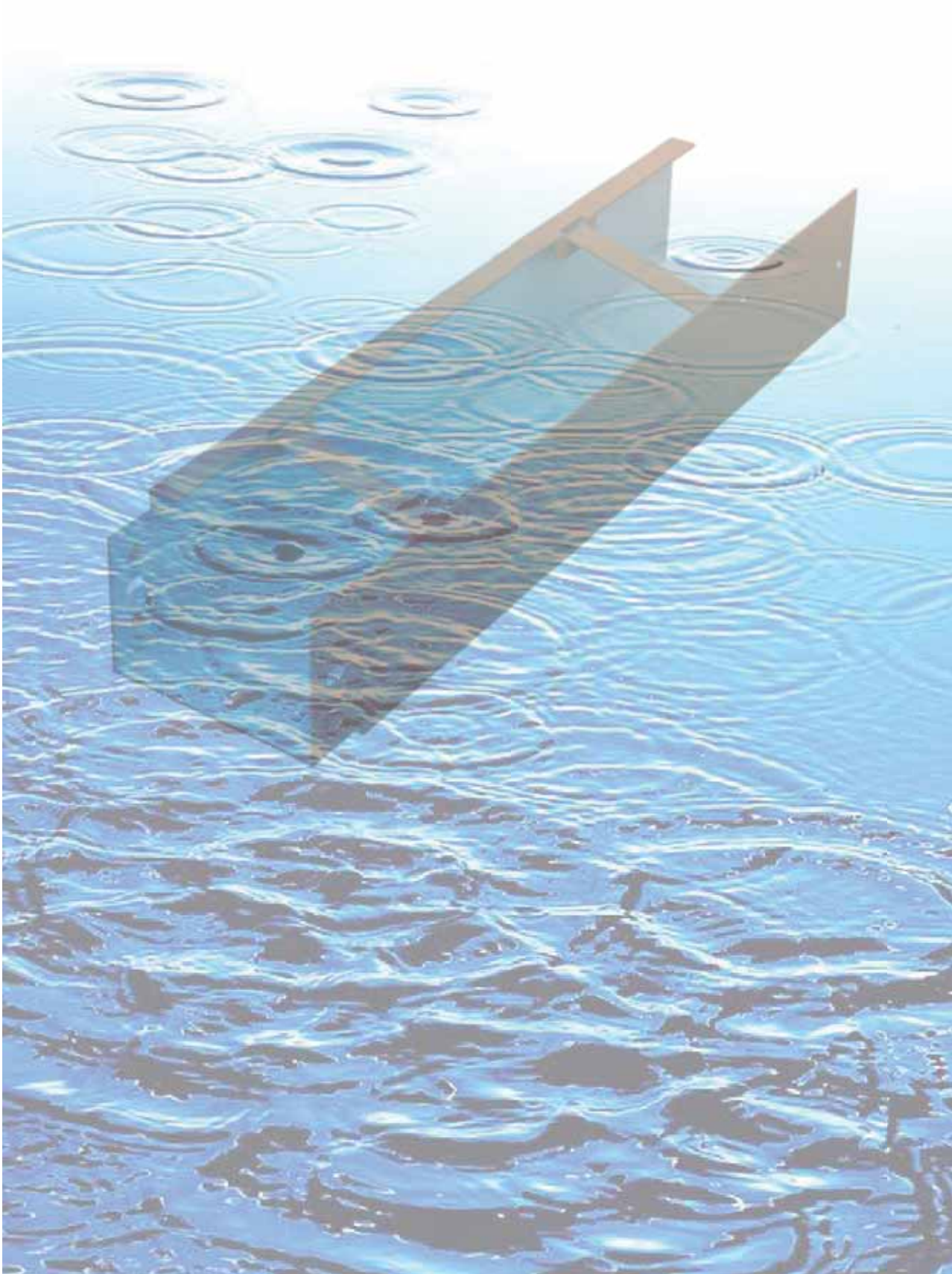


**“Legion”**  
**Pressed Box Gutter**



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Unit 2, Vitruvius Way  
Meridian Business Park  
Braunstone  
Leicester  
LE19 1WA

Tel: 0116 2894400

Fax: 0116 2894433

E-mail: [sales@arp-ltd.com](mailto:sales@arp-ltd.com)

Web: [www.arp-ltd.com](http://www.arp-ltd.com)

## “Legion” Pressed Box Gutter

### Description:

Formed from high strength aluminium sheet grade 1050AH14 in various sizes & profiles, with a full range of accessories ie angles, outlets, stopends, fascia brackets.

True & Facetted radius gutters are also available.

### Installation:

Pressed box gutters have fascia brackets which are set out at 750mm maximum centres no further than 375mm from a joint or fitting. The fascia brackets should be set out to any pre-determined fall taking note of the position of any fittings such as outlets & angles beforehand, brackets should be fixed using 5mm x 25mm stainless steel countersunk screws (dependant on substrate). See Fig 1.

Rafter brackets are also available whose centres may be governed by the roof timbers. Rise & fall brackets driven into the masonry are recommended to be at 600mm maximum centres.

### Direct Fixing:

Box gutters are supplied pre drilled on the back face at 750mm centres. The gutter can be installed horizontal or to a pre determined fall to each outlet. (eg 1 in 60). Check existing fascia boards are suitably fixed and are structurally sound. Working from corners offer up the intermediate straight lengths and mark the fixing positions. Ensure all outlets are positioned correctly relative to the drains. Apply silicone sealant (Arbosil 1096 recommended) to the joggle joint. Using suitable fixings, (stainless steel recommended) position and fix length to fascia. Fix gutter together with M6 x 20mm screws, nuts and washers supplied.

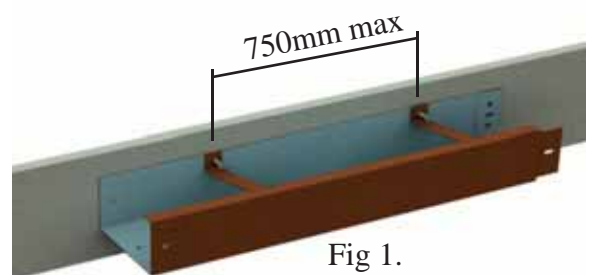


Fig 1.

## “Legion” Pressed Box Gutter

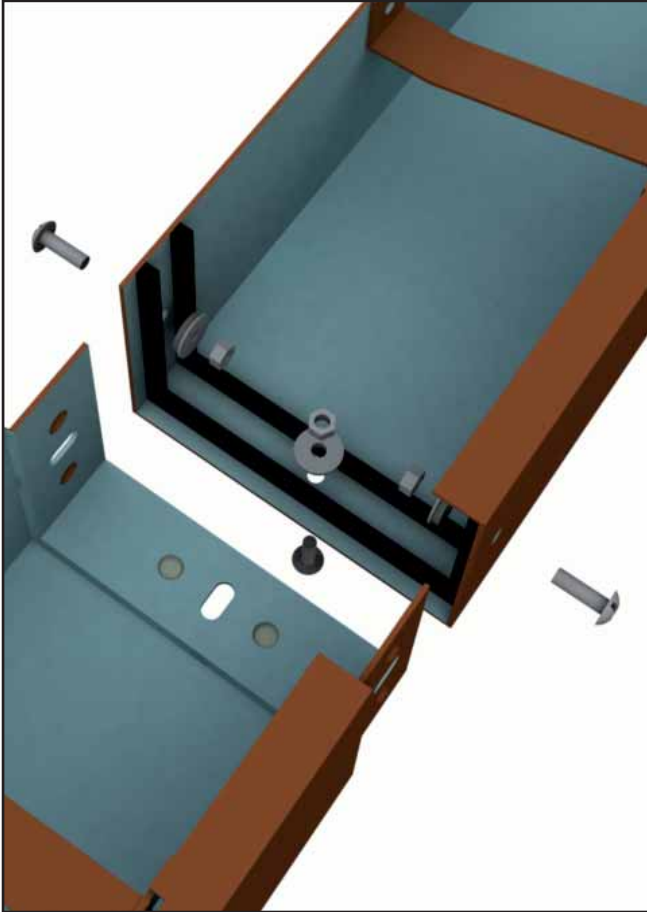


Fig 2.

### Jointing:

Aluminium has a coefficient of expansion equal to 0.00002348mm per °C on average, this equates to just over 1.4mm per metre on a temperature range of -20°C to +40°C. Typically a 3mm to 4mm expansion gap between the ends of the gutter sections is advisable.

ARP recommend & supply Arbosil 1096 Low Modulus Silicone sealant (in certain situations Arbosil 1090 sealant may be preferable, please consult technical department) & it is essential that this or a direct equivalent is used to seal the joints as this will ensure a strong mechanical bond that withstands the forces associated with thermal movement.

It is important to observe the sealant manufacturers guidelines concerning application & curing during cold or damp weather conditions & that before assembling the joint all surfaces are clean & free from grease, acetone applied with a soft cloth & wiped dry is recommended.

Pressed box gutters gutters have integral union connectors (joggle joint) that are secured using M6 x 20mm aluminium bolts, neoprene washers & nuts.

Having sited the gutter apply 2 x 6mm beads of Arbosil 1096 Low Modulus Silicone sealant to each side of the joint (Fig 2.). Carefully insert the bolts, applying sealant to the thread & round the slot in the union, fit the washers & nuts, gently tightening until some sealant emerges & leaving a 3mm thick sandwich of sealant between the union connector & the gutter. Excess sealant should then be removed.

## “Legion” Pressed Box Gutter

### Composition & Manufacture:

‘Legion’ pressed box Gutters are manufactured from Aluminium sheet 1050AH14 & the product complies to, or exceeds all relevant standards.

Fittings for the gutters are formed using fabrication methods involving cut,mitre & welding techniques using specially made jig & forming tools.

### Finish:

Mill Finish Aluminium or Polyester Powder Coated to a range of BS or RAL Colours.

### Model Specification:

ARP ‘Legion’ Gutters & fittings to BS 2997 (EN612) using 1050AH14 grade aluminium sheet. Profile to be box gutter, size 100x75mm (1.5mm), 125x100 (1.5mm), 150x100 (1.5mm), 150x150 (2mm), 200x150mm (2mm).\*

Materials to have factory applied Polyester Powder Coat to all significant surfaces in accordance with BS EN 12206 Matt/ Satin/Gloss\* finish, or alternatively plain aluminium Mill Finish. All to be supplied by Aluminium Roofline Products Ltd, Unit 2, Vitruvius Way, Meridian Business Park, Braunstone, Leicester LE19 1WA. Tel 0116 2894400 Fax 0116 2894433.

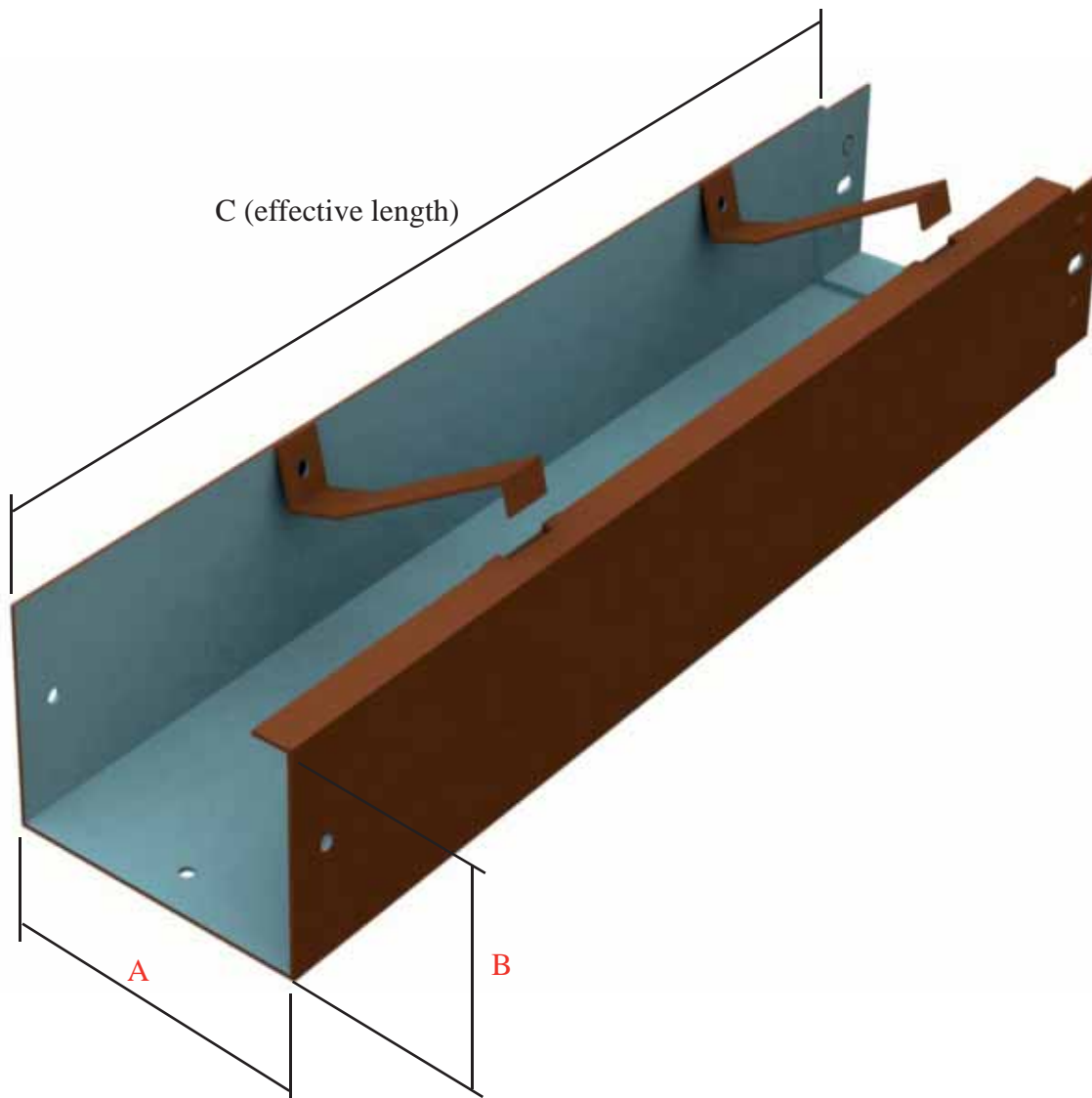
Joints to be joggle joint union sealed by application of Arbosil 1096 Low Modulus Silicone Sealant & fastened by M6 x 20mm bolts, neoprene washers & nuts in accordance with the manufacturer’s specification & guidelines. Gutter to be fixed by fascia brackets at 750mm centres with supplementary brackets at or near fittings. Fixing for brackets to be 5mm x 25mm countersunk stainless steel screws (dependant on substrate).

\* Delete as appropriate



# “Legion” Pressed Box Gutter

## Gutter Lengths



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A (mm)	B (mm)	Code C=2.94m	Code C=2.5m	Code C=2.0m	Code C=1.0m	Code C=0.5m
100	75	43BG3S	43BG2.5S	43BG2S	43BG1S	43BG0.5S
125	100	54BG3S	54BG2.5S	54BG2S	54BG1S	54BG0.5S
150	100	64BG3S	64BG2.5S	64BG2S	64BG1S	64BG0.5S
150	150	66BG3S	66BG2.5S	66BG2S	66BG1S	66BG0.5S
200	150	86BG3S	86BG2.5S	86BG2S	86BG1S	86BG0.5S



Unit 2, Vitruvius Way  
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Leicester  
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Tel: 0116 2894400

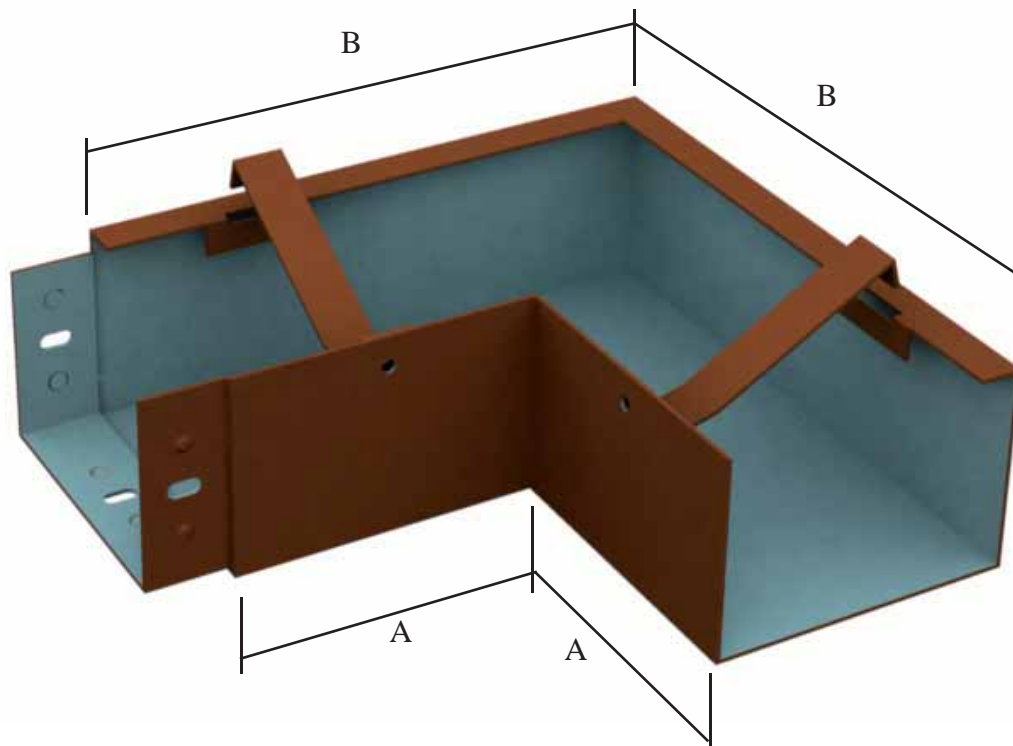
Fax: 0116 2894433

E-mail: sales@arp-ltd.com

Web: www.arp-ltd.com

# “Legion” Pressed Box Gutter

## Gutter Angles



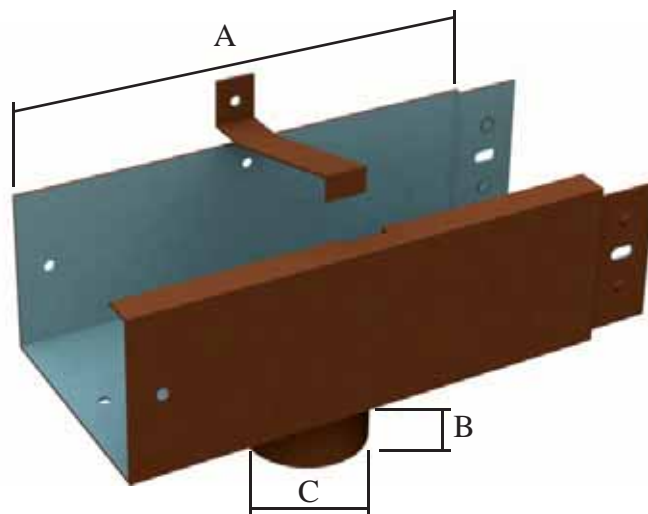
Gutter Size (mm)	Code	A (mm)	B (mm)	Code	A (mm)	B (mm)
	90° External			90° Internal		
100x75	43BAX90	150	250	43BAI90	250	150
125x100	54BAX90	150	275	54BAI90	275	150
150x100	64BAX90	150	300	64BAI90	300	150
150x150	66BAX90	150	300	66BAI90	300	150
200x150	86BAX90	150	350	86BAI90	350	150

Gutter Size (mm)	Code	A (mm)	B (mm)	Code	A (mm)	B (mm)
	135° External			135° Internal		
100x75	43BAX135	150	191	43BAI135	191	150
125x100	54BAX135	150	202	54BAI135	202	150
150x100	64BAX135	150	212	64BAI135	212	150
150x150	66BAX135	150	212	66BAI135	212	150
200x150	86BAX135	150	233	86BAI135	233	150

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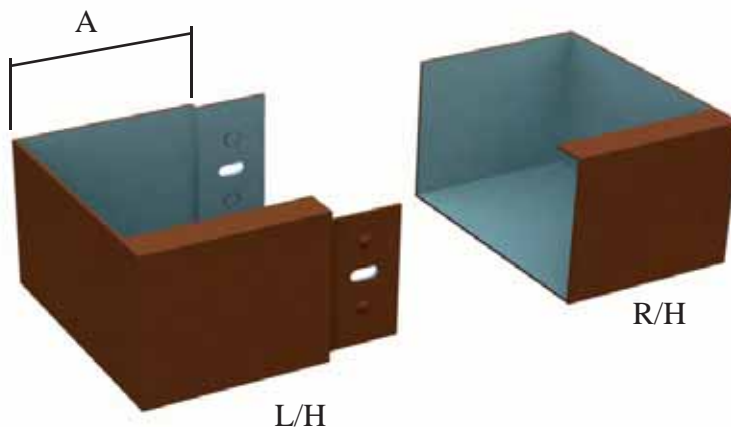
# “Legion” Pressed Box Gutter

## Outlets



Gutter Size (mm)	A (mm)	B (mm)	Code C=63mm Ø	Code C=76mm Ø	Code C=101mm Ø	Code C=63mm Sq	Code C=76mm Sq	Code C=101x76 mm	Code C=101mm Sq
100x75	300	60	43BO2R	43BO3R	-	43BO2S	43BO3S	43BO43	-
125x100	300	60	54BO2R	54BO3R	54BO4R	54BO2S	54BO3S	54BO43	54BO4S
150x100	300	60	64BO2R	64BO3R	64BO4R	64BO2S	64BO3S	64BO4	64BO4S
150x150	300	60	66BO2R	66BO3R	66BO4R	66BO2S	66BO3S	66BO43	66BO4S
200x150	300	60	86BO2R	86BO3R	86BO4R	86BO2S	86BO3S	86BO43	86BO4S

## Stopends

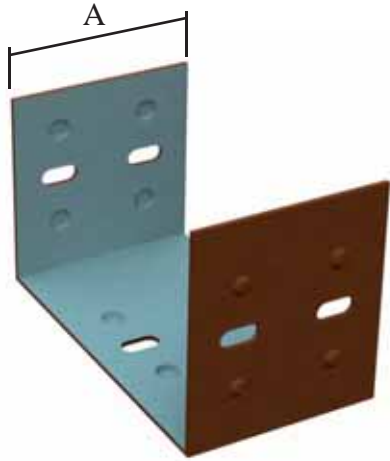


Gutter Size (mm)	A (mm)	Code L/H	Code R/H
100x75	150	43BSEL	43BSER
125x100	150	54BSEL	54BSER
150x100	150	64BSEL	64BSER
150x150	150	66BSEL	66BSER
200x150	150	86BSEL	86BSER

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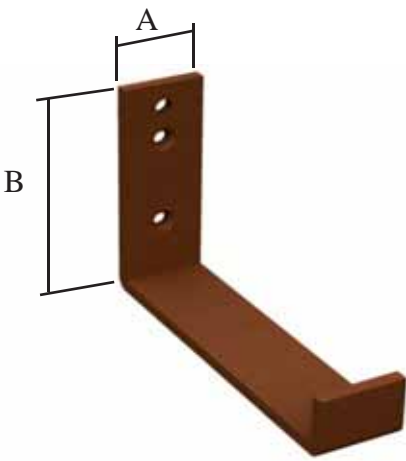
**“Legion”  
Pressed Box Gutter**

**Union Connectors**



Gutter Size (mm)	A	Code
100x75	80	43BUC
125x100	80	54BUC
150x100	80	64BUC
150x150	80	66BUC
200x150	80	86BUC

**Fascia Brackets**

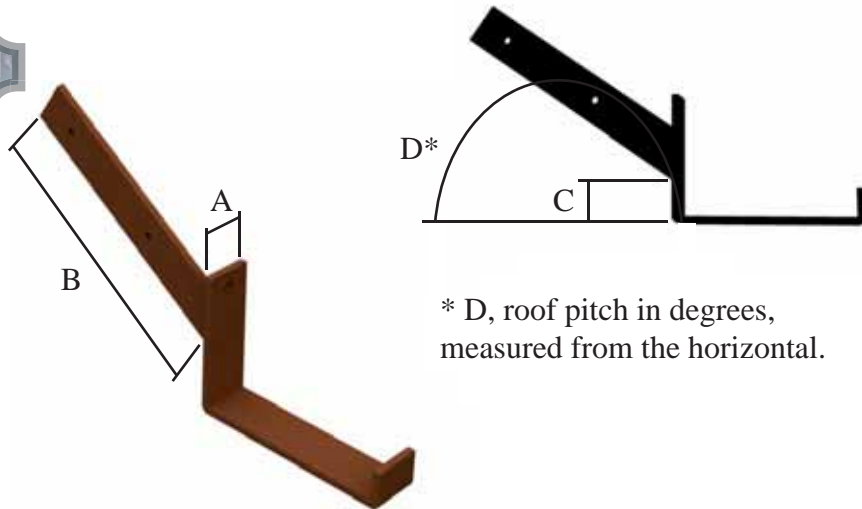


Gutter Size (mm)	A (mm)	B (mm)	Code
100x75	38	81	43BBF
125x100	38	106	54BBF
150x100	38	106	64BBF
150x150	38	156	66BBF
200x150	38	156	86BBF



# “Legion” Pressed Box Gutter

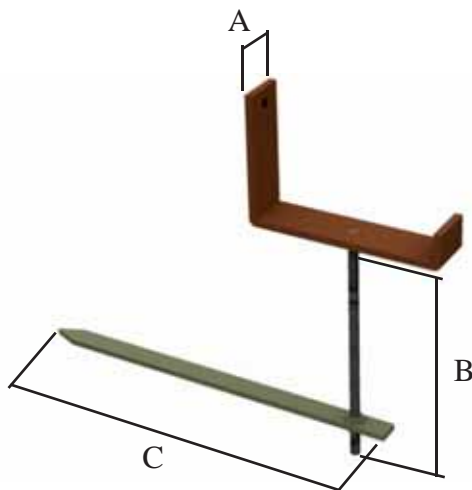
## Rafter Bracket



\* D, roof pitch in degrees, measured from the horizontal.

Gutter Size (mm)	A (mm)	B (mm)	C (mm)	D °	Code Side Fix	Code Top Fix
100x75	38	230	30	Specify	43BBRS	43BBRT
125x100	38	230	40	Specify	54BBRS	54BBRT
150x100	38	230	40	Specify	64BBRS	64BBRT
150x150	38	230	65	Specify	66BBRS	66BBRT
200x150	38	230	65	Specify	86BBRS	86BBRT

## Rise & Fall Bracket



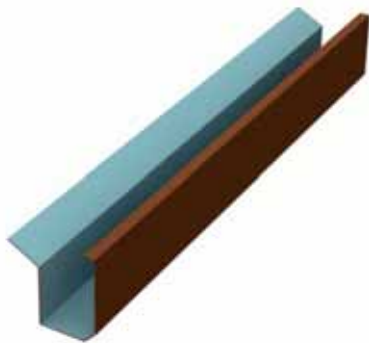
Gutter Size (mm)	A (mm)	B (mm)	C (mm)	Code
100x75	38	200	330	43BBRFS
125x100	38	200	330	54BBRFS
150x100	38	200	330	64BBRFS
150x150	38	200	330	66BBRFS
200x150	38	200	330	86BBRFS

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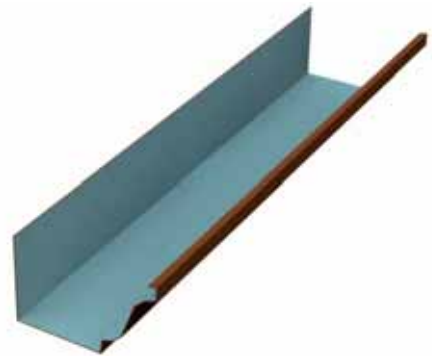
# “Legion” Pressed Box Gutter

## Profiles

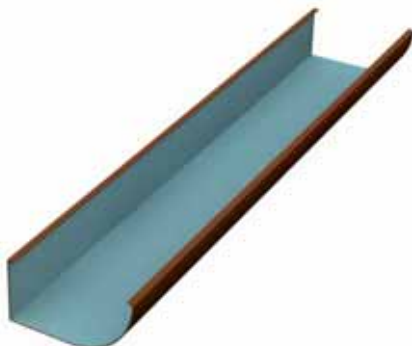
ARP offer a range of Box Gutter profiles available in either joggle joint or conventional jointing, examples shown below.  
Bespoke gutters are manufactured to order, please advise requirements.



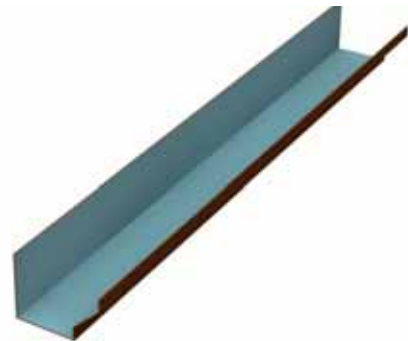
Box c/w Apron



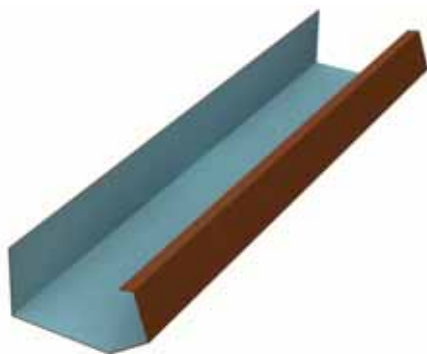
Simple Ogee



Radius Front



Angled Face



Parapet



Angled Box

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# Handling & Storage

## Handling & Storage:

Gutters/downpipes & fittings, particularly with polyester powder coat finish should be handled with care & should preferably be stored under cover on racks to prevent scratching.

All lengths are supplied in protective polythene wrapping, components suitably packed in boxes.

If painted products are to be stored outside, cover with tarpaulin to guard against water ingress into the protective polythene.

Mill finish items should be stored under cover to avoid uneven oxidization prior to being fitted.

## Safety:

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

Refer to CDM regulations (Code of Practice and Design for Health and Safety in Construction 1995)

Handling mill finish or painted aluminium products does not pose any known health hazard, however it is recommended to wear protective gloves whilst handling.

When cutting or welding these products it is advisable to wear eye protection. Avoid ingestion or inhalation of any dust or fumes arising from such operations & use a face mask when necessary.

Precaution needs to be taken to avoid contact with live power lines or cables.

These products generally do not aid combustion & are rated as below.

Mill Finish, non combustible to BS 476 part 4.

Powder coated, 0.1 Fire propagation index BS476 part 6, Class 1 Flame Surface Spread BS 476 part 7.

## Maintenance:

### Post Installation

Gutters & downpipes should be thoroughly checked & water tested for leaks, sealant smudges & any damage that may impair the performance or appearance of the system with the necessary remedial action being taken before the system is handed over.

### Inspection

The gutter should be regularly inspected in terms of fixings, joints, surface damage & build up of leaves or silt. The proximity of trees or climbing vegetation in the immediate vicinity should be noted. Lightning links, if installed should be checked for conductivity.

## Cleaning:

Remove any debris in the gutter to ensure the gutter performs to its original design capacity.

Brushing down a mill finish gutter will be adequate, as an aluminium oxide layer forms over time. This acts as a natural barrier against further corrosion & thus protects the metal.

Polyester powder coated gutters & downpipes should be washed down regularly using non abrasive materials & a warm detergent solution, in marine or other aggressive environments this should be carried out at three monthly intervals. Any breaks in the surface finish should be rubbed down, primed & touched up with a suitable liquid paint.

Guarantees (if required) issued by polyester powder manufacturers or applicators are reliant upon their terms & conditions being met which include maintenance, copies available upon request.

## Health & Safety

### Material Safety Data Sheet - Aluminium Extrusions & Sheet Products

#### Product

Extruded Aluminium sections and/or Aluminium sheet formed to requirements.

#### Composition

The products consist of aluminium which may (or not) be subsequently coated with polyester powder paints or alternative finishes.

#### Health Statement

When subject to the normal purposes for which they are designed, these products do not present health risks or hazards.

By their nature these products may have sharp edges and corners and the use of gloves when handling is recommended. When installing overhead it is advisable to wear head protection.

When cutting or welding these products it is advisable to wear eye protection. Avoid ingestion or inhalation of any dust or fumes arising from such operations and use a suitable face mask when necessary.

Metal is a good conductor of electricity and precautions should be taken to ensure contact with live power lines/cables is avoided.

#### Precautions for Handling & Storage

No special precautions are necessary for normal handling and storage.

#### Procedures in the event of an emergency

There are no special risks associated and the products do not constitute a fire hazard. The products are not generally ignitable.

#### Waste Disposal

Waste products are not hazardous and their disposal should be in accordance with local authority regulations.

## ADSHHEAD RATCLIFFE

### Technical Datasheet Arbosil 1096

Arbosil 1096 is a One-part Low Modulus Neutral Cure Silicone Sealant, which cures on exposure to moisture vapour to form an elastic silicone rubber.

#### Main Application

Recommended for use in many forms of construction including glass wall assemblies, perimeter seals on curtain walling, perimeter sealing of polyester powder coated frames and glazing of windows in swimming pool buildings. *It is not recommended for overpainting and use against natural stone.*

#### Specification Compliances

BS EN ISO 11600 F/G 25LM  
BS 5889 Type A: 1989  
BS 6920 Part 1: 1990 (*Translucent only*)  
German DIN 18545 Class 2 Type E (*Translucent only*)  
German DIN 18540 Class 2 (*All colours except Translucent*)  
US Federal TT-S-00 1543A Class A

#### Application Instructions

##### Joint preparation

The joint surfaces must be clean, dry and free from all contamination. The surfaces should be degreased using the appropriate Arbo Cleaner. Primers may be required on some substrates. It is recommended that Adshead Ratcliffe Technical Services Department should be consulted and advice obtained with regard to the choice of primer for specific purposes.

##### Joint Backing

Where applicable, appropriate joint filler e.g. closed cell polyethylene foam, should be used to provide the correct joint depth.

##### Application

Arbosil 1096 is supplied in cartridges and can be applied into the joint using an Arbo Caulking Gun.

All joint preparation, priming, and sealant application should be carried out in accordance with BS 8000 Part 16, the British Standard for the sealing of joints in buildings using sealants.

#### Joint Size suitability

##### Joint width

Minimum 6mm  
Maximum 25mm (*single application*); 50mm (*Multiple application*)

##### Joint Depth

Minimum 10mm on porous substrates  
Minimum 6mm on non-porous substrates  
Maximum 15mm

##### Width:Depth ratio (*within above min/max restrictions*)

2:1 butt joints  
1:1 lap joints

#### Storage Life

12 months in original unopened package stored in a cool, dry place out of direct sunlight.

#### Health & Safety

Under the Chemical (Hazards Information and Packaging for Supply) Regulations 1994, Arbosil 1096 is labelled 'irritant'. If sealant comes into contact the eyes, flush with copious volumes of cold water and obtain medical attention. For further information consult Product Safety Data Sheet P41A/B.

## ADSHEAD RATCLIFFE

### Technical Datasheet Arbosil 1096

#### Technical Data

<b>Properties</b>	<b>Values</b>
Typical Shore A hardness.....	30
Application temperature.....	+5°C to + 50°C
Service temperature.....	-50°C to +150°C
Skimming time @ 20°C/65%RH.....	5 minutes
Cure rate @ 20°C/65%RH .....	2mm/24 hours
Chemical resistance.....	Resistant to most dilute acids and alkalis; organic solvents may cause the sealant to swell and lose adhesion, but do not directly dissolve the sealant.
UV resistance.....	Very Good
Service life.....	25 years +
Movement accommodation.....	Butt joints ( <i>movement in tension and compression</i> ): 50% ( <i>Not to exceed ± 30% in any one direction</i> ) Lap joints ( <i>movement in shear</i> ): 100% ( <i>Not to exceed ± 70% in any one direction</i> )
Colours.....	White, Black, Grey, Mahogany, Translucent, Anthracite.

#### **Accessories:**

##### **Primers**

Arbo Primer 2650	500ml tin (yield approximately 125 metres per tin)
Arbo Primer 2402	500ml tin (yield approximately 200 metres per tin)
Arbo Primer 2172	500ml tin (yield approximately 200 metres per tin)

##### **Cleaners**

Arbo Cleaner No.13	1Litre tin
<i>(Toluene based – not suitable for use with plastics or delicate finishes)</i>	
Arbo Cleaner No.16	1 Litre tin
<i>(Alcohol based)</i>	

##### **Equipment**

Polyethylene nozzles  
Arbo Caulking Guns

##### **Quantity Estimator**

<i>Joint size</i>	<i>Metres per litre</i>
6 x 6	27.75
9 x 6	18.50
12 x 9	9.25
18 x 10	5.55
25 x 10	4.0

**Packaging:** 25 x 380ml plastic cartridges. Polyethylene nozzles are included in each box.

# Health & Safety

## ARBOSIL 1096

### BIOACCUMULATION

This product is not expected to significantly bioaccumulate.

### DEGRADABILITY

Not degradable.

### ACUTE FISH TOXICITY

Toxicity to fish is improbable.

## 13 DISPOSAL CONSIDERATIONS

### DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements.

## 14 TRANSPORT INFORMATION

### GENERAL

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

## 15 REGULATORY INFORMATION

### LABELLING



Irritant

### CONTAINS

METHYL-0,0',0"-BUTAN-2-ONE-TRIOXIMOSILANE

### RISK PHRASES

R43 May cause sensitisation by skin contact.

### SAFETY PHRASES

S24 Avoid contact with skin.  
S37 Wear suitable gloves.  
S60 This material and its container must be disposed of as hazardous waste.

### STATUTORY INSTRUMENTS

Chemicals (Hazard Information and Packaging) Regulations. Control of Substances Hazardous to Health.

### GUIDANCE NOTES

Workplace Exposure Limits EH40. CHIP for everyone HSG(108).

## 16 OTHER INFORMATION

### REVISION COMMENTS

General review

REVISION DATE 120/9/05

REV. NO./REPL. SDS GENERATED 26/02/04

SDS NO. 10171

### RISK PHRASES IN FULL

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.