

# Product Data Sheet

## ALUMINIUM ROOF & BALCONY RAINWATER OUTLETS

Accessories

### **Robust and revolutionary rainwater drainage outlets compatible with all waterproofing membranes and roof build-ups**

The Axter Aluminium Roof and Balcony Rainwater Outlets and associated drainage accessories are designed to be used on new build and refurbishment projects. This range provides a comprehensive choice of rainwater outlet options that are compatible with all types of Axter waterproofing systems (reinforced bitumen membranes, structural hot melt, single ply, cold applied liquid waterproofing membranes) in a wide choice of waterproofing designs: warm, inverted, living and cold roof build-ups; terraces, balconies, podiums, walkways, paved areas and car parks.

Specifiers and designers can be confident when specifying Axter roof drainage systems. Our project specific design calculation service will be undertaken upon request to ensure that the correct size and number of units are installed and that they are fully compatible with the waterproofing system and guaranteed to last.

## Key benefits of aluminium roof and balcony outlets

Designed to provide unrivalled drainage flow performance using fewer units than conventional outlets.

Reduce overall downpipe numbers leading to project cost savings.

Unique and reliable clamping feature: the waterproofing membrane is secured to the outlet by a compression clamp combined with a high performance butyl sealing ring, giving a durable, watertight seal.

50 year life expectancy - manufactured from marine grade aluminium for strength, durability and protection against corrosion and pollution.

Rigorously tested to withstand water depths greater than 1m.

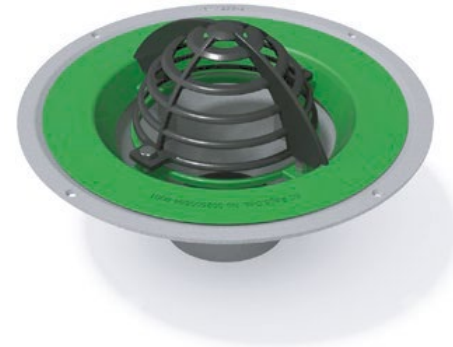
PVCu pipe connectors provide an airtight seal and thermal break between outlet body and connecting pipework (AOSEAL sealant to be used).

Aluminium roof outlets connect to all common PVCu, HDPE and socketless cast iron pipework sizes.

Balcony outlets connect to aluminium (76mmØ, 72x72mm & 160mmØ), PVCu (82mmØ, 110mmØ & 160mmØ) and socketless cast iron (70mmØ & 100mmØ) pipework.

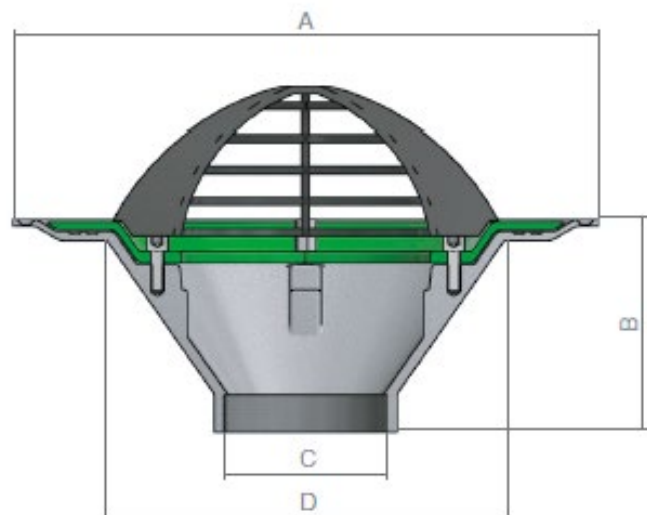
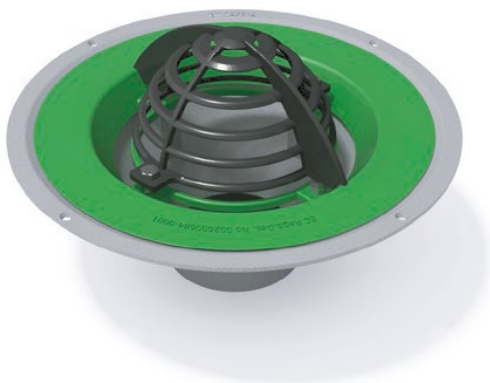
Fire protection – pipe connectors are manufactured from BS EN 1329 pipework and are suitable for use with pipe wraps and fire collars.

Axter Ltd's Aluminium Roof and Balcony Rainwater Outlets are manufactured to and in excess of the appropriate BS or EN Standards.



## Aluminium rainwater outlets With dome leafguard

Primarily suited for use with warm roof and cold roof build-ups.



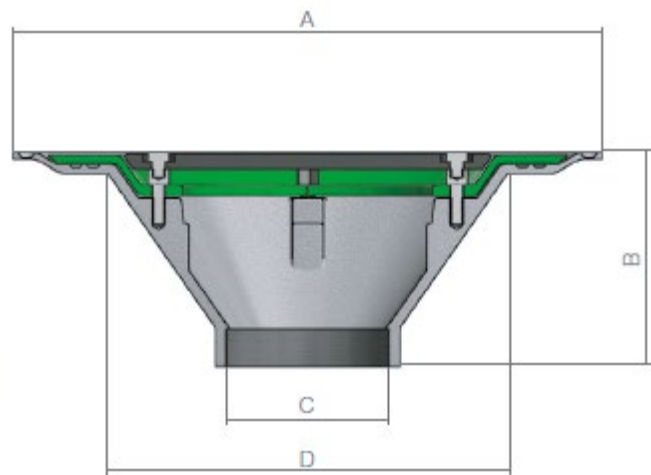
Product code	Pipe connection size (O.D.)	A (mm)	B (mm)	C (mm)	D (mm)	Max. flow rate (l/s)
AROD/82	82mmØ	377	111	82	255	5
AROD/110	110mmØ	377	136	110	255	10.7
AROD/160	160mmØ	377	111	160	255	19

Flow rates are measured at 35mm head of water for outlets up to 110mmØ and 45mm head of water for 160mmØ outlets, in accordance with BS EN 1253-2.

Units are supplied with the relevant sized threaded PVCu pipe connector. The pipe connectors are 500mm long and can be cut on site as required. An even band of AOSEAL sealant must be applied around the top of the pipe connector before being inserted into the outlet. For further details, contact Axter Ltd.

## Aluminium rainwater outlets With flat leafguard / car park outlet

Primarily suited for use with warm roofs, terraces, walkways and cold roof build-ups.



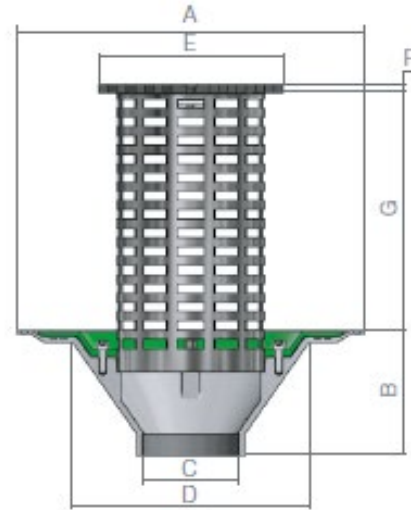
Product code	Pipe connection size (O.D.)	A (mm)	B (mm)	C (mm)	D (mm)	Max. flow rate (l/s)
AROF/82	82mmØ	377	111	82	255	5
AROF/110	110mmØ	377	136	110	255	10.7
AROF/160	160mmØ	377	111	160	255	19

Flow rates are measured at 35mm head of water for outlets up to 110mmØ and 45mm head of water for 160mmØ outlets, in accordance with BS EN 1253-2. Units are supplied with the relevant sized threaded PVCu pipe connector. The pipe connectors are 500mm long and can be cut on site as required.

An even band of AOSEAL sealant must be applied around the top of the pipe connector before being inserted into the outlet. For further details, contact Axter Ltd.

## Aluminium rainwater outlets With extended leafguard

Primarily suited for use with inverted roofs, living roofs, terraces, podiums, walkways and paved areas. Also for use with Blue Roof Attenuator on Axter Ltd Aquamodul blue roofs (see following page).



Product code	Pipe connection size (O.D.)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G Max. (cut down to requirement)	Max. flow rate (l/s)
AROE/82	82mmØ	377	111	82	255	200	10	255	5
AROE/110	110mmØ	377	136	110	255	200	10	255	10.7
AROE/160	160mmØ	377	111	160	255	200	10	255	19

Flow rates are measured at 35mm head of water for outlets up to 110mmØ and 45mm head of water for 160mmØ outlets, in accordance with BS EN 1253-2. Units are supplied with the relevant sized threaded PVCu pipe connector. The pipe connectors are 500mm long and can be cut on site as required.

An even band of AOSEAL sealant must be applied around the top of the pipe connector before being inserted into the outlet. For further details, contact Axter Ltd.

## Blue roof attenuator

For use with Axter aluminium roof rainwater outlet with extended leafguard (as shown on previous page) on Aquamodul and Aquamodul Trafic blue roofs.

Axter Aquamodul blue roofs combine a drainage and attenuation void within the roof make up, and an outlet system designed to allow the controlled attenuation of heavy rainfall during a storm.

The rainwater from the roof is temporarily stored and released at a controlled discharge rate, as agreed and permitted in the planning consent of the site, so as not to overwhelm sewers, waterways and rivers.

Axter Ltd provides blue roof attenuation calculations as part of its blue roof design service, further information is available on request.



Blue Roof Attenuator



Aluminium Outlet with Blue Roof Attenuator

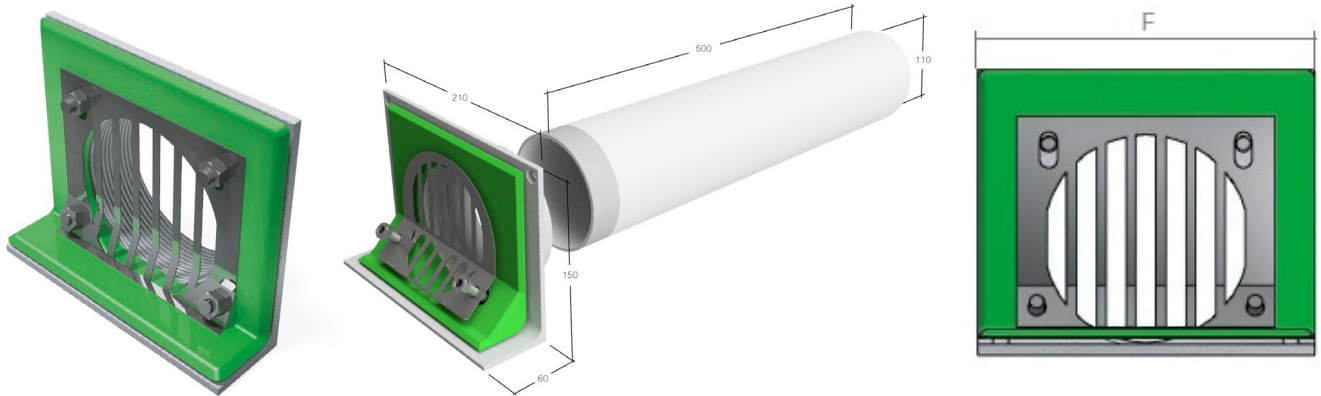
## Restricted rainwater run-off figures per outlet (litres per second)

Product code	Holes visible	Water depth					
		25mm	35mm	50mm	100mm	135mm	150mm
BRA	2 holes	0.2	0.21	0.23	0.27	0.3	0.31
	4 holes	0.4	0.42	0.45	0.54	0.6	0.62
	6 holes	0.61	0.64	0.68	0.81	0.89	0.92
	8 holes	0.81	0.85	0.91	1.08	1.19	1.23

The flange of the Blue Roof Attenuator must be placed and bedded onto an 8mm bead of AOSEAL sealant into the throat of roof outlet. For further details, contact Axter Ltd.

## Aluminium parapet outlet with leafguard

Primarily suited for use with parapet wall penetrations and internal gutters. Outlet can be set horizontal or vertical.



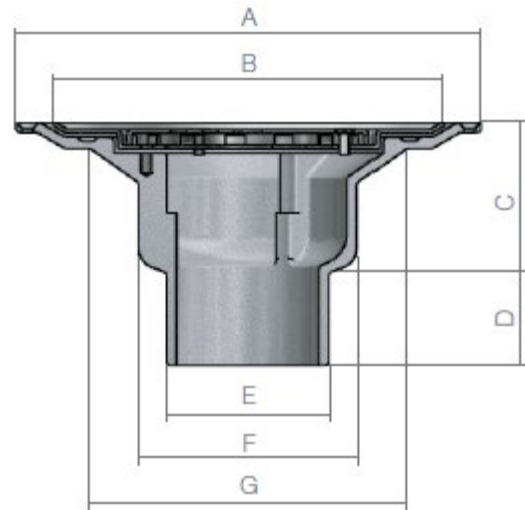
Product code	Pipe connection size (O.D.)	Max. flow rate (l/s)
APO/110	110mm dia	2.4*

\* Flow rate measured at 35mm head of water, performance will dramatically increase if outlets are sumped, e.g. 100mm sump = 9.8 l/s. Units are supplied with the relevant sized threaded PVCu pipe connector. The pipe connectors are 500mm long and can be cut on site as required.

An even band of AOSEAL sealant must be applied around the top of the pipe connector before being inserted into the outlet. For further details, contact Axter Ltd.

## Aluminium balcony outlets With flat leafguard

Primarily suited for use with uninsulated balconies/walkways and terraces.



Product code	Pipe connection size (O.D.)	A	B	C	D	E	F	G	Max. flow rate (l/s)
ABOF/82	76, 72x72, 82 and 110mm	234	196	77	45	82	110	158	4.7

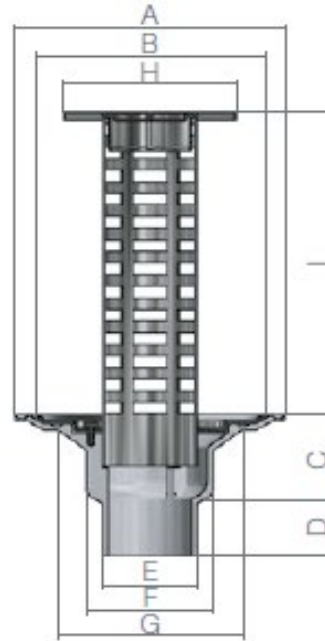
\* Flow rate measured at 35mm head of water.

### Connection to aluminium pipework

Each balcony outlet is supplied with an EPDM rubber adaptor that allows direct connection to 76mmØ and 72x72 aluminium pipework.

## Aluminium balcony outlets With terrace leafguard

Primarily suited for use with inverted podiums, decked and paved balconies/walkways.



Product code	Pipe connection size (O.D.)	A	B	C	D	E	F	G	H	I (cut down to requirement)	Max. flow rate (l/s)
ABOT/82	76mm, 72x72mm, 82mm and 110mm	234	196	77	45	82	110	158	150	260	4.7

\* Flow rate measured at 35mm head of water.

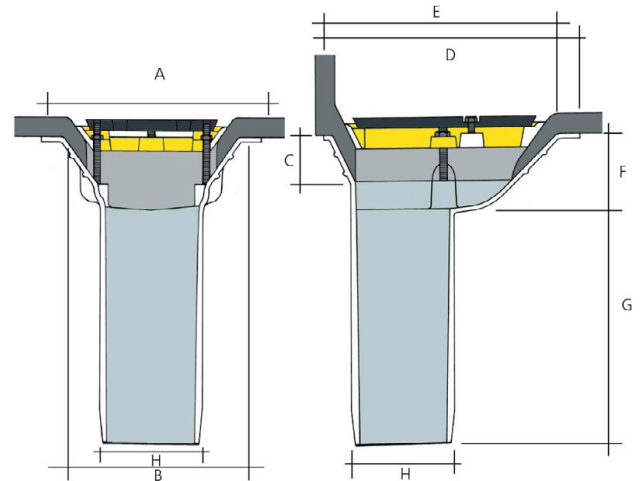
### Connection to aluminium pipework

Each balcony outlet is supplied with an EPDM rubber adaptor that allows direct connection to 76mmØ and 72x72 aluminium pipework.



## Aluminium 'D' balcony outlets With flat leafguard

Balcony outlet primarily suited for use with reinforced bitumen membrane (RBM) and hot melt waterproofing systems.



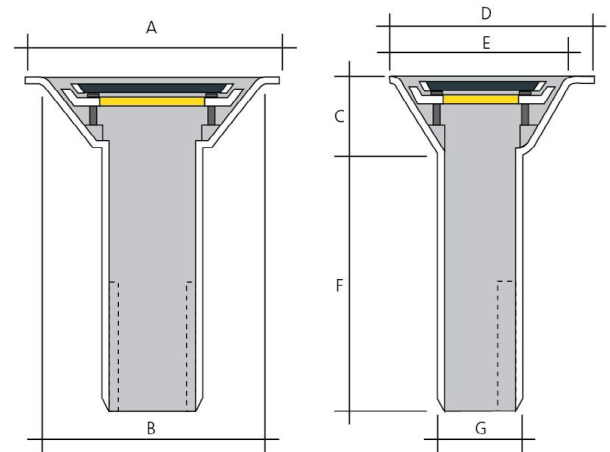
Product code	Nominal Size (mm)	Pipe connection size (O.D.)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	Max. flow rate (l/s)
ADBOF/82	75	82mm	230	190	50	265	240	85	260	83	5.0
ADBOF/110	100	110mm	230	190	50	265	240	85	260	83	7.55

### Connection to aluminium pipework

Each balcony outlet is supplied with an EPDM rubber adaptor that allows direct connection to 76mm Ø and 72x72 aluminium pipework.

## Aluminium 'D' shallow balcony outlets With flat leafguard

Shallow balcony outlet primarily suited for use with reinforced bitumen membrane (RBM) and hot melt waterproofing systems.



Product code	Nominal Size (mm)	Pipe connection size (O.D.)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Max. flow rate (l/s)
ADSBOF/82	75	82mm	215	172	55	172	152	220	83	5.77

### Connection to aluminium pipework

Each balcony outlet is supplied with an EPDM rubber adaptor that allows direct connection to 76mm Ø and 72x72 aluminium pipework.

## Design and maintenance recommendations

### Design

#### Roof drainage design

Axter Ltd's technical sales team will assist with the correct drainage design, specification of the correct product and a full set of drainage calculations. Please contact Axter Ltd on 01473 724056.

#### Rainwater outlet positioning

Outlets should be distributed as evenly as possible, throughout the roof areas, in order to accept an equal proportion of the rainwater runoff.

#### Emergency outlets/overflows

Overflows should be included within the design of all flat roofs and balconies with perimeter upstands greater than 50mm. Overflows indicate if there is a maintenance requirement and prevent structural overloading or rainwater over spilling into the building fabric.

#### Pipework

Our rainwater outlet maximum performance figures, in many cases, are restricted by the maximum allowed capacity of the connecting pipe system. If it is intended to link multiple roof outlets within a singular pipework run, the combined capacity of the outlets must not exceed the design capacity of the pipe system. Contact Axter Ltd for further assistance.

#### Balcony outlet pipework

To reduce the risk of a balcony outlet becoming overwhelmed in a storm event, it is good practice to connect each balcony outlet separately into a continuous main rainwater pipe drop, as opposed to draining balconies from above onto lower.

If a continuous main rainwater pipe drop is not an option, rainwater outlets and overflows need to be suitably sized to accept the total combined drainage from the above balconies at each level.

### Installation

Full details are given in the Aluminium Rainwater Outlets and Leafguards Installation Guide, available from Axter Ltd.

### Maintenance

All outlets should be clearly identifiable and accessible for maintenance. Outlet gratings should not be covered by pavers, decking, plant material, ballast etc.

For optimum performance, ensure roof outlets are inspected and cleaned every six months to ensure peak performance. Any build up of leaves or other debris must be removed from around the grate to maximise flow rate.

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