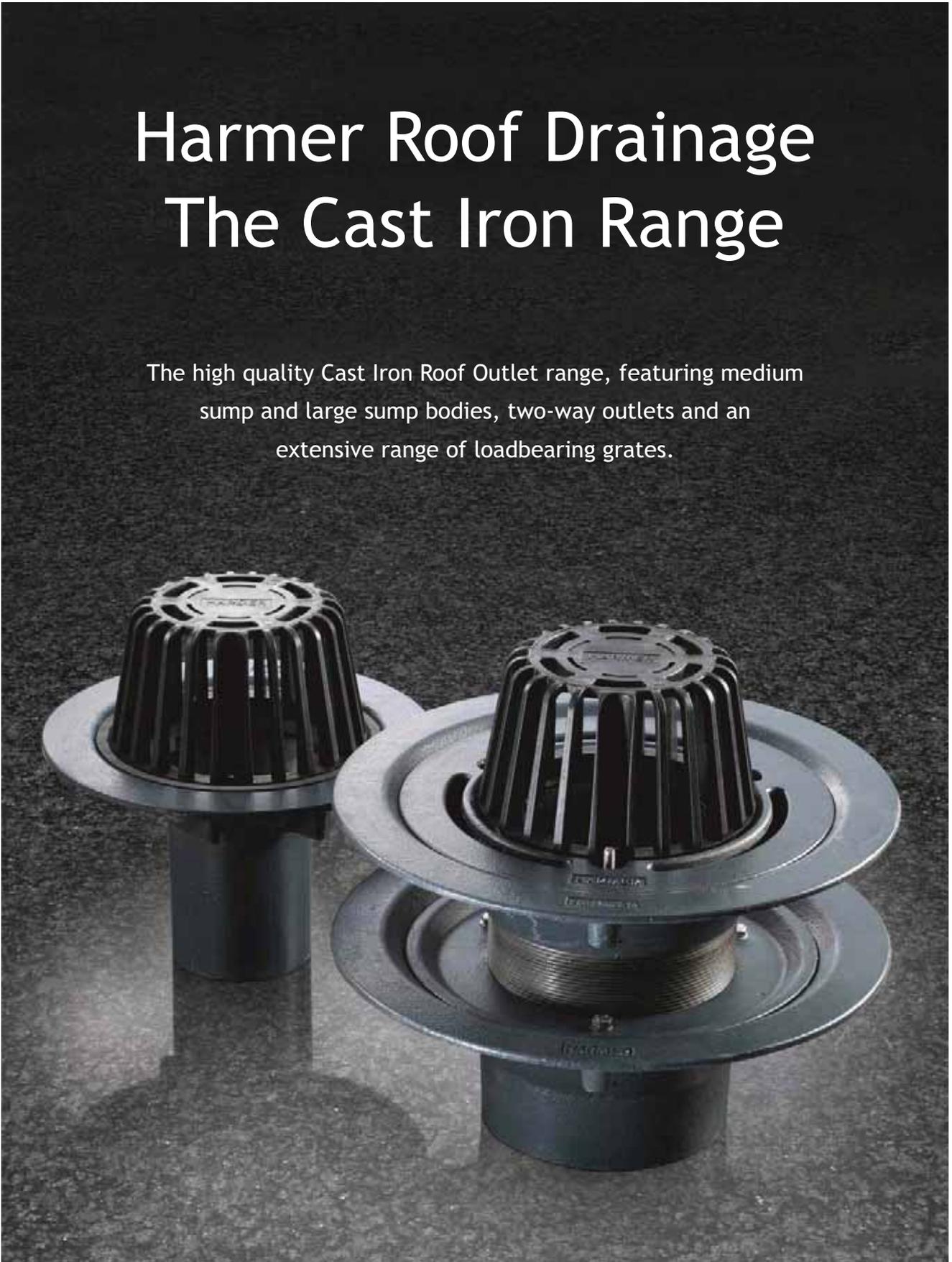


# Harmer Roof Drainage The Cast Iron Range

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

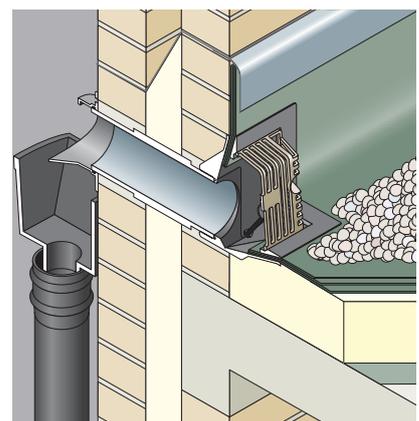
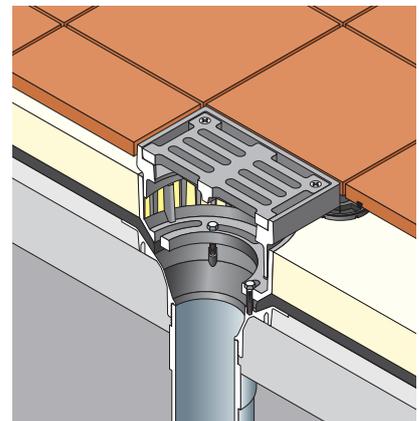
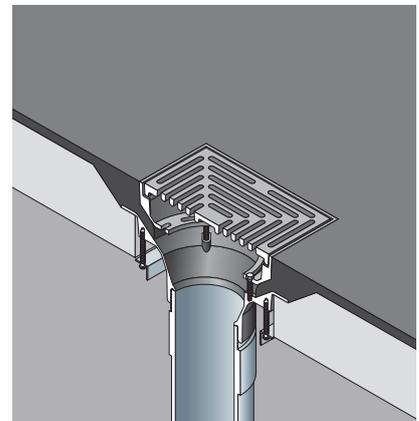
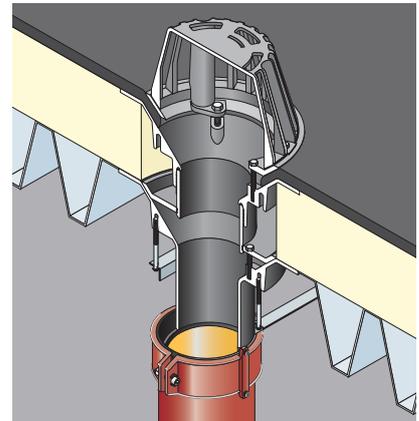
- Domical grates made from UV-stable polypropylene to give long life service. Domical grate types are designed to permit a free flow of rainwater while preventing loose chippings or debris from entering the outlet
- The side fixing of the clamping ring and domical grate to the outlet body ensures that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

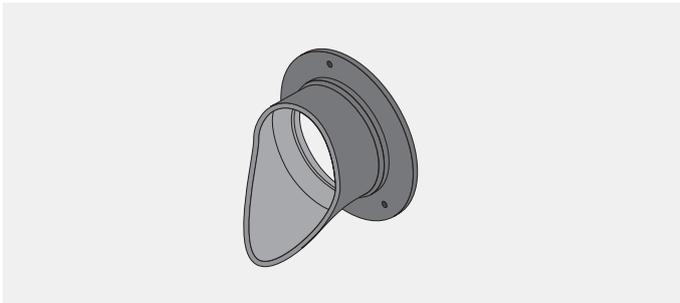
## Two-Way Outlets



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

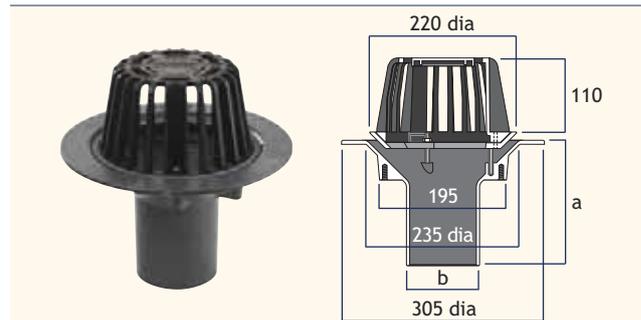
Vertical Spigot outlets are suitable for direct connection to cast iron pipework to BS EN 877 and BS 416, HDPE pipework and PVC O-ring socketed pipe to BS 4514 and BS EN1329-1. Please see pipework connections on page 53 for appropriate Harmer coupling selection.

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 <sup>1</sup> (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.

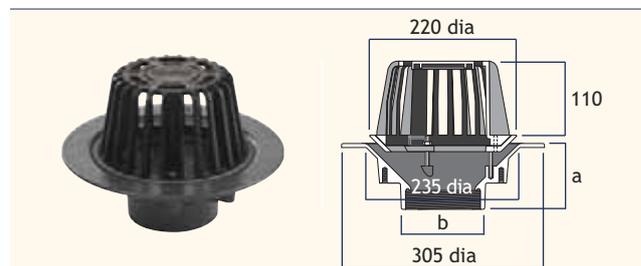
## Vertical Threaded Outlet - Domical Grate

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 <sup>1</sup> (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.

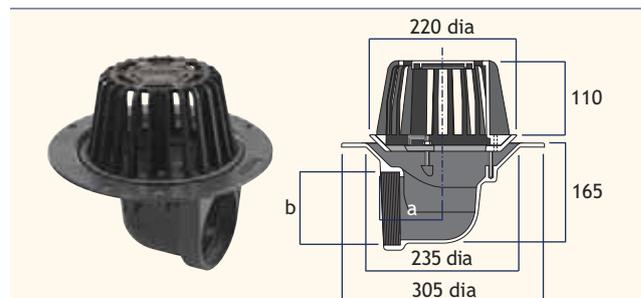
## Horizontal Threaded Outlet - Domical Grate

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 <sup>1</sup> (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

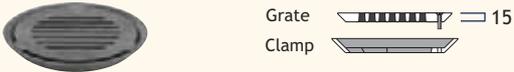
\*50 and 75mm threaded outlets are supplied with reducer pieces for assembly on site.

# 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.

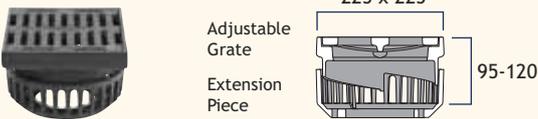


Circular Grate Material	Flow Rate <sup>1</sup> (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.30*	1.5	1.3	/F

\*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.



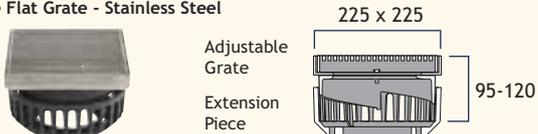
Square Grate Material	Flow Rate <sup>1</sup> (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.30*	12.5	9.7	/ESD

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



Circular Grate Material	Flow Rate <sup>1</sup> (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.



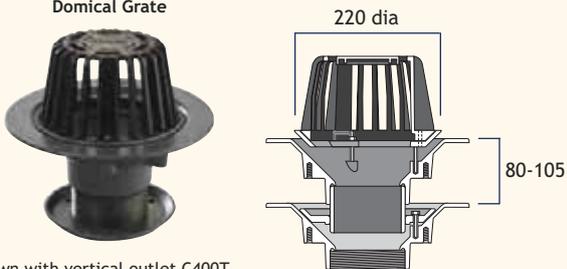
Square Grate Material (5mm aperture)	Flow Rate <sup>1</sup> (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Stainless Steel	6.30*	12.5	7.8	/ESS

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

## Double Flange Variable Height Bodies

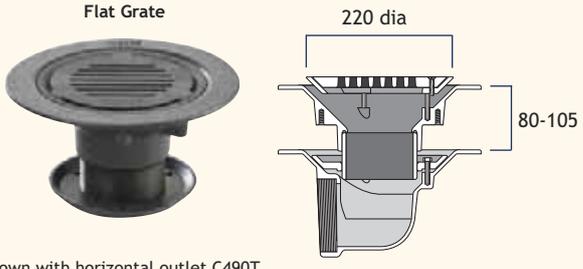
For use in loadbearing warm roof applications. Double flange construction allows fine adjustment for use with insulation thicknesses between 80-100mm.

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



Domical Grate Material	Flow Rate <sup>1</sup> (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.



Flat Grate Material	Flow Rate <sup>1</sup> (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.

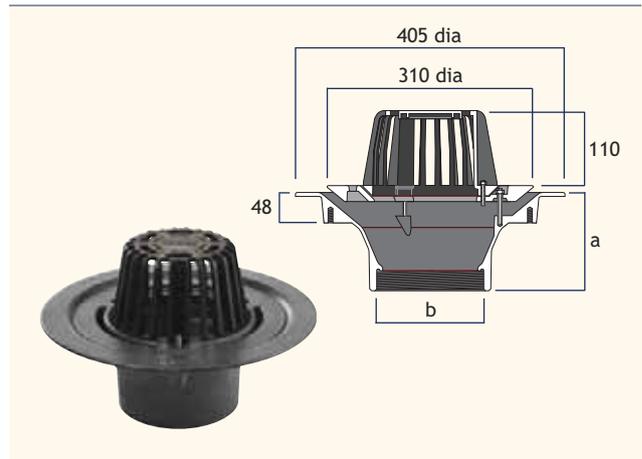
Harmer threaded outlets can be connected to socketed and socketless cast iron, HDPE and PVC pipework by means of the Harmer Threaded Spigot Adaptor with appropriate Harmer coupling. (See page 53).

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.



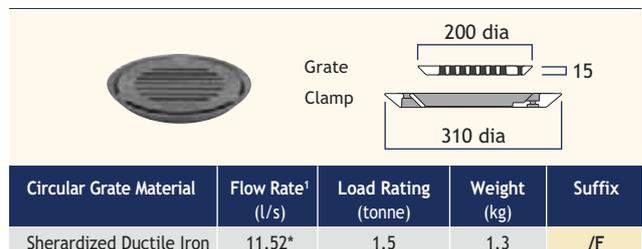
Outlet Size (mm nominal)	a (mm)	b (BSP)	Flow Rate <sup>1</sup> (l/s)	Load Rating	Weight (kg)	Product Code
100	154	4"	8.56	n/a	14.3	C400LT
150	154	6"	10.35	n/a	12.6	C600LT

## 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.

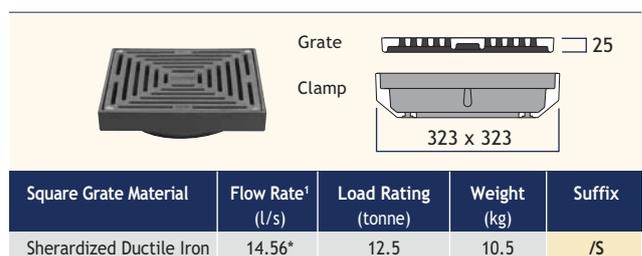


Circular Grate Material	Flow Rate <sup>1</sup> (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherdized Ductile Iron	11.52*	1.5	1.3	/F

\*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 <sup>1</sup> (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.

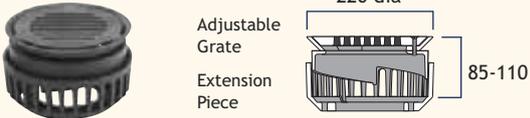
# Cast Iron Roof Outlets - Large Sump Grates, Extension Pieces & Double Flange Body Options

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

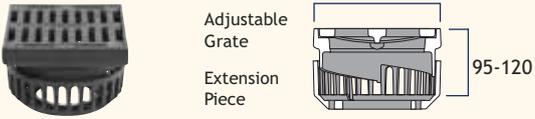
For use in inverted roofs and no fines screed areas with pedestrian or vehicle traffic (refer to load class). Waterproofing is achieved at the outlet body flange with the extension piece allowing permeable drainage into the outlet. Height adjustable grating assembly allows use with varying thicknesses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

**Flat Grate** 220 dia



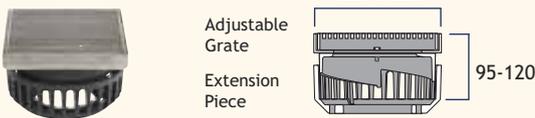
Circular Grate Material	Flow Rate <sup>1</sup> (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Sherardized Ductile Iron	6.3	1.5	6.6	/ECD

**Square Flat Grate - Ductile Iron** 225 x 225



Square Grate Material	Flow Rate <sup>1</sup> (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

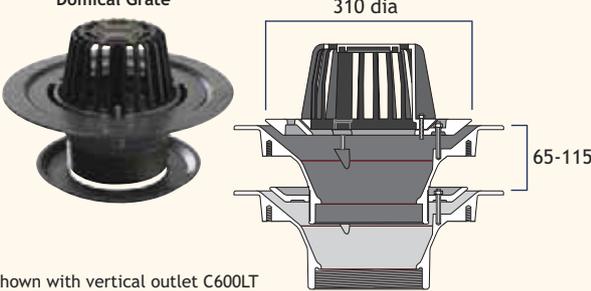


Square Grate Material (5mm aperture)	Flow Rate <sup>1</sup> (l/s)	Load Rating (tonne)	Weight (kg)	Suffix
Stainless Steel	6.3	12.5	8.9	/ESS

## 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

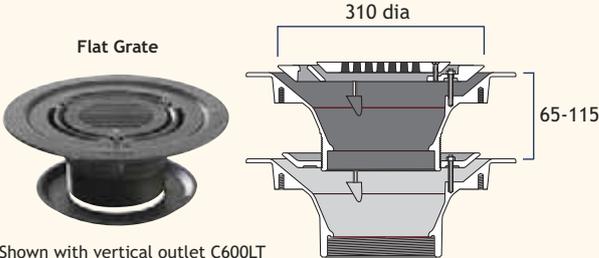


Shown with vertical outlet C600LT

Domical Grate Material	Flow Rate <sup>1</sup> (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

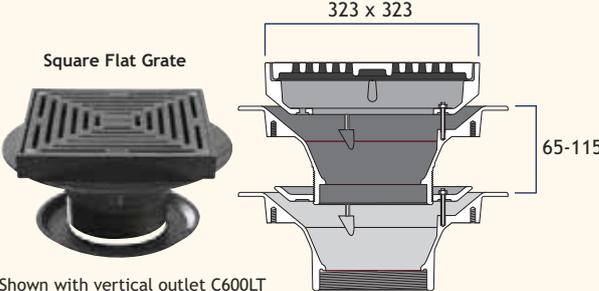


Shown with vertical outlet C600LT

Flat Grate Material	Flow Rate <sup>1</sup> (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 <sup>1</sup> (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

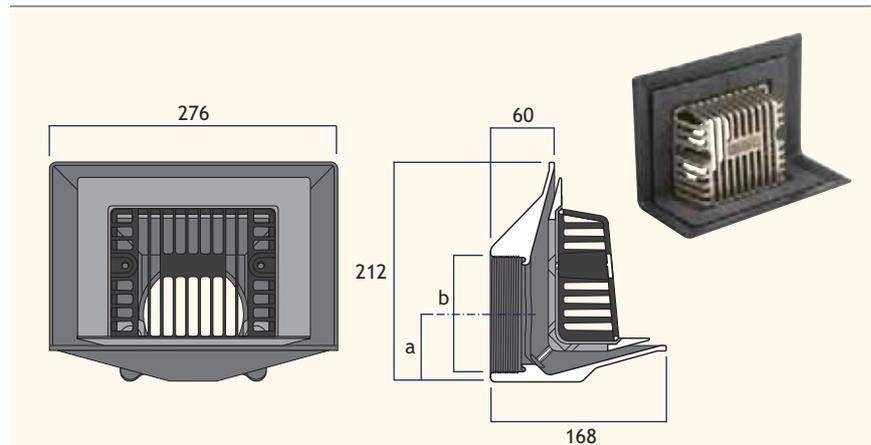
The Harmer cast iron Two-Way outlet is designed for applications where an angle is formed by the intersection of vertical and horizontal surfaces (for example, where a balcony or roof meets a parapet wall). They can be installed to provide either vertical or horizontal run-off.

## 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.

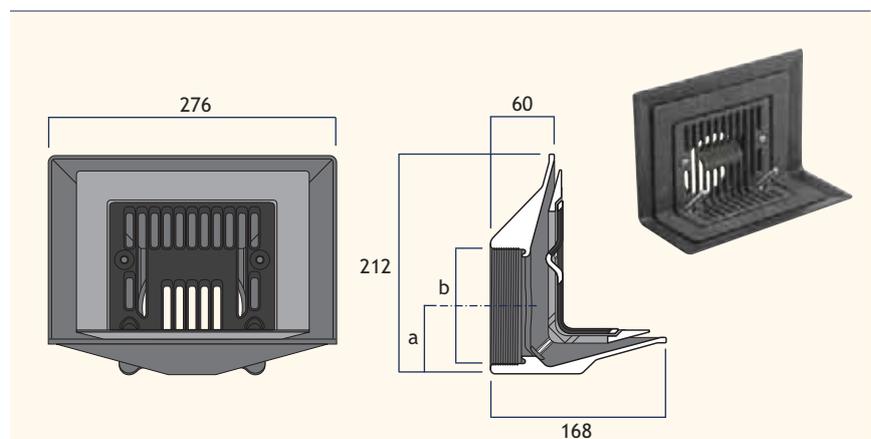


Outlet Size (mm)	Grate Material	a (mm)	b (BSP)	Flow Rate <sup>1</sup> (l/s)		Load Rating (tonne)	Weight (kg)	Product Code
				vertical	horizontal			
50	Cast iron	38	2"	1.4	0.7	0.3	5.9	CTW2/RC
50	Nickel bronze	38	2"	1.4	0.7	0.3	6.1	CTW2/RN
50	Aluminium	38	2"	1.4	0.7	0.3	5.2	CTW2/RA
75	Cast iron	52	3"	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 <sup>1</sup> (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

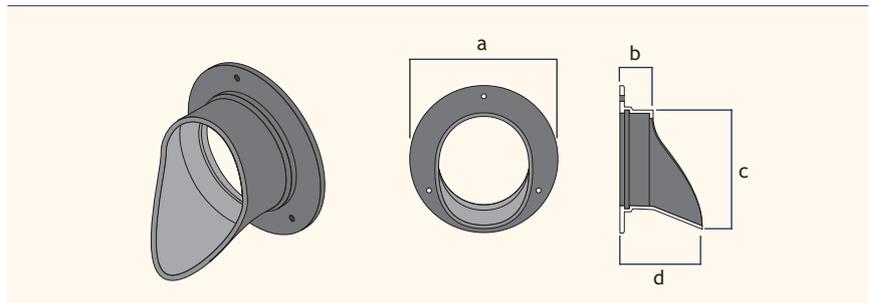
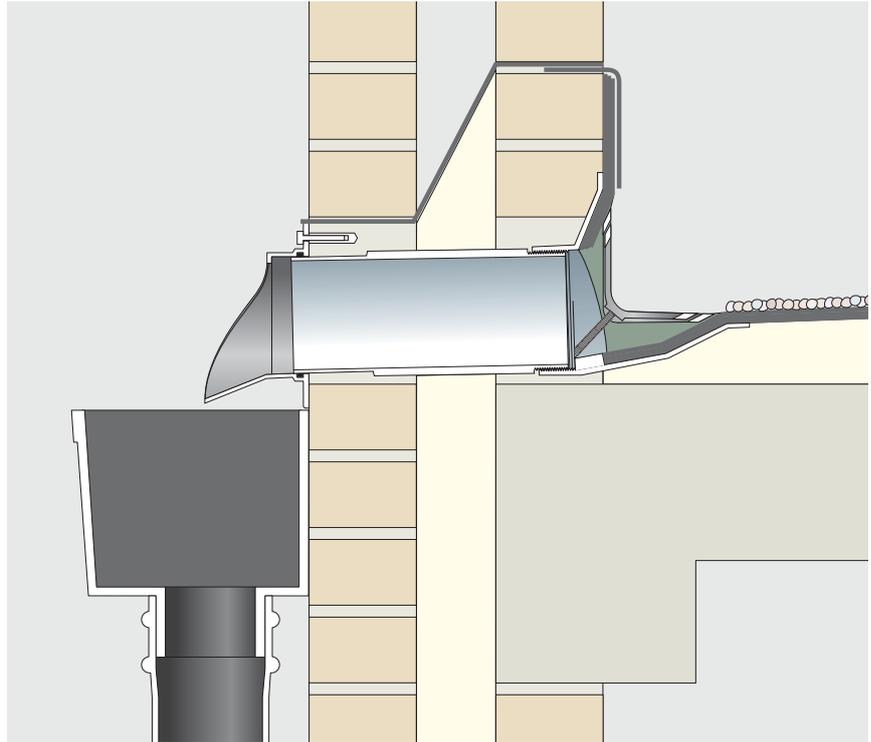
## Finish

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.

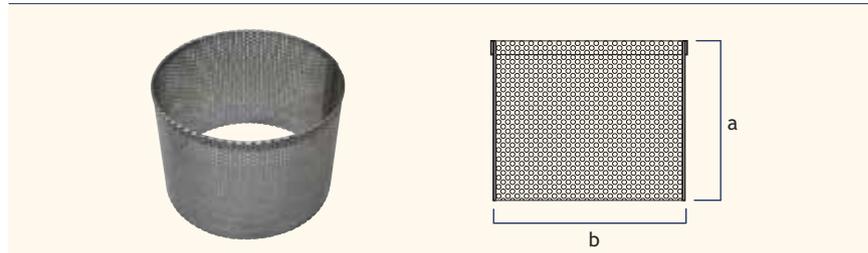


Outlet Size (mm)	Material	a (mm)	b (mm)	c (mm)	d (mm)	Weight (kg)	Product Code
100	Aluminium	180	40	146	100	0.5	ADS/4
100	Cast Iron	180	40	146	100	1.4	CDS/4

# Cast Iron Roof Outlets - Accessories and Connections

## Gravel Guard

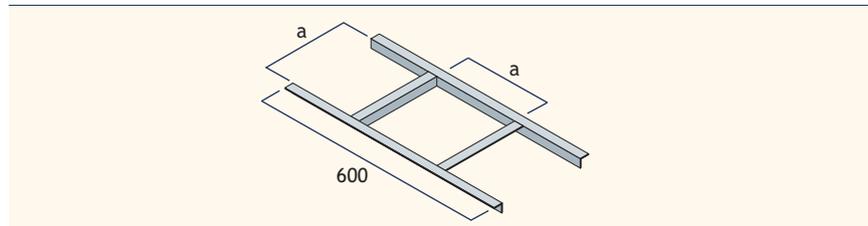
Made of stainless steel, the Gravel Guard is used with Domical Grates on roofs with gravel finish to prevent ingress of insulation and gravel into the outlet. Other lengths are available to order.



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

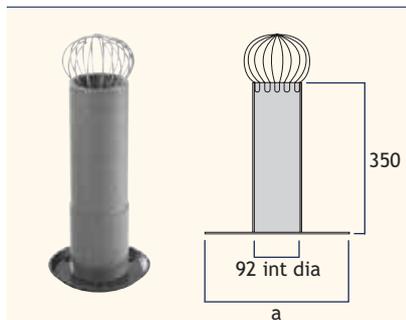
The Underdeck Clamp is used to secure cast iron outlet body to roof deck (cannot be used with horizontal outlet).



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

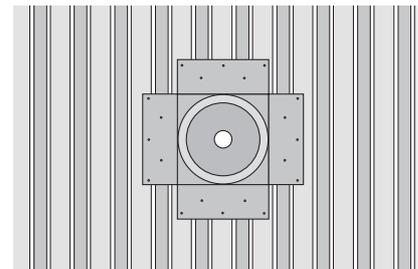
For use where overflow outlets are required. The overflow assembly simply bolts onto the rainwater outlet where the clamp normally sits. Made from ABS, the overflow is easily cut to the required length on site. The balloon grating can be re-fitted back into the overflow inlet to protect the outlet from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



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

## Metal Deck Support Plates

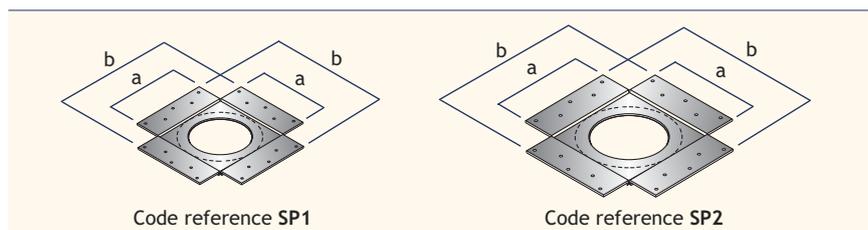
Recommended for use where Harmer cast iron rainwater outlets are installed in metal deck roofs. They are designed to provide a secure and stable junction between the roof deck and rainwater outlet.



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

# Cast Iron Roof Outlets - Accessories and Connections

## Threaded Spigot Adaptors

The Threaded Spigot Adaptor has been designed to facilitate the connection of Harmer Roof Cast Iron rainwater outlets to PVC pipework. The adaptor is suitable for connection with all types of pipe systems and presents an economic alternative to using a short length of steel gas tube to BS 1387 in the case of cast iron socketed or socketless systems. (See page 6).

### Materials

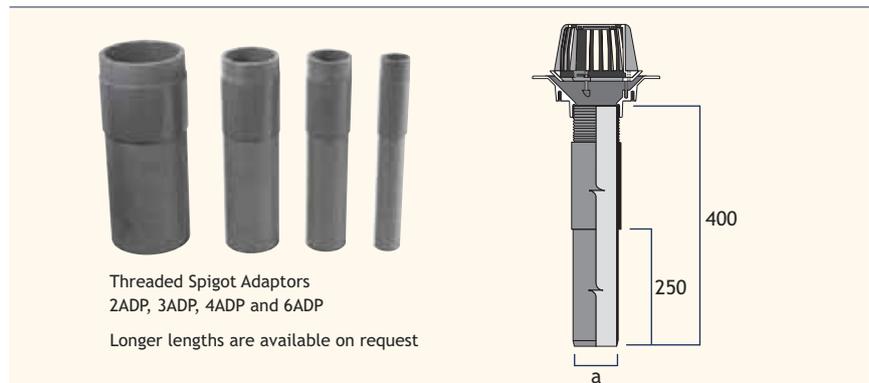
The Threaded Spigot Adaptor, made of ABS plastic, is supplied in 400mm lengths, taper-threaded externally at one end to BS EN 10226-1 and chamfered at the other end to BS 4514 spigot dimensions. Sizes are available to suit 50, 75, 100 and 150mm nominal bore pipework.

### Connection to Pipework

The Threaded Spigot Adaptor is screwed into the base of the outlet using silicone sealant to obtain a gas-tight seal. The spigot end of the adaptor can then be connected to the pipe socket. If necessary, the length of the spigot end of the adaptor can be reduced by cutting as required with a fine toothed saw.

The spigots of Harmer Roof Threaded Spigot Adaptors are suitable for direct connection to cast iron pipework to BS EN 877 and BS 416, HDPE pipework with appropriate Harmer couplings, PVC O-ring socketed pipe to BS 4514.

Refer to the pipe connections table below.



Threaded Spigot Adaptors  
2ADP, 3ADP, 4ADP and 6ADP  
Longer lengths are available on request

Nominal bore (mm)	a (mm)	Weight (kg)	Product Code
50	60	0.4	2ADP
75	83	0.6	3ADP
100	110	1.2	4ADP
150	160	2.0	6ADP

For fitting the Harmer Threaded Spigot Adaptor see page 33, Method 2.

## Couplings

For appropriate couplings selection refer to the pipe connections table below.



Coupling Type	Pipe Dia (mm)	Product Code
SML Ductile Iron	50	235849
SML Ductile Iron	100	235357
SML Ductile Iron	150	235358
SML Duo	50	3140/50
SML Duo	100	3140/100
SML Duo	150	3140/150
SML Adaptor	75	3151/070075

## Pipe Connections

Outlet Type (mm)	Nominal Size (mm)	Outlet Dia (mm)	Pipe Material and Connection Type			
			Cast Iron EN877	Stainless Steel	HDPE	PVCu
 <b>Vertical Spigot</b>	50	60	SML Duo coupling	Post formed socket OR flexible coupling	Duo coupling	Post formed socket OR flexible coupling
	75	83	SML Adaptor coupling	"O" ring socket OR SML Duo coupling	SML Adaptor coupling	"O" ring socket OR SML Duo coupling
	100	110	SML Duo coupling	"O" ring socket OR SML Duo coupling	SML Duo coupling	"O" ring socket OR SML Duo coupling
 <b>Threaded</b>	50	2"BSP	2ADP + SML Duo coupling	2ADP to Post formed socket OR flexible coupling	2ADP to cast formed socket OR flexible coupling	2ADP to Post formed socket OR flexible coupling
	75	3"BSP	3ADP + SML Adapter coupling	3ADP to "O" ring socket OR SML Duo coupling	3ADP + SML Adaptor coupling	3ADP to "O" ring socket OR SML Duo coupling
	100	4"BSP	4ADP + SML Duo coupling	4ADP to "O" ring socket OR SML Duo coupling	4ADP + SML Duo coupling	4ADP to "O" ring socket OR SML Duo coupling
	150	6"BSP	6ADP + SML Duo coupling	6ADP to P "O" ring socket OR SML Duo coupling	6ADP + SML Duo coupling	6ADP to "O" ring socket OR SML Duo coupling

# Cast Iron Roof Outlets - NBS Specification

A typical NBS Specification for Harmer Cast Iron Roof Outlets. A full range of NBS specifications and roof drainage calculators are available via the Harmers online NBS Specification Builder at [www.harmerdrainage.co.uk](http://www.harmerdrainage.co.uk) For project specific specification advice, contact Harmer Technical Services.

NBSPlus

## R10 Gravity Rainwater Drainage Systems

### GENERAL

- 110 GRAVITY RAINWATER DRAINAGE SYSTEM
- Roof Outlets, Pipework and Accessories: As per detail sections below

### SYSTEM PERFORMANCE

- 210 DESIGN
- Design: Complete the design of the rainwater drainage system
  - Standard: To BSEN12056-3:2000, clauses 3-7 and National Annexes
  - Proposals: Submit Drawings, technical information, calculations and manufacture's literature

### PRODUCTS

#### 365 HARMER CAST IRON ROOF OUTLETS

Manufacturer: Alumasc Exterior Building Products Ltd,  
White House Works, Bold Road, Sutton  
St Helens, Merseyside WA9 4JG  
Tel: 01744 648400, Fax: 01744 648401.  
Email: [info@alumasc-exteriors.co.uk](mailto:info@alumasc-exteriors.co.uk)

Outlet: Harmer Cast Iron

Type: Spigot Outlets

Grate Type: Domed Grate

Size: 150mm

Product Code: C600LT

Reference: Harmer Roof Cast Iron

Accessories: Flat grate, domed grate, trafficable grate



Create Harmer Drainage NBS specifications by selecting the required product range, profile, size and finish by visiting: [www.harmerdrainage.co.uk](http://www.harmerdrainage.co.uk)



## Drainage Design Calculator

Architects and Building Services Engineers can now design and quantify all their Rainwater Drainage requirements using Alumasc's dedicated design software.

### Key Features

- Category 2 and 3 Flat Roof Drainage Calculator linked in to local rainfall data
- Rainwater Drainage Drawing tool integrating Quantities Schedule
- Eaves Drainage Gutter sizing and pipe calculator for Cast and Contemporary gutter types
- Hyperlinks to Product Literature, DWG files and application specific NBS Specification Clauses



# Cast Iron Roof Outlets - Installation

## Introduction

The Harmer Roof Cast Iron range of outlets are designed for use with flat roof structures using either insitu cast concrete, timber or lightweight metal deck construction. Harmer Roof outlets are ideal for connection to continuous waterproofing systems using mastic asphalt, high performance built-up felt, wet-applied waterproofing systems and most types of single ply membranes.

The Harmer range of outlets incorporate all the key features inherent in the Harmer design approach to trouble-free flat roof drainage.

## Components

Harmer cast iron roof outlets are made up of three base components:

### Body

An outlet body with integral sump for controlled flow of water into the pipe.

### Clamping Ring

The clamping ring is designed to compress the waterproof membrane against the outlet body to ensure total integrity of seal. The side fixing of the clamping ring and domical grate to the outlet body ensures that the throat is completely unobstructed to optimise flow and facilitate rodding.

### Grate

Domical grates permit a free flow of rainwater while preventing loose chippings or debris from entering the outlet. Flat grates are used for trafficked and pedestrian areas.

An important feature of both the Domical and Flat grate fixture is that it can be removed without disturbing the clamping ring and waterproof seal of the roofing membrane.

Site detailing is taken care of with a range of accessories which are designed for use in different types of applications. Accessories include, Extension Pieces, Adjustable Height Grates, Double Flange Variable Height Bodies, Support Plates, Gravel Guards, Pipe Adaptors, Overflows and Downspouts.

## Materials

All Harmer cast iron components are cast to material grade EN-GJL-200 to BS EN1561, ductile iron components are cast to material grade EN GJS-450-10 to EN1563.

## Installation and Sitework

Each site application will require careful assessment by the installer.

Consideration must be given to the type of outlet, roof construction and pipework connection that is used. The general principal of installation is common to all Harmer outlets and the following guidance should be used.

- Threaded outlets using threaded spigot adaptors must be leak tested prior to fixing to the roof structure.
- Position outlet in the roof construction so that the roof substrate is flush with outlet rim and ensure that the roof has adequate falls to the outlet.
- Depending on the type of waterproofing membrane, degrease or prime the inside of the outlet body as per roof membrane manufacturer's recommendation i.e. for asphalt, prime the outlet with bitumen.
- Dress the waterproof membrane into the outlet making sure that adequate material is available for full surface contact between the clamping ring and the outlet body. Bolt down the clamping ring ensuring that equal pressure is applied to the bolts.
- Fix the Grate to the clamping ring using the bolts provided.
- Flood test the outlet in accordance with good practice and commission the rainwater system.

Typical application details are shown on pages 56-57. For further advice on installation, contact Harmer Technical Helpline 01744 648400.

## Care and Maintenance

Maintenance is a key aspect of reliable, low cost operation.

### Before completion of any drainage scheme:

- Check if overflows have been provided
- Anticipate blockage, never have a single rainwater outlet
- Once the rainwater outlets have been installed they should be inspected to ensure that all parts have been correctly fitted, that no parts are missing and that nuts and bolts are tight and secure.
- Remove tacks, nails and screws left by other trades. These will damage the membrane if trodden on.

### Every flat roof must have an inspection plan:

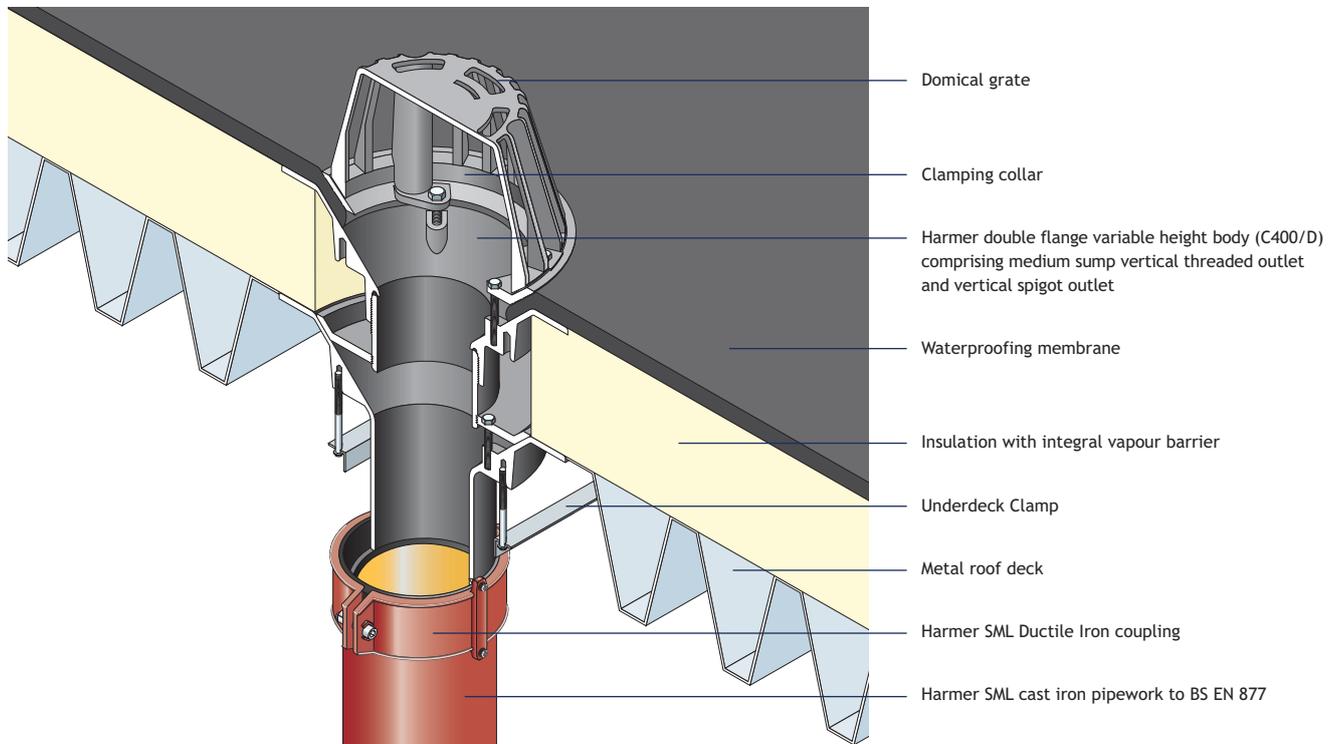
- Inspection of the outlets should be on a regular basis and generally not less than twice annually - Autumn and Spring.
- In locations with nearby trees, leaf congestion will require more frequent clearance
- Plastic bags blown onto the roof will wash to an outlet position and block the strainer.
- Airborne grit and fines will silt up the inlets to the outlet and restrict flow.
- Remove silt and remove leaves
- Check overflows have leaf guards fitted
- Clear any blockages immediately to ensure system does not overflow.

### Health & Safety

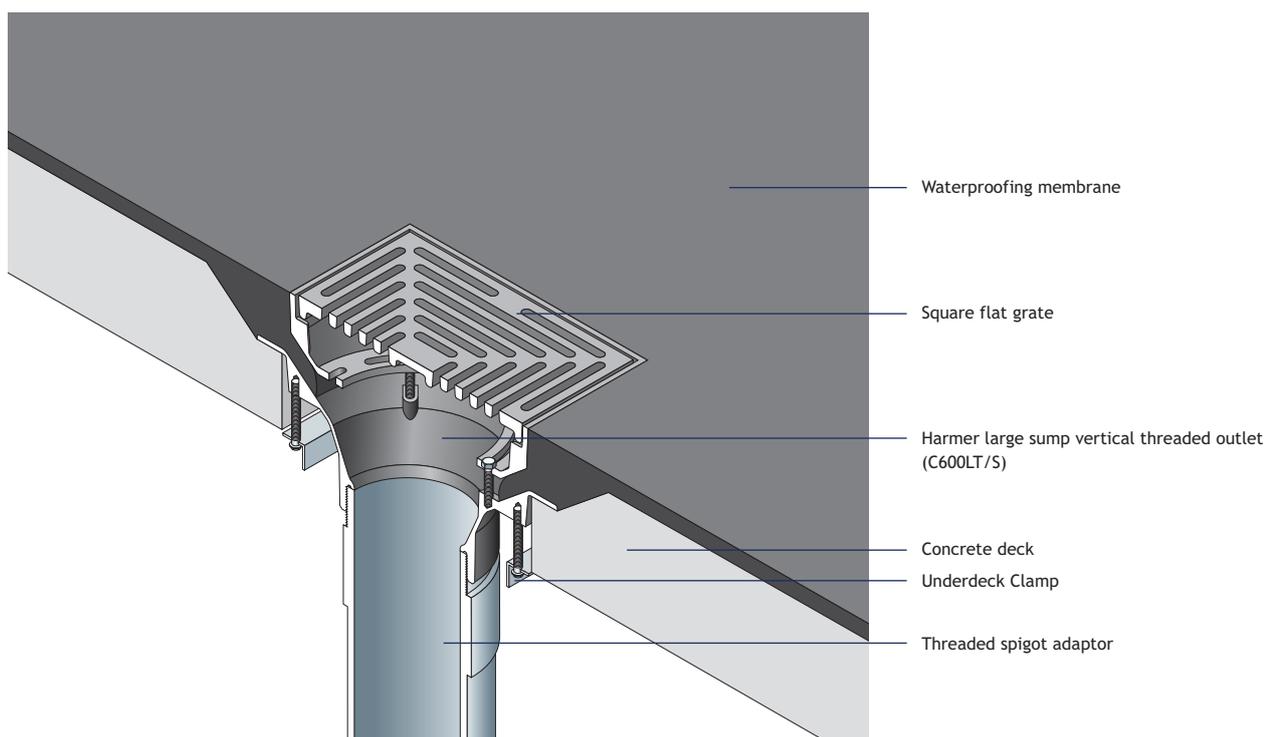
Always refer to current Health & Safety legislation, safe systems of work and the relevant material safety data sheets.

# Cast Iron Roof Outlets - Application Details

## Harmer Medium Sump Vertical Spigot Double Flanged Outlet in Warm Roof Metal Deck Construction

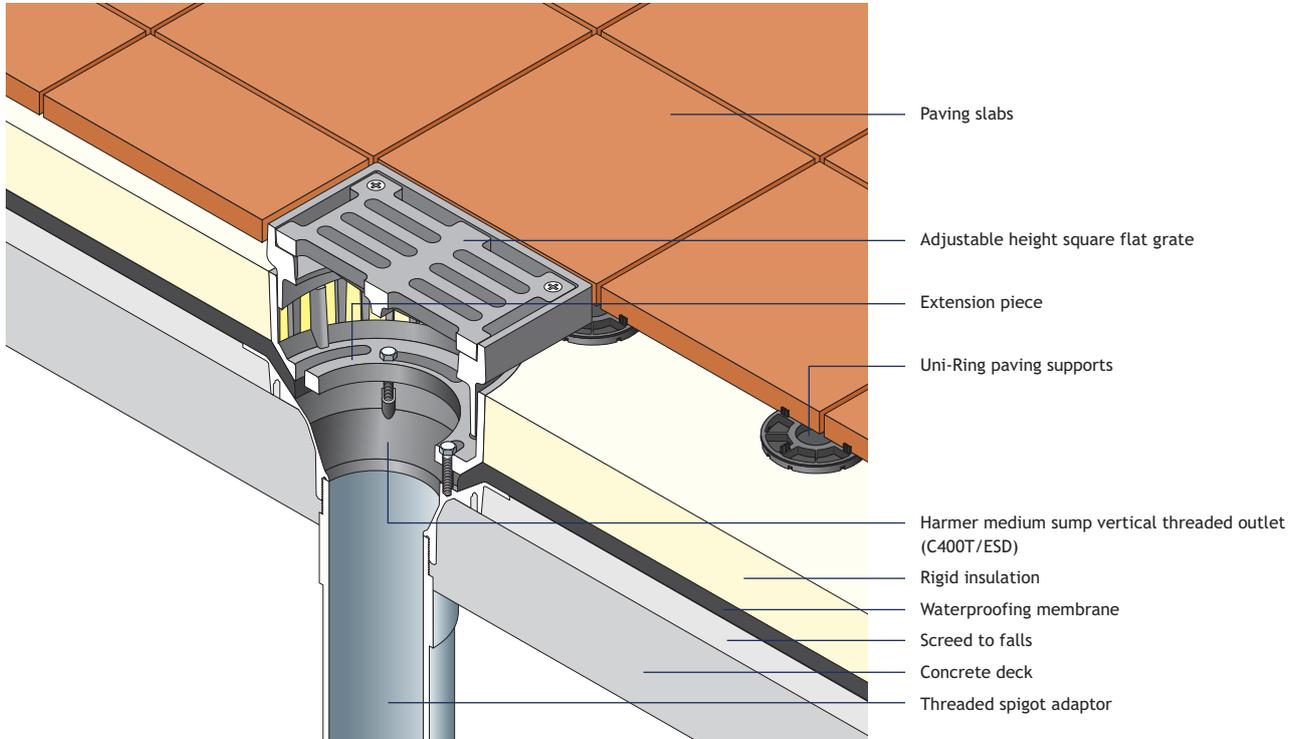


## Harmer Large Sump Vertical Threaded Outlet with Square Grate in Cold Roof Concrete Deck Construction



# Cast Iron Roof Outlets - Application Details

## Harmer Medium Sump Vertical Threaded Outlet with Square Grate in Inverted Roof Concrete Deck Construction



## Harmer Two-Way Outlet in Warm Roof Concrete Deck Construction

