (100mm)

311 HERITAGE ALUMINIUM GUTTERS

Gutters and fittings to: BS 8530 (formerly BS 2997)
Manufacturer: Alumasc Exterior Building Products Ltd
White House Works, Bold Road, Sutton, St Helens, Merseyside WA9 4JG.
Tel: 01744 648400, Fax: 01744 648401, Email: info@alumasc-exteriors.co.uk

Reference: Heritage cast aluminium rainwater system
Profile: Half Round
Size: 100mm
Outlet Size: 75mm
Type/grade: Made from LM2 and LM6 grades of Aluminium alloy to BSEN1559:1997, BSEN 1676:1997 and BSEN 1706:1998
Finish: Polyester powder coated to BS EN 12206-1:2004
Colour: To be advised

Jointing: Gutter lengths or fittings are overlapped at the joint with a spigot and socket. Slots are provided for fixing using M6 mushroom head aluminium screws with nuts and washers. Seal evenly across the joints with Dow Corning 791.

Fixing: Fascia bracket fixed at 915mm centres and at each fitting using number 12x38mm round head twin thread screws and washers bright zinc plated.



NBS Specification Builder

Select System:	Aluminium Gutter Systems
Product Type:	Heritage Cast Aluminium
Gutter Profile:	Half Round
Gutter Size (mm):	100
Downpipe Size (mm) (Flow rate in l/s):	75 (1.24 l/s)
Material Finish:	Polyester powder coated
Colour:	To be advised

Create Alumasc Rainwater System NBS specifications by selecting the required product range, profile, size and finish by visiting:

www.alumascrainwater.co.uk

PRODUCTS (TYPICAL SPECIFICATION)

FLUSHJOINT ALUMINIUM DOWNPIPE (75mm diameter)

370 FLUSHJOINT ALUMINIUM PIPEWORK FOR EXTERNAL USE:

Pipes, fittings and accessories to: BS 2997
Manufacturer: As above

Reference: Flushjoint aluminium downpipe system
Size: 75mm diameter
Type/grade: 6063 TF alloy
Finish: Polyester powder coated to BS EN 12206-1:2004
Colour: To be advised

Fixing: Pipe clip fixed at maximum 2.0m centres. Plug and screw to wall with number 12 x 50mm round head twin thread screws and washers bright zinc plated to BS 1706:1960 Class ZN3. Seal internal spigot joints with Dow Corning 791 silicone sealant allowing for a 3-4 mm vertical thermal movement gap.

Accessories: Bends, Branches, Access Pipes, Offsets, Shoes, Rainwater Heads, Pipe Clips

NBS Specification Builder

Select System:	Aluminium Downpipe Systems
Product Type:	Flushjoint
Size (mm):	75 mm diameter
Material Finish:	Polyester powder coated
Colour:	To be advised

General Specification Advice

General specification clauses for aluminium rainwater systems are provided below.

For project specific specification advice, contact Alumasc Technical Services.

EXECUTION CLAUSES

600 PREPARATION, ENSURE:

- Below ground drainage is ready to receive rainwater or that the discharge can be dispersed by approved means to prevent damage or disfigurement of the building fabric.
- Any specified painting of surfaces which will be concealed or inaccessible is completed.

605 INSTALLATION GENERALLY:

- Install pipework/gutters to ensure the complete discharge of rainwater from the building without leaking.
- Obtain all components for each type of pipework/guttering from the same manufacturer unless specified otherwise.
- Provide access fittings and rodding eyes as necessary in convenient locations to permit adequate cleaning and testing of pipework.
- Avoid contact between dissimilar metals and other materials which would result in electrolytic corrosion.
- Do not bend plastics or galvanized steel pipes.
- Adequately protect pipework/gutters from damage and distortion during construction. Fit purpose made temporary caps to prevent ingress of debris. Fit all access covers, cleaning eyes and blanking plates as the work proceeds.
- Where not specified otherwise use plated, sherardized, galvanized or nonferrous fastenings, suitable for the purpose and background, and compatible with the material being fixed.

610 FIXING AND JOINTING GUTTERS:

- Fix securely at specified centres and at all joints in gutters, with additional brackets near angles and outlets.
- Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.
- Seal as specified to make watertight.
- Spread jointing compound evenly over jointing face of socket.
- For gutters with bolted joints, tighten joints in the gutter sole before any other bolts. Fit suitable washers, and spacers to prevent overtightening, unless specified otherwise.
- Tighten fixing to squeeze out some compound.
- Remove surplus, squeezed out compound and neatly clean off.
- Ensure that roofing underlay is dressed into gutter.

615 SETTING OUT EAVES GUTTERS - TO FALLS

- Set out to a true line and even gradient to ensure no ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50 mm below the roof.
- Position outlets to align with connections to below ground drainage, unless shown otherwise on drawings.

630 RAINWATER OUTLETS, ENSURE THAT:

- Outlets are securely fixed before connecting pipework.
- Junctions between outlets and pipework can accommodate all movement in the structure and pipework.

435 FIXING PIPEWORK:

- Fix securely at specified centres plumb and/or true to line.
- Make changes in direction of pipe runs only where shown on drawings unless otherwise approved.
- Fix branches and low gradient sections with uniform and adequate falls to drain efficiently.
- Fix externally socketed pipes/fittings with sockets facing upstream.
- Provide additional supports as necessary to support junctions and changes in direction.
- Fix every length of pipe at or close below the socket collar or coupling.
- Provide a load bearing support for vertical pipes at not less than every storey level. Tighten fixings as the work proceeds so that every storey is self supporting and undue weight is not imposed on fixings at the base of the pipe.
- Isolate from structure where passing through walls or floors and sleeve pipes as specified in Section P31.
- Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.
- Fix expansion joint pipe sockets rigidly to the building and elsewhere use fixings that allow the pipe to slide.

650 JOINTING PIPEWORK/GUTTERS:

- Joint using materials, fittings and techniques which will make effective and durable connections.
- Joint differing pipework/gutter systems with adaptors recommended by manufacturer(s).
- Cut ends of pipes to be clean and square with burrs and swarf removed. Chamfer pipe ends before inserting into ring seal sockets.
- Ensure that jointing or mating surfaces are clean, and where necessary lubricated, immediately before assembly.
- Form junctions using fittings intended for the purpose ensuring that jointing material does not project into bore of pipes, fittings and appliances.
- Remove surplus flux/solvent/cement/sealant from joints.

675 COATED PIPEWORK/GUTTERS:

- Make good to coatings after cutting and any other damage or recoat, as recommended by the manufacturer.

685 IDENTIFICATION OF INTERNAL RAINWATER PIPEWORK:

- To BS 1710 using self-adhesive bands or identification clips located at junctions, at both sides of each slab, bulkhead and wall penetration, and elsewhere as directed.

690 ELECTRICAL CONTINUITY:

- Use clips or suitable standard couplings supplied for the purpose by pipework manufacturer to ensure electrical continuity at all joints in metal pipes with flexible couplings and which are to be earth bonded.

700 ACCESS FOR TESTING AND MAINTENANCE:

- Install pipework and gutters with adequate clearance to permit testing, cleaning and maintenance.
- Position access fittings and rodding eyes so that they are not obstructed by other pipework, framing, etc.

COMPLETION CLAUSES

900 TESTING GENERALLY:

- Inform the Contractor Administrator sufficiently in advance to give him a reasonable opportunity to observe tests.
- Check that all sections of installation are free from obstruction and debris before testing.
- Provide clean water, assistance and apparatus for testing as required.
- Carry out tests as specified. After testing, locate and remedy all defects without delay and retest as instructed.
- Keep a record of all tests and provide a copy of each to the Contractor Administrator.

905 INTERNAL PIPEWORK TEST - ENGLAND, WALES AND NORTHERN IRELAND:

- Temporarily seal open ends of pipework with plugs.
- Connect a 'U' tube water gauge and air pump to the pipework via a plug.
- Pump air into pipework until gauge registers 38 mm.
- Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for not less than 3 minutes.

906 INTERNAL PIPEWORK TEST- SCOTLAND

- Standard - To BSEN12056-3:2000, National Annex NG

910 GUTTER TEST:

- Block all outlets, fill gutters to overflow level and after 5 minutes closely inspect for leakage.

915 MAINTENANCE INSTRUCTIONS

- At completion, submit printed instructions recommending procedures for maintenance of the rainwater installation including full details of the recommended inspection, cleaning and repair procedures.

920 IMMEDIATELY BEFORE HANDOVER:

- Remove construction rubbish and debris from all roofs and gutters. Where possible, sweep and remove fine dust which may enter rainwater systems. Do not sweep or flush dust or debris into the rainwater system.
- Remove swarf, debris and temporary caps from the entire rainwater installation.
- Ensure that all access covers, rodding eyes, outlet gratings, etc. are secured complete with all fixings.

Skyline System - Introduction

The interface between walls and roof at the building eaves is one of the most crucial facets of design - both functionally and aesthetically. The sharpness and vibrancy of Alumasc's Skyline range of Fascias, Soffits and Copings provides dramatic engineered solutions over a wide range of buildings for both public and commercial sectors.

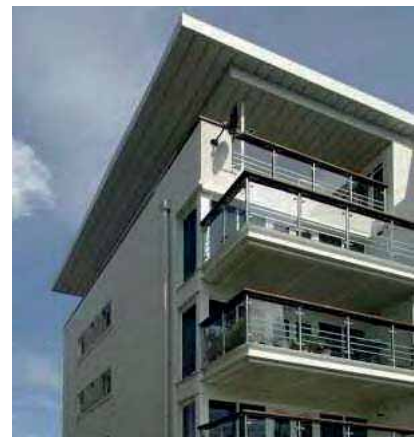
The Skyline Range

Skyline is a stylish and functional aluminium fascia, soffit and coping range offering solutions for use at roofing and gutter interfaces. Standard and fully bespoke designs from the Skyline range are available in high quality, in-house powder coated aluminium.

Skyline fascia and soffit components are designed to be used in conjunction with Alumasc's aluminium rainwater systems, in particular the GX range of folded aluminium gutters, providing a complete eaves and roof drainage solution.

Alumasc Technical Services can assist in the design of a fixing and support framework to suit individual project requirements. A design and fabrication service is also available for bespoke fascia profiles to suit special project requirements.

Skyline is not a rigid set of standard components, but a product rationale, developed to exploit the potential of Alumasc's wide ranging production capability in pressed and folded aluminium.



Skyline Fascias and Soffits

Skyline's range of four generic fascia profiles in aluminium, complemented by interlocking soffit planks, provides a wide choice of building eaves solutions.

Fascia profiles combine with soffit panels to create a range of fascia configurations which may be projected direct from the elevation or they may be combined with Alumasc soffit planks to produce varying eaves overhangs. (See page 122)

Skyline Coping System

Skyline Copings provide an economical and easily installed capping to upstanding parapets, in conjunction with flat or pitched roofs. The strap fixing method avoids penetration of the capping, whilst allowing ventilation over the top of the wall. Skyline Copings are maintenance free, available in a wide range of colours and are equally suited to retrofit and new build projects. (See page 123)

Skyline Anti-Climb

Skyline Anti-Climb is designed with security in mind, preventing unauthorised access to the building roofscape. Skyline Anti-Climb barriers comprise support brackets and preformed curved barrier sections. They can be fitted in front of virtually any gutter profile, resulting in a bold architectural feature.



Skyline Fascias and Soffits

Alumasc's Skyline Fascia and Soffit configurations offer top of the range roof edge details to suit all designs and budgets.

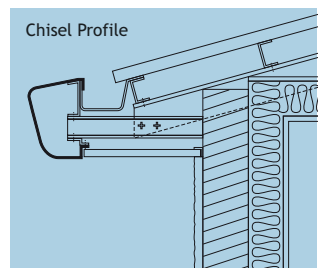
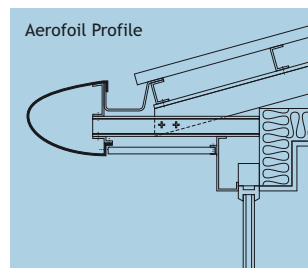
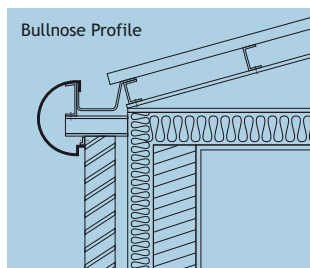
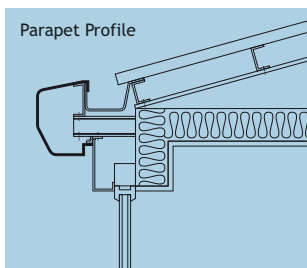
Standard Skyline Profiles

Skyline Fascias and Soffits are manufactured from high quality, polyester powder coated aluminium and are available in four bold generic shapes with bespoke designs available to order. Skyline can be fully integrated with Alumasc's aluminium rainwater systems.

Skyline Designer

Skyline Designer is not a defined product range, but a collection of ideas which provide the architect with an opportunity to create highly distinctive fascias, soffit panels and cassettes that can be detailed and fabricated in a multitude of shapes and sizes to suit project requirements. If it can be made, we can make it.

Alumasc Technical Services can offer advice from the first pencil sketches right up to site installation. Once the architectural details are agreed, full working drawings are produced with client approval requested prior to fabrication.



Skyline Coping System

The Skyline Coping system provides an economical and easily installed capping to upstand parapets, in conjunction with flat or pitched roofs. The strap fixing method avoids penetration of the capping, whilst allowing ventilation over the top of the wall. Skyline Copings are equally suited to retrofit and new build projects.

Applications

- Provides a totally weatherproof covering to upstand parapets as fixing method does not penetrate the Skyline Coping
- Suitable for new buildings and retrofit

Performance

- Attractive, clean lines are maintained as fixings are not visible on the surface of the Skyline Coping
- The fixing strap profile allows ventilation over the top of the wall whilst remaining weatherproof
- Material thickness and fixing mechanism gives excellent rigidity
- Lightweight, durable and non-corrodible
- Coefficient of linear thermal expansion is $23 \times 10^{-6} \text{mm/m/}^{\circ}\text{C}$
- A gap of 3-4mm should be left between Skyline Coping sections to accommodate thermal expansion
- Life expectancy of aluminium: 40 years (rural/suburban areas); up to 25 years (industrial/marine areas)
- Aluminium is 100% recyclable

Components and Manufacture

- UK manufactured
- Skyline Coping are fabricated from 2mm or 3mm thick aluminium alloy sheet, depending on width
- Fixing straps are pressed 3mm aluminium with extruded EPDM seals bonded to the top surface
- All fabricated fittings (90° corners, irregular corners, stop ends, closed ends, upstands, 90° tee junctions) are mitred, welded and have a smooth finish on the front face
- A waterproof membrane will be required beneath the Skyline Coping to provide an effective seal

Colours & Finishes

- In-house polyester powder coating facility with 16 BBA approved standard colours
- Additional BS or RAL colours available to special order; also available in plain mill finish for on-site painting

Installation & Fixing

- Simple and quick to install
- In most cases fixing can be carried out from the roof so no external access is required making it particularly suitable for renovation work
- Minimal maintenance requirements

