

Aluminium Roof Outlets - Introduction to Detail Outlets

The Harmer Roof Detail range includes outlets to cover all the awkward detailing situations that occur in building design and in refurbishment.

Main Characteristics

Harmer Roof Detail outlets incorporate all the key features inherent in the Alumasc design approach to trouble-free flat roof drainage:

- Integral and generously proportioned sump ensures an adequate head of water for a steady flow into the rainwater pipe.
- Clamp fixing of the waterproof membrane to the sides of the sump completely eliminates any risk of leakage through capillary action or back pressure.
- Elimination of flashings means there is nothing which might reduce the effective bore of the rainwater pipe and restrict the flow of water.
- Connection to all standard sizes of pipework.

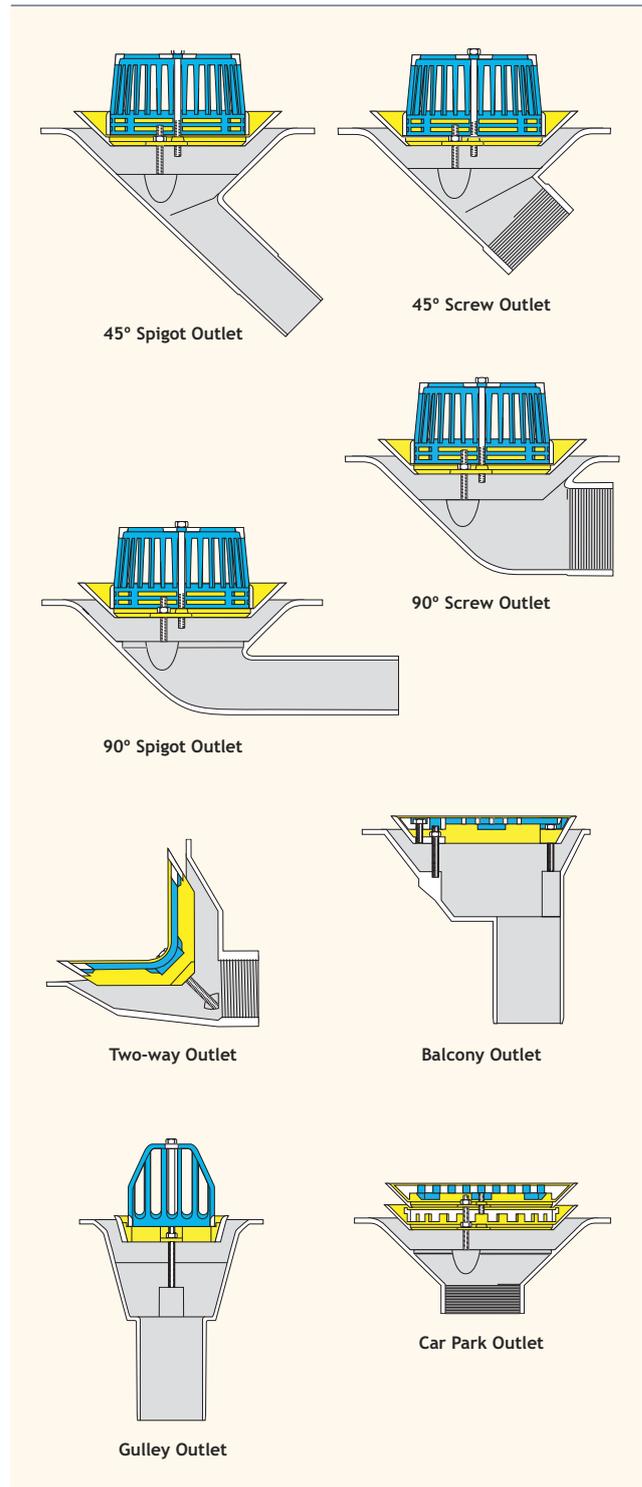
Areas of Application

Harmer Roof Detail includes outlets specially designed for the following situations:

- Spigot or Screw threaded aluminium outlets cast in LM6 aluminium alloy for connection to drainage pipework at 45° and 90°.
- Two-way screw threaded outlets cast in LM6 aluminium alloy for connection to pipework through a parapet. Two-way outlets can be installed to provide either vertical or horizontal take-off, and are particularly suitable for parapet type applications.
- Balcony spigot outlets cast in LM6 aluminium alloy for balcony drainage or similar applications. Supplied with a flat grate the balcony outlet is ideal for use in areas of pedestrian access. Grates can be hole punched to receive 50, 75 or 100mm diameter rainwater down pipes.
- Gully spigot outlets cast in LM6 aluminium alloy for narrow gutter and gully drainage where an outlet narrower than the standard AV outlet is required.
- Screw threaded car park and service deck drains cast in LM6 aluminium alloy for drainage requirements in multi-level car park and utility areas.

Bespoke Manufacture

Rainwater outlets can be modified to have extended pipework as well as pipe conversions to co-ordinate with Alumasc colour coated, external rainwater pipe systems. Contact Harmer Technical Department for all bespoke requirements.

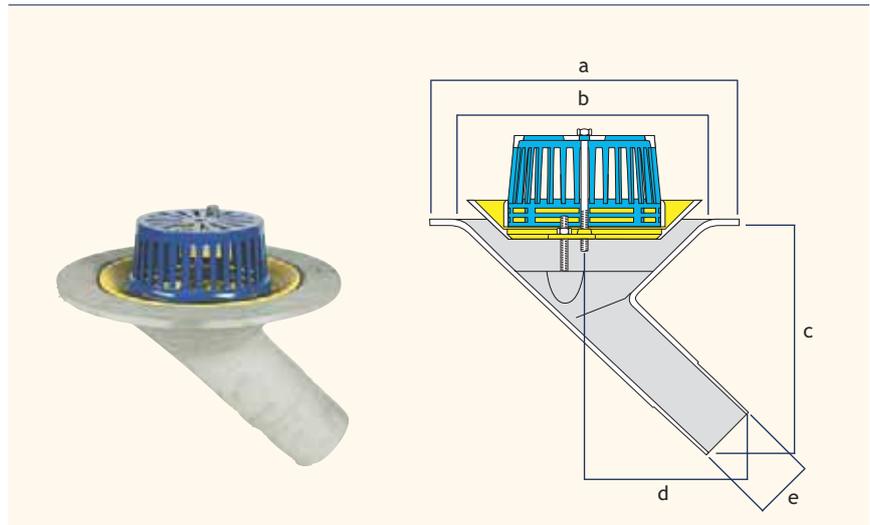


Aluminium Roof Outlets - 45° Detail Outlets

Harmer Roof 45° Detail outlets are designed for use with flat roof structures using either insitu cast concrete, timber and lightweight metal deck construction. Harmer Roof outlets are ideal for connection to continuous waterproofing systems using single ply membranes, mastic asphalt or high performance built up felt.

45° Spigot Outlet - Domical Grate

45° Spigot outlets are suitable for connection to cast iron pipework to BS EN 877 and BS 416, HDPE pipework and PVC pipe to BS 4514 and BS EN 1329-1. Please see pipework connections on page 34 for appropriate Harmer coupling selection.



Flow Rate Note 1 (applies to all tables)

Flow rates are in litres per second to rainwater pipe capacity limits of BS EN 12056. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity.

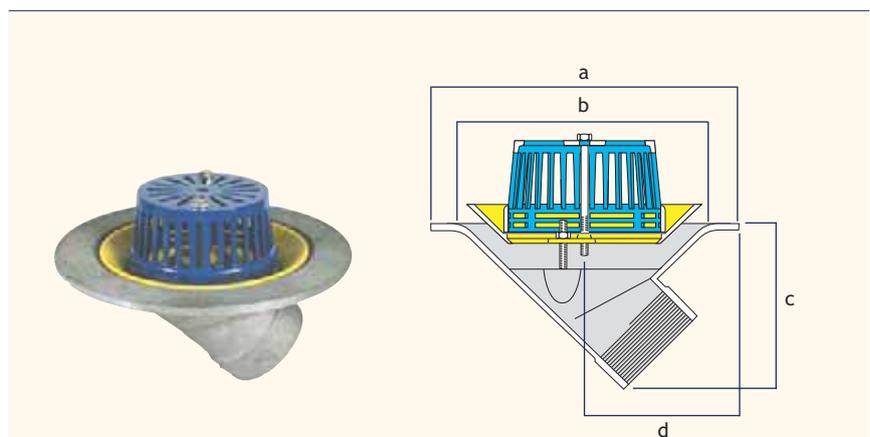
Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50	305	229	229	175	62	1.69	3.6	245
75	305	229	235	175	87	4.97	4.2	345
100	372	305	273	191	114	10.66	6.0	445

For flat grate versions add suffix /F to the product code (See page 21)

A range of accessories is available for use with special detail requirements (See pages 21, 32 and 33)

45° Threaded Outlet - Domical Grate

45° Screw outlets have a female socket with parallel thread to BS EN 10226-1 for direct connection to threaded tube conforming with BS EN 10226-1. This tube is supplied with BS EN 10255 taper male thread which ensures a completely watertight joint when screwed home into the socket outlet. Threaded outlets are particularly recommended where a connection to the outlet occurs within the thickness of a concrete slab. In such cases, a threaded connection will create a completely gastight seal within the slab. Harmer Roof AV threaded outlets can be connected to socketed and socketless cast iron pipework, HDPE pipework and PVC pipework by means of the Harmer Roof Threaded Spigot Adaptor with appropriate Harmer coupling. (See page 33).



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50	305	229	159	109	1.69	3.8	245T
75	305	229	159	109	4.97	3.5	345T
100	372	305	186	113	10.71	6.0	445T

For flat grate versions add suffix /F to the product code (See page 21)

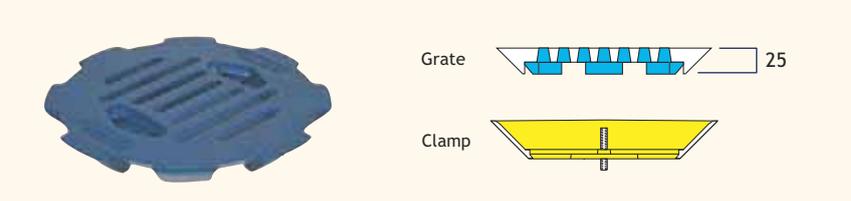
A range of accessories is available for use with special detail requirements (See pages 21, 32 and 33)

Aluminium Roof Outlets - 45° Detail Outlets

Flat Grate

Flat grates should be used if the outlet occurs in an area which is subject to pedestrian traffic. These grates are also designed for use with Harmer Modulock drainage system where concealed rainwater outlets are used. (See page 38)

To specify or order, add suffix /F to the product codes on page 20, e.g 100mm 45° Spigot outlet with Flat Grate: 445/F.



Outlet Size (kg)	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
50	1.69	1.5	0.8	/F
75	4.97	1.5	0.8	/F
100	10.71	1.5	1.2	/F
150	15.55	1.5	1.2	/F

Terrace Grates

Terrace Grates are designed for installation in terrace tiles or brick paviors. They should be used in connection with Grate Extension Pieces which raise the Terrace Grate to the level of the paved surface. The radius slots in the grate allow for movement through 90° permitting adjustment to suit surrounding paving prior to final tightening.



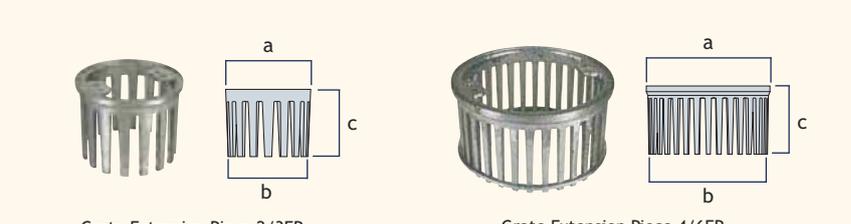
Outlet Size (mm)	a (mm)	b (mm)	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Product Code
50	150	25	1.69	1.5	0.7	2/3TG
75	150	25	4.97	1.5	0.7	2/3TG
100	232	25	10.71	1.5	1.6	4/6TG
150	232	25	15.55	1.5	1.6	4/6TG

Grate Extension Pieces

Grate Extension Pieces are 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. (See page 38)

The Grate Extension Pieces will accept domical grates and terrace grates but not standard flat grates. Terrace Grates can be used only in connection with grate extension pieces. The extension pieces 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.

Grate Extension Pieces are supplied with one set of stainless steel extension studs per outlet.



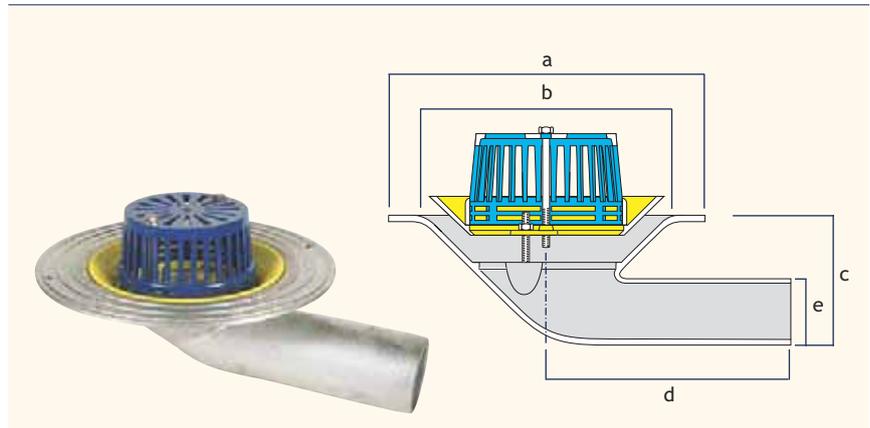
Outlet Size (mm)	a (mm)	b (mm)	c (mm)	Weight (kg)	Product Code
50	161	150	128	0.7	2/3EP
75	161	150	128	0.7	2/3EP
100	233	222	128	1.3	4/6EP
150	233	222	128	1.3	4/6EP

Aluminium Roof Outlets - 90° Detail Outlets

Harmer Roof 90° Detail outlets are designed for use with flat roof structures using either insitu cast concrete, timber and lightweight metal deck construction. Harmer Roof outlets are ideal for connection to continuous waterproofing systems using single ply membranes, mastic asphalt or high performance built up felt.

90° Spigot Outlet - Domical Grate

90° Spigot outlets are suitable for direct connection to cast iron pipework to BS EN 877 and BS 416, HDPE pipework and PVC O-ring socketed pipe to BS 4514 and BS EN 1329-1. Please see pipework connections on page 34 for appropriate Harmer coupling selection.



Flow Rate Note 1 (applies to all tables)

Flow rates are in litres per second to rainwater pipe capacity limits of BS EN 12056. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity.

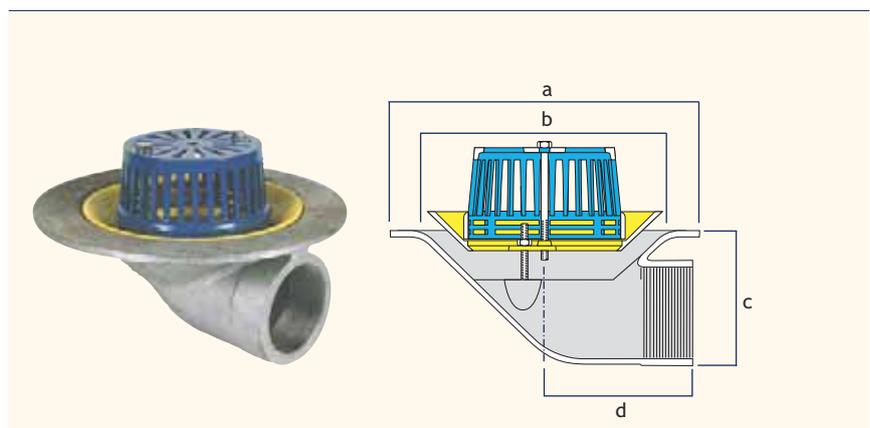
Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50	305	229	124	232	62	1.69	4.0	290
75	329	229	121	267	83	3.31	3.8	390
100	450	305	142	285	110	7.19	5.5	490

For flat grate versions add suffix /F to the product code (See page 23)

A range of accessories is available for use with special detail requirements (See pages 23, 32 and 33)

90° Threaded Outlet - Domical Grate

90° Screw outlets have a female socket with parallel thread to BS EN 10226-1 for direct connection to threaded tube conforming with BS EN 10226-1. This tube is supplied with BS EN 10255 taper male thread which ensures a completely watertight joint when screwed home into the socket outlet. Threaded outlets are particularly recommended where a connection to the outlet occurs within the thickness of a concrete slab. In such cases, a threaded connection will create a completely gastight seal within the slab. Harmer Roof AV threaded outlets can be connected to socketed and socketless cast iron pipework, HDPE pipework and PVC pipework by means of the Harmer Roof Threaded Spigot Adaptor with appropriate Harmer coupling. (See page 33).



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50	305	229	127	140	1.69	3.9	290T
75	305	229	127	140	3.39	3.7	390T
100	356	305	172	152	7.29	5.5	490T
150	356	305	225	152	10.01	7.0	690T

For flat grate versions add suffix /F to the product code (See page 23)

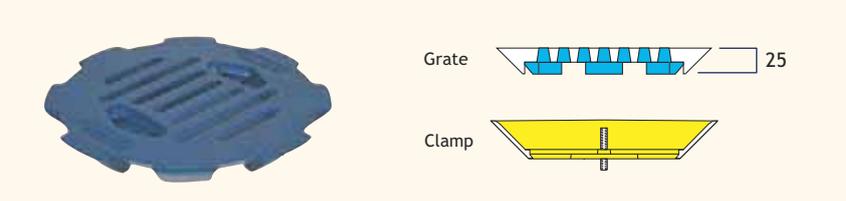
A range of accessories is available for use with special detail requirements (See pages 23, 32 and 33)

Aluminium Roof Outlets - 90° Detail Outlets

Flat Grate

Flat grates should be used if the outlet occurs in an area which is subject to pedestrian traffic. These grates are also designed for use with Harmer Modulock drainage system where concealed rainwater outlets are used. (See page 38)

To specify or order, add suffix /F to the product codes on page 22, e.g 100mm 90° Spigot outlet with Flat Grate: 490/F.



Outlet Size (kg)	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
50	1.69	1.5	0.8	/F
75	4.97	1.5	0.8	/F
100	10.71	1.5	1.2	/F
150	15.55	1.5	1.2	/F

Terrace Grates

Terrace Grates are designed for installation in terrace tiles or brick paviors. They should be used in connection with Grate Extension Pieces which raise the Terrace Grate to the level of the paved surface. The radius slots in the grate allow for movement through 90° permitting adjustment to suit surrounding paving prior to final tightening.



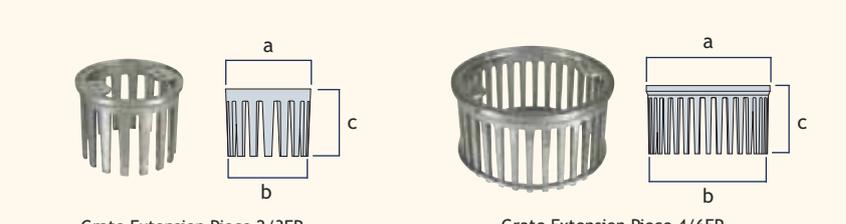
Outlet Size (mm)	a (mm)	b (mm)	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Product Code
50	150	25	1.69	1.5	0.7	2/3TG
75	150	25	4.97	1.5	0.7	2/3TG
100	232	25	10.71	1.5	1.6	4/6TG
150	232	25	15.55	1.5	1.6	4/6TG

Grate Extension Pieces

Grate Extension Pieces are 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. (See page 38)

The Grate Extension Pieces will accept domical grates and terrace grates but not standard flat grates. Terrace Grates can be used only in connection with grate extension pieces. The extension pieces 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.

Grate Extension Pieces are supplied with one set of stainless steel extension studs per outlet.



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	Weight (kg)	Product Code
50	161	150	128	0.7	2/3EP
75	161	150	128	0.7	2/3EP
100	233	222	128	1.3	4/6EP
150	233	222	128	1.3	4/6EP

Aluminium Roof Outlets - Two-Way Detail Outlets

Harmer Roof Two-Way Detail outlets are designed for applications where an angle is formed by the intersection of vertical and horizontal surfaces (for example, where a balcony or roof meets a parapet wall). They can be installed to provide either vertical or horizontal run-off and are suitable for use with most types of waterproofing membrane.

Two-Way Detail Outlets

Two-Way Detail outlets have a female socket with parallel thread to BS EN 10226-1 for direct connection to threaded tube conforming with BS EN 10226-1. This tube is supplied with BS EN 10255 taper male thread which ensures a completely watertight joint when screwed home into the socket outlet. Screw outlets are particularly recommended where a connection to the outlet occurs within the thickness of a concrete slab. In such cases a threaded connection, achieved by use of a Harmer Roof Threaded Spigot Adaptor, will create a completely gas-tight seal within the slab. Harmer Two-Way Detail outlets can be connected to socketed and socketless cast iron pipework, HDPE pipework and PVC pipework by means of the Harmer Roof Threaded Spigot Adaptor with appropriate Harmer coupling. (See page 33).

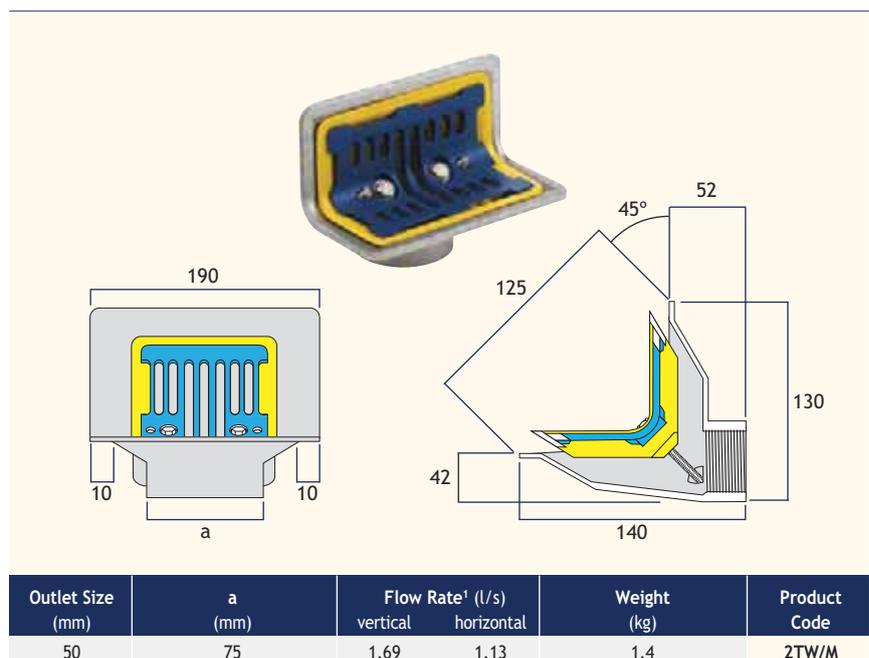


Mini Two-Way

Specially designed for connection to 50mm pipework in situations where the drainage requirement is small, such as domestic balconies. Outlet connection is 2" BSP thread.

Flow Rate Note 1 (applies to all tables)

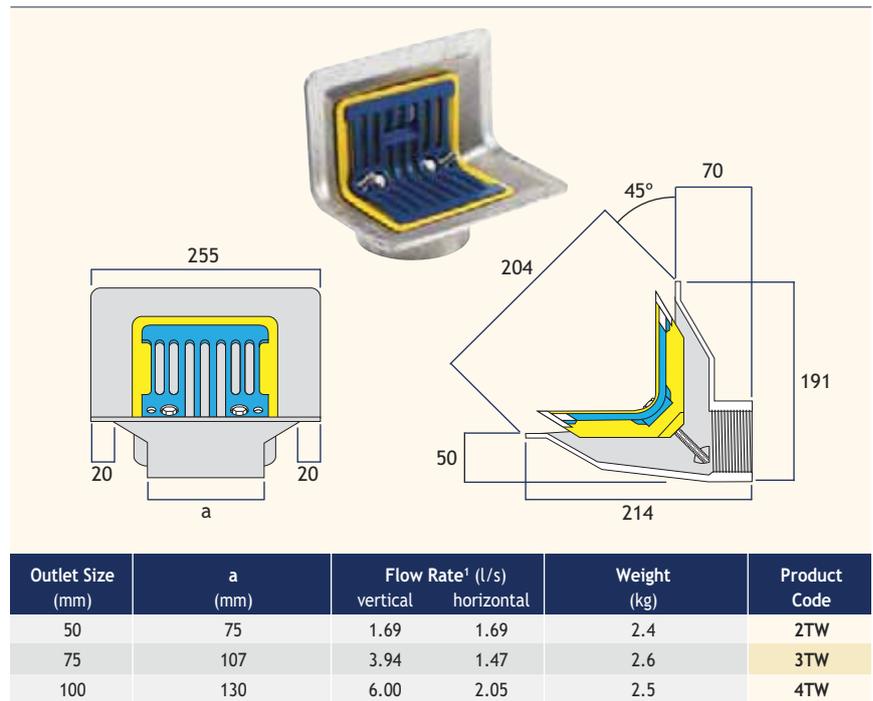
Flow rates are in litres per second to rainwater pipe capacity limits of BS EN 12056. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity.



Aluminium Roof Outlets - Two-Way Detail Outlets

Regular Two-Way

The Regular Two-Way is designed for use in many applications, the sump is compact yet provides adequate drainage for most parapet applications, it has three outlet options in 2", 3", and 4" BSP thread.



Large Two-Way

The Large Two-Way is designed for use on large surface drainage areas where 150mm outlets are required. Outlet connection is 6" BSP thread.

