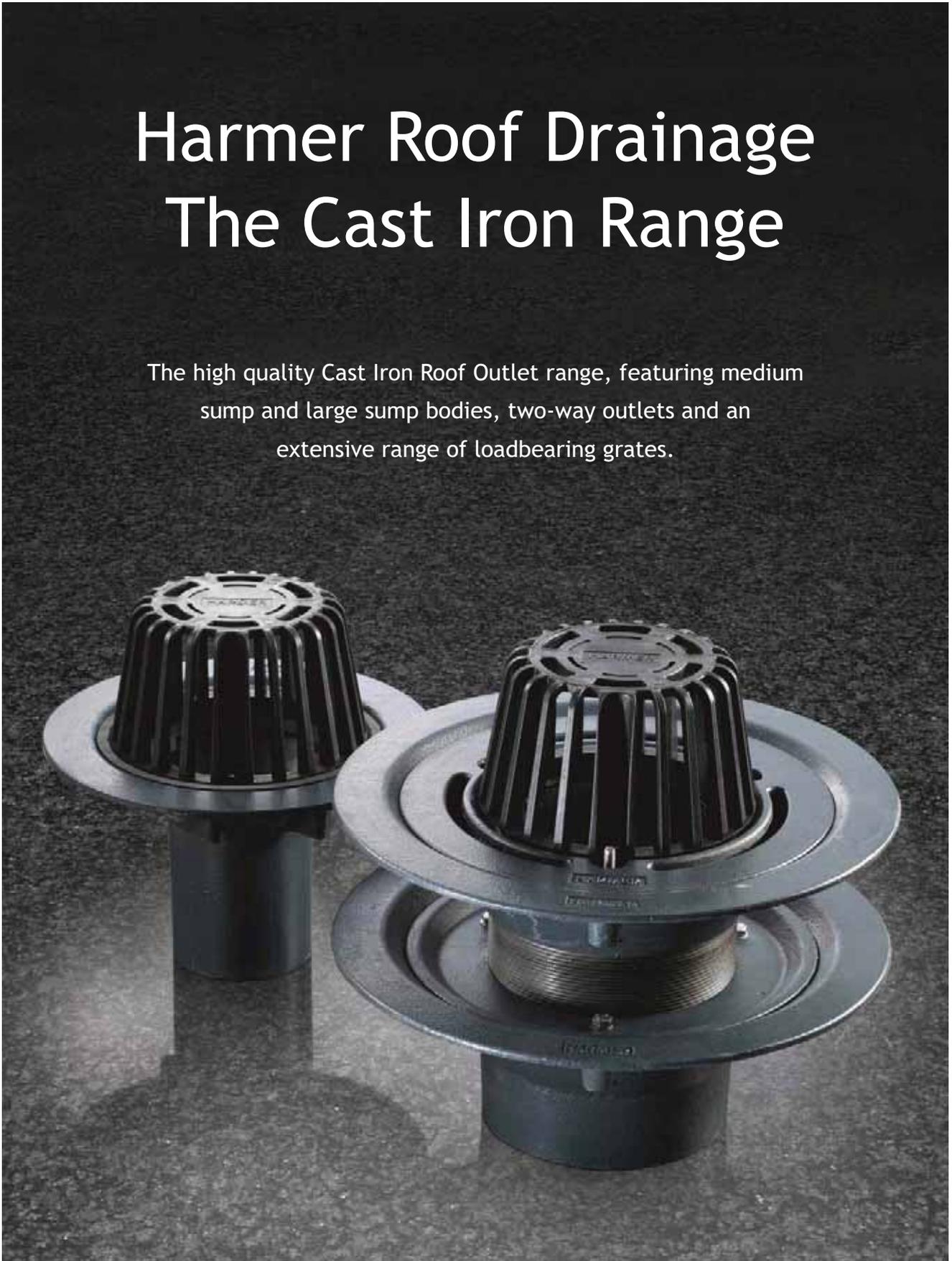


Harmer Roof Drainage The Cast Iron Range

The high quality Cast Iron Roof Outlet range, featuring medium sump and large sump bodies, two-way outlets and an extensive range of loadbearing grates.



Cast Iron Roof Outlets - Benefits

Harmer Cast Iron Roof outlets provide a practical solution to many building drainage applications. Inherently strong, cast iron is an ideal choice for load-bearing applications.

Compliances

- The Harmer Roof Cast Iron range is cast to BS EN 1561 and are suitable for most types of flat roof drainage applications
- Designated load rating up to 12.5 tonnes
- Drainage flow performance to BS EN 12056-3

Flow Performance

- Medium and Large Sump outlet bodies are available with varying flow rate capacity to discharge requirements and building design
- Two-Way Parapet outlets and Downspouts are available for connection to external rainwater systems

Robust and Secure

- The crystallised nature of cast iron gives the material very high strength and robustness. Once installed, cast iron components resist impact damage even in exposed areas, such as vehicular trafficked areas
- Cast iron is inherently durable and can be used in conjunction with copper and lead clad roofs with reduced risk of bi-metallic corrosion
- All Harmer cast iron clamps and grates are surface treated using a sherardizing zinc coating process which provides an extremely hard wearing anti-corrosive finish

A Choice of Body and Grates

- A wide choice of standard drain body variations with spigot and threaded outlet connection, for vertical and horizontal discharge
- Fully secured grating options available for vehicular applications

Low Maintenance

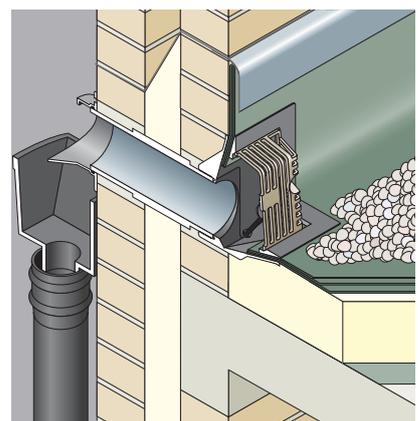
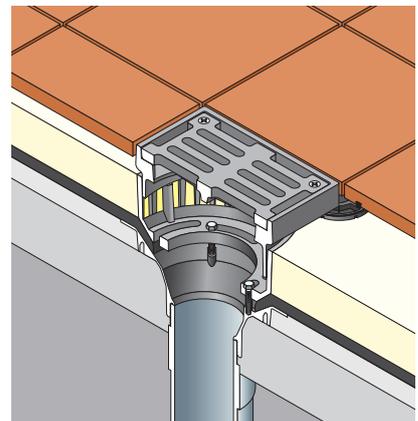
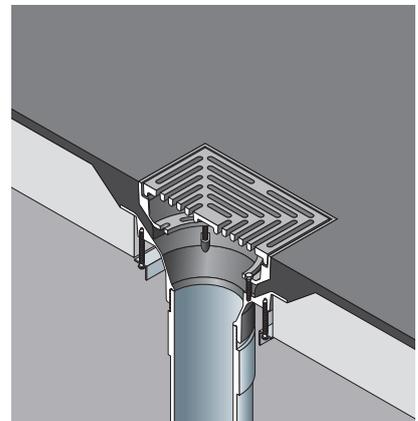
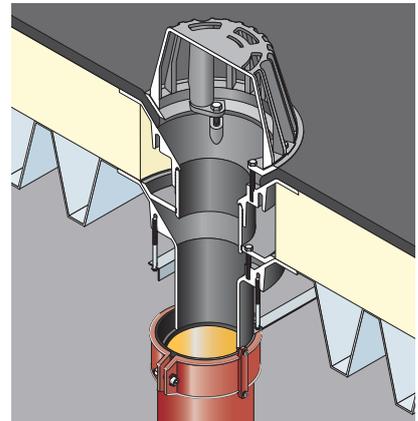
- Domical grates made from UV-stable polypropylene to give long life service. Domical grate types are designed to permit a free flow of rainwater while preventing loose chippings or debris from entering the outlet
- The side fixing of the clamping ring and domical grate to the outlet body ensures that the throat is completely unobstructed to facilitate rodding

Easy and Quick to Install

- A wide range of standard accessories such as extension pieces, pipe adaptors and grates are available to ensure successful installation of Harmer rainwater outlets in most types of roof construction

Sustainable

- Cast iron has a proven track record for its longevity over the lifetime of the building
- Cast iron is 100% recyclable, therefore end of life Harmer Cast Iron outlets can be returned to the furnace to make new cast iron products



Cast Iron Roof Outlets - Product Range Summary

The Harmer Cast Iron range of roof outlets provide the ideal drainage combinations to accommodate insitu construction, drainage performance and finishes.

Medium Sump Outlets



The Harmer cast iron medium sump range is a compact outlet body in vertical and horizontal variations for connection to 50, 75 and 100mm pipe work. Vertical bodies come with either spigot or threaded outlets and horizontal body versions are available in threaded only. A comprehensive range of grates is available for use in different types of application including load bearing circular and square grates which are suitable for areas with vehicular access.

See page 46.

Large Sump Outlets



The Harmer cast iron large sump range provides a deep outlet sump for 100 and 150mm vertical pipe connection. The outlets are threaded to 4" and 6" BSP and can be used with Harmer adaptors for connection to Cast Iron, HDPE, PVCu and Stainless Steel pipework systems.

A comprehensive range of grates is available for use in different types of application including heavy duty ductile iron circular and square grates which are suitable for areas with vehicular access.

See page 48.

Cast Iron Roof Outlets - Product Range Summary

Harmer Cast Iron rainwater outlets provide the ideal drainage solution in conjunction with ease of installation, practical aesthetics and choice of metals.

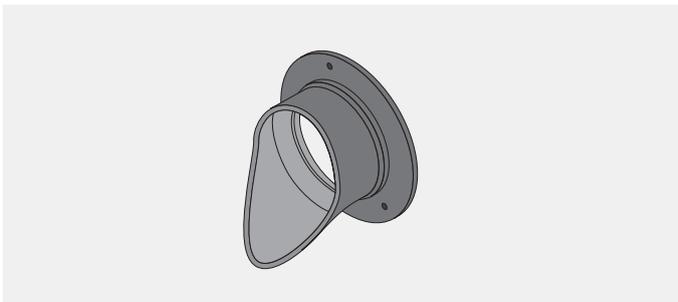
Two-Way Outlets



The Harmer cast iron Two-Way outlet is unobtrusive and suitable for use in a parapet wall construction. It can be used vertically or horizontally for connecting to 50, 75 and 100mm pipework making it suitable for use in balcony installations. A choice of flat or rectangular grates design is available in cast iron, nickel bronze or aluminium.

See page 50.

Parapet Downspout



Parapet Downspout is ideal for use with Two-Way outlets or for use as emergency overflow discharge points around the building façade. The push-fit design allows easy connection and alignment of the spout to direct water away from the building façade into the external rainwater system.

See page 51.

Accessories and Pipe Connections



A comprehensive range of accessories for the Harmer Cast Iron Roof outlet system is available for successful installation of the Harmer rainwater outlets in most types of roof construction.

The range includes gravel guards, underdeck clamp fixtures, overflow outlets, threaded adaptors, pipe couplings and metal deck support plates

See page 52.

Cast Iron Roof Outlets - Medium Sump

Harmer Cast Iron Medium Sump roof outlets comprise of a compact integral sump body available in 50, 75 and 100mm outlet sizes for vertical or horizontal pipework connection.

Vertical Spigot Outlet - Domical Grate

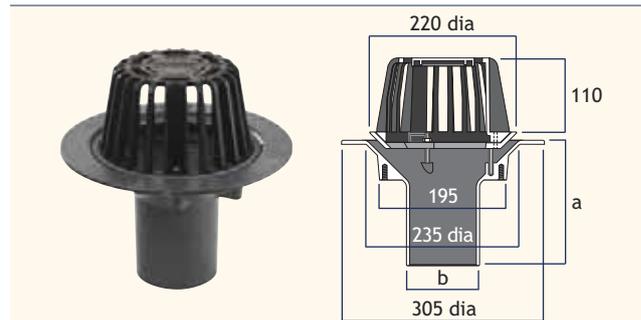
Vertical Spigot outlets are suitable for direct connection to cast iron pipework to BS EN 877 and BS 416, HDPE pipework and PVC O-ring socketed pipe to BS 4514 and BS EN1329-1. Please see pipework connections on page 53 for appropriate Harmer coupling selection.

Note:

- For Flat Grate version add suffix /F to the product code (see page 47)
- A range of accessories is available for use with special detail requirements (See page 47 and 52)

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 nominal)	a (mm)	b (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50*	220	60	1.69	7.2	C200
75*	220	83	4.97	7.8	C300
100	190	110	4.97	6.7	C400

*50 and 75mm spigot outlets are supplied with reducer pieces for assembly on site.

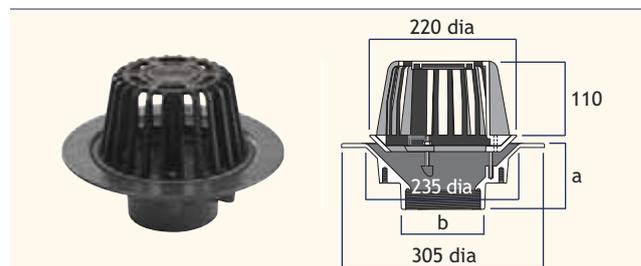
Vertical Threaded Outlet - Domical Grate

Vertical Threaded outlets have a female socket with parallel BSP thread suitable for connection to male BSP threaded pipe. Threaded outlets are 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 gas-tight seal within the slab.

Harmer threaded outlets can be connected to socketed and socketless cast iron, HDPE and PVC pipework by means of the Harmer Threaded Spigot Adaptor with appropriate Harmer coupling. (See page 53).

Note:

- For Flat Grate version add suffix /F to the product code (see page 47)
- A range of accessories is available for use with special detail requirements (See page 47 and 52)



Outlet Size (mm nominal)	a (mm)	b (BSP)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50*	112	2"	1.69	7.6	C200T
75*	112	3"	4.97	6.8	C300T
100	100	4"	4.97	5.5	C400T

*50 and 75mm threaded outlets are supplied with reducer pieces for assembly on site.

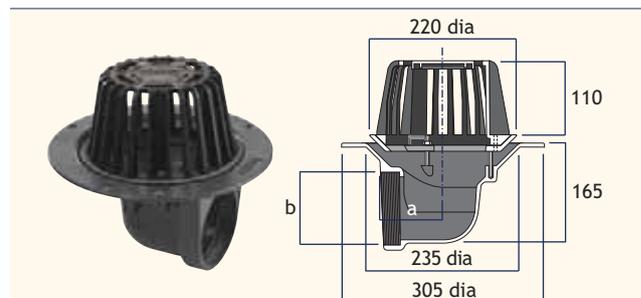
Horizontal Threaded Outlet - Domical Grate

Horizontal Threaded outlets have a female socket with parallel BSP thread suitable for connection to male BSP threaded pipe. Threaded outlets are 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 gas-tight seal within the slab.

Harmer threaded outlets can be connected to socketed and socketless cast iron, HDPE and PVC pipework by means of the Harmer Threaded Spigot Adaptor with appropriate Harmer coupling. (See page 53).

Note:

- For Flat Grate version add suffix /F to the product code (see page 47)
- A range of accessories is available for use with special detail requirements (See page 47 and 52)



Outlet Size (mm nominal)	a (mm)	b (BSP)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50*	105	2"	1.69	9.0	C290T
75*	105	3"	4.97	8.2	C390T
100	90	4"	4.97	7.0	C490T

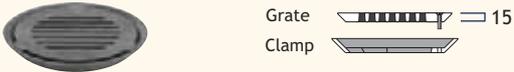
*50 and 75mm threaded outlets are supplied with reducer pieces for assembly on site.

Cast Iron Roof Outlets - Medium Sump Grates, Extension Pieces, & Double Flange Body Options

The Harmer cast iron medium sump roof outlet range has options for use with specific types of drainage application and building design. To specify or order, add the correct suffix code to the appropriate body type on page 46. For example, 100mm Vertical Spigot Outlet with Flat Grate: C400/F.

Flat Grate

For use in areas with pedestrian traffic or light vehicle traffic (excluding forklift) in commercially used premises. These grates are also designed for use with Harmer Modulock Raised Floor Supports where concealed rainwater outlets are used.

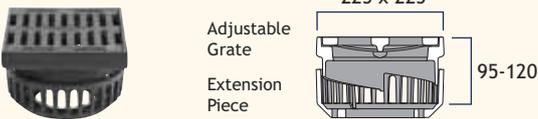


Circular Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.30*	1.5	1.3	/F

*For 50 and 75mm outlets maximum pipe capacity to BS EN 12056 applies.

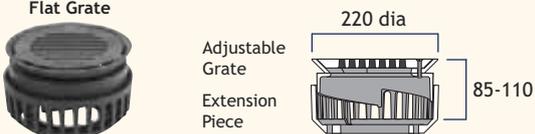
Extension Piece with Adjustable Height Grates

For use in inverted roofs and no fines screed areas with pedestrian or vehicle traffic (refer to load class). Waterproofing is achieved at the outlet body flange with the extension piece allowing permeable drainage into the outlet. Height adjustable grating assembly allows use with varying thicknesses of insulation and roof finish. See page 57 for application details.



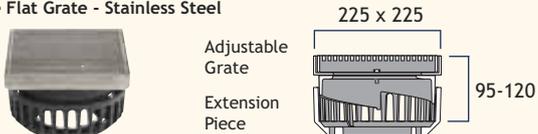
Square Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.30*	12.5	9.7	/ESD

*For 50 and 75mm outlets maximum pipe capacity to BS EN 12056 applies.



Circular Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.30*	1.5	5.5	/ECD

*For 50 and 75mm outlets maximum pipe capacity to BS EN 12056 applies.



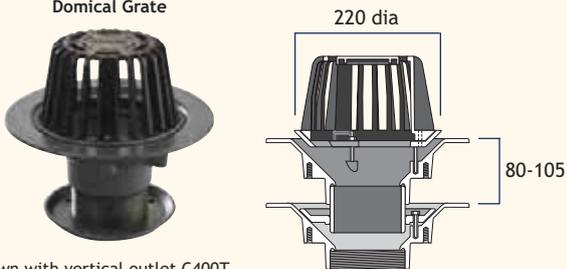
Square Grate Material (5mm aperture)	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Stainless Steel	6.30*	12.5	7.8	/ESS

*For 50 and 75mm outlets maximum pipe capacity to BS EN 12056 applies.

Double Flange Variable Height Bodies

For use in loadbearing warm roof applications. Double flange construction allows fine adjustment for use with insulation thicknesses between 80-100mm.

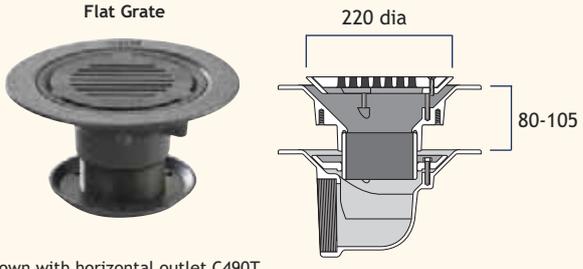
See page 56 for application details. For other insulation thicknesses, please contact Harmer Technical Helpline.



Shown with vertical outlet C400T

Domical Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Polypropylene	4.97*	n/a	6.4	/D

*For 50 and 75mm outlets maximum pipe capacity to BS EN 12056 applies.



Shown with horizontal outlet C490T

Flat Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.30*	1.5	7.7	/DF

*For 50 and 75mm outlets maximum pipe capacity to BS EN 12056 applies.

Cast Iron Roof Outlets - Large Sump

Harmer Cast Iron Large Sump rainwater outlets comprise of a deep sump integral body ideal for heavy duty locations such as car park decks requiring the inherent strength of cast iron. Threaded pipe sizes include 100mm and 150mm diameters for vertical pipework connections.

Vertical Threaded Outlet - Domical Grate

Vertical Threaded outlets have a female socket with parallel BSP thread suitable for connection to male BSP threaded pipe. 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 gas-tight seal within the slab.

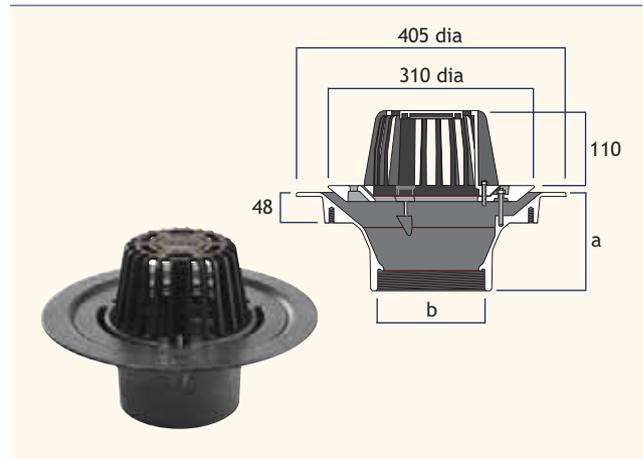
Harmer threaded outlets can be connected to socketed and socketless cast iron, HDPE and PVC pipework by means of the Harmer Threaded Spigot Adaptor with appropriate Harmer coupling. (See page 53).

Note:

A range of accessories is available for use with special detail requirements (See page 49 and 52)

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.



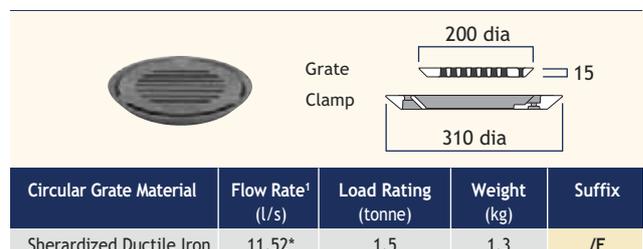
Outlet Size (mm nominal)	a (mm)	b (BSP)	Flow Rate ¹ (l/s)	Load Rating	Weight (kg)	Product Code
100	154	4"	8.56	n/a	14.3	C400LT
150	154	6"	10.35	n/a	12.6	C600LT

Alternative Grate Options

Alternative Flat Grate permutations are available to suit various applications. To specify or order, simply add the below suffix to the above product code. For example, 150mm Vertical Threaded Outlet with Square Flat Grate: C600LT/S.

Flat Grate

For use in areas with pedestrian traffic or light vehicle traffic (excluding forklift) in commercially used premises. These grates are also designed for use with Harmer Modulock Paving Supports where concealed rainwater outlets are used.

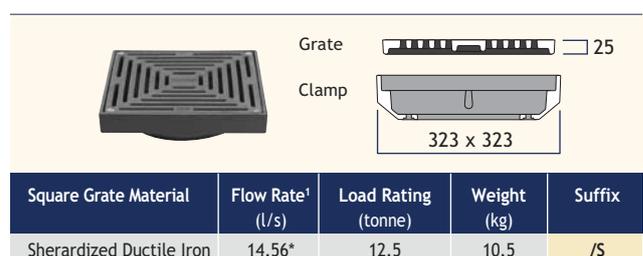


Circular Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherdized Ductile Iron	11.52*	1.5	1.3	/F

*For 100mm outlet size, maximum pipe capacity to BS EN 12056 applies.

Square Flat Grate

325 x 325mm Square Flat Grate is made of ductile iron and has a load rating of 12.5 tonnes. For use in areas with vehicular access, such as car parks, factories and workshops. The clamping collar extends above the outlet body to accommodate adequate thickness of concrete or asphalt finish around the grate surround. The clamping collar can also be rotated to suit paving alignment.



Square Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherdized Ductile Iron	14.56*	12.5	10.5	/S

*For 100mm outlet size, maximum pipe capacity to BS EN 12056 applies.

Cast Iron Roof Outlets - Large Sump Grates, Extension Pieces & Double Flange Body Options

The Harmer cast iron large sump roof outlet range has options for use with specific types of drainage application and building design. To specify or order, add the correct suffix code to the appropriate body type on page 48. For example, 150mm Vertical Threaded Outlet with Stainless Steel Adjustable Height Grate: C600LT/ESS.

Extension Piece with Adjustable Height Grates

For use in inverted roofs and no fines screed areas with pedestrian or vehicle traffic (refer to load class). Waterproofing is achieved at the outlet body flange with the extension piece allowing permeable drainage into the outlet. Height adjustable grating assembly allows use with varying thicknesses of insulation and roof finish. See page 57 for application details.

Flat Grate 220 dia

Adjustable Grate
Extension Piece

Circular Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.3	1.5	6.6	/ECD

Square Flat Grate - Ductile Iron 225 x 225

Adjustable Grate
Extension Piece

Square Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.3	12.5	9.7	/ESD

Square Flat Grate - Stainless Steel 225 x 225

Adjustable Grate
Extension Piece

Square Grate Material (5mm aperture)	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Stainless Steel	6.3	12.5	8.9	/ESS

Double Flange Variable Height Bodies

For use in loadbearing warm roof applications. Double flange construction allows fine adjustment for use with insulation thicknesses between 65-115mm. For other insulation thicknesses, please contact Harmer Technical Helpline.

Domical Grate 310 dia

Shown with vertical outlet C600LT

Domical Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Polypropylene	10.35*	n/a	10.9	/D

*For 100mm outlet size, maximum pipe capacity to BS EN 12056 applies.

Flat Grate 310 dia

Shown with vertical outlet C600LT

Flat Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	11.52*	1.5	12.2	/DF

*For 100mm outlet size, maximum pipe capacity to BS EN 12056 applies.

Square Flat Grate 323 x 323

Shown with vertical outlet C600LT

Flat Grate Material	Flow Rate ¹ (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	14.56*	12.5	21.0	/DS

*For 100mm outlet size, maximum pipe capacity to BS EN 12056 applies.

Cast Iron Roof Outlets - Two-Way

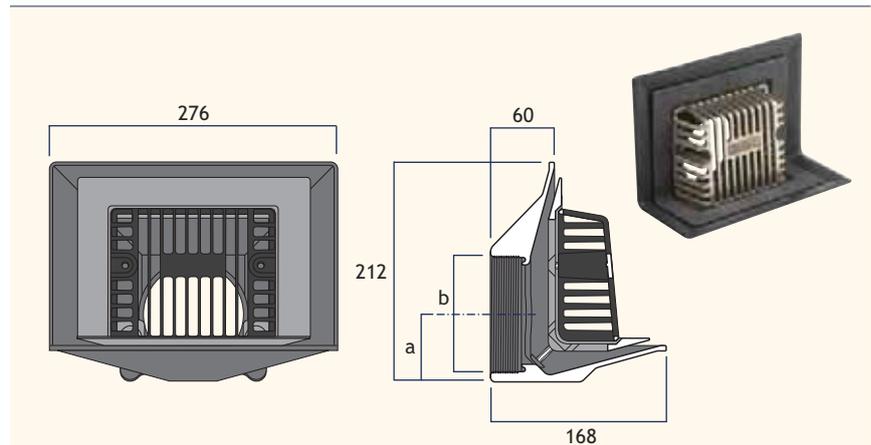
The Harmer cast iron Two-Way outlet is designed for applications where an angle is formed by the intersection of vertical and horizontal surfaces (for example, where a balcony or roof meets a parapet wall). They can be installed to provide either vertical or horizontal run-off.

Two-Way Outlet - Rectangular Grate

Two-Way Outlet with Rectangular Grate is suitable for use in the majority of parapet wall applications in either horizontal or vertical run-off. Two-Way outlets are available in 50, 75 and 100mm diameter outlet sizes. The outlet has a female socket with parallel BSP thread suitable for connection to male BSP threaded pipe and is usually used in conjunction with Harmer Threaded Spigot Adaptors and Downspouts. (See pages 51 and 53)

Rectangular Grates are available in Cast Iron (painted black), Nickel Bronze or Mill Finish Aluminium. Aluminium grates can be polyester powder coated to order - please contact Harmer Technical Helpline.

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.

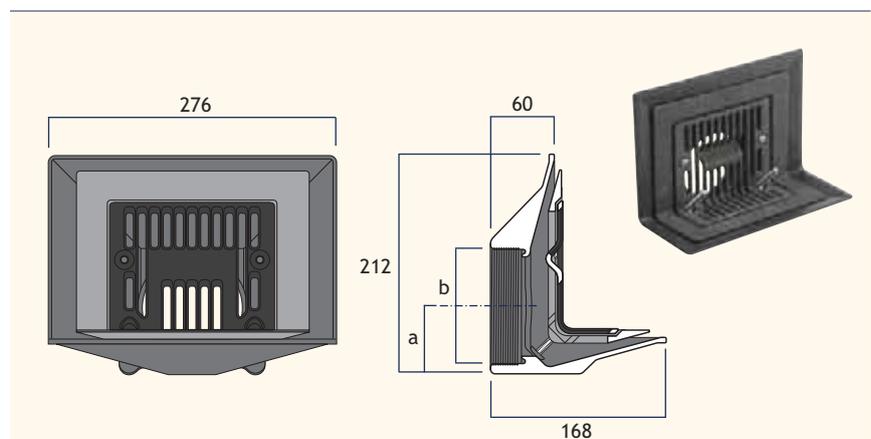


Outlet Size (mm)	Grate Material	a (mm)	b (BSP)	Flow Rate ¹ (l/s)		Load Rating (tonne)	Weight (kg)	Product Code
				vertical	horizontal			
50	Cast iron	38	2"	1.4	0.7	0.3	5.9	CTW2/RC
50	Nickel bronze	38	2"	1.4	0.7	0.3	6.1	CTW2/RN
50	Aluminium	38	2"	1.4	0.7	0.3	5.2	CTW2/RA
75	Cast iron	52	3"	2.6	0.8	0.3	5.8	CTW3/RC
75	Nickel bronze	52	3"	2.6	0.8	0.3	6.0	CTW3/RN
75	Aluminium	52	3"	2.6	0.8	0.3	5.1	CTW3/RA
100	Cast iron	65	4"	2.6	0.8	0.3	5.7	CTW4/RC
100	Nickel bronze	65	4"	2.6	0.8	0.3	5.8	CTW4/RN
100	Aluminium	65	4"	2.6	0.8	0.3	4.9	CTW4/RA

Two-Way Outlet - Flat Grate

Two-Way Outlet with Flat Grate is suitable for use in the majority of parapet wall applications in either horizontal or vertical run-off. Two-Way outlets are available in 50, 75 and 100mm diameter outlet sizes. The outlet has a female socket with parallel BSP thread suitable for connection to male BSP threaded pipe and is usually used in conjunction with Harmer Threaded Spigot Adaptors and Downspouts. (See pages 51 and 53)

Flat Grates are available in Cast Iron (painted black).



Outlet Size (mm)	Grate Material	a (mm)	b (BSP)	Flow Rate ¹ (l/s)		Load Rating (tonne)	Weight (kg)	Product Code
				vertical	horizontal			
50	Cast iron	38	2"	1.4	0.7	0.3	5.8	CTW2/FC
75	Cast iron	52	3"	2.6	0.8	0.3	5.7	CTW2/FC
100	Cast iron	65	4"	2.6	0.8	0.3	5.5	CTW2/FC

Cast Iron Roof Outlets - Parapet Downspouts

Harmer Roof Parapet Downspouts provide an attractive means of directing water away from the face of the building to prevent the backtrack of rainwater from causing unsightly staining and damage. Harmer Roof Parapet Downspouts can be used in combination with Alumasc rainwater pipes and hoppers, and can be colour co-ordinated.

Application

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

Material - Cast Iron

Material - Siliconised Cast Aluminium LM6

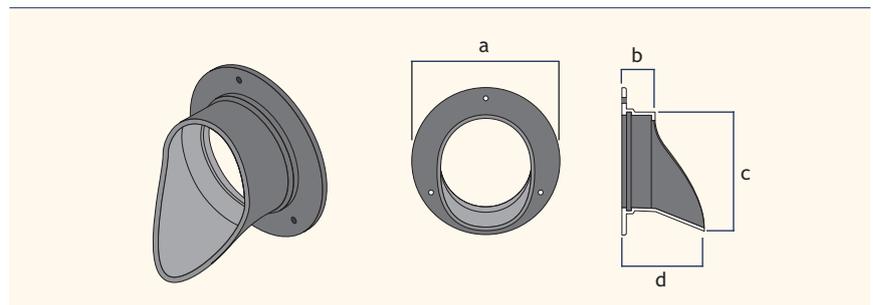
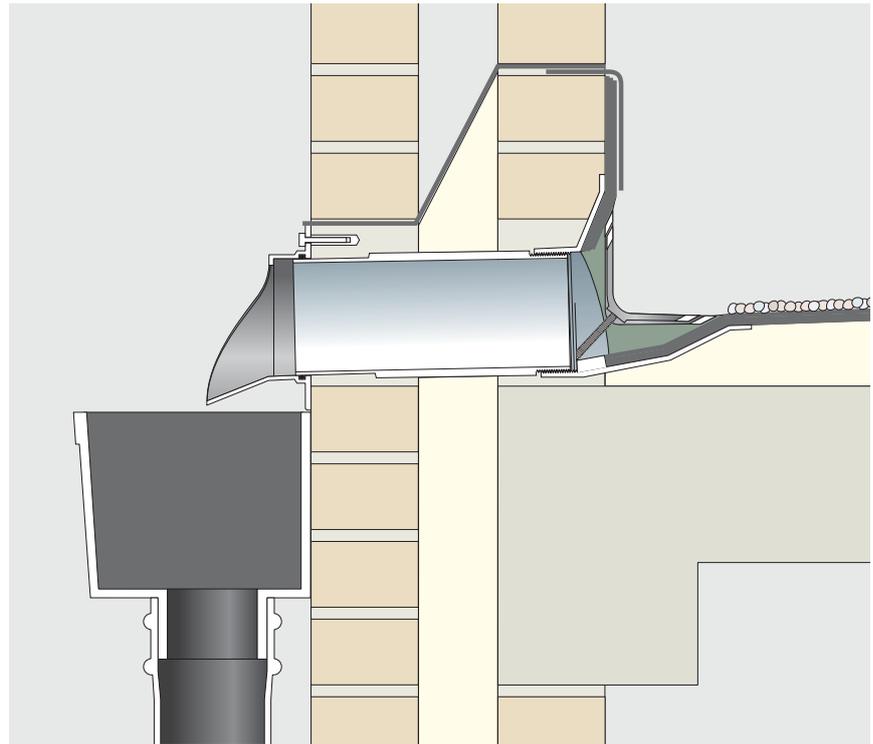
Finish

Cast iron downspouts are supplied as standard in primed finish for painting on site or can be painted black by Alumasc to co-ordinate with other cast iron rainwater goods.

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 110 diameter plain ended pipe using an "O" ring seal and mechanical fixing into masonry.

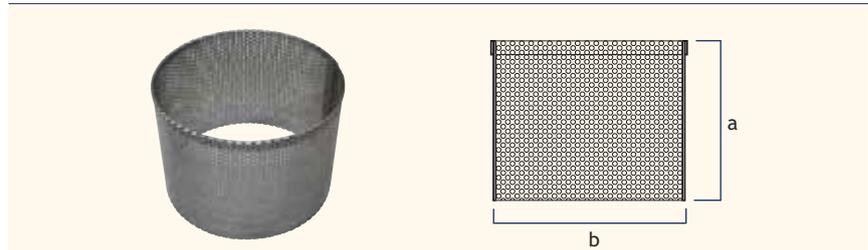


Outlet Size (mm)	Material	a (mm)	b (mm)	c (mm)	d (mm)	Weight (kg)	Product Code
100	Aluminium	180	40	146	100	0.5	ADS/4
100	Cast Iron	180	40	146	100	1.4	CDS/4

Cast Iron Roof Outlets - Accessories and Connections

Gravel Guard

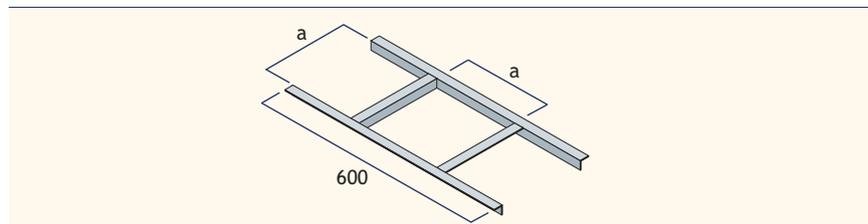
Made of stainless steel, the Gravel Guard is used with Domical Grates on roofs with gravel finish to prevent ingress of insulation and gravel into the outlet. Other lengths are available to order.



Outlet Size (nominal)	a (mm)	b (mm)	Weight (kg)	Product Code
Medium Sump	150	200	0.5	C4/GG/15
Medium Sump	200	200	0.6	C4/GG/20
Large Sump	150	305	0.8	C6/GG/15
Large Sump	200	305	0.9	C6/GG/20

Underdeck Clamp

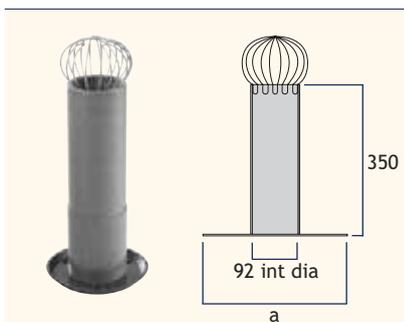
The Underdeck Clamp is used to secure cast iron outlet body to roof deck (cannot be used with horizontal outlet).



Outlet Size (nominal)	Material (mm)	a (mm)	Weight (kg)	Product Code
Medium Sump	Mild steel	175	1.7	C4/UC
Medium Sump	Stainless steel	175	2.1	C4/UC/SS
Large Sump	Mild steel	300	2.0	C6/UC
Large Sump	Stainless steel	300	2.4	C6/UC/SS

Overflow Outlet

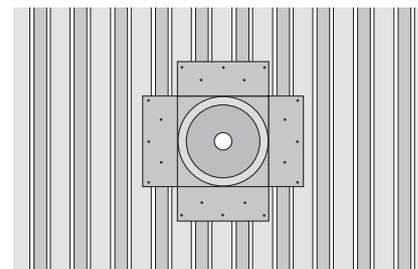
For use where overflow outlets are required. The overflow assembly simply bolts onto the rainwater outlet where the clamp normally sits. Made from ABS, the overflow is easily cut to the required length on site. The balloon grating can be re-fitted back into the overflow inlet to protect the outlet from debris.



Outlet Type	a (mm)	Weight (kg)	Product Code
Medium Sump	200	2.6	C4/OF

Metal Deck Support Plates

Recommended for use where Harmer cast iron 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.



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

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.

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