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Harmer Roof Drainage Systems - Overview

Architectural design, and advances in roofing materials, have transformed the use of flat roofs in recent years. Harmer’s extensive range of rainwater outlets and raised deck supports offers great flexibility of choice for designers to optimise the spatial use of the building roof.

Applications

Harmer offers a wide range of roof drainage products suited to different types of roof construction including structural concrete, metal deck, timber deck, warm roof, cold roof, green roof and inverted roof. A secure connection between the waterproofing membrane and rainwater outlet is critical. Harmer Roof outlets can be used with all types of membrane including asphalt, built-up felt, single ply, hot melt and wet-applied systems.

Flat and Low Pitched Roofs

The Harmer Roof range is suitable for all types of flat and low pitch roofs. Harmer’s patented AV aluminium range provides optimum flow performance minimising the number of outlets. The anti-vortex effect increases as the depth of water at the outlet, or rainfall intensity, increases ensuring effective water disposal even in extreme weather. Installations are covered to suit most applications. For copper or lead clad roof applications where the risk of bi-metallic corrosion is high, a comprehensive range of cast iron outlets is available in Medium Sump, Large Sump, Two-Way Parapet and Balcony configurations.

Balconies

Adaptable solutions are available for drainage of balcony areas in aluminium, cast iron and stainless steel. The Harmer aluminium shallow sump balcony outlet provides an unobtrusive design solution in new and refurbishment projects. The extensive grate options further enhance the functionality and appearance of the drain for use with paving supports, sand or cement bedding and epoxy resin coverings. The Harmer Balcony range can be combined with Alumasc architectural rainwater pipework where colour matching and bespoke manufacture opens up endless design possibilities. The Harmer AV and Detail Aluminium Roof Outlets are now available with Extended Spigot options including connection onto the Alumasc Rainwater Flushjoint Aluminium downpipe range. This provides an A2 fire rated drainage solution for building envelope and balcony drainage.

Car Parks, Factories and Workshops

Load bearing applications where rainwater outlets are exposed to vehicular traffic are catered for in both cast iron and aluminium. Ductile iron grates have a load rating up to 12.5 tonnes.

Roof Terraces

A wide range of hard and soft landscaping materials can now be installed on roof areas to combine ecological benefits with strong visual enhancement and recreational use. Harmer provides a comprehensive range of drainage solutions for such applications by combining its traditional ranges with new innovative products. The Harmer Modulock system is an innovative solution for raised deck drainage on green roofs, terraces, walkways and ballasted flat roof construction. The range comprises raised paving supports and drainage channels that can be used in combination or individually to provide a versatile drainage system that provides level access as well as protecting the building from wind driven rain. The pedestals are available in both plastic and also steel which combined with the steel channels on offer, provides a completely non-combustible solution.

Materials

The Harmer Roof range consists of premium quality materials chosen for their inherent strength, durability and fire classification* for ease of installation, protection and long-life service.

Aluminium

Aluminium is durable and strong. It is also weatherproof and unaffected by UV light, ensuring optimal performance over its lifetime. Renowned for high quality, the Harmer Roof aluminium range is manufactured from marine grade aluminium alloy which has excellent corrosion resistance and as a material is A1 fire rated.

Note: *A1 fire rated product unless powder coated - it becomes A2 fire rated in this instance. Plastic gratings are not A1 fire rated.

Cast Iron and Ductile Iron

Cast iron is strong, durable and widely used in drainage applications. Ductile iron is used for its tensile strength in load bearing applications. The Harmer Roof cast iron range combines both these materials to optimise product performance, both of which are A1 fire rated materials

Note: *A1 fire rated product unless powder coated - it becomes A2 fire rated in this instance. Plastic gratings are not A1 fire rated.

Stainless Steel and Galvanised Steel

Stainless steel is a corrosion-resistant metal that is both strong and aesthetically pleasing. Galvanised steel combines high performance and value engineering for use in many types of application. The Harmer Modulock Channel Drain system is available as A1 fire rated in both materials to suit individual project requirement.

Quality and Sustainability

In addition to complying with environmental legislation, Alumasc is committed to developing its own measures to limit the adverse effects of its activities on the environment. To this end, Alumasc operates an environmental policy that fully integrates all aspects of company activities.



Green Economy

The Alumasc Group plc are pleased to be recognised by London Stock Exchange as contributing to the global green economy. The Mark is given to companies and funds that derive more than 50% of revenues from environmental solutions. The Alumasc Group plc provides high-quality, low carbon, sustainable building products, systems and solutions which help manage the scarce resources of energy and water in the built environment and improve quality of life for the owner/occupier

Alumasc operates a series of quality assurance management systems which is independently audited. This quality management system extends to our network of Stockists, for single source accountability and peace of mind. Individual products and systems are certified by the British Board of Agrément.

ISO 9001:2015

The ISO 9001 framework governs the management of many aspects of our support services, manufacturing and transport operations. Alumasc is committed to continual development and, along with the ISO 14001: 2004 Environmental Management Standard, ISO 9001 provides the tools to monitor and feed back information from all areas of the business to ensure a first class service is maintained.

ISO 14001:2015

Alumasc’s manufacturing sites at Burton Latimer and Dover are independently audited to the ISO 14001: 2004 Environmental Management Standard. Alumasc is committed to achieving improvements, not only as a good neighbour to the surroundings of their manufacturing plants, but in the responsible sourcing of raw materials and monitoring of the impact on the environment as a whole.

Professional Bodies



Standards & Classifications

All Harmer floor, shower and roof outlets have been developed in accordance with current Building Regulations and British Standards to ensure that they are fit for purpose.

The Roof Aluminium range is cast in aluminium silicon alloy LM6 to the following standards:

BS EN 1676:2010

This European Standard defines the requirements for grades of alloyed aluminium ingots intended for remelting. It specifies the classifications and designations applicable to these grades, the conditions in which they are produced, their properties and the marks by which they are identified.

BS EN 1559

This standard shows the correct technical conditions for casting all metallic materials, except copper alloy. The European guidelines outline how to achieve best practice during the casting process, with specifications on the correct composition of cast metallic materials.

BS EN 1706

This standard specifies the chemical composition limits for aluminium casting alloys and mechanical properties of separately cast test pieces for these alloys.

BS EN 12056

This covers wastewater drainage systems which operate under gravity. It is applicable for drainage systems inside dwellings, commercial, institutional and industrial buildings.

BS 8579:2020

A standard which provides guidance on the design of balconies and terraces. This standard is applicable to all balconies and terraces at any height above the lowest ground level. It offers information on construction, efficient drainage design and fire rating requirements of products.

Summary

Aluminium as a standalone material is generically a non-combustible with a melting point starting from 650°C and as such does not have a specific fire rating. It is the application that constitutes the need for a fire rating for which we have achieved with the results as indicated above as either a single sheet or casting / extrusion with polyester powder coated surface.

Building Safety Act 2022

The Act enforces compliance to Building Regulations restricting the use of combustible materials in the construction of buildings over 11m and reinforces the personal responsibility of all parties involved in the construction process.

Fire Classification of AWMS Products

UK Classification

The polyester powder coating used by AWMS has been tested in accordance to the protocols defined by BS476: Fire Tests on Building Materials & Structures. The Parts of BS476 applicable to PPC are:

- Part 6: This gives the Fire Propagation Index which is a measure of contribution to fire growth.
- Part 7: This is a method of measuring flame spread along a surface. The AWMS PPC achieves a Fire Propagation Index of <12 and a sub-index rating <6 (Part6) and a Class1 Rating for flame spread (Part7). Under UK Building Regulations - Fire Safety Approved Document B, these results meet the criteria for the highest safety performance level, Class 0.

EU Classification

Fire testing and reports issued by external independent accredited laboratories certify that our range of PPC products are classified in the agreement with European Norm EN13501-1 as: A2L-s1, d0 This means: A2L - Non-combustible - no contribution to fire s1 - Lowest level for smoke emissions d0 - Lowest level for flaming droplet/particles

Therefore, we can state that AWMS products achieve Class 0, Class 1 and A2L - s1, d0 in regard to fire reaction specifications. Further Information For further assistance with fire ratings or any other aspect of product performance, please contact AWMS Technical Services on 01536 383 810 or technical@alumascwms.co.uk

Fire Classification

Understanding product fire classifications within the construction industry is crucial to comply with current legislation and ensure products are suitable for their application.

With recent changes in legislation regarding the installation of products into the building envelope, such as BS 8579:2020 and the Building Safety Act 2022, identifying the combustibility of a product is a key factor in its specification. Products being installed should not provide a medium for spread of fire, nor should they propagate fire downwards by means of falling droplets or debris; ultimately, they should minimise the risk to the building and its occupants. Below is a table showing fire classifications in accordance with BS EN 13501-1:2018.

Fire Classification		Smoke Generation		Fire Generation	
Classification	Description	Classification	Description	Classification	Description
A1	Non-combustible	s1	Very limited smoke	d0	No burning droplets
A2	Limited combustibility	s2	Limited smoke	d1	Limited burning droplets
B	Combustible - Very limited contribution to fire	s3	A lot of smoke	d2	Unlimited burning droplets
C	Combustible - Limited contribution to fire				
D	Combustible - Medium contribution to fire				
E	Combustible - High contribution to fire				
F	Combustible - Easily flammable				



A1 Fire Rating

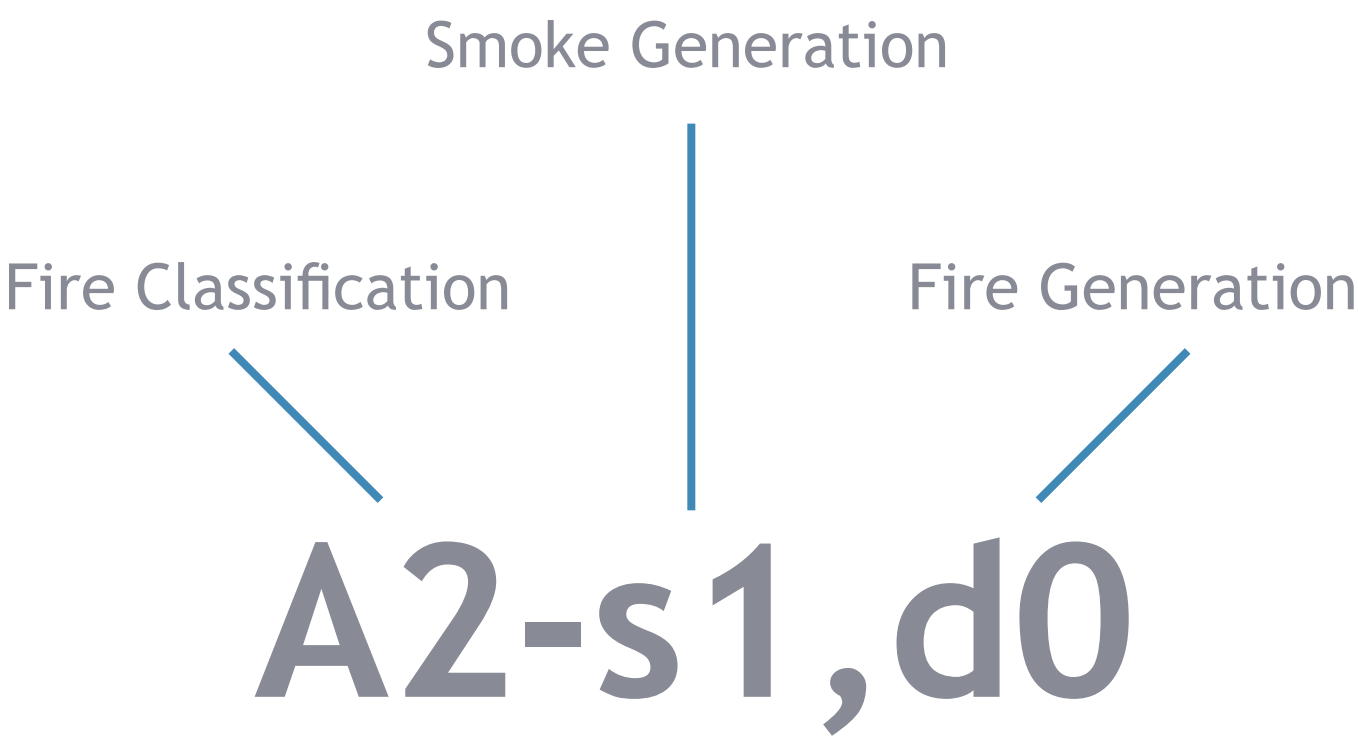
A1 is the highest rating a product can achieve. This is classed as completely non-combustible with key characteristics being the total absence of smoke or burning droplets. Most products manufactured from metals are A1 rated unless they have been powder coated which will result in the second highest rating of A2-s1,d0.





A2 Fire Rating

A2 is the second highest rating in terms of fire classification. This is classed as limited combustibility. Further explanation is provided by the suffixes s1, referring to very limited smoke, and d0 confirming that no burning droplets are produced. A2-s1,d0 products manufactured by Alumasc are generally A1 rated products which are powder coated; when this powder coating burns it emits very limited smoke. But the material beneath the powder coating is rated A1.



Technical and Customer Service Support

Alumasc Technical Services is a fully experienced team of drainage specialists who use the latest CAD technology and calculation tools to provide an unrivalled support service to Architects, Designers and Contractors.

Alumasc offers a full technical and support service as standard for all projects:

- Drainage calculations
- Takeoffs from drawings
- BIM, CAD and NBS Specifications
- Detailed technical advice and quotes
- Site surveys
- Detailing advice
- Samples on request

Specialist knowledge across the water management cycle

Recommended Installers

Alumasc Rainwater has a network of recommended installers covering the UK & Ireland. Visit the Alumasc WMS website to view.

Approved Stockists / Suppliers

Our products are delivered by approved suppliers throughout the UK & Ireland. To find your nearest stockist, visit the 'Where to buy' section on our website.



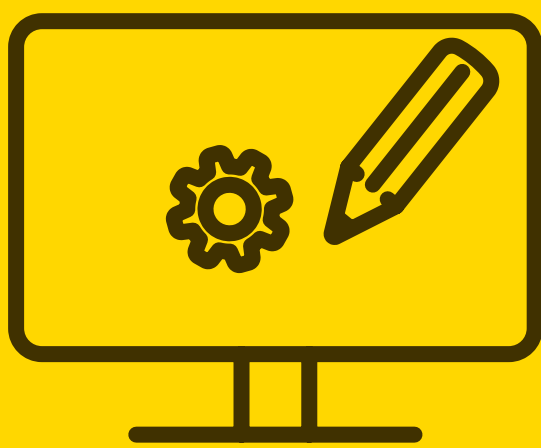
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Orders:

Orders are supplied in accordance with our current Terms & Conditions of Sale, which are downloadable from the website.

Carriage Charges:

Any appropriate surcharges, including next-day, time-specific, and special vehicles (small, rigid, Hiab, etc.) will be applied to all deliveries in accordance with our published schedule of carriage charges prevailing at date of despatch. Copies are available on request.

Disclaimer:

Due to continuous product development, descriptions and illustrations may be subject to change without notice. All prices are subject to VAT at the current rate. While every effort will be made to maintain prices at the published levels, Alumasc Building Products (The Company) reserves the right to amend those prices without notice should the need arise.

Contact us:

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Aluminium Roof Outlets - Benefits

Harmer Aluminium Roof Outlets are hydraulically engineered to ensure trouble-free performance in excess of building life, whilst offering versatility and choice for architects, specifiers and consultants.

Compliances

The Harmer Roof Aluminium range is cast in aluminium silicon alloy LM6 to BS EN 1676, BS EN 1559 and BS EN 1706, and are suitable for most types of flat roof drainage applications. Drainage flow performance to BS EN 12056. A2 fire rated in accordance with BS EN 13501-1 and follows guidance from BS EN 8579.

High Flow Performance

An outlet body with a deep integral sump for controlled flow of water into pipe. Domical grates for Harmer AV outlets incorporate a patented baffle to prevent water swirl and air entrapment enabling the outlet to drain at optimum pipe capacity. The AV system provides complete reassurance which is critical to building drainage design.

Robust and Secure

Aluminium has a light weight-to-strength ratio, which means it is strong yet economical. The reduced weight provides benefits in material transportation and application. Application of the waterproof membrane by a clamping ring ensures total integrity of seal. Optional flat grates are available for trafficked and terraced areas.

A Choice of Body and Grates

A wide choice of standard drain body variations with standard and extended spigot options, as well as threaded outlet connections, for vertical, horizontal or 45° discharge. The shallow sump balcony outlets incorporate Stainless Steel grate options for enhanced appearance with alternative deck finishes

Low Maintenance

Domical grates for Harmer outlets permit a free flow of rainwater while preventing loose chippings or debris from entering the outlet. The offset fixings of the clamping ring and domical grate to the outlet body, for both Detail and AV grates, ensures that the throat is completely unobstructed for optimised flow and to facilitate rodding.

Easy and Quick to Install

The aluminium alloy is light in weight and therefore easy to handle on site and during installation. This lightness also makes aluminium outlets suitable for a wide range of lightweight roof decks. A selection of standard accessories such as extension pieces, pipe adaptors and grates is available to ensure successful installation of Harmer rainwater outlets in most types of roof construction.

Value for Money

Diecast in LM6 aluminium alloy which has excellent resistance to corrosion under both atmospheric and marine conditions. Clamps and grates are polyester powder coated to BBA-approved standard to further increase protection and extend product life.

Sustainable

Aluminium is 100% recyclable making it a cost effective, sustainable material. End of life Harmer Roof aluminium outlets can be recast into new aluminium products. Life expectancy of aluminium: 40 years for rural/suburban areas, up to 25 years for industrial/marine areas.



Aluminium Roof Outlets - AV Retro-Gully Outlets

Harmer Roof AV Retro-Gully outlets are designed to fit within the existing outlet and pipework of the roof which is being upgraded. Because of minimal disturbance and the ease with which the Retro-Gully is fitted, it represents an extremely cost-effective and efficient solution to flat roof upgrading.



Application

The use of AV increases flow performance at the outlet location regardless of pipe diameter downsizing.

There is no need to remove the old rainwater outlet.

The outlet body is in diecast LM6 aluminium silicon alloy to BS EN 1706, and incorporates a welded 300mm aluminium tail pipe. The tail pipe, cut to the required length, is simply inserted through the existing outlet, into existing pipework, and sealed by means of the Harmer Roof AV special multi-fin pipe seal. This seal creates a watertight junction between existing pipework and the Retro-Gully tail pipe. The outlet body's wide fixing flange incorporates concentric grooves which enhance the bond with roofing felts or asphalt.

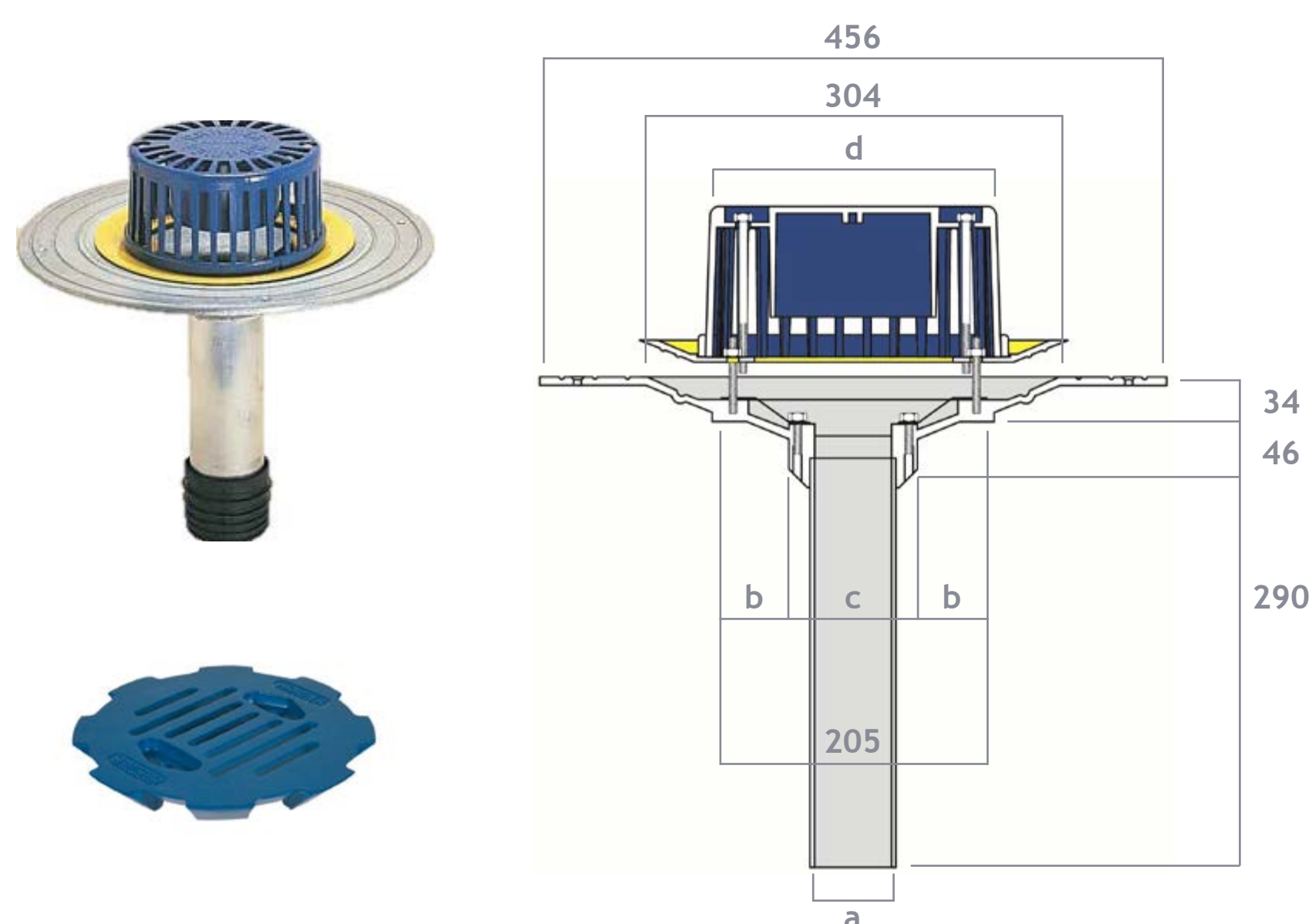
An LM6 aluminium silicon clamping ring, also has a ridged under-surface for improved bond with roofing membranes.

Two sealable ports in the outlet body are designed for injection of PU foam to fill the void between old and new outlet.

Connection to Pipework

The Retro-Gully may be used for any type of warm roof refurbishment and with any flat roof waterproofing system. 75mm and 100mm pipework options are Available, and will accommodate variations on pipe internal diameter from PVC through to cast iron pipe systems.

The AV Retro-Gully has been designed in conjunction with the Flat Roofing Alliance (FRA).

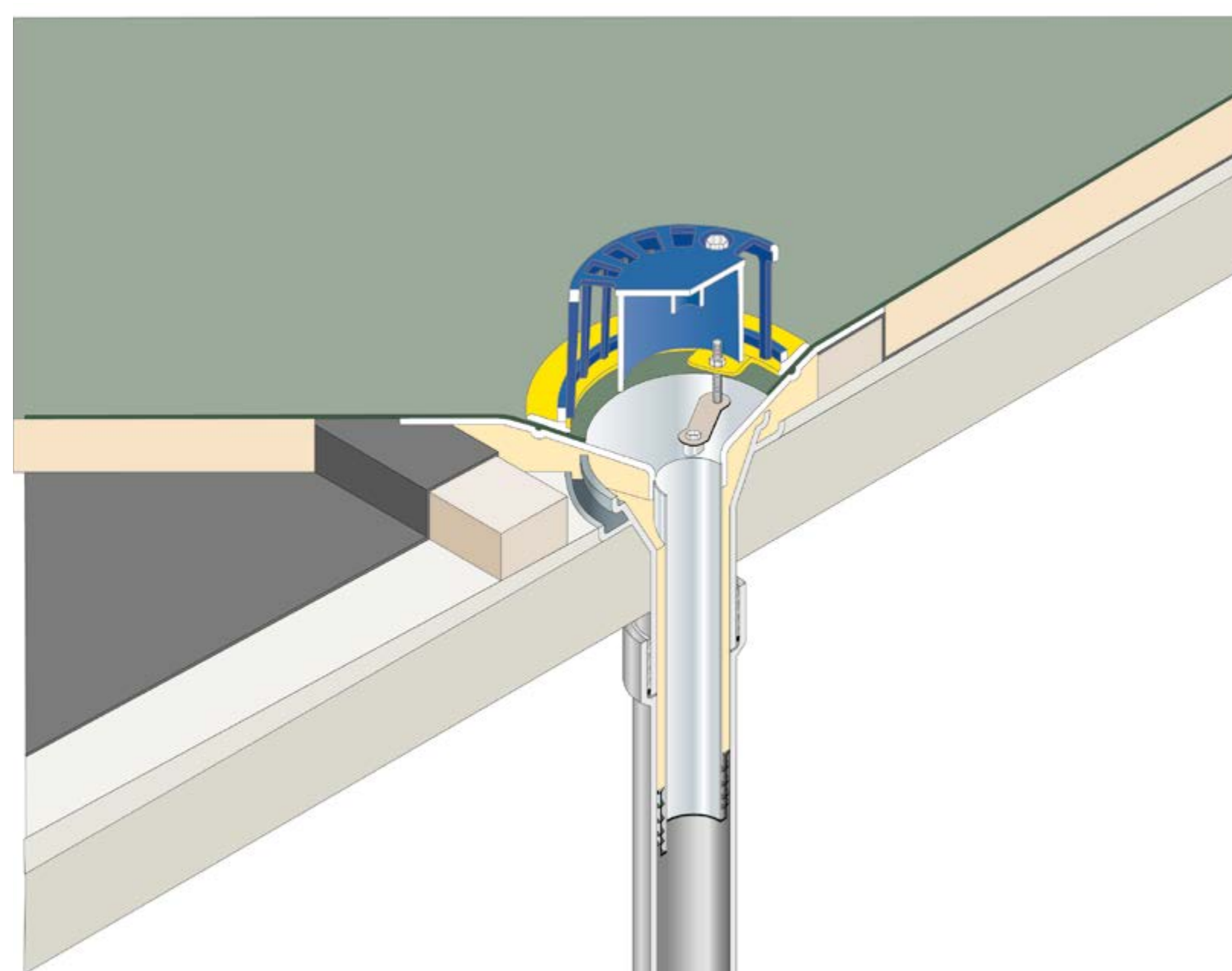


Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Grate Height (mm)	Product Code
75	63.5	55	95	137	4.63	5.4	86	RAV75
100	88.9	42	120	210	5.53	4.9	110	RAV100

For flat grate versions add suffix /F to the product code (See page 20) A range of accessories is available for use with special detail requirements (See page 20)

Existing pipe diameters for connection

Existing pipework internal diameter (mm)	Product Code
71.5 - 78.5	RAV75
97.0 - 104.0	RAV100



Flow Rate Note 1 (applies to all tables) Flow rates are in litres per second based on flow rate test data. Where tested flow rates are greater than pipe capacity limits of BS EN 12056, the pipe capacity limit has been shown. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity

Aluminium Roof Outlets - Balcony Detail Outlets

The Large Balcony outlet is ideal for use where larger balcony water catchment areas dictate the discharge requirements.



Large Balcony Outlet

Balcony outlets are suitable for direct connection to: Cast iron pipework to BS 416: 1973 or EN 877, PVC O-ring socketed pipe to BS 4514: 1983 (3BO and 4BO outlets only).

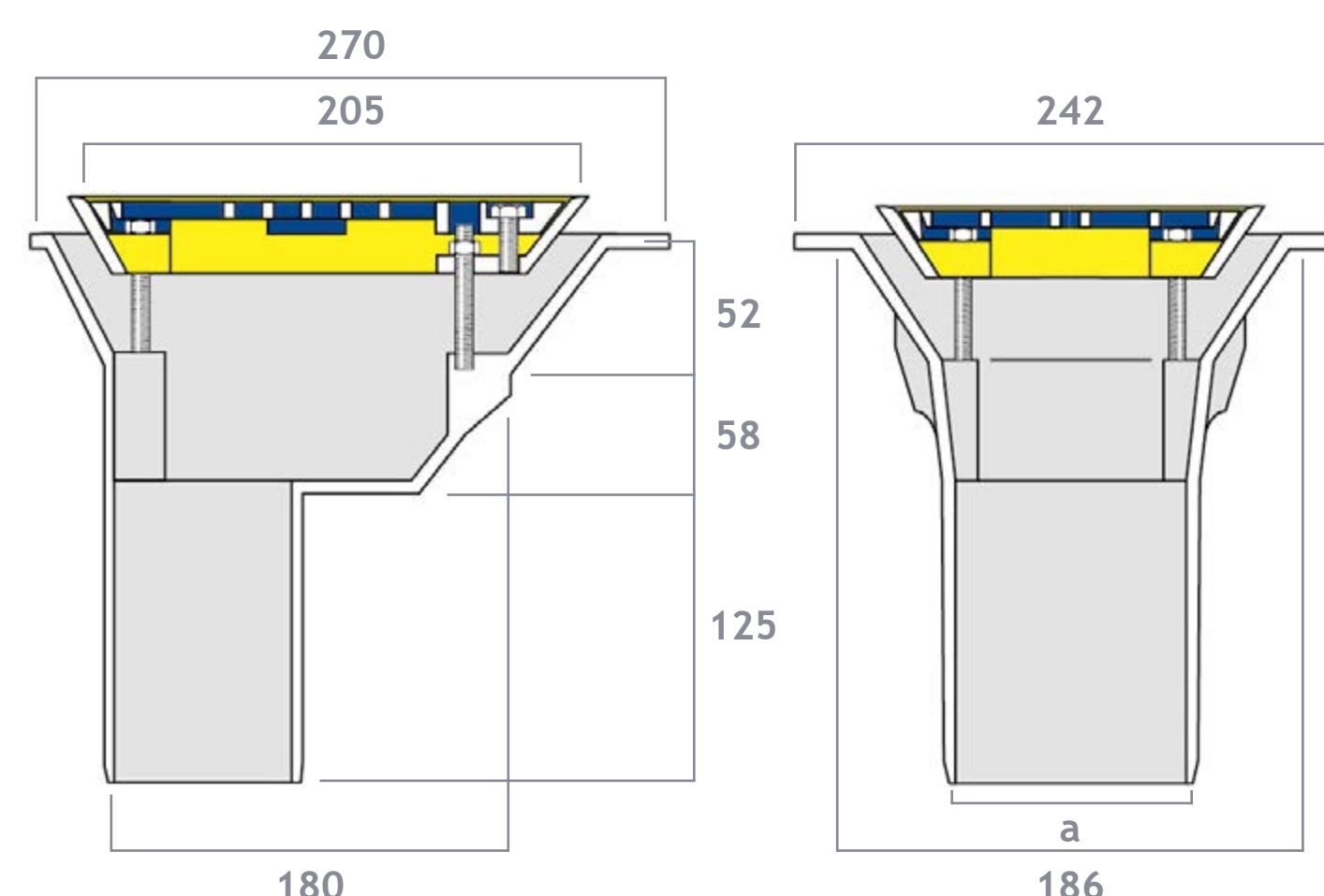
Balcony outlets can also be connected to Alumasc's aluminium Flushjoint and Heritage rainwater pipes. Flat grates can be supplied with holes punched out to receive 50, 75 or 100mm nominal bore rainwater downpipes. When ordering pre-punched grates, add the following suffixes shown in blue to the product codes:

2BO/**2H** for 50mm pipe
3BO/**3H** for 75mm pipe
4BO/**4H** for 100mm pipe

Alternatively, where grates are not supplied pre-punched, the hole can be cut on site by the installer.

The Balcony outlet can be used with an extension piece.

Please see Harmer couplings available (page 41).



Outlet Size (mm)	a (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50	60	1.69	2.8	2BO
75	83	4.97	3.1	3BO
100	110	8.41	3.3	4BO

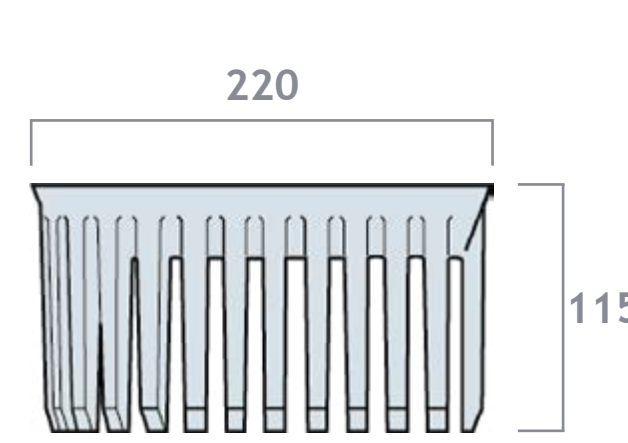
Flow Rate Note 1 (applies to all tables) Flow rates are in litres per second based on flow rate test data. Where tested flow rates are greater than pipe capacity limits of BS EN 12056, the pipe capacity limit has been shown. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity



Grate Extension Piece

The Grate Extension Piece is for applications where it is necessary to raise the level of the grate above the body of the outlet such as in inverted roof construction.

The extension piece can be cut down if necessary to suit the thickness of paving or tiles. This can be done easily on site with a hacksaw, or, if required, extension pieces can be trimmed prior to delivery. The Grate Extension Piece is supplied with one set of stainless steel extension studs per outlet.



Outlet Size (mm)	Product Code
50	BO/EP
75	BO/EP
100	BO/EP

Aluminium Roof Outlets - Balcony Detail Outlets



Large Balcony Extended Spigot Outlet

Balcony extended spigot outlets are suitable for direct connection to: Cast iron pipework to BS 416: 1973 or EN 877, PVC O-ring socketed pipe to BS 4514: 1983 (3BO and 4BO outlets only).

Balcony outlets can also be connected to Alumasc's aluminium Flushjoint and Heritage rainwater pipes. Flat grates can be supplied with holes punched out to receive 50, 75 or 100mm nominal bore rainwater downpipes. When ordering pre-punched grates, add the following suffixes shown in blue to the product codes:

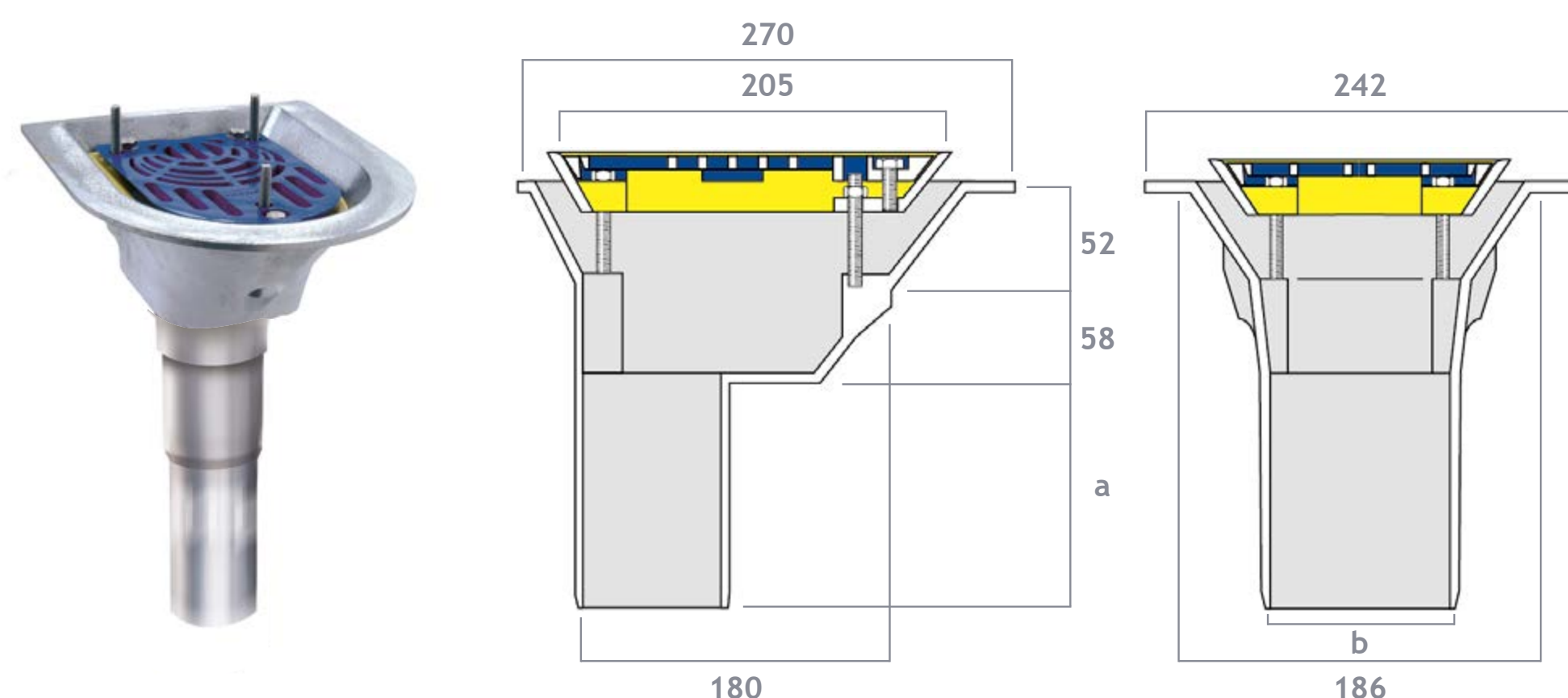
2BO/2H for 50mm pipe
3BO/3H for 75mm pipe
4BO/4H for 100mm pipe

Alternatively, where grates are not supplied pre-punched, the hole can be cut on site by the installer.

The balcony outlet can be used with an extension piece.

Please see harmer couplings available (page 41).

Flow Rate Note 1 (applies to all tables) Flow rates are in litres per second based on flow rate test data. Where tested flow rates are greater than pipe capacity limits of BS EN 12056, the pipe capacity limit has been shown. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity



Outlet Size (mm)	a (mm)	b (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50	200	63	1.69	2.9	2BO/EXT/200
50	400	63	1.69	3.1	2BO/EXT/400
50	600	63	1.69	3.2	2BO/EXT/600
50	800	63	1.69	3.3	2BO/EXT/800
50	1000	63	1.69	3.4	2BO/EXT/1000
75	200	82	4.97	3.4	3BO/EXT/200
75	400	82	4.97	3.6	3BO/EXT/400
75	600	82	4.97	3.9	3BO/EXT/600
75	800	82	4.97	4.2	3BO/EXT/800
75	1000	82	4.97	4.5	3BO/EXT/1000
100	200	110	8.41	3.9	4BO/EXT/200
100	400	110	8.41	4.4	4BO/EXT/400
100	600	110	8.41	5.0	4BO/EXT/600
100	800	110	8.41	5.6	4BO/EXT/800
100	1000	110	8.41	6.2	4BO/EXT/1000

Bespoke Lengths

All extended outlets come as standard with 200mm, 400mm, 600mm, 800mm and 1000mm spigots. For bespoke lengths please use the table below to specify the correct product code, and clearly state the dimension required when specifying or placing an order. For bespoke lengths a drawing for approval will be issued prior to manufacture. For example an AV400 with a spigot length of 362mm, please specify AV400/EXT/400 and clearly state 362mm spigot on your specification and/or order. If no specific dimension is provided, spigot length will be supplied as shown in column "e" of the product table.

Bespoke Spigot Length Required (mm)	Product Code Required
0-200	Code ending /200
201-400	Code ending /400
401-600	Code ending /600
601-800	Code ending /800
801-1000	Code ending /1000

Aluminium Roof Outlets - Parapet Downspouts

Harmer Roof Parapet Downspouts are designed to effectively discharge rainwater away from the building and avoid the problem of rainwater backtrack to the face of the wall. Parapet Downspouts can also be used in conjunction with parapet overflows.

Introduction

Harmer Roof Parapet Downspouts provide an attractive means of directing water away from the face of the building in such a way as to prevent the backtrack of rainwater from causing unsightly staining and damage.

Harmer Roof Parapet Downspouts can be used in combination with Alumasc’s Flushjoint and Heritage rainwater pipes as well as hoppers, and when colour co-ordinated, will add to the finished appearance of the building.

Application

Downspouts are ideally suited for use with Harmer Detail Two-Way outlets fitted with Harmer Threaded Spigot Adaptors. They can also provide a discreet means of discharge when used with parapet overflows.

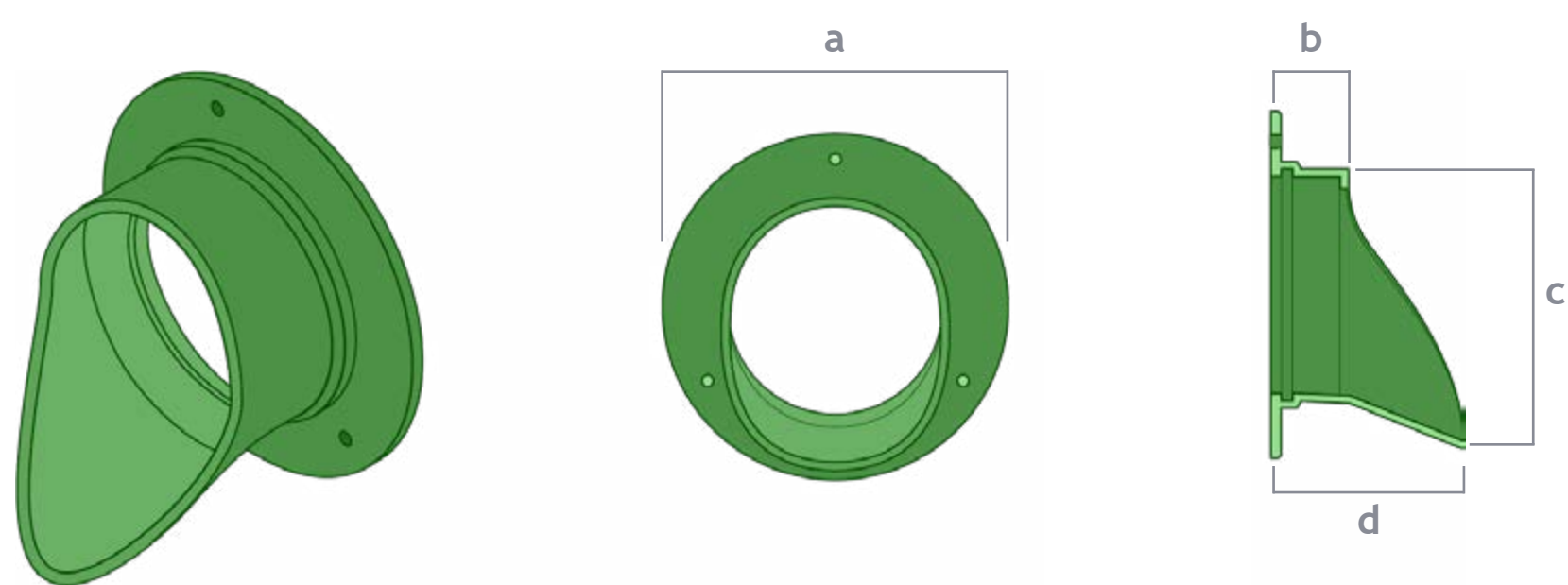
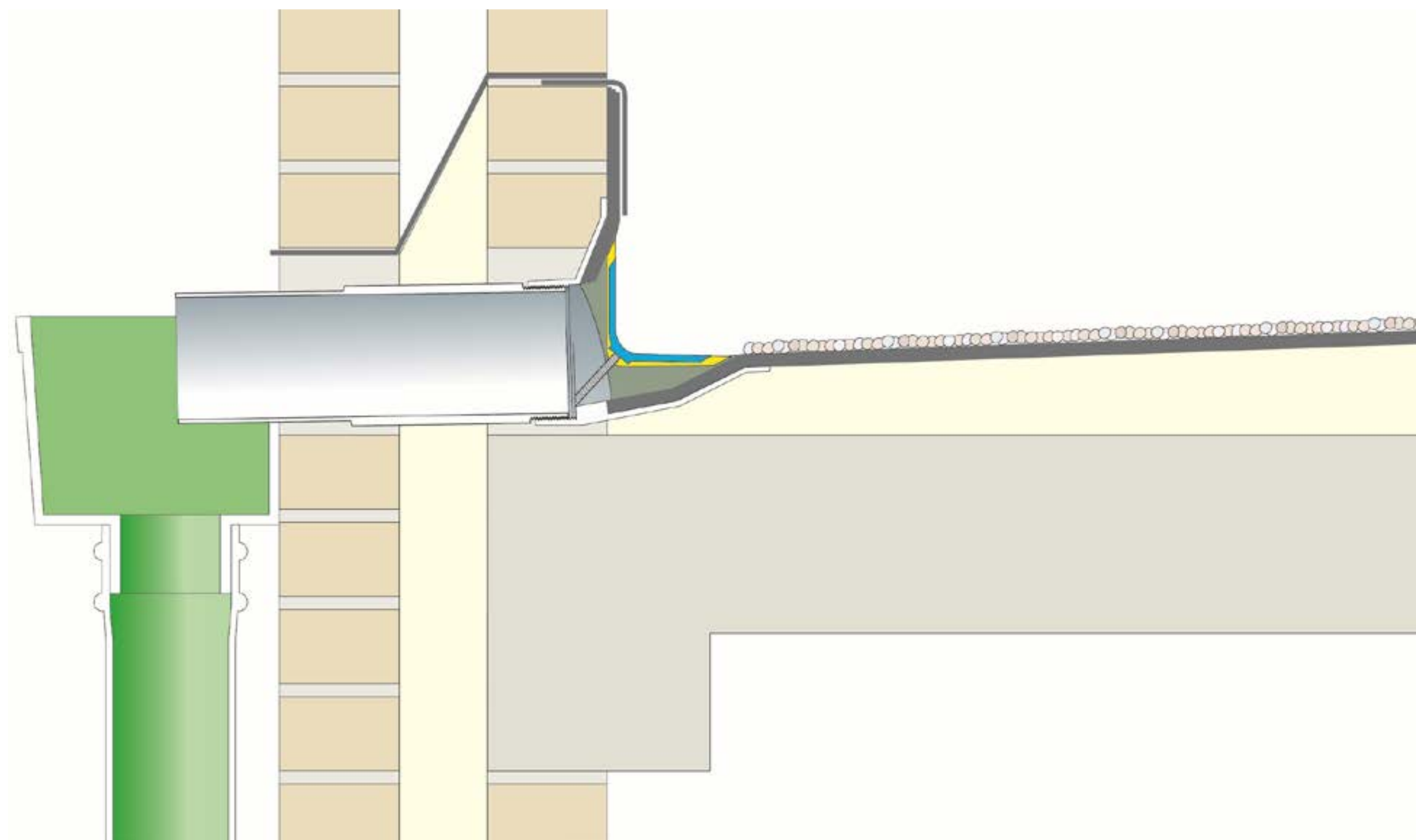
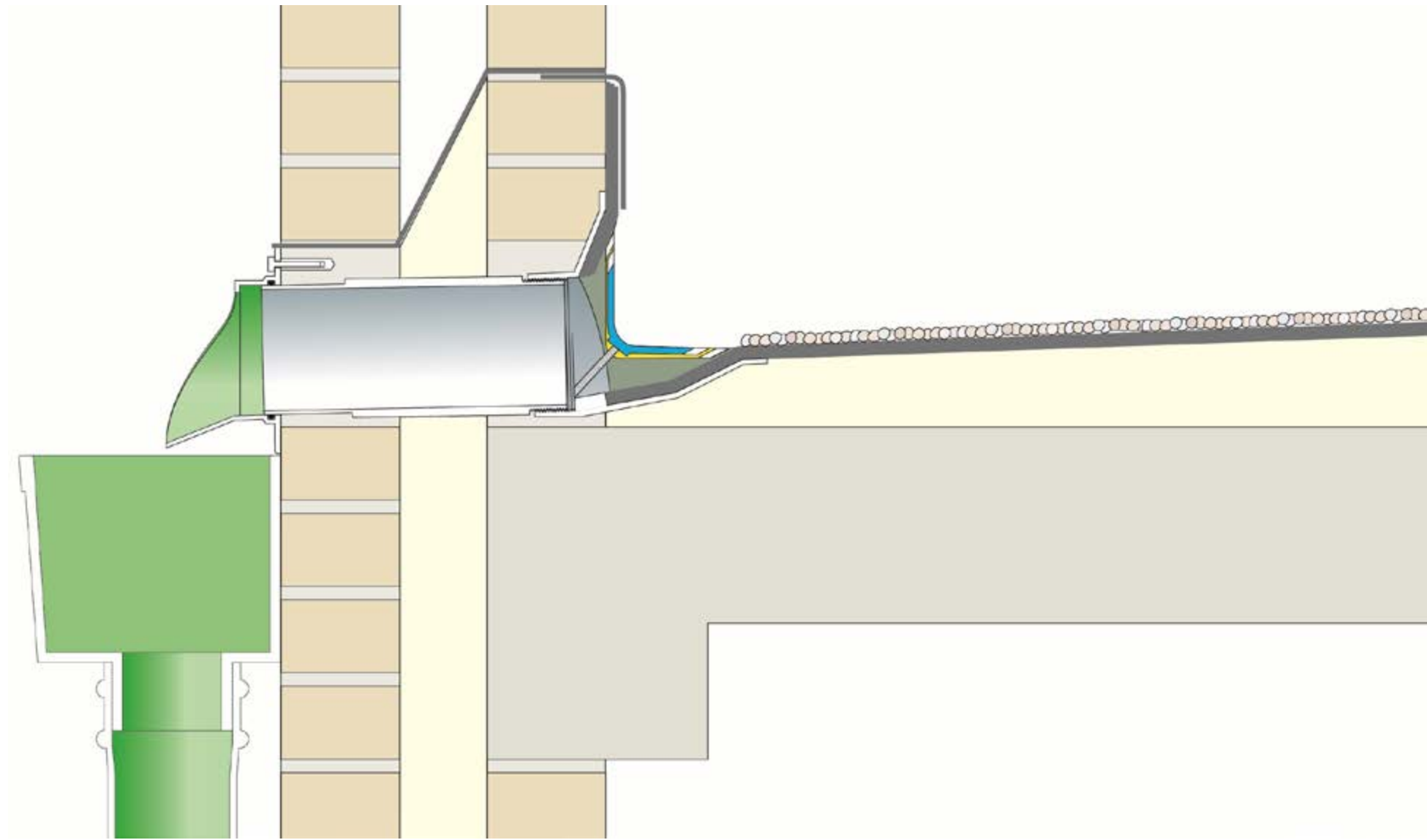
Material - Siliconised Cast Aluminium LM6

Finish

Aluminum downspouts are supplied in mill finish cast aluminium. Polyester powder coated finishes in Alumasc’s standard colours are available to match external building finishes or colour coated rainwater pipes and hoppers.

Connection

For ease of installation and perfect alignment, Harmer Downspouts push-fit connect to standard 110mm diameter plain ended pipe using an “O” ring seal and mechanical fixing into masonry.



Outlet Size (mm)	Material	a (mm)	b (mm)	c (mm)	d (mm)	Weight (kg)	Product Code
100	Aluminium	180	40	146	100	0.5	ADS/4*

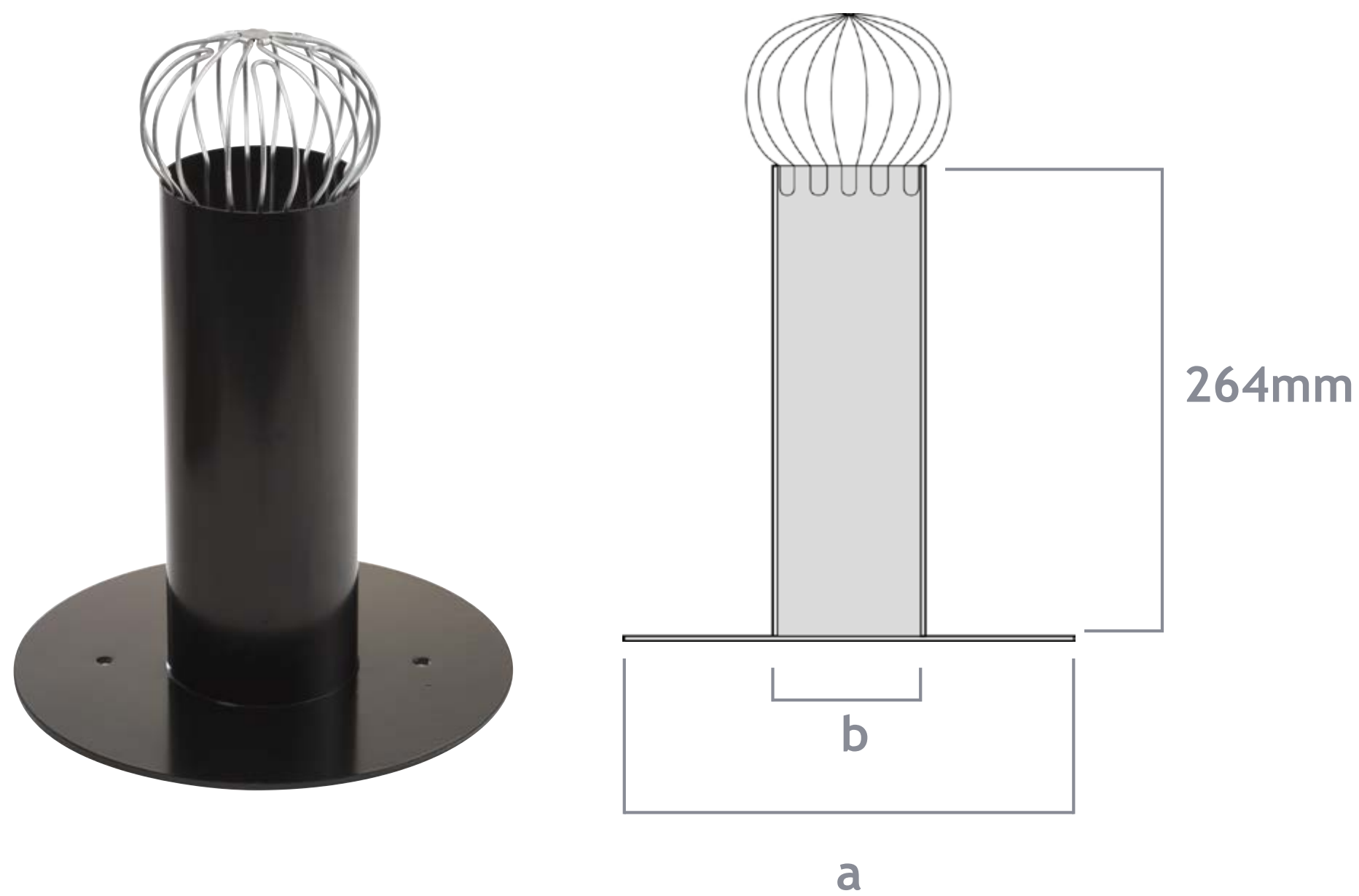
**Also available in polyester powder coated finish to Alumasc standard colour range or RAL.*

Aluminium Roof Outlets - Overflow Outlets



Overflow Outlet

The Overflow assembly simply bolts onto the clamp where the grate normally sits. Made from aluminium, the overflow is easily cut to the required length on site. The balloon grate can be re-fitted back into the overflow inlet to protect the outlet from debris. In accordance with BS EN 12056:2000 & BS EN 8579:2020



Outlet Type	a (mm)	b (mm)	Weight (kg)	Product Code
AV200 and AV300	212	76	0.5	OF/23
AV400 and AV600	290	102	0.6	OF/46

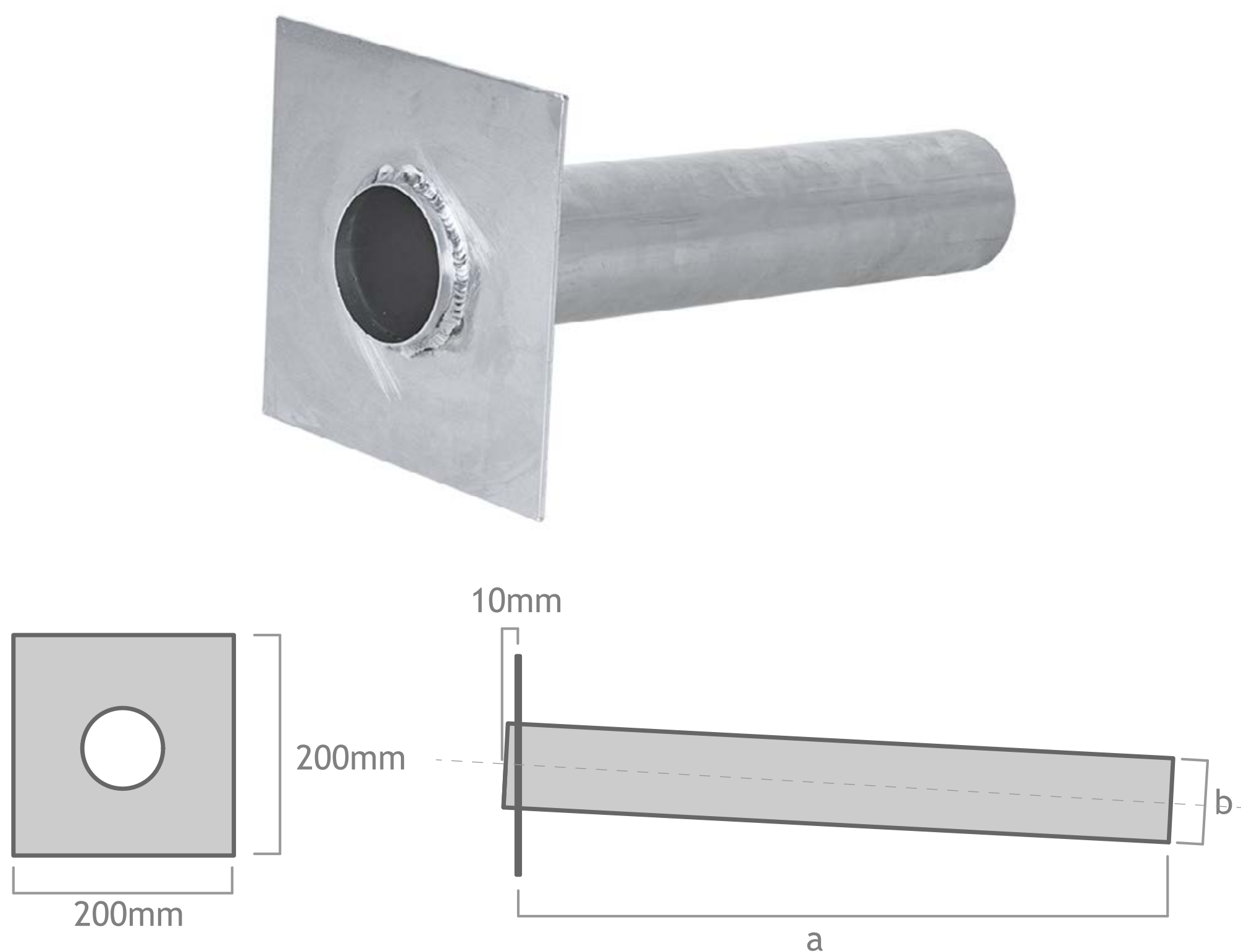


Horizontal Overflow Outlet

The Horizontal Overflow Outlet is designed to be installed through a parapet wall above the water level at which the roof area has been designed to.

For example this would typically be installed at 50mm above the waterproofing layer if the roof area calculations were completed to a 35mm head of water.

This overflow is not designed to take the full capacity of the system, but to be a visual indicator that there is a blockage or maintenance required with the primary drainage system. In accordance with BS EN 12056:2000 & BS EN 8579:2020.

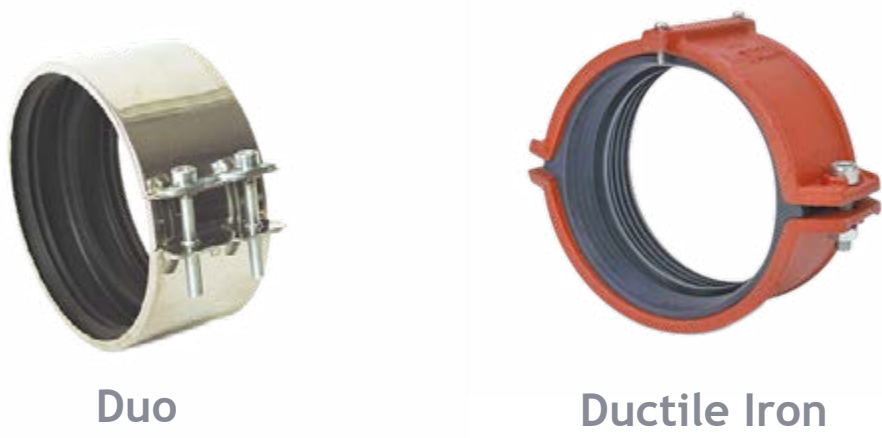


Outlet Size (mm)	a (mm)	b (mm)	Weight (kg)	Product Code
50	400	50	0.6	OVER/50/400
50	600	50	0.75	OVER/50/600
75	400	76.5	0.7	OVER/75/400
75	600	76.5	0.9	OVER/75/600

Aluminium Roof Outlets - Accessories & Connections

Harmer Couplings

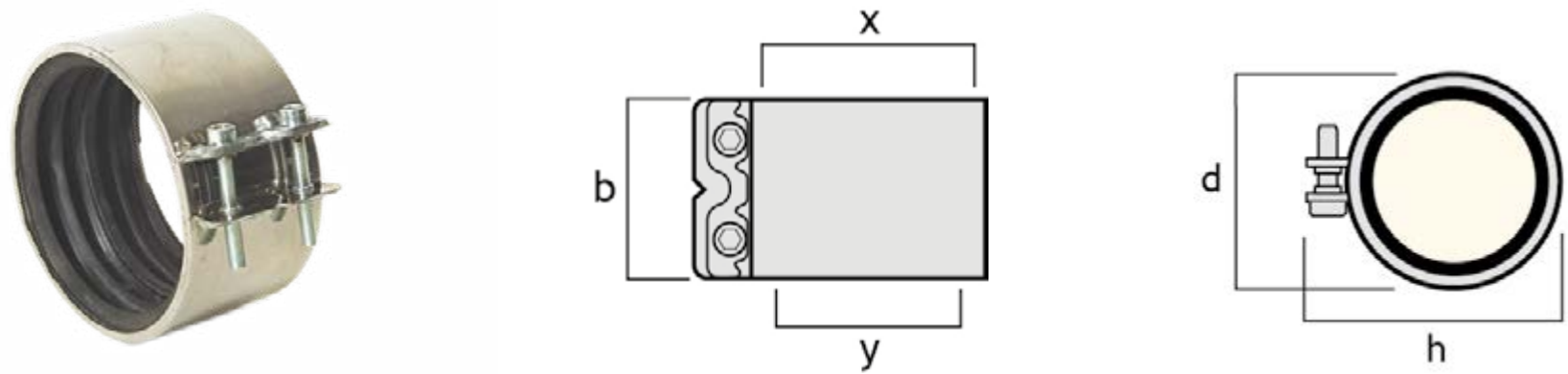
Harmer SML couplings are available in either ductile iron or stainless steel and meet the requirements of BS EN 877. The internal pressure performance of couplings ranges from 0.5 bar to 10 bar. All couplings feature EPDM elastomeric seals as standard. Neoprene rubber seals are available on request.



Coupling Type	Pipe Diameter (mm)	Product Code
SML Ductile Iron	50	235849
SML Ductile Iron	100	235357
SML Ductile Iron	150	235358
SML Duo Stainless Steel	50	3140/50
SML Duo Stainless Steel	100	3140/100
SML Duo Stainless Steel	150	3140/150

Adaptor Couplings

The Stainless Steel Harmer SML Adaptor coupling is used when it is necessary to make a connection between BS EN 877 lightweight cast iron 'soil' systems, conventional cast iron thick wall 'drain' systems and 3"/83mm imperial pipework. This coupling does not incorporate any provision for electrical continuity.



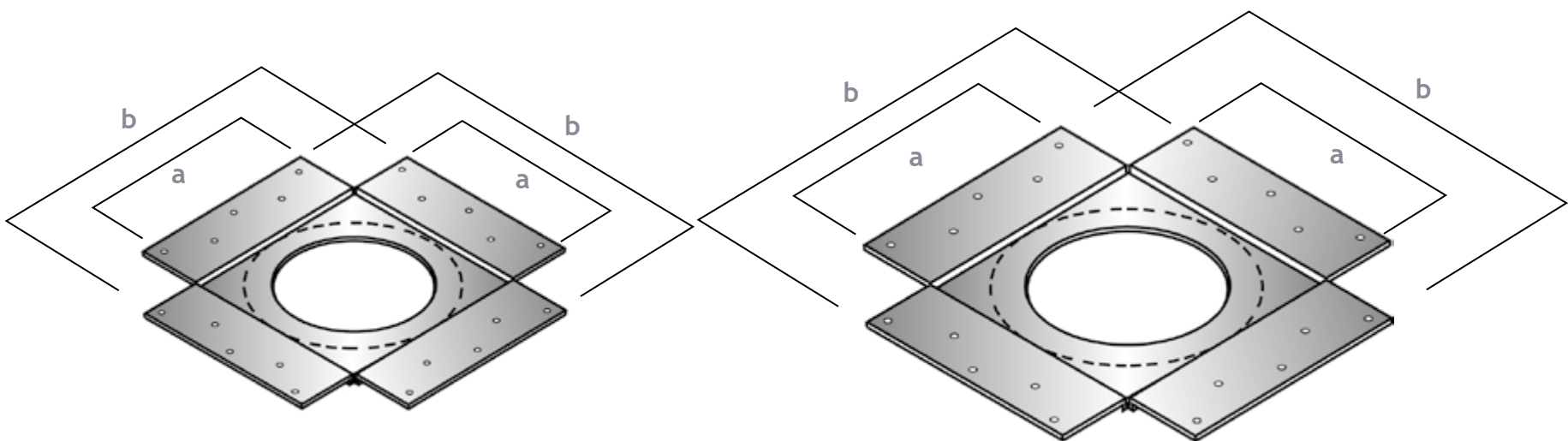
Pipe Dia (mm)	Bolts	d	h	b	x	y	Product Code
70	2	95	110	70	83-84	75-76	3151/010075
100	2	130	145	70	116-119	108-113	3102/100
150	4	180	215	70	168	159	3102/150

Metal Deck Support Plates

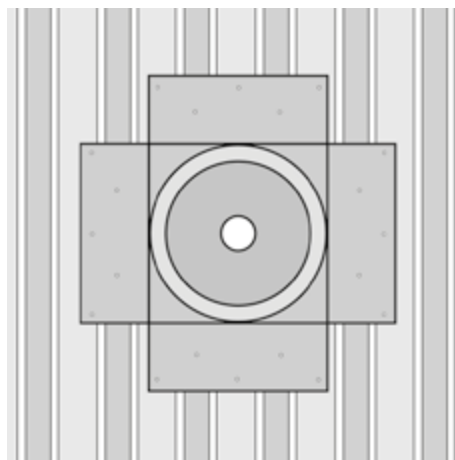
Recommended for use where Harmer cast aluminium rainwater outlets are installed in metal deck roofs. They are designed to provide a secure and stable junction between the roof deck and rainwater outlet.

Materials

The Support Plates are manufactured from 2mm galvanised steel sheet, finished in epoxy primer. They are suitable for installation in all types of metal deck roofing.



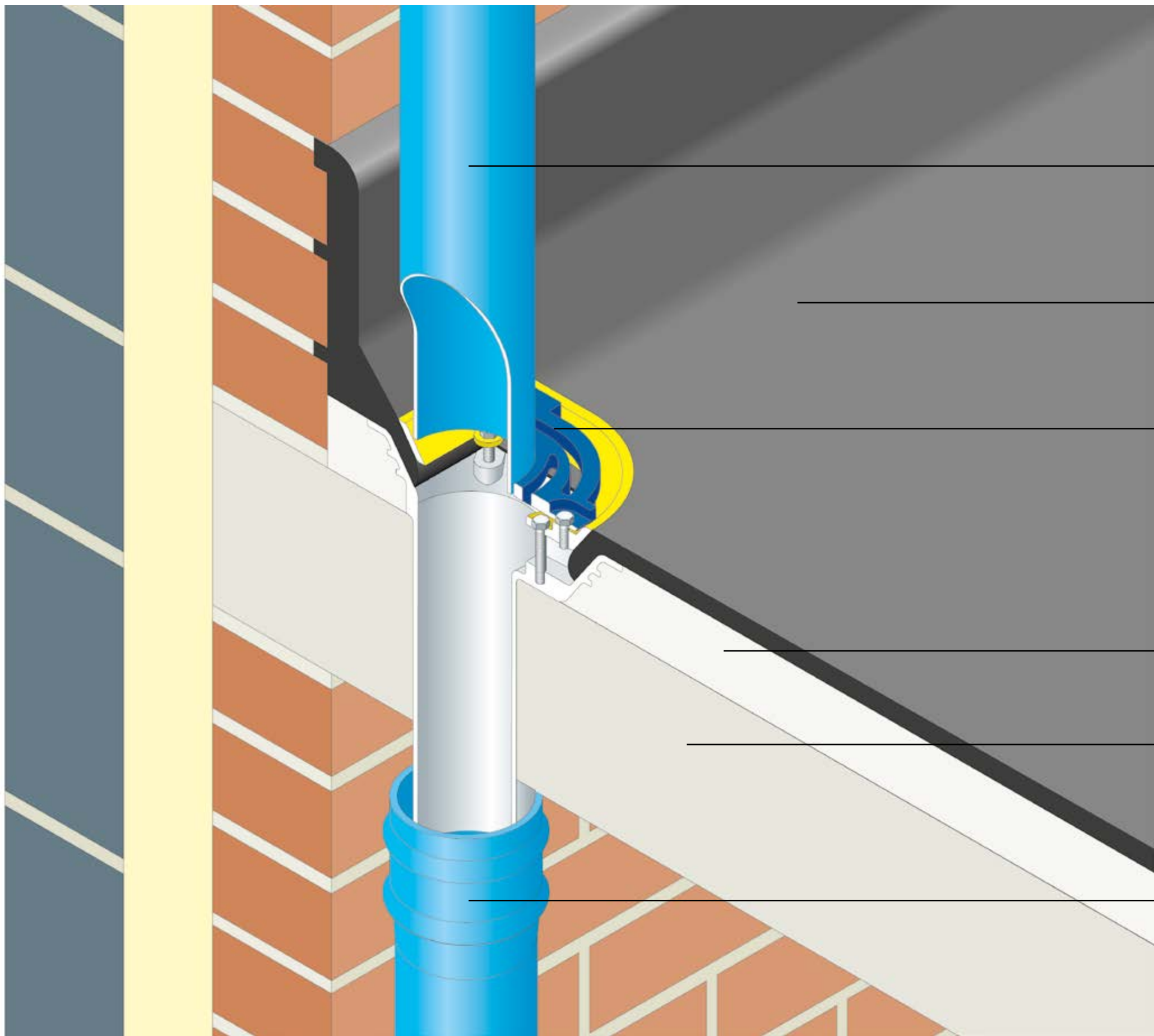
Plan view of Harmer outlet body in the Metal Deck Support Plate fixed to the structural metal deck.



Outlet Size (nominal)	a (mm)	b (mm)	Weight (kg)	Product Code
Medium Sump	335	490	2.7	SP1
Large Sump	415	570	3.5	SP2

Aluminium Roof Outlets - Application Details

Harmer Mini Balcony Outlet with Standard Grate



- Alumasc aluminium rainwater pipe
- Water proofing membrane
- Harmer Mini Balcony outlet with grate hole-punched to receive rainwater downpipe
- Screed to falls
- Concrete slab
- Alumasc Heritage aluminium pipe system

