

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 LEGACY CAST ALUMINIUM GUTTERS**

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

Reference: Legacy Cast Aluminium Rainwater System
Profile: Victorian Ogee
Size: 100mm or 114mm or 125mm (Delete as appropriate)
Flow performance: As stated in ARP literature.
Outlet Size: 63mmØ or 76mmØ or 76 x 76mm (Delete as appropriate)
Type/grade: Marine grade extruded aluminium to BS EN 755-2:2008
Finish: Polyester powder coated to BS EN 12206-1:2004 or Mill Finish (bare aluminium) (Delete as appropriate)
Colour: BS or RAL Colour reference _____

Functional life expectancy: 60 years

Jointing: External Socketed joint union to be sealed with ARP approved sealant.

Fixing: BS EN 1462:2004 Class H, fascia brackets at 915mm centres or direct fixed at 915mm centres (Delete as appropriate). Fixed with austenitic stainless steel 32mm x No. 10 round head screws.

INSERT PIPE SPECIFICATION HERE

EXECUTION

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.
- Provide access fittings and rodding eyes as necessary in convenient locations to permit adequate cleaning and testing of pipework.
- Avoid contact between dissimilar metals and other materials which would result in electrolytic corrosion.
- Do not bend plastics or galvanised steel pipes.
- Adequately protect pipework/gutters from damage and distortion during construction. Fit purpose made temporary caps to prevent ingress of debris. Fit all access covers, cleaning eyes and blanking plates as the work proceeds.
- Where not specified otherwise use plated, sherardized, galvanised or nonferrous fastenings, suitable for the purpose and background, and compatible with the material being fixed.

610 FIXING AND JOINTING GUTTERS:

- Fix securely at specified centres and at all joints in gutters, with additional brackets near angles and outlets.
- Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.
- Seal as specified to make watertight.
- Spread jointing compound evenly over jointing faces.
- Remove surplus, squeezed out compound and neatly clean off.
- Ensure that roofing underlay is dressed into gutter.

615 SETTING OUT EAVES GUTTERS

- Gutters must be installed level or to a fall of between 1:350 and 1:600 unless otherwise specified.
- The gutter should be positioned at a level where the front lip of the gutter is 10mm under the line of the roof pitch ensuring excess debris and snow are not held within the gutter or back up 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 caused by expansion.
- 435 **FIXING PIPEWORK:**
- In accordance with BS8230, fixed securely maximum of 2 metre centres.
 - Make changes in direction of pipe runs only where shown on drawings unless otherwise approved.
 - Access to be provided on every drop, in the form of a show or access plate
 - Fix branches and low gradient sections with uniform and adequate falls to drain efficiently.
 - Fix externally socketed pipes/fittings with sockets facing upstream.
 - Provide additional supports as necessary to support junctions and changes in direction.
 - Fix every length of pipe at or close below the socket collar or coupling.
 - Provide a load bearing support for vertical pipes at not less than every storey level. Tighten fixings as the work proceeds so that every storey is self supporting and undue weight is not imposed on fixings at the base of the pipe.
 - Isolate from structure where passing through walls or floors and sleeve pipes as specified in Section P31.
 - Provide for thermal and building movement when fixing and jointing, and ensure that clearances are not reduced as fixing proceeds.
 - Fix expansion joint pipe sockets rigidly to the building and elsewhere use fixings that allow the pipe to slide.
- 650 **JOINTING PIPEWORK/GUTTERS:**
- Joint using materials, fittings and techniques which will make effective and durable connections.
 - Joint differing pipework/gutter systems with adaptors recommended by ARP Ltd.
 - Cut ends of pipes to be clean and square with burrs and swarf removed and in painted systems, touch up paint applied to the raw ends.
 - Chamfer pipe ends before inserting into ring seal sockets.
 - Ensure that jointing or mating surfaces are clean, and where necessary lubricated, immediately before assembly.
 - Form junctions using fittings intended for the purpose ensuring that jointing material does not project into bore of pipes, fittings and appliances.
 - Remove surplus flux/solvent/cement/sealant from joints.
- 675 **COATED PIPEWORK/GUTTERS:**
- Make good to coatings after cutting and any other damage or recoat, as recommended by ARP Ltd.
- 690 **ELECTRICAL CONTINUITY:**
- Where required, 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 CA 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 CA.

910 GUTTER TEST:

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

915 MAINTENANCE INSTRUCTIONS

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

920 IMMEDIATELY BEFORE HANDOVER:

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