

Cl/Sfb (52.6) In6  
ALUTEC EVOLVE

March 2012



Product Guide





Knockroon Village,  
Ayrshire



Barn conversion,  
Feeringbury, Essex



Lochside Hotel,  
New Cumnock, Ayrshire



Lawley Farm,  
Telford, Shropshire



## Introduction

Alutec	4
Products and services	4
Aluminium, a sustainable material	6
Colour options	7

## Evolve rainwater systems

Features & Benefits	8
Life-time costs	9
Product selector	9
Half Round gutter and fittings	10
63mm Ø downpipe and fittings	11
Deepflow gutter and fittings	12
Box gutter and fittings	13
Ogee gutter and fittings	14
76mm Ø downpipes and fittings	16
72x72mm downpipes and fittings	18

## Design and installation

Roof drainage design	20
Non standard requirements	22
Gutter and hopper head flow capacities	24
Specification clauses	25
Installation	26
General systems advice	28
BS and EN Standards	29
Alutec range overview	31



Alutec is part of Aliaxis, a multi-national group of plumbing & drainage companies. Present in over 40 countries, the group is known for its market leading plumbing and drainage systems.

Alutec is the UK leader in innovative aluminium rainwater and eaves drainage solutions. Alutec prides itself in providing industry leading standards in technical support, customer service and sustainable product design.

## Products

Alutec offers solutions for three distinct areas:

- Gutters and rainwater systems
- Soffit & fascia
- Roof and shower outlets

### Gutters and rainwater systems

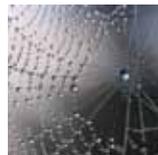
evolve



traditional



aligator



soffit & fascia



roof & shower



## Life expectancy

The performance, quality and longevity of all product systems are backed by the knowledge that Alutec is a long established and financially sound company and part of a substantial international group ensuring complete peace of mind for specifiers and building owners.

## Standards

All Alutec systems are manufactured to and in excess of the appropriate BS or EN Standards. For a full list, please see BS and EN Standards in the Design and Installation section.

### ISO 14001: 2004

Alutec is committed to continually reducing its environmental impact across all its business activities and is accredited to ISO 14001: 2004.



## Service

Alutec offers a fully integrated “turn key” project advisory service; from the initial design stages, right through to completion, ensuring deadlines and delivery dates are met.

## Product availability

Alutec products are available through all major national or regional building, plumbing and roofing merchants and distributors. Call Alutec for your nearest merchant.



### CPD Service

Alutec is a leading CPD provider for aluminium rainwater and soffit & fascia systems. Alutec's RIBA accredited CPD covers all aspects of eaves design, selection and correct installation. To date, it has been presented to over 5,000 construction industry professionals.

### Alutec Trained Installers

To ensure our products are correctly installed and therefore fulfil their design objectives, Alutec recommends the use of independent trained installers, accredited at Alutec's training centre. A nationwide network of Trained Installers is available on request.

### Technical support

Alutec Technical Services team has many years experience in helping specifiers with:

- Correct system choice
- Roof drainage design
- Flow rate calculations
- Installation advice

All Alutec technical or product specifications and brochures can be downloaded from the Alutec website [marleyalutec.co.uk](http://marleyalutec.co.uk)

For further technical queries, call the Technical Services Department.

### Sales support

We offer a complete service from enquiry to order point and will deal with all types of enquiries, whether they are related to plans, bill of quantities, tenders or other material.

### Sustainable product design

Alutec is committed to designing the most sustainable, durable and high performance rainwater systems possible.

Sustainable design creates products with a lower carbon footprint, longevity and low maintenance. Alutec eaves solutions lead the market, all have a life expectancy of 50 years or more and require little or no maintenance.



## Aluminium, a sustainable material

For a material to be considered sustainable, it must be recyclable, have a long life expectancy and a low impact on the environment. Aluminium has all these qualities and more.

### Lightweight, strong and long-lasting

Aluminium is a very light metal, about 65% lighter than steel or cast iron. It has a very high strength to weight ratio and excellent corrosion resistance. One of the oldest recorded uses of aluminium is the statue of Eros in London, cast in 1893.

### Highly corrosion resistant

Aluminium naturally generates a protective oxide coating. Should the painted surface be damaged, the aluminium simply oxidises to protect itself. Furthermore, marine grade aluminium, used on all Alutec systems, is better still; used in combination with architectural grade polyester powder coating it provides an attractive, durable and maintenance free finish. This is in contrast to steel, where galvanising only offers limited protection and cast iron, which requires regular repainting.

### Infinitely recyclable

Aluminium can be recycled again and again without loss of quality, in fact 75% of all aluminium ever produced is still in use today. The recycling of aluminium requires little energy. It saves up to 95% of the energy required for primary aluminium production.

### Responsible sourcing

Aluminium is the world's third most abundant element. 97% of all bauxite mines in the world operate rehabilitation projects, returning the land to its original condition after mining is finished. The amount of electrical energy required to produce aluminium has dropped by 70% since the 1880's and 60% of that electricity is provided from renewable green energy.



### Green production power

Hydro-electric or geo-thermal green energy accounts for 60% of global primary aluminium production, minimising aluminium's environmental impact.

For more information visit the European Aluminium Association:  
[www.eaa.net](http://www.eaa.net)



## Colour options

All Alutec eaves rainwater systems are available with a BS 6496 architectural grade polyester powder coat (PPC) paint finish carried out to BS EN 12206-1:2004.

Architectural grade PPC paint finishes are designed for exterior use and maintain their colour and gloss level for longer. The paint's life expectancy is enhanced further by Alutec's choice of aluminium. Alutec only uses the highest quality marine grade aluminium, which greatly increases its durability.

Alutec has 21 standard colours, including Heritage Black, with a textured surface, emulating the appearance of traditional cast gutters. For more bespoke projects an infinite number of non standard colours are available.

<b>CAST 98</b> Heritage Black	<b>RAL 9010</b> White	<b>RAL 1013</b> Pearl White	
	<b>RAL 9005</b> Black	<b>RAL 7035</b> Light Grey	
<b>RAL 7036</b> Platinum Grey	<b>RAL 7037</b> Steel Grey	<b>RAL 7015</b> Slate Grey	<b>RAL 7016</b> Anthracite Grey
<b>RAL 7021</b> Granite Grey	<b>RAL 5010</b> Flower Blue	<b>RAL 5002</b> Ultramarine	<b>RAL 5003</b> Sapphire Blue
<b>RAL 6002</b> Leaf Green	<b>RAL 6005</b> Moss Green	<b>RAL 1017</b> Saffron Yellow	<b>RAL 3002</b> Signal Red
<b>RAL 3003</b> Ruby Red	<b>RAL 8016</b> Chestnut Brown	<b>RAL 8014</b> Sepia Brown	<b>RAL 8017</b> Chocolate

Colours are approximate and for general guidance only. For exact colour and finish reference, colour plates are available on request.

Hundreds of colours are available on request. For information on these and the gloss levels of the coating, please contact Alutec.



Evolve Half Round



Evolve Deepflow



Evolve Box



Evolve Ogee

## Evolved with the environment in mind

Evolve uses the latest manufacturing technologies to reduce its carbon footprint, making the Evolve family one of the most green and sustainable ranges available in the UK today.

### Features of the Evolve range

**Life expectancy** of 50 years or more

**Near zero maintenance**, only periodic aesthetic cleaning required

**Marine grade aluminium** – Evolve will outlast other grade aluminium systems

**Concealed fascia brackets** on Box and Ogee profiles for a sleek and modern aesthetic

**Unique JuraJoint** (pat. pending) for quick, simple and secure jointing

**Durable and strong**, made from heavy grade extruded aluminium and high pressure castings, making Evolve more resistant to damage than steel, roll-form or PVC systems

**Fade resistant** architectural grade polyester powder coat paint finish

**High flow rates** reducing the number of downpipes required

Available at a **lower price** in the popular Heritage Black finish, with a textured surface to emulate the appearance of traditional cast iron

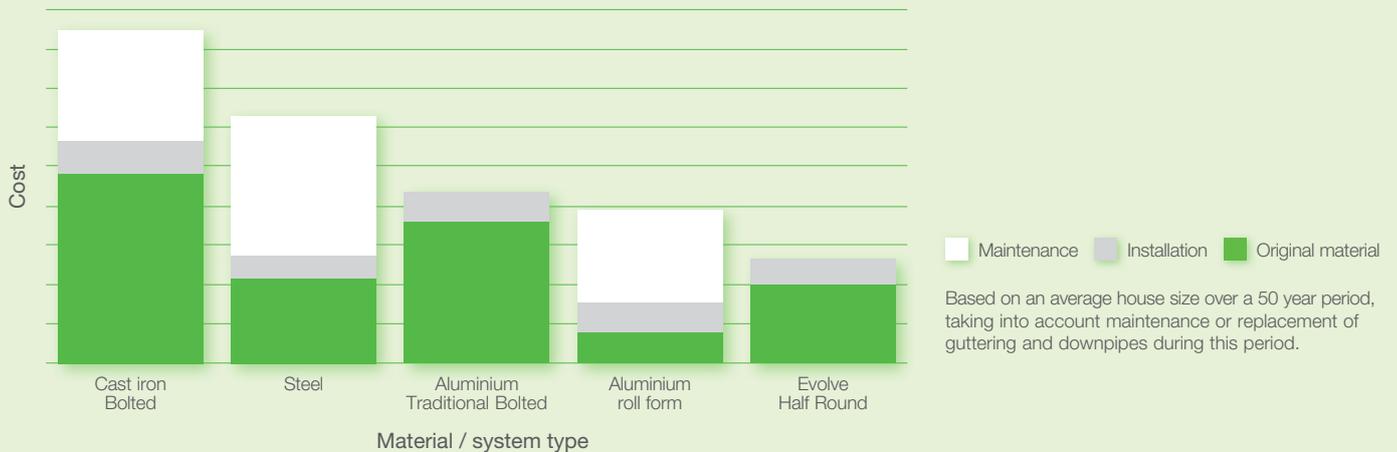
**21 standard colours**

**Over 75% lighter** than cast iron, making Evolve easier and safer to handle and install

## Evolve: A low cost and sustainable solution

Maintenance cost estimates over 50 years show that Evolve is competitive against all materials.

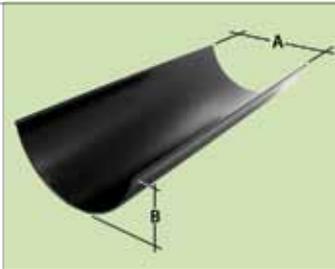
### 50 year life-time material cost comparison: Half Round gutter systems



## Product Selector

Profile	Size	Typical building types	Compatible downpipes	Maximum flow rate	Maximum roof area (per downpipe) <sup>1</sup>
Half Round 	120mm	Small – medium residential	Evolve 63mm Ø	1.8 l/s	87m <sup>2</sup>
Deepflow 	125mm	Medium to large residential and small commercial	Traditional 76mm Ø	4.9 l/s	232m <sup>2</sup>
			Flush-fit 76mm Ø	4.9 l/s	232m <sup>2</sup>
Box 	130x85mm	Medium to large residential	Flush-fit 76mm Ø	6.0 l/s	286m <sup>2</sup>
			Traditional 76mm Ø	6.0 l/s	286m <sup>2</sup>
		Small to medium commercial	Flush-fit 72x72mm	7.0 l/s	333m <sup>2</sup>
			Traditional 72x72mm	7.0 l/s	333m <sup>2</sup>
Ogee 	130x95mm	Medium to large residential	Flush-fit 76mm Ø	6.0 l/s	286m <sup>2</sup>
			Traditional 76mm Ø	6.0 l/s	286m <sup>2</sup>
		Small to medium commercial	Flush-fit 72x72mm	7.0 l/s	333m <sup>2</sup>
			Traditional 72x72mm	7.0 l/s	333m <sup>2</sup>

<sup>1</sup>: The above flow rates are based on physical tests carried out in accordance with BS EN 12056-3. Please refer to page 24 for more information or contact Marley Alutec Technical Services department for a full roof drainage design.



## Gutter 3m

Code	A	B
GT513	123	51



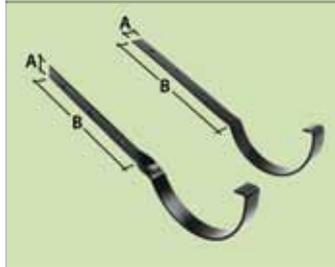
## Union

Code	A
GT520	60



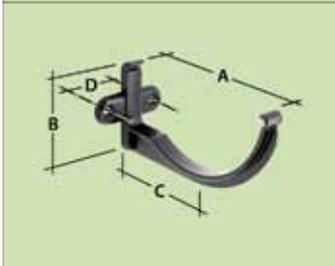
## Stop end (external)

Code	A
GT555	31



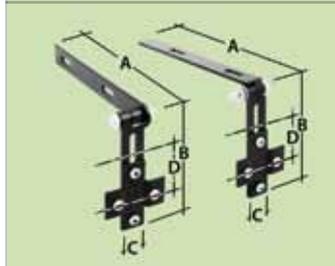
## Fixed rafter arm

Code		A	B
AT73	Side	20	240
AT76	Top	20	240



## Fascia bracket

Code	A	B	C	D
GT580	135	66	67	38



## Adjustable rafter arm

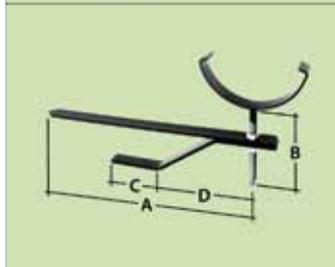
Code		A	B	C	D
AC78	Side	195	120	23	30
AC77	Top	195	120	23	30

Black Only



## Angle 90°

Code	A	B
GT532	135	28



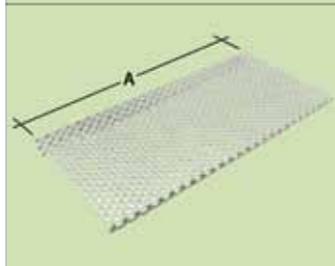
## Rise & fall bracket

Code	A	B	C	D
AT93	360	125	80	168



## Angle 135°

Code	A	B
GT537	64	28



## Leafguard

Code	A
SL70	1220

Mill Finish



## Outlet

Code	A	B	C	Fascia to outlet centre
GT522	200	140	62	67



## Compatible fixing screws

Roundhead fascia bracket screw

Code	Description
SC201	32mm x No. 10

Mill Finish



## Stop end (internal)

Code	A
GT550	25



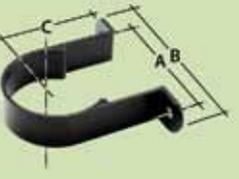
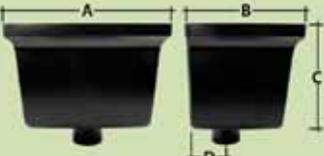
## Sealant

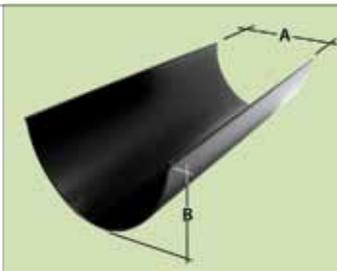
Code	Description
SC101	310ml clear

Please note sealant shelf life is 12 months. Refer to sealant usage table, page 27.

# Evolve 63mm ø downpipe

Compatible with Evolve Half Round gutter only (page 10).

	<p><b>Downpipe 3m</b></p> <p><b>Code</b></p> <table border="1"> <tr><td>RT213</td></tr> </table>	RT213		<p><b>Shoe</b></p> <p><b>Code</b></p> <table border="1"> <thead> <tr><th></th><th>A</th><th>B</th></tr> </thead> <tbody> <tr><td>RT250</td><td>92</td><td>104</td></tr> </tbody> </table>		A	B	RT250	92	104													
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	<p><b>Pipe socket (eared)</b></p> <p><b>Code</b></p> <table border="1"> <thead> <tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th></tr> </thead> <tbody> <tr><td>RT220</td><td>82</td><td>52</td><td>94</td><td>116</td><td>59</td></tr> </tbody> </table>		A	B	C	D	E	RT220	82	52	94	116	59		<p><b>Access pipe</b></p> <p><b>Code</b></p> <table border="1"> <thead> <tr><th></th><th>A</th><th>B</th><th>C</th></tr> </thead> <tbody> <tr><td>RT260</td><td>300</td><td>140</td><td>105</td></tr> </tbody> </table>		A	B	C	RT260	300	140	105
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RTD25	134	500	74	30																			
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RT242	95	26	115																				



## Gutter 3m

Code	A	B
GE513	128	75



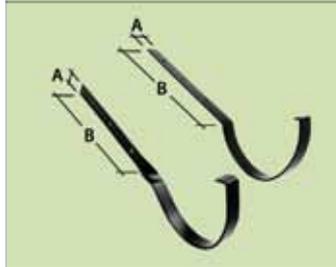
## Stop end (external)

Code	A
GE555	39



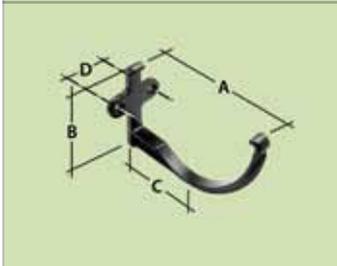
## Union

Code	A
GE520	86



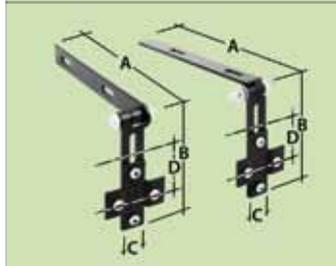
## Fixed rafter arm

Code		A	B
AE73	Side	20	233
AE76	Top	20	233



## Fascia bracket

Code	A	B	C	D
GE580	140	90	70	38



## Adjustable rafter arm

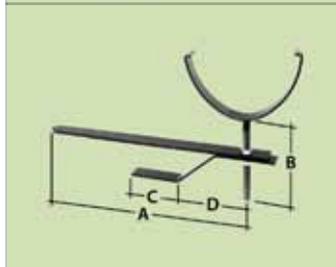
Code		A	B	C	D
AC78	Side	195	120	23	30
AC77	Top	195	120	23	30

Black Only



## Angle 90°

Code	A	B
GE532	144	35



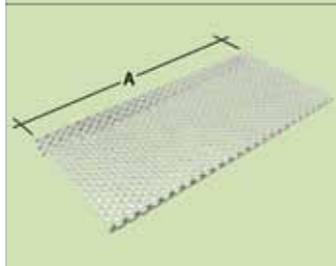
## Rise & fall bracket

Code	A	B	C	D
AE93	360	125	80	168



## Angle 135°

Code	A	B
GE537	65	35



## Leafguard

Code	A
SL75	1220

Mill Finish



## Outlet

Code	A	B	C	Fascia to outlet centre
GE523	214	150	85	70



## Compatible fixing screws

Roundhead fascia bracket screw

Code	Description
SC201	32mm x No. 10

Mill Finish



## Stop end (internal)

Code	A
GE550	35



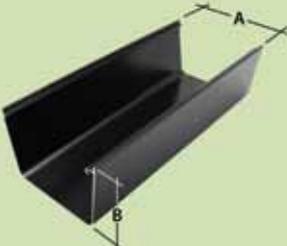
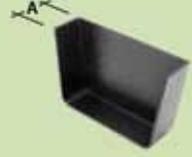
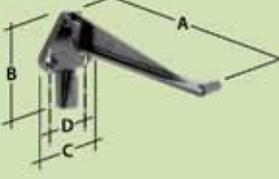
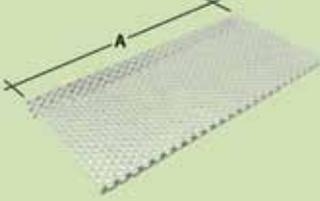
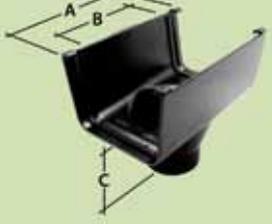
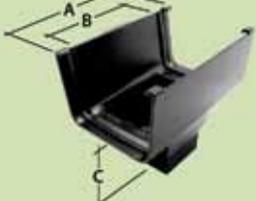
## Sealant

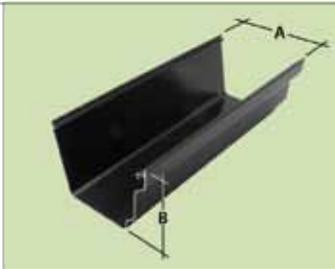
Code	Description
SC101	310ml clear

Please note sealant shelf life is 12 months. Refer to sealant usage table, page 27.

# Evolve Box gutter

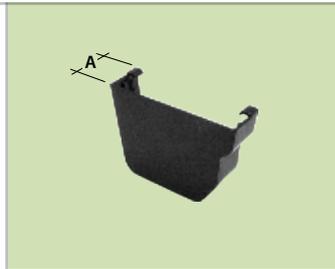
Compatible with Traditional and Flush-fit 76mm Ø and 72x72mm downpipes (pages 16 – 19).

	<h3>Gutter 3m</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>GB513</td> <td>131</td> <td>85</td> </tr> </tbody> </table>	Code	A	B	GB513	131	85		<h3>Stop end (internal)</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>GB550</td> <td>35</td> </tr> </tbody> </table>	Code	A	GB550	35				
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Code	A																
GB555	37																
	<h3>Fascia bracket</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>GB580</td> <td>138</td> <td>83</td> <td>57</td> <td>38</td> </tr> </tbody> </table>	Code	A	B	C	D	GB580	138	83	57	38		<h3>Leafguard</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>SL76</td> <td>1220</td> </tr> </tbody> </table> <p>Mill Finish</p>	Code	A	SL76	1220
Code	A	B	C	D													
GB580	138	83	57	38													
Code	A																
SL76	1220																
	<h3>Angle 90°</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>GB532</td> <td>138</td> <td>35</td> </tr> </tbody> </table>	Code	A	B	GB532	138	35		<h3>Compatible fixing screws</h3> <p>Roundhead fascia bracket screw</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SC201</td> <td>32mm x No. 10</td> </tr> </tbody> </table> <p>Mill Finish</p>	Code	Description	SC201	32mm x No. 10				
Code	A	B															
GB532	138	35															
Code	Description																
SC201	32mm x No. 10																
	<h3>Angle 135°</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>GB537</td> <td>55</td> <td>35</td> </tr> </tbody> </table>	Code	A	B	GB537	55	35		<h3>Sealant</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SC101</td> <td>310ml clear</td> </tr> </tbody> </table> <p>Please note sealant shelf life is 12 months. Refer to sealant usage table, page 27.</p>	Code	Description	SC101	310ml clear				
Code	A	B															
GB537	55	35															
Code	Description																
SC101	310ml clear																
	<h3>Outlet (76mm Ø)</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> <th>B</th> <th>C</th> <th>Fascia to outlet centre</th> </tr> </thead> <tbody> <tr> <td>GB523</td> <td>200</td> <td>133</td> <td>80</td> <td>76</td> </tr> </tbody> </table>	Code	A	B	C	Fascia to outlet centre	GB523	200	133	80	76						
Code	A	B	C	Fascia to outlet centre													
GB523	200	133	80	76													
	<h3>Outlet (72x72mm)</h3> <table border="1"> <thead> <tr> <th>Code</th> <th>A</th> <th>B</th> <th>C</th> <th>Fascia to outlet centre</th> </tr> </thead> <tbody> <tr> <td>GB525</td> <td>200</td> <td>133</td> <td>80</td> <td>76</td> </tr> </tbody> </table>	Code	A	B	C	Fascia to outlet centre	GB525	200	133	80	76						
Code	A	B	C	Fascia to outlet centre													
GB525	200	133	80	76													



## Gutter 3m

Code	A	B
GY513	131	95



## Stop end (internal)

Code	A
GY558 Right hand	35
GY557 Left hand	35



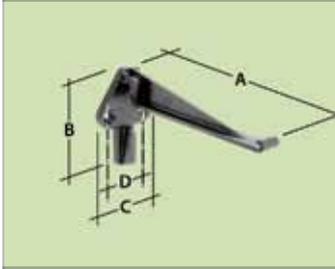
## Union

Code	A
GY520	72



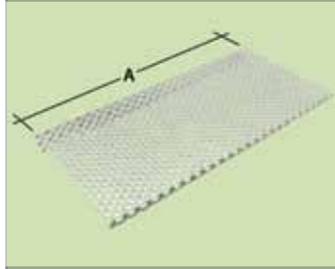
## Stop end (external)

Code	A
GY555 Right hand	37
GY550 Left hand	37



## Fascia bracket

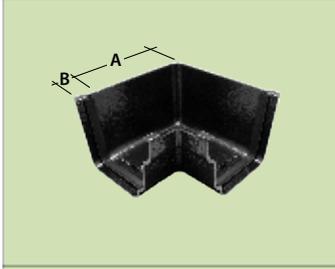
Code	A	B	C	D
GY580	138	83	57	38



## Leafguard

Code	A
SL77	1220

Mill Finish



## Angle 90°

Code	A	B
GY530 Internal	145	35
GY531 External	35	36



## Compatible fixing screws

Roundhead fascia bracket screw

Code	Description
SC201	32mm x No.10

Mill Finish



## Angle 135°

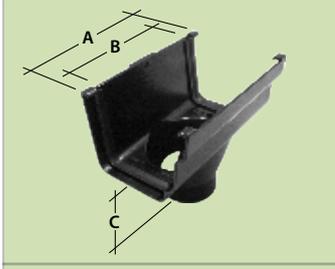
Code	A	B
GY535 Internal	60	35
GY536 External	34	35



## Sealant

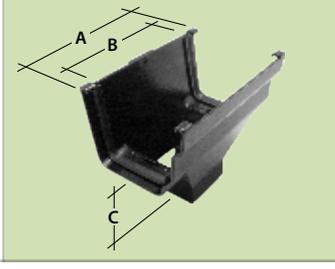
Code	Description
SC101	310ml clear

Please note sealant shelf life is 12 months. Refer to sealant usage table, page 27.



## Outlet (76mm Ø)

Code	A	B	C	Fascia to outlet centre
GY523	200	130	69	69



## Outlet (72x72mm)

Code	A	B	C	Fascia to outlet centre
GY525	200	130	69	67



Lawley Farm,  
Telford, Shropshire



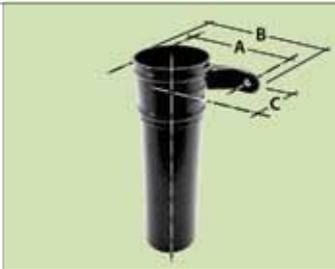
Lawley Farm,  
Telford, Shropshire



Wichelstowe,  
Swindon, Wiltshire

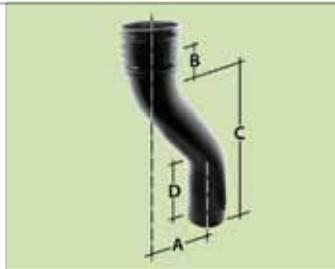


Lawley Farm,  
Telford, Shropshire



## Downpipe 3m

Code	A	B	C
RR313	109	160	70



## Fixed offset

Code	A	B	C	D
RR3903	75	82	300	120
RR3904	100	80	321	133
RR3906	150	84	350	145



## Pipe socket

Code	A	B	C	D
RR320	83	85	70	42



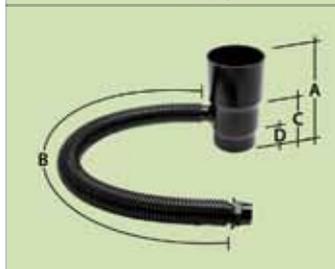
## Adjustable offset

Code	A min	A max	B	C
RR3945	200	450	48	163
RR3990	200	900	48	163



## Bend

Code		A	B	C
RR330	92.5°	110	215	42
RR332	112.5°	110	230	42



## Rainwater diverter

Code	A	B	C	D
RRD35	150	500	79	25



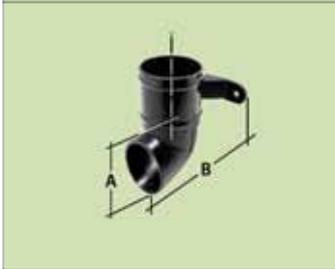
## Branch 112.5°

Code	A	B	C
RR342	250	119	130



## Hopper head (standard)

Code	A	B	C	D
RH102	250	180	180	70



## Shoe

Code	A	B
RR350	103	124



## Compatible fixing screws

Code	Description
SC603	50mm x No. 16 – Domehead

For use with downpipe and hopper



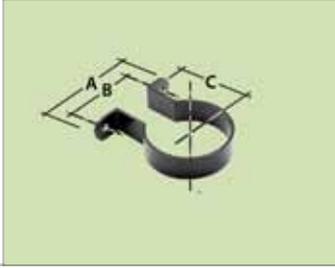
## Access pipe

Code	A	B	C
RR360	300	140	105



## Pipe socket filler

Code	Description
SC911	10m roll Foam



## Pipe clip

Code	A	B	C
RR380	98	72	70



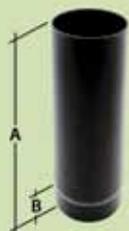
## Sealant

Code	Description
SC101	310ml clear

Please note sealant shelf life is 12 months.  
Refer to sealant usage table, page 27.

# Flush-fit 76mm Ø downpipe

Compatible with Evolve Deepflow, Box and Ogee gutters only (pages 12 – 14).



## Downpipe 3m

Code	A	B
RE313	3000	50



## Internal joint spigot

Code	A
RE320	69



## Bend

Code		A	B
RE330	92.5°	115	81
RE332	112.5°	90	56



## Branch 112.5°

Code	A	B	C
RE342	180	180	120



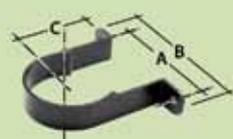
## Shoe

Code	A	B
RE350	173	62



## Access pipe

Code	A	B	C
RE360	345	138	104



## Pipe clip

Code	A	B	C
RE380	112	137	69



## Adjustable eaves offset

Code	A min	A max	B	C
RE3925	90	250	100	14
RE3950	90	500	100	14
RE39100	90	1000	100	14



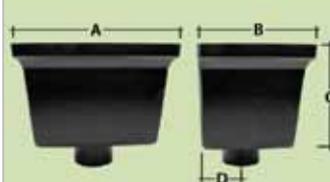
## Fixed wall offset

Fixed offsets are available to order\*



## Rainwater diverter

Code	A	B	C	D
RED35	125	500	45	25



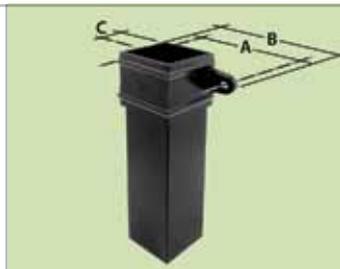
## Hopper head (standard)

Code	A	B	C	D
RH111	250	180	180	69



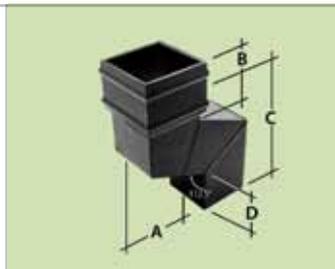
## Compatible fixing screws

Code	Description
SC605	Domehead 50mm x No. 12 For use with downpipe
SC603	Domehead 50mm x No. 16 For use with hopper



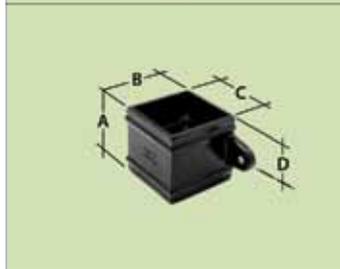
## Downpipe 3m\*\*

Code	A	B	C
RSR313	125	151	42



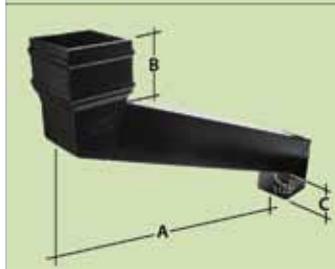
## Fixed offset

Code	A	B	C	D
RSR3903	75	80	160	60
RSR3904	100	80	173	60
RSR3906	150	80	193	60



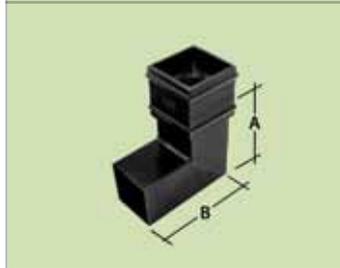
## Pipe socket\*\*

Code	A	B	C	D
RSR320	80	83	83	40



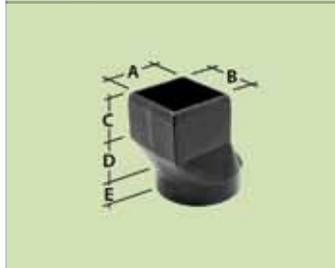
## Adjustable offset

Code	A min	A max	B	C
RSR3945	75	450	80	60
RSR3990	75	900	80	60



## Bend

Code	A	B
RSR330 92.5°	150	150
RSR332 112.5°	60	135



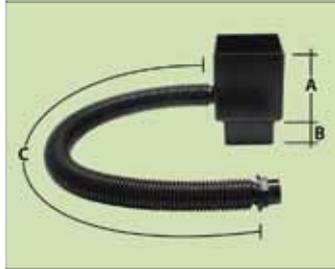
## Drain connector (slip socket)

Code	A	B	C	D	E
RSR370	85	85	65	41	30



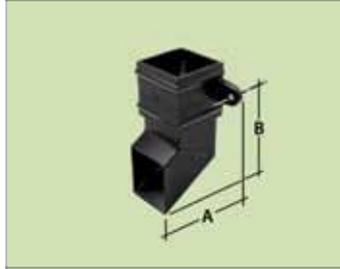
## Branch 112.5°

Code	A	B	C
RSR342	260	127	130



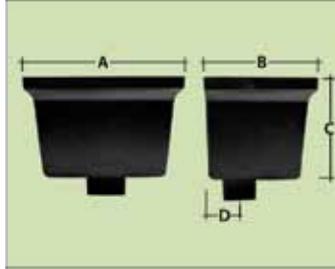
## Rainwater diverter

Code	A	B	C
RSRD35	98	30	500



## Shoe\*\*

Code	A	B
RSR350	96	100



## Hopper head (standard)

Code	A	B	C	D
RH104	250	180	180	42



## Access pipe\*\*

Code	A	B	C
RSR360	300	140	105



## Compatible fixing screws

Code	Description
SC603	Domehead 50mm x No. 16

For use with downpipe and hopper



## Pipe clip

Code	A	B	C
RSR380	103	128	25



## Sealant

Code	Description
SC101	310ml clear

Please note sealant shelf life is 12 months. Refer to sealant usage table, page 27.

\*\* Non eared available on request.

All dimensions are in mm. For colour range and finishes, see page 7.

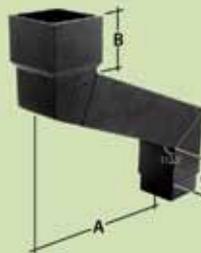
# Flush-fit 72x72mm downpipe

Compatible with Evolve Box and Ogee gutters only (pages 12 – 14).



## Downpipe 3m

Code	A	B
RJ313	3000	50



## Adjustable eaves offset

Code	A min	A max	B	C
RJ3925	75	250	75	60
RJ3950	75	500	75	60
RJ39100	75	1000	75	60



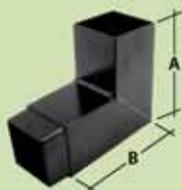
## Internal joint spigot

Code	A
RJ320	62



## Fixed wall offset

Fixed offsets are available to order\*



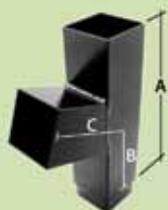
## Bend

Code		A	B
RJ330	92.5°	150	150
RJ332	112.5°	128	128



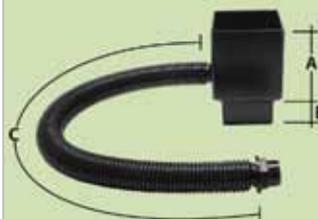
## Drain connector (slip socket)

Code	A	B	C	D	E
RJ370	85	85	65	41	30



## Branch 112.5°

Code	A	B	C
RJ342	260	127	154



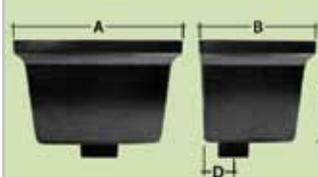
## Rainwater diverter

Code	A	B	C
RJD35	98	30	500



## Shoe

Code	A	B
RJ350	96	160



## Hopper head (standard)

Code	A	B	C	D
RH112	250	180	180	42



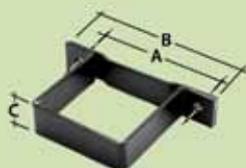
## Access pipe

Code	A	B	C
RJ360	300	140	105



## Compatible fixing screws

Code	Description
SC605	Domehead 50mm x No. 12 For use with downpipe
SC603	Domehead 50mm x No. 16 For use with hopper



## Pipe clip

Code	A	B	C
RJ380	103	128	25

## Design basis

Alutec gutter flow capacities shown on page 24 in the flow capacity table are calculated with the gutters being fixed nominally level. Most metal gutters are installed level for aesthetic purposes. However, if installed to a fall of 1:600 the flow capacity will be marginally improved.

Factors to be considered when designing an eaves drainage system.

1. Rainfall intensity design rate (l/s/m<sup>2</sup>).
2. Effective Roof Area (ERA) to be drained (m<sup>2</sup>).
3. Gutter flow capacity (l/s).
4. Size, number and position of outlets.
5. Frictional resistances in long gutter runs and the number of corners.

## Rainfall intensity design rate

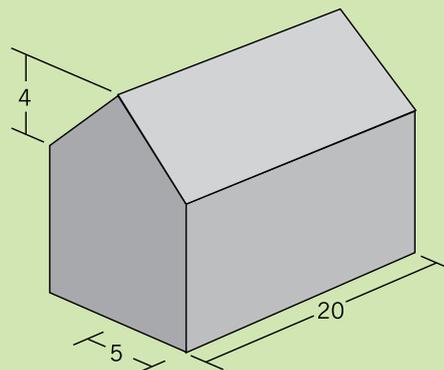
Building Regulations 2000 Document H3 recommend a general design rate of 0.021 l/s/m<sup>2</sup> (which is virtually the same as the traditional design rate of 75mm/hour) for eaves gutters where if overflowing occurs, water overspill will discharge clear of the building without risk of water ingress. If required, alternative rainfall intensity design rates can also be considered. Meteorological data published in the National Annex to EN12056 and Building Regulations 2000 Document H3, show varying rainfall intensities throughout the UK depending on geographical location.

The flow capacity table (page 24) indicates maximum flow, the gutter being full to the brim, however EN12056 states the design rate run-off from the roof should not exceed 90% of the gutter capacity. Also shown are the differences between outlet capacities when positioned centrally or at the end of a gutter run.

## Effective roof area

Effective roof area can be determined by calculation as set out in EN12056-3.

The following example shows a basic calculation method that can be used as a guide in establishing the effective roof area (ERA).



$$ERA = \left(\frac{4}{2} + 5\right) \times 20 = 140m^2$$



## Gutter capacity

Assuming the recommended rainfall intensity of 0.021 l/s/m<sup>2</sup> is acceptable, determine if the gutter outlet is to be positioned centrally, or at the end of the gutter run. Refer to the flow capacity table (page 24) and find the nearest roof area m<sup>2</sup> in either the 'central' or 'end outlet' options to determine the size/type of gutter/ rainwater pipes required.

Should a different rainfall intensity design rate be required, multiply the alternative design rate by the ERA to establish the required gutter capacity (l/s). Then refer to the gutter flow capacity table and select the nearest gutter flow capacity (l/s). Ensure that appropriate proportional allowances for central or end of gutter outlets are made.

Example:

$$\text{Alternative design rate} \\ 0.025 \text{ l/s/m}^2 \times 140m^2 = 3.5 \text{ l/s}$$

3.5 l/s into end outlet =  
Evolve Box with 72mm outlet



Lawley Farm, Telford, Shropshire

## Frictional resistances

**Gutter Angles:** EN12056-3 recommends that the gutter capacity should be reduced by a factor of 0.85 if the gutter run includes one or more angles greater than 10 degrees and that positioning of outlets adjacent to angles should be avoided.

**Long Gutters:** Frictional resistance in very long gutter runs will effectively reduce the flow capacity, hence reduction factors should be applied in accordance with recommendations detailed in EN12056-3.

**Valley Discharges:** Where a discharge from long valley occurs, it is prudent to consider a corner hopper or purpose made gutter angle with larger catchment area, to cope with the concentrated volume of rainwater during storm conditions.

## Compatibility

To avoid bi-metallic corrosion, ensure electrolytically incompatible materials do not come in direct contact with un-insulated plain aluminium surfaces. In particular ensure that the recommended compatible screws and fixings are used. Polyester powder coated surfaces will give limited protection, but should not be solely relied upon. If in doubt, please contact the Technical Services Department.

## Durability

Under normal UK atmospheric conditions, Alutec systems, if correctly installed, have a minimum life expectancy of 50 years or more. This may be marginally reduced in highly polluted or coastal areas.

## Chemical

All products are naturally corrosion resistant under normal atmospheric conditions. Not to be used for chemical drainage or in conjunction with foul waste drainage.

## Fire

In general Alutec rainwater products do not aid combustion and are rated as follows:

Finish rating	Test standard
Plain finish – non combustibility	BS 476: Part 4
PPC – 0.1 fire propagation index	BS 476: Part 6
PPC class 1, flame surface spread	BS 476: Part 7

## Thermal

Coefficient for thermal expansion – 0.000026 deg C for cast aluminium and 0.000023 deg C for sheet and extruded aluminium. Melting point approximately 660 deg C.

To accommodate unusual curves or angles, roofs which intersect at different levels or any other feature of an installation not covered by the standard ranges, Alutec offer a bespoke product service to complement any non standard requirements.

An indication of the most common non standard items are shown below, however other items may be possible. For further advice, contact the Technical Services Department.



Wichelstowe,  
Swindon, Wiltshire



True Radius



Segmented Radius

## True radiused gutters

True radiused gutters can be sand cast to simulate all profiles in the Alutec range. Sand casting involves making a wooden pattern of the gutter profile, to the given radius, from which the sand moulds are made. In view of the pattern cost, this method can be costly for small quantities.

Due to building and foundry tolerances, it is recommended that radiused gutters are made in approximately 1m lengths.

## Segmented radiused gutters

Achieved by internally welding together segments of machine mitred gutter to achieve a given radius. Dependent on the radius, the more segments introduced the better the appearance.

This method is less expensive than sand casting and in general the segmentation is not noticeable on two storey buildings and above.

## Site dimensions

As theoretical radius dimensions are often subject to extreme building tolerances, we recommend that a rigid 1m long radiused template be cut or marked on site. The template should be offered up to the fascia at 1m intervals to check the fascia has been constructed to a uniform radius. The template should be sent to Alutec Technical Services department for use as a master template.

## Bespoke hopper heads

Individually designed hoppers can be fabricated from sheet aluminium and a variety of decorative cast motifs and embellishments can be added to enhance the appearance, if required.



## Rise and fall gutter angles

Any reasonable degree of angle can be fabricated. However, care must be taken in establishing accurate site dimensions and degrees of angle. Experience has proved that theoretical geometry may not be accurate, hence each angle should be site checked and location referenced.

## Special gutter adaptors

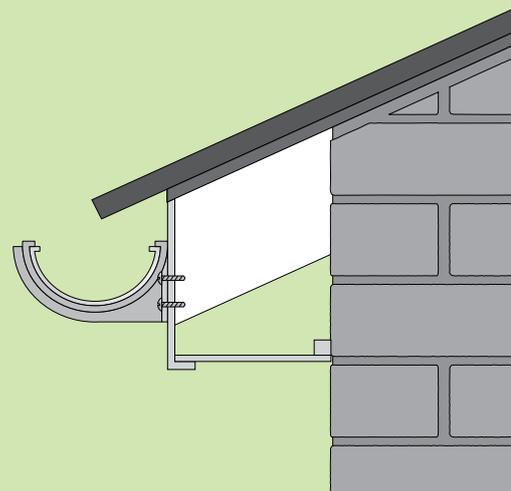
Adaptors between differing sizes and profiles of gutters, rainwater pipes or drain connections can be fabricated to customer requirements, subject to design criteria. Accurate dimensional details are required.

## Special gutter outlets

Standard gutter outlets can be modified to customer requirements subject to design criteria. However it should be noted that this may be detrimental to the flow performance of that outlet

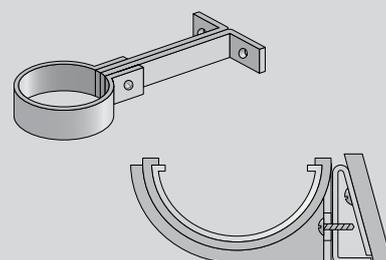
## Gutter / fascia / soffit assemblies

Non standard gutter profiles made from sheet aluminium are available to order. Fascia and soffit systems are made to a standard design concept which can be adapted to suit most applications; see the Alutec soffit and fascia brochure for further information. Customer designed systems will also be considered subject to design criteria.



## Special pipe and gutter brackets

Special support brackets for use in conjunction with standard or bespoke products are available to order subject to design criteria.



## Gutter flow rates

Gutter Profile	Downpipe system	End Outlet		Centre Outlet	
		Capacity l/s	Effective Roof Area m <sup>2</sup>	Capacity l/s	Effective Roof Area m <sup>2</sup>
Half Round 	Evolve 63mm	0.85	41	1.8	87
Deepflow 	Traditional 76mm Ø	2.5	120	4.9	232
	Flush-fit 76mm Ø	2.5	120	4.9	232
Box 	Traditional 76mm Ø	3.0	142	6.0	286
	Flush-fit 76mm Ø	3.0	142	6.0	286
	Traditional 72x72mm	3.5	167	7.0	333
	Flush-fit 72x72mm	3.5	167	7.0	333
Ogee 	Traditional 76mm Ø	3.0	142	6.0	286
	Flush-fit 76mm Ø	3.0	142	6.0	286
	Traditional 72x72mm	3.5	167	7.0	333
	Flush-fit 72x72mm	3.5	167	7.0	333

## Hopper head flow rates

	Outlet size mm	Capacity l/s	Effective Roof Area m <sup>2</sup>
	63mm Ø	3.0	115
	76mm Ø	4.5	214
	72x72mm	4.4	210

Figures based on a design rainfall intensity of 0.021 l/s/m<sup>2</sup>



# Alutec specification clauses

NBSPlus

Alutec have a full list of NBS clauses for rainwater gutter and downpipe systems. Below is an example of a typical specification. More detailed specifications are also available online [marleyalutec.co.uk](http://marleyalutec.co.uk).



## R10 rainwater drainage systems

### Manufacturer

Marley Alutec, Unit 1 (G – H),  
Hudson Road,  
Elms Farm Industrial Estate,  
Bedford MK41 0LZ

Tel: 01234 359438

Fax: 01234 357199

Email: [enquiries@marleyalutec.co.uk](mailto:enquiries@marleyalutec.co.uk)

Web address: [marleyalutec.co.uk](http://marleyalutec.co.uk)

### Product reference

Marley Alutec Aluminium  
Gutter system

### Type/Grade

Evolve Half Round  
Extruded

### Profile

Evolve Half Round

### Nominal size

120mm for Evolve Half Round

### Jointing

Evolve JuraJoint EPDM rubber seal  
with Alutec silicone sealant

### Fixing

Evolve Half Round  
Fascia brackets

### Product reference

Marley Alutec Aluminium  
Downpipe system

### Type/Thickness

Extruded / Cast

### Section

Circular

### Nominal size

Evolve: 63mm Ø

### Fixings

Evolve 63mm Ø: Eared pipe sockets /  
Pipe clips

### Accessories

Hopper Rectangular  
Branch  
Adjustable offset  
Fixed offset  
Shoe

### Access pipe

Rainwater diverter

### Finish

Polyester Powder Coated to  
BS EN 12206:2004

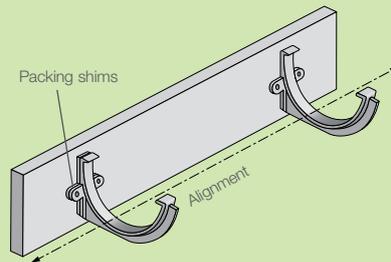
### Colour gutter and downpipe

RAL 1013 Pearl White/ RAL 1017  
Saffron Yellow/ RAL 3002 Signal  
Red/ RAL 3003 Ruby Red/ RAL 5002  
Ultramarine/ RAL 5003 Sapphire Blue/  
RAL 5010 Flower Blue/ RAL 6002  
Leaf Green/ RAL 6005 Moss Green/  
RAL 7015 Slate Grey/ RAL 7016  
Anthracite Grey/ RAL 7021 Granite  
Grey/ RAL 7035 Light Grey/ RAL  
7036 Platinum Grey/ RAL 7037 Steel  
Grey/ RAL 8014 Sepia Brown/ RAL  
8016 Chestnut Brown/ RAL 8017  
Chocolate/ RAL 9010 White/ RAL 9005  
Black/ Cast 98 Heritage Black

## Preparation

Fascia boards should be in good condition, level and in linear alignment. If required, lead packing shim plates can be fabricated on site and fixed behind gutter brackets to achieve good alignment. Brackets which are misaligned will cause joint fatigue resulting in eventual joint failure. Where a gutter is fixed to cellular fascia board, less than 20mm thick, it is recommended that a timber backing board is installed behind the fascia to provide a straight and secure fixing surface.

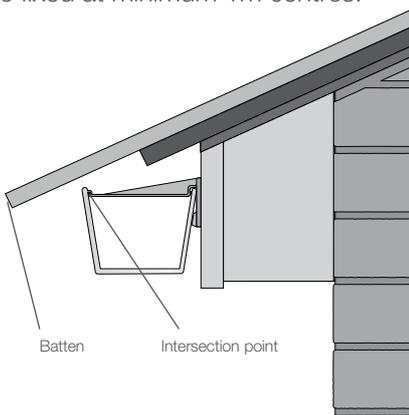
Use standard metal work tools to cut or drill aluminium gutters. Angle grinders are not recommended. Where gutter or fittings are polyester powder coated, cut edges should be deburred and repainted with touch up paint, SC880.



## Gutter position

Gutters must be installed level or to a fall of 1:600. The gutter should not be positioned at a level which causes rainfall to overshoot the gutter, i.e. too low, or where it is damaged by the high velocity impact of sliding snow, i.e. too high.

To establish the recommended gutter position, place a straight batten on the lowest profile of the roof covering, overhanging the eaves. The gutter can then be offered not higher than the intersection point (where the top front edge of the gutter and the batten meet). Gutter brackets must be fixed at minimum 1m centres.



## JuraJoint

A new method of jointing aluminium gutter, combining the simplicity of a rubber seal with the security of Alutec sealant. Sealant SC101 is simply applied in one bead into the central channel of the rubber seal. When the joint is snapped together it 'bonds' the rubber seal to the gutter surface achieving a durable, thermally flexible and leak free joint.

## Jointing

Joint sealing must not be carried out in wet weather or in temperatures below 5°C or above 40°C. Joint surfaces must be perfectly clean and dry. Use a clean cloth and solvent cleaner SC108 to remove all traces of dirt or grease, which may not be visible.

Only Alutec high performance low modulus sealant SC101 must be used. Use of other sealants may result in early joint failure. Sealant over nine months old must not be used.

## Fixing

To ensure the long term durability of aluminium gutter systems, it is vitally important to ensure that the fixing components are equally durable and capable of providing the necessary support. They must therefore be non corrosive, of a compatible material to ensure no electrolytic corrosion occurs and of the appropriate size. Only the recommended austenitic stainless steel screws must be used to fix gutters, whether direct, fascia or rafter bracket fixed.

SC201	32mm x No.10 Roundhead
SC603	50mm x No.16 Domehead
SC604	75mm x No.16 Hexagonal head
SC605	50mm x No.10 Roundhead
SC203	15mm x No.10 Roundhead Pozi For fixing gutter brackets to Alutec aluminium composite fascia

If fixing to fascia boards made of materials other than wood or Alutec aluminium composites, please call the Alutec Technical Services Department.



## Snow loading

Heavy snow fall coupled with highly insulated roofs is causing accumulation of snow on roofs. A sudden thaw will then cause the snow to slide down the roof and rest against the gutters if they are fixed too high. Greater care must be taken to make sure the gutters will not impede sliding snow. However, for the ultimate protection, snow guards should be installed.

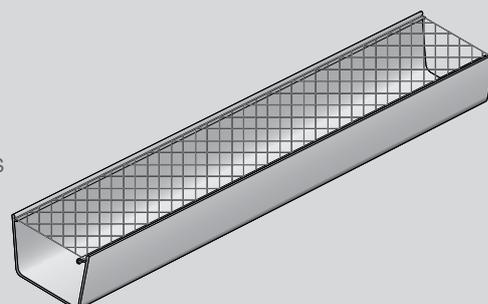
## Sealant usage table

Approximate number of joints per tube of Alutec sealant.

System	Joints per tube of sealant
Evolve Half Round gutter	105
Evolve Deepflow gutter	80
Evolve Box gutter	65
Evolve Ogee gutter	65
Evolve 63mm Ø pipe socket	25
Traditional 76mm Ø pipe socket	20
Traditional 72x72mm pipe socket	17

## Leafguards

Aluminium leafguard mesh is available for all profiles in 1.22m lengths. Supplied in mill finish, leafguards either require brackets (supplied) or simply sit inside the gutter.



Detailed installation instructions are supplied with every consignment of goods and are available separately on request or at [marleyalutec.co.uk](http://marleyalutec.co.uk).



## Site painting

Evolve is only supplied in polyester powder coat paint finishes and if over-painted, it is recommended that all components are individually painted prior to installation to ensure that all surfaces are painted.

If over-painting new or aged polyester powder coated surfaces, rub down surfaces with a light abrasive scotch wool (not steel wool) to achieve a good key. Clean surfaces using a clean cloth and solvent cleaner, SC108 and apply top coat directly onto the prepared surface. No undercoats or primers are required.

Two-part synthetic or polyurethane paints are recommended for durability. Ensure the paint is fully dry prior to contact with joint sealant. Partially dry paint may react with sealant, affecting reliability of gutter joint.

## Handling & storage

Gutters and pipes should be handled with care and should preferably be stored under cover on racks to prevent scratching or denting. All gutter and pipe lengths are supplied in protective polythene sleeving and components packed in cardboard boxes.

If polyester powder coated products are stored outside, cover with a tarpaulin to guard against water ingress into the protective polythene tubing. If water becomes trapped within the polythene wrapping and left exposed to warm sunlight, it may leave permanent water stains on the paint finish.

Sealants should not be stored in temperatures below 0°C and kept away from any direct heat source. Solvent cleaners must be stored away from any direct heat or combustible source, preferably in an appropriate fire resistant storage cabinet.

## Safety

The relevant safety regulations are outlined in the Health and Safety at Work Act 1974 and should be followed.

Refer to the Approved Code of Practice (ACOP) Construction Design and Management Regulations 2007.

Handling mill finished or polyester powder coated aluminium products does not pose any known health hazard, however it is recommended to wear protective gloves when handling mill finish aluminium.

Hazard instructions relating to sealant, solvent cleaner and touch up paint are printed on their respective containers and COSHH sheets are supplied with each consignment of goods and are available on request.



## Maintenance

Gutters should be periodically cleaned out to maintain the design flow rate and to prevent build up of debris blocking downpipes. Check all fixings are secure and take any remedial action to rectify if necessary.

Leafguards are available as standard to fit each gutter system and are recommended for buildings close to trees, with restricted access, or areas susceptible to airborne debris.

Installed gutters and pipes with polyester powder coated finishes should be periodically washed down with water and non-toxic detergent, this will remove built up grime to reveal the true colour. Under no circumstances should abrasive cleaners be used.

## Standards

All Alutec systems are manufactured in accordance with the appropriate British or European Standard, including:

**BS EN ISO 9227:2006**  
Corrosion tests in artificial atmospheres – Salt spray tests.

**BS EN 12056-3:2000**  
Gravity drainage systems inside buildings, Part 3 Roof drainage layout and calculation.

**BS EN 755-2:2008**  
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 1559-2:2000**  
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.



Cockernhoe, Luton,  
Hertfordshire



Traditional 72x72mm  
downpipe



Wichelstowe,  
Swindon, Wiltshire



Evolve Half Round  
in Heritage Black Finish

## Alutec range overview



### Evolve

Specifically developed to meet the demands of both the building owner and installer. Evolve systems combine high flow rate performance with fast and easy installation. Evolve systems use the latest manufacturing technologies to reduce its carbon footprint.



### Aligator®

Two distinctive design solutions:

Aligator Classic, a domestic size ogee style gutter system with external unions and brackets; ideal for community or local authority housing.

Deepflow, Ogee, Boxer and Giant profiles with internal joints and concealed brackets, offering a sleek and unobtrusive solution for modern building design.



### Traditional

A range of BS 8530:2010 traditional style bolted gutter systems for replacement of cast iron on period, listed or traditional style new builds, combining aluminium's inherent benefits of longevity and low maintenance. Manufactured to original British Standard cast iron dimensions; available in Half Round, Victorian Ogee and Moulded Ogee profiles with matching round, square and rectangular downpipe options.



### Soffit, fascia and coping systems

A new and innovative concept in roofline solutions, Alutec soffit, fascia and coping systems are manufactured from composite aluminium, a material used on some of the world's most prestigious developments, including high rise buildings, where exceptional durability and aesthetic appearance are key. Alutec composite aluminium systems have a life expectancy of 50 years or more.



### Roof and shower outlets

A comprehensive range of aluminium roof and shower outlets for a wide range of applications. Each component has been engineered to achieve design flexibility and the highest performance specification to give complete confidence to the specifier.



#### Head Office

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