



Gutter Size A & B	Maximum length	Spigot	Product Code
125 x 100mm	3000mm	Internal	54DHRG3

#### R10 Rainwater Drainage Systems

2 To be read with Preliminaries/General conditions.

#### GENERAL

110 GRAVITY RAINWATER DRAINAGE SYSTEM.  
 Rainwater outlets: As per detail sections below  
 Gutters: As per detail sections below  
 Pipework: As per detail sections below  
 Accessories outlets: As per detail sections below

#### SYSTEM PERFORMANCE

210 DESIGN  
 Design: Complete the design of the rainwater drainage system  
 Standard: To BSEN12056-3:2000, clauses 3-7 and National Annexes  
 Proposals: Submit Drawings, technical information, calculations and manufacturer's literature.

221 COLLECTION AND DISTRIBUTION OF RAINWATER  
 General: Complete, and without leakage or noise nuisance

230 DESIGN PARAMETERS - GENERAL  
 Roof and gutter construction and finish: As per detail sections below  
 Design Rate of rainfall: As per BSEN12056-3:2000, National Annex  
 NB.2 - Category 1  
 Available capacity of existing below ground drainage (maximum): TBC

#### PRODUCTS

##### 311 SENTINEL EXTRUDED ALUMINIUM GUTTERS

Gutters & Fittings: To BS 460:1964

Manufacturer: ARP Ltd, Unit 2 Vitruvius Way, Meridian Business Park, Braunstone, Leicester, LE19 1WA  
 Tel: 0116 289 4400.  
 Email: sales@arp-ltd.com

Reference: Sentinel Extruded Aluminium Rainwater System  
 Profile: Deep Beaded Half Round  
 Size: 125 x 100mm

**SENTINEL****Deep Beaded Half Round - Snap-fit**

Flow performance: As stated in ARP literature.

Outlet Size: [63mm diameter] or [76mm diameter] or [101mm diameter] or [63mm square] or [76mm square] or [101mm square] or [101 x 76mm Rectangular] **Delete as applicable**

Type / grade: Extruded from 6063 T6 alloy to BS EN 12020

Brackets: Fascia Bracket

Finish: Polyester powder coated to BS EN 12206-1:2004

Colour: TBC

Functional life expectancy: 30 years

Jointing: Internal Union Clips fitting within each butt joint and sealed with ARP approved low modulus sealant.

Fixing: At maximum 750mm centres and at each fitting, using austenitic stainless steel fixings.

**EXECUTION CLAUSES****600 PREPARATION specified in this section, ensure that:**

Below ground drainage is ready to receive rainwater or that the discharge can be dispersed by approved means to prevent damage or disfigurement of the building fabric.

Any specified painting of surfaces which will be concealed or inaccessible is completed.

**605 INSTALLATION GENERALLY:**

Install pipework/gutters to ensure the complete discharge of rainwater from the building without leaking.

Obtain all components for each type of pipework/guttering from the same manufacturer unless specified otherwise.

All calculations performed in accordance with BS EN 12056-3:2000 to ensure correct size of gutter and number of outlets are installed.

Ensure that prior to installation that the background is sound, secure and of sufficient thickness to support fully loaded gutter.

Provide access fittings and rodding eyes as necessary in convenient locations to permit adequate cleaning and testing of pipework.

Avoid contact between dissimilar metals and other materials which would result in electrolytic corrosion.

Adequately protect pipework/gutters from damage and distortion during construction. Fit purpose made temporary caps to prevent ingress of debris. Fit all access covers, cleaning eyes and blanking plates as the work proceeds.

Where not specified otherwise use stainless steel fastenings, suitable for the purpose and background, and compatible with the material being fixed.

**610 FIXING AND JOINTING GUTTERS:**

Fix securely at specified centres and at all joints in gutters without overtightening, with additional brackets near angles and outlets.

Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.

Seal as specified to make watertight.

Spread low modulus silicone sealant evenly over jointing face of socket

For gutters with bolted joints, tighten joints in the gutter sole before any other bolts. Fit suitable washers, and spacers to prevent overtightening, unless specified otherwise.

Tighten fixing to squeeze out some silicone sealant.

Remove surplus of squeezed out silicone sealant and neatly clean off.

Ensure that roofing underlay is dressed into gutter.

**615 SETTING OUT EAVES GUTTERS – TO FALLS**

Set out to a true line and even gradient including where laid level to ensure no ponding or backfall. Position high points of gutters as close as practical to the roof and low points than more than 50 mm below the roof.

Position outlets to align with connections to below ground drainage, unless shown otherwise on drawings.

**630 RAINWATER OUTLETS: Ensure that:**

Outlets are securely fixed before connecting pipework.

Junctions between outlets and pipework can accommodate all movement in the structure and pipework.

**435 FIXING PIPEWORK:**

Fix securely at specified centres plumb and/or true to line with a maximum of 2.0m between fixings.

Make changes in direction of pipe runs only where shown on drawings unless otherwise approved.

Fix branches and low gradient sections with uniform and adequate falls to drain efficiently.

Fix externally socketed pipes/fittings with sockets facing upstream.

Provide additional supports as necessary to support junctions and changes in direction.

Fix every length of pipe at or close below the socket collar or coupling.

Provide a load bearing support for vertical pipes at not less than every storey level. Tighten fixings as the work proceeds so that every storey is self-supporting and undue weight is not imposed on fixings at the base of the pipe.

Isolate from structure where passing through walls or floors and sleeve pipes as specified in Section P31.

Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.

Fix expansion joint pipe sockets rigidly to the building and elsewhere use fixings that allow the pipe to slide.

Provide access at the bottom of each downpipe by way of shoe or access plate in accordance with BS EN 12056-3:2000

**650 JOINTING PIPEWORK/GUTTERS:**

Joint using materials, fittings and techniques which will make effective and durable connections.

Joint differing pipework/gutter systems with adaptors recommended by manufacturer(s).

Cut ends of pipes to be clean and square with burrs and swarf removed.

Ensure that jointing or mating surfaces are clean, and where necessary lubricated, immediately before assembly.

Form junctions using fittings intended for the purpose ensuring that jointing material does not project into bore of pipes, fittings and appliances.

Remove sealant from joints.

**675 COATED PIPEWORK/GUTTERS:**

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

**690 ELECTRICAL CONTINUITY:**

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

**700 ACCESS FOR TESTING AND MAINTENANCE:**

Install pipework and gutters with adequate clearance to permit testing, cleaning and maintenance.

Position access fittings and rodding eyes so that they are not obstructed by other pipework, framing, etc.

## COMPLETION

## 900 TESTING GENERALLY:

Inform the Contract Administrator sufficiently in advance to give him a reasonable opportunity to observe tests.

Check that all sections of installation are free from obstruction and debris before testing.

Provide clean water, assistance and apparatus for testing as required.

Carry out tests as specified. After testing, locate and remedy all defects without delay and retest as instructed.

Keep a record of all tests and provide a copy of each to the Contract Administrator.

## 910 GUTTER TEST:

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

## PIPEWORK TEST:

Following Gutter Test, ensure no leaks visible from pipe joints and that water discharges in an uninterrupted fashion

## 915 MAINTENANCE INSTRUCTIONS

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

## 920 IMMEDIATELY BEFORE HANDOVER:

Remove construction rubbish and debris from all roofs and gutters. Where possible, sweep and remove fine dust which may enter rainwater systems. Do not sweep or flush dust or debris into the rainwater system.

Remove swarf, debris and temporary caps from the entire rainwater installation.

Ensure that all access covers, rodding eyes, outlet gratings, etc. are secured complete with all fixings.

## ACCESS FURTHER DOCUMENTS AND ARP'S LITERATURE

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