

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 manufacture'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

315 RAINCLEAR SYSTEMS GALVANISED INFINITY STEEL RAINWATER GOODS

Gutters and fittings to: ISO 9001: 2008
 Manufacturer: Zambelli, Fertigungs GmbH & Co. KG, Passauer Straße 3 + 5, 94481 Grafenau
 Distributor: Rainclear Systems
 Email: sales@rainclear.co.uk / info@infinityguttering.co.uk
 Telephone: James Wright - Sales Office Manager - 0800 644 44 28/07703 729 827
 Profile: 115mm,125mm,150mm,190mm Half Round
 Size: Deep Flow
 Outlet Size: 80/100mm
 Finish: Replacement Goods to be supplied with Galvanised finish or Robust PPC Coating (Specification TBC)
 Colour: TBC
 Jointing: Downpipes to be joined as per existing and using the existing fixing method.

- 380 RAINCLEAR SYSTEMS GALVANISED INFINITY STEEL PIPEWORK FOR EXTERNAL USE:
 Pipes, fittings and accessories: To ISO 9001: 2008
 Manufacturer: Zambelli, Fertigungs GmbH & Co. KG, Passauer Straße 3 + 5, 94481 Grafenau
 Distributor: Rainclear Systems
 Email: sales@rainclear.co.uk / info@infinityguttering.co.uk
 Telephone: James Wright - Sales Office Manager - 0800 644 44 28/07703 729 827
 Reference: Rainclear Infinity rainwater system
 Profile: 80mm/100mm Diameter
 Size: 80mm/100mm
 Outlet Size: 80mm/100mm
 Finish: Replacement Goods to be supplied in be supplied with Galvanised finish or Robust PPC Coating (Specification TBC)
 Colour: TBC
 Jointing: Downpipes to be joined as per existing and using the existing fixing method.

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 galvanized 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, galvanized 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 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 compound.
 - Remove surplus, squeezed out compound 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 to ensure no ponding or backfall. Position high points of gutters as close as practical to the roof and low points not 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.
 - 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.
- 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. 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 the manufacturer.
- 685 **IDENTIFICATION OF INTERNAL RAINWATER PIPEWORK:**
- To BS 1710 using self-adhesive bands or identification clips located at junctions, at both sides of each slab, bulkhead and wall penetration, and elsewhere as directed.
- 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 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.

905 INTERNAL PIPEWORK TEST - ENGLAND, WALES AND NORTHERN IRELAND:

- Temporarily seal open ends of pipework with plugs.
- Connect a 'U' tube water gauge and air pump to the pipework via a plug.
- Pump air into pipework until gauge registers 38 mm.
- Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for not less than 3 minutes.

906 INTERNAL PIPEWORK TEST - SCOTLAND

- Standard - To BSEN12056-3:2000, National Annex NG

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.