

**“Sentinel”**  
**Beaded Half Round Gutters**

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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)

**“Sentinel”**

**Beaded Half Round Gutters**

**Description:**

Formed from extruded aluminium in various sizes (112mm, 125mm & 150mm) & is supplied with a complete range of accessories ie angles, outlets, stopends, fascia brackets. True & Facetted radius gutters are also available.

**Installation:**

Beaded Half Round 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

**Direct Fixing:**

Not applicable to this product

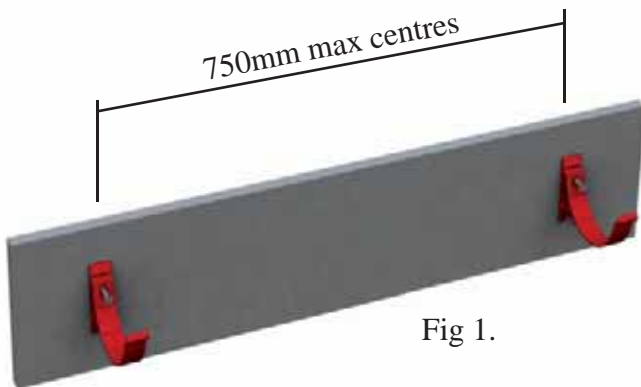


Fig 1.

**“Sentinel”**

## **Beaded Half Round Gutters**

### **Jointing:**

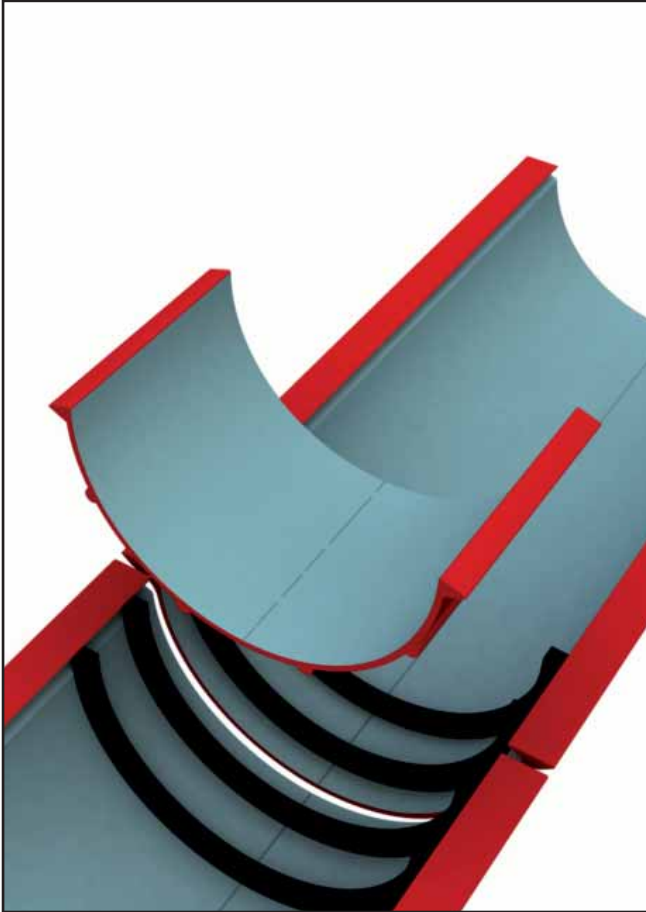


Fig 2.

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 & 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.

Beaded Half Round gutters have loose internal union connectors that clip into recesses in the gutter extrusion.

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 offer the union connector into position & apply sealant to both sides of joint & tool in. Excess sealant should then be removed.

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**“Sentinel”**

**Beaded Half Round Gutters**

**Composition & Manufacture:**

‘Sentinel’ Beaded Half Round Gutters are manufactured from Aluminium alloy 6063 T6 to BS1474: 1972 & 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 heavy grade ‘Sentinel’ Gutters & fittings to BS 2997 (EN612) using 6063 T6 grade extruded aluminium in accordance with BS 1474: 1974. Profile to be Beaded Half Round, size 112mm (2mm),125mm (2mm), 150mm (3mm).

Materials to have factory applied Polyester Powder Coat to all significant surfaces in accordance with BS EN 122026 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 snapfit union connector sealed by application of Arbosil 1096 Low Modulus Silicone Sealant 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).

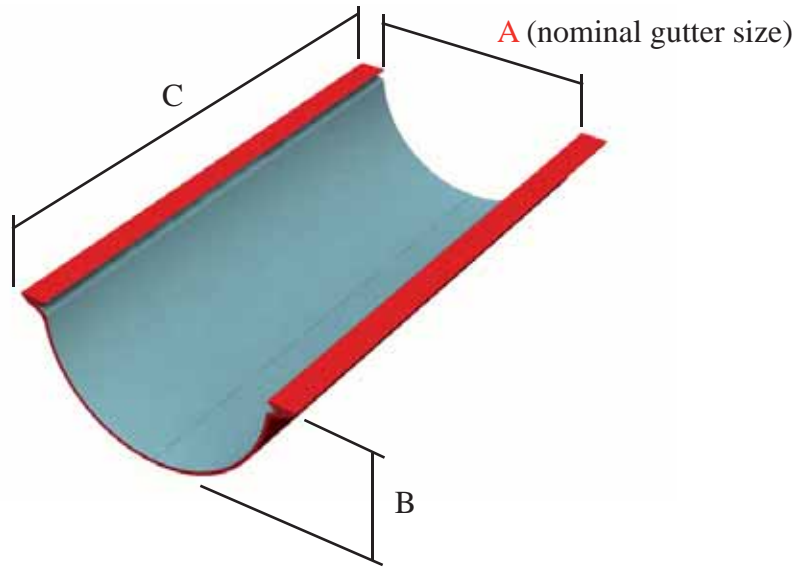
\* Delete as appropriate



# “Sentinel” Beaded Half Round Gutters

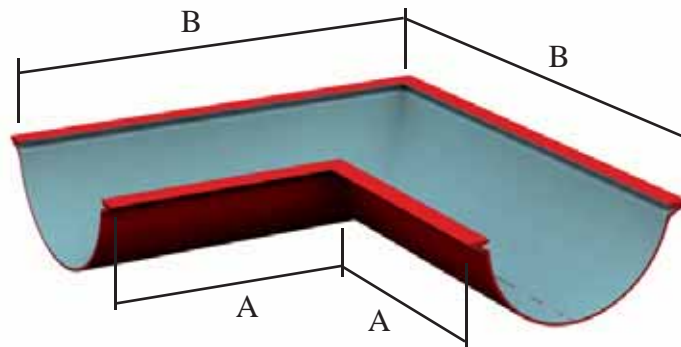
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## Gutter Lengths



A	B	Code	Code	Code	Code	Code
(mm)	(mm)	C=3.0m	C=2.5m	C=2.0m	C=1.0m	C=0.5m
114	59	4BHRG3	4BHRG2.5	4BHRG2	4BHRG1	4BHRG0.5
125	65	5BHRG3	5BHRG2.5	5BHRG2	5BHRG1	5BHRG0.5
150	79	6BHRG3	6BHRG2.5	6BHRG2	6BHRG1	6BHRG0.5

## Gutter Angles (Universal)

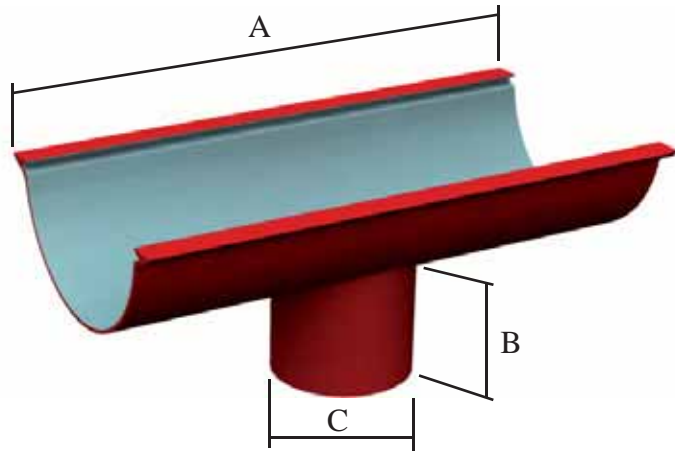


Gutter Size	Code	A	B	Code	A	B
(mm)	90°	(mm)	(mm)	135°	(mm)	(mm)
114	4BHRA90	150	293	4BHRA135	150	210
125	5BHRA90	150	308	5BHRA135	150	221
150	6BHRA90	150	334	6BHRA135	150	225

**“Sentinel”**

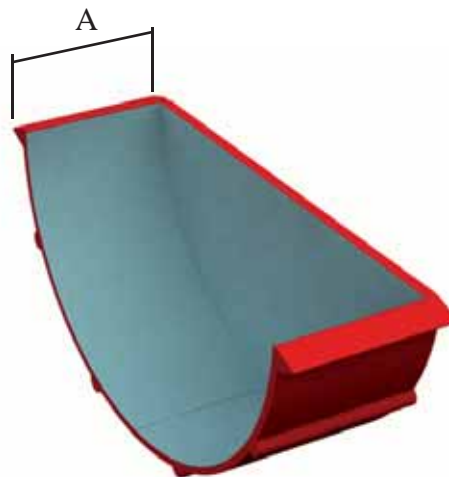
**Beaded Half Round Gutters**

**Gutter Outlets**



Gutter Size (mm)	A (mm)	B (mm)	Code	Code	Code	Code	Code	Code	Code
			C=63mm Ø	C=76mm Ø	C=101mm Ø	C=63mm Sq	C=76mm Sq	C=101x76 mm	C=101mm Sq
114	300	60	4BHRO2R	4BHRO3R	-	4BHRO2S	4BHRO3S	4BHRO43	-
125	300	60	5BHRO2R	5BHRO3R	5BHRO4R	5BHRO2S	5BHRO3S	5BHRO43	5BHRO4S
150	300	60	6BHRO2R	6BHRO3R	6BHRO4R	6BHRO2S	6BHR03S	6BHR043	6BHRO4S

**Gutter Stopends (Universal)**



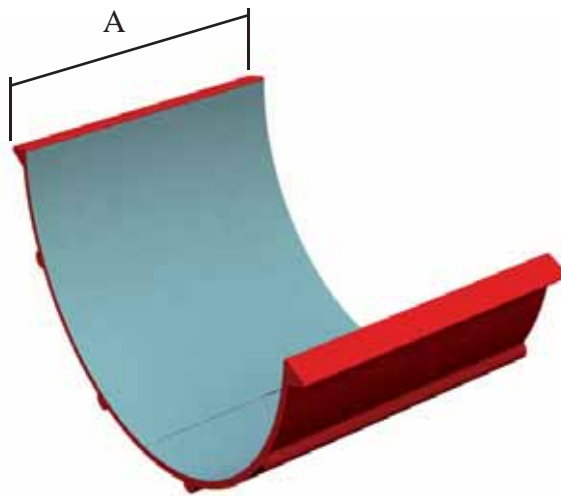
Gutter Size (mm)	A (mm)	Code
114	40	4BHRSE
125	40	5BHRSE
150	40	6BHRSE

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# “Sentinel” Beaded Half Round Gutters

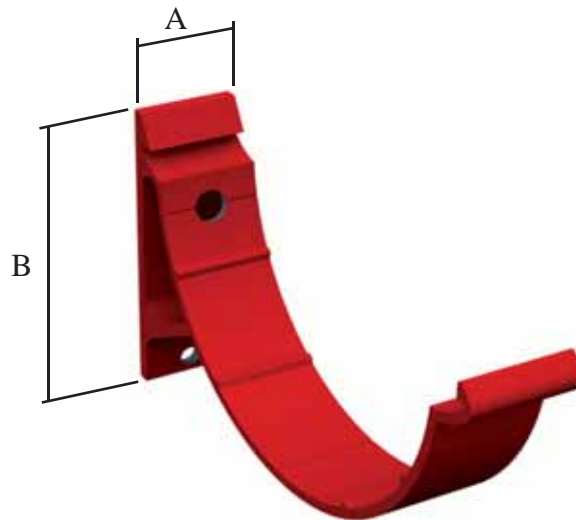
B e a d e d H a l f R o u n d

## Union Connector



Gutter Size (mm)	A (mm)	Code
114	80	4BHRUC
125	80	5BHRUC
150	80	6BHRUC

## Fascia Brackets



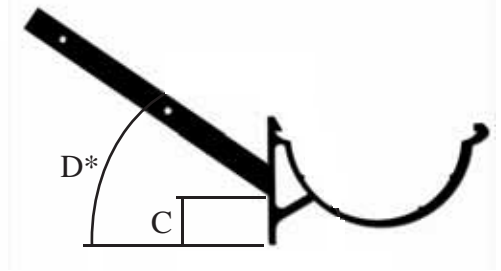
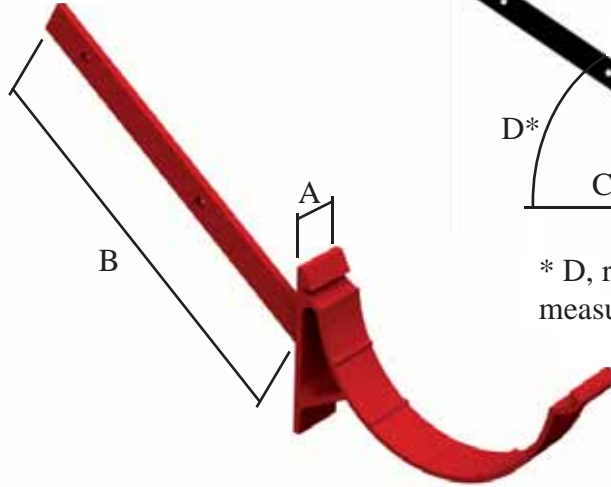
Gutter Size (mm)	A (mm)	B (mm)	Code
114	30	94	4BHRBF
125	30	94	5BHRBF
150	30	113	6BHRBF



**“Sentinel”**

**Beaded Half Round Gutters**

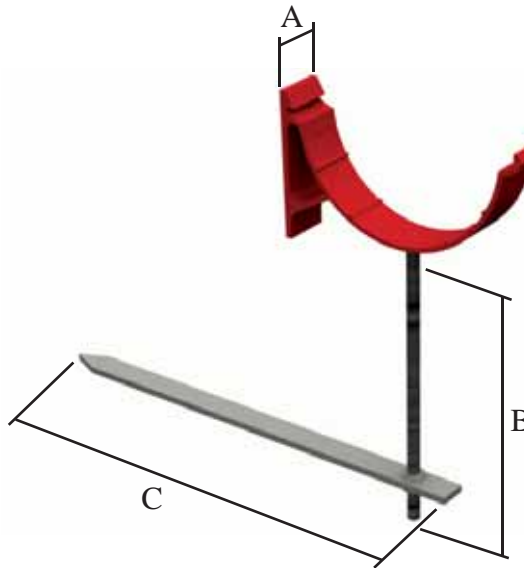
**Rafter Bracket**



\* 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
114	30	230	37	Specify	4BHRBRS	4BHRBRT
125	30	230	37	Specify	5BHRBRS	5BHRBRT
150	30	230	47	Specify	6BHRBRS	6BHTBRT

**Rise & Fall Bracket**



Gutter Size (mm)	A (mm)	B (mm)	C (mm)	Code
114	30	200	330	4BHRBRF
125	30	200	330	5BHRBRF
150	30	200	330	6BHRBRF



# 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
Skinning 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.