

System Overview

Flat Roofs

The past few years have seen major advances and improvements in the materials used in modern roofing technology. A specifier now has renewed confidence to take full advantage of the benefits flat and low-pitched roof designs can offer.

Flat roofs provide opportunities for planning and design flexibility, for example; terracing, roof-top gardens, patios, car parks, delivery areas, building services and ventilation equipment and the ability to add additional storeys at a later date.

Large area roofs or irregular shaped buildings can be completed more quickly, easily and cost effectively than a pitched roof.

Flat roofs also allow easy access to natural light and because of the simple construction, internal partitioning is easy and particularly advantageous for commercial or industrial buildings.

Materials

All ACO Building Drainage High Performance Rainwater Outlets are manufactured from die-cast marine-grade LM6 aluminium silicon alloy. This grade of aluminium alloy is highly corrosion resistant, weather-proof and resistant to ultra-violet radiation.

All cast components are polyester powder coated. For additional protection, this tough and resilient powder coated finish prevents natural galvanic corrosion in applications where dissimilar metals are dressed into the outlets. 304 stainless steel fixings are used to ensure long-service durability and reliability.

All ACO Building Drainage Rainwater Outlets are available in leaded gun metal to BS EN 1982:2008 to special order for lead or copper-clad roofs or connection to copper pipework.

ACO Building Drainage Car Park Gullies are manufactured from grey cast iron for robust and durable applications to accommodate heavy and frequent vehicle loads.

Typical Applications

ACO Building Drainage High Performance Rainwater Outlets - page 8

- Flat roofs
- Low-pitched roofs
- Balconies
- Roof terraces

ACO Building Drainage Car Park Gullies - page 29

- Multi storey car parks
- Parking decks

Standard References:

Design requirements and flow rate performance refer to EN 1253:2015 *Gullies for Buildings – Part 2: Roof drains and floor gullies without trap.*

Roof drainage layout and hydraulic calculations refer to BS EN 12056-3:2000 *Gravity drainage systems inside buildings – Part 3: Roof drainage, layout and calculation.*



High Performance (HP) outlets for a wide range of applications

Product range overview

ACO HP vertical spigot outlet



General purpose rainwater outlets suitable for convenient direct connection to PVC-U 'O'-ring socket pipe to BS 4514:2001 or to cast iron pipework to BS 416:1990 or BS EN 877: 1999. Other connections can be made using an appropriate flexible coupling or heat shrink sleeving.

Vertical spigot outlets are available with either domed or flat gratings. Flat gratings are used where either vehicles or pedestrian traffic is likely.

ACO HP two-way screw outlet



The two-way outlet is designed to be used at the junction of roofs and parapet walls, or wherever horizontal and vertical surfaces meet. This flexible design of outlet allows either a horizontal or vertical outflow take-off. Pipework connections as for vertical screw details.

ACO HP 45° & 90° outlets



These angled problem solving outlets are particularly relevant to suit more complex pipe run detail. Pipework connections as spigot or screwed outlets.

ACO HP vertical screw outlet



Screwed outlets are recommended where connection to the outlet occurs within the thickness of the slab and threaded connections will form a completely gas-tight seal.

Vertical screw outlets have a female parallel thread to BS 21:1985 for connecting directly to pipes conforming to BS EN 10226:2005. This ensures a completely watertight seal when screwed home into the outlet body.

A range of ABS threaded adaptors are available from ACO Building Drainage to allow connection to PVC-U, socketless cast iron and aluminium rainwater pipes.

ACO HP balcony spigot outlet



The balcony outlet provides discrete safe drainage for balconies and walkways. Supplied complete with a 'D'-shaped flat grating, the outlet can be installed directly against a wall. The grating is supplied with suitable apertures to accommodate 50mm, 75mm or 100mm nominal bore rainwater downpipes, easily cut on site to suit the application.

ACO HP Refurbishment outlet



When an existing flat roof is being upgraded, the refurbishment outlet is designed to fit inside the existing outlet and pipework with minimal disruption without the need to remove the original unit or pipework.

Outlets are supplied with a flexible finned pipe seal ensuring a watertight connection to existing pipework. The ease of use and minimal disruption to the existing rainwater system makes this an extremely cost effective solution when upgrading flat roofs.