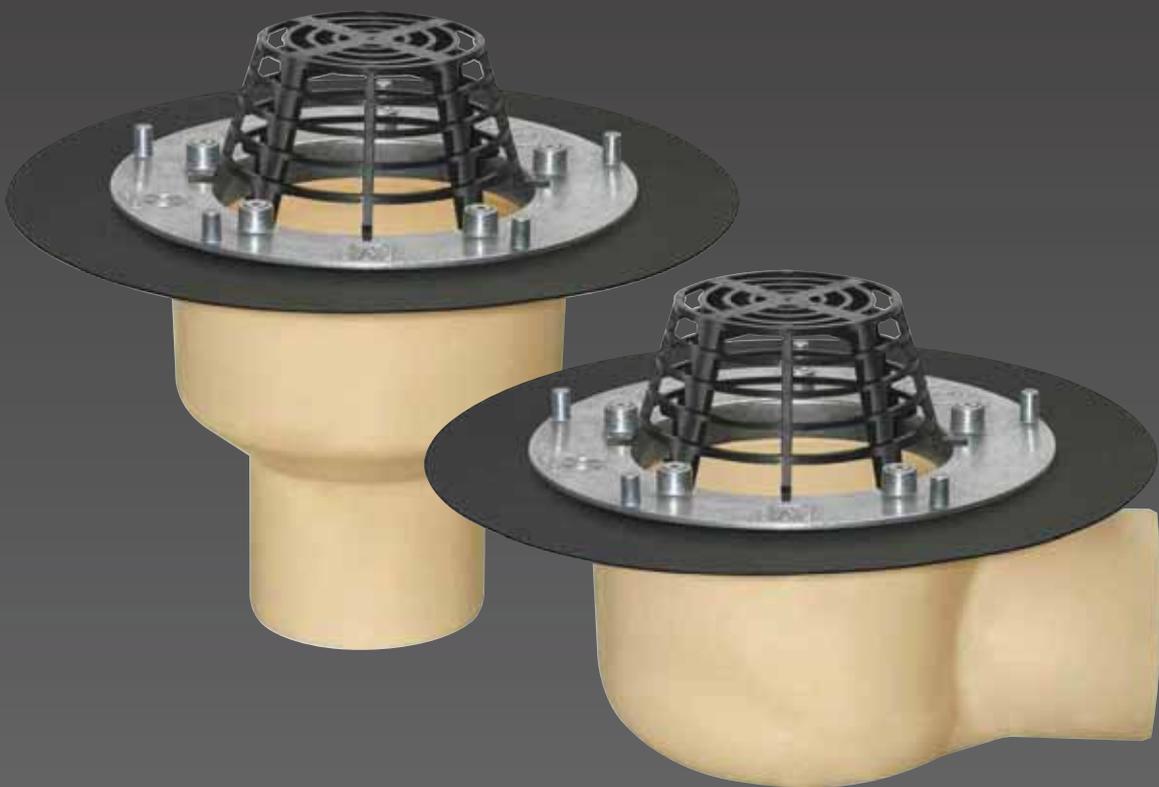


# Harmer Roof Drainage The Insulated Range

The high insulation, rigid polyurethane foam body range of roof outlets that eliminate any possibility of condensation as a result of thermal bridging.



# Insulated Roof Outlets - Benefits

Harmer Roof Insulated outlets are based on a rigid polyurethane foam body, with high insulation value.

## Main Characteristics

### Performance

Harmer Roof Insulated outlets are ideal for installation in cold and warm roofs, where the requirement is to completely eliminate any possibility of condensation forming on the underside of the roof outlet as a result of cold bridging.

There are three basic body types:

- Vertical Spigot
- Horizontal Spigot
- Graduated Vertical Spigot

An elastomeric bitumen connecting membrane is fused to the polyurethane body and is used for bonding to three-layer felts, torch-on roofing and hot asphalt. Alternative membrane specifications are available for PVC, EPDM, TPO and EB roofing.



The outlets are supplied with a black polyamid domical grate as standard.

The domical grate is simply push-fitted into the mouth of the outlet. It is easily removable for rodding which is further simplified by the unobstructed throat.

A range of accessories is also available to extend the range of roof constructions suitable for Insulated outlets.

## Key Benefits of Harmer Roof Insulated Outlets

### Reduction of Heat Loss

- Consistent with upgradings in the Building Regulations regarding flat roof U values, the high insulation value of the outlet body cuts down on heat loss.

### One-Piece Leakproof Design

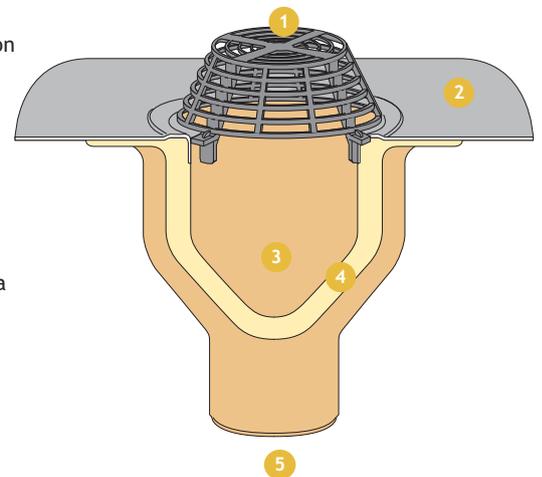
- One piece polyurethane foam body provides a completely watertight connection between roof membrane and rainwater pipe.
- Insulated outlets are available with a flexible connecting membrane fused to the outlet body. The outlet membrane is sealed to the flat roof waterproof membrane, creating a completely watertight connection with either bituminous or single ply roofing systems.

### Unobstructed Rainwater Flow

- Insulated outlets incorporate a polyamid domical grate which permits a free flow of rainwater while preventing loose chippings or debris from entering the outlet. A flat grate option is available for certain types of application.

### Optional Heating Element

- For the highest measure of protection against ice and snow blockage and condensation problems, Harmer Roof insulated outlets can be supplied with a heat sensor protected electric element moulded into the body of the outlet. The element is controlled by a heat sensor with a 1 metre length of cable for connection to a 240V supply.
- Heated outlets are particularly suitable for installation in areas of permanent shadow and north facing aspects.



- 1 Polyamid Domical Grate**  
Push-fitted into outlet body
- 2 Flexible Connecting Membrane**  
Designed to form a waterproof seal with the main roofing membrane
- 3 Integral Sump and Pipe Connection**  
Ensures the free flow of rainwater and facilitates easy rodding
- 4 One-Piece Polyurethane Foam Body**  
Designed to reduce heat loss and prevent condensation
- 5 Spigot Connection**

# Insulated Roof Outlets - Product Range Summary

## Outlets with Elastomeric Membrane Connection



Harmer Roof Insulated outlets with an elastomeric membrane connection, is a range that includes vertical spigot outlets, shallow sump graduated vertical spigot outlets and horizontal spigot outlets.

See page 61.

## Outlets with Screw Flange Connection



Harmer Roof Insulated outlets with a screw flange connection, is a range that includes vertical and horizontal spigot outlets.

See page 62.

## Accessories



Harmer Roof Insulated outlet accessories include a flat circular grate, extension pieces, and a terrace kit consisting of a circular ring fitting and square grate.

See page 63.

# Insulated Roof Outlets - Product Tables

The outlets are supplied with a black polyamid domical grate as standard. An aluminium flat grate is also available, but should be used only in inverted roof constructions where the outlet is covered by paving on Harmer Modulock or Uni-Ring raised supports. An optional electric heating element moulded into the outlet body can also be supplied.

## Vertical Spigot Outlet – Elastomeric Membrane

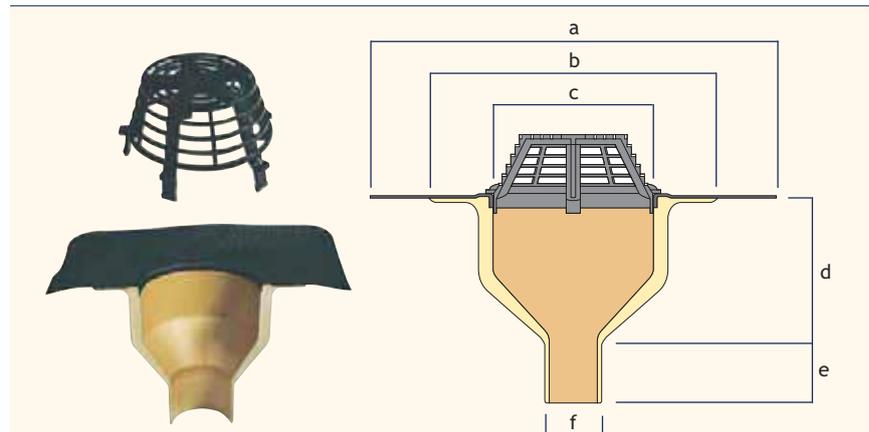
The Harmer Roof Insulated Vertical Spigot outlet comprises a rigid foamed polyurethane body 22mm thick and a 495mm square elastomeric bitumen connecting membrane fused to the body of the outlet. This membrane bonds to three-layer felts, torch-on roofing and hot asphalt.

Alternative connecting membrane specifications are available for bonding to PVC, EPDM, TPO and EB roofing.

### Connection to Pipework

Vertical Spigot outlets are suitable for connection to:

- Plain ended cast iron pipework with appropriate Harmer coupling.
- HDPE pipework with appropriate Harmer coupling.
- PVC “O” ring socketed soil grade pipe to BS 4514: 1983. Connection can be made directly, or with heat-shrink adaptors where necessary.



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Flow Rate <sup>1</sup> (l/s)	Product Code	
								Unheated	Heated
75	495	339	192	180	69	75	4.97	1000*	1004*
100	495	339	192	180	69	110	6.53	1001*	1005*
150	492	335	192	122	69	160	6.49	1003*	1007*

\* To specify or order please add the appropriate membrane code to the product code as follows: EB - Elastomeric membrane (1000EB), PVC - PVC membrane (1000PVC), DM - EPDM membrane (1000DM). Other membranes available on request.

For flat grate, add /F to code reference.

A range of accessories is available for use with special detail requirements (See pages 63).

### Flow Rate Note 1 (applies to all tables)

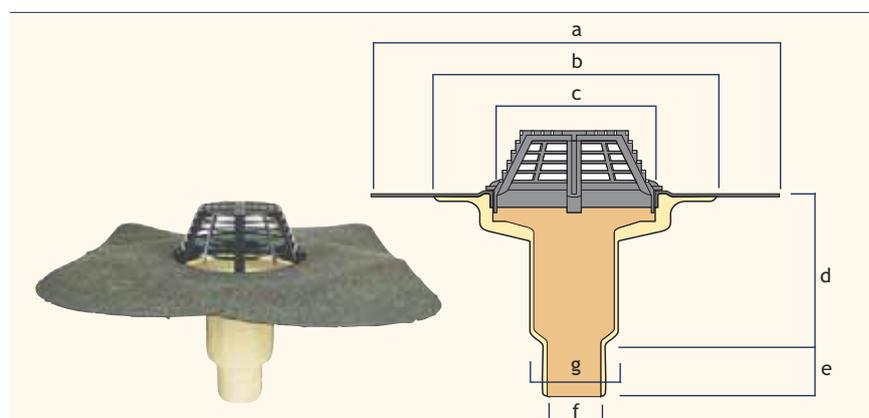
Flow rates are in litres per second to rainwater pipe capacity limits of BS EN 12056. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity.

## Shallow Sump Graduated Vertical Spigot Outlet – Elastomeric Membrane

The Harmer Roof Graduated Vertical Spigot outlet is an economy version of the Harmer Roof Insulated Vertical Spigot outlet.

Graduated Vertical Spigot outlets are particularly suitable for:

- Roof constructions which allow only a shallow outlet bowl.
- Cold roofs – where the formation of condensation on the underside of the outlet within the ‘cold’ roof void is unlikely, as in the case of a warm roof design.



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	Flow Rate <sup>1</sup> (l/s)	Product Code
75** or 100***	495	320	192	164	81	75	110	4.97** and 6.88***	1017*

\* To specify or order please add the appropriate membrane code to the product code as follows: EB - Elastomeric membrane (1000EB), PVC - PVC membrane (1000PVC), DM - EPDM membrane (1000DM). Other membranes available on request.

For flat grate, add /F to code reference.

A range of accessories is available for use with special detail requirements (See pages 63).

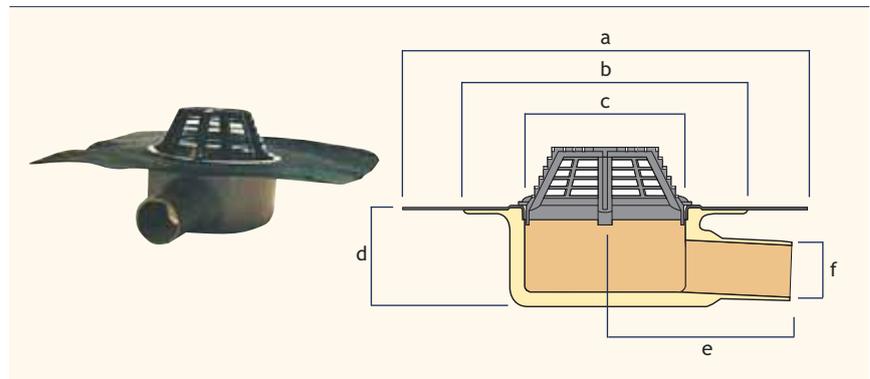
# Insulated Roof Outlets - Product Tables

## Horizontal Spigot Outlet – Elastomeric Membrane

The Harmer Roof Insulated Horizontal Spigot outlet comprises a rigid foamed polyurethane body 22mm thick and a 495mm square elastomeric bitumen connecting membrane fused to the body of the outlet. This membrane bonds to three-layer felts, torch-on roofing and hot asphalt.

Alternative connecting membrane specifications are available for bonding to PVC, EPDM, TPO and EB roofing.

The outlets are supplied with a black polyamid domical grate as standard. An aluminium flat grate is also available, but should be used only in inverted roof constructions where the outlet is covered by paving on Harmer Modulock or Uni-Ring raised supports.



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Flow Rate <sup>1</sup> (l/s)	Product Code	
								Unheated	Heated
75	495	335	192	120	225	75	3.49	1008*	1011*
100	495	335	192	140	225	110	6.10	1009*	1012*

\* To specify or order please add the appropriate membrane code to the product code as follows:  
EB - Elastomeric membrane (1000EB), PVC - PVC membrane (1000PVC), DM - EPDM membrane (1000DM).  
Other membranes available on request.

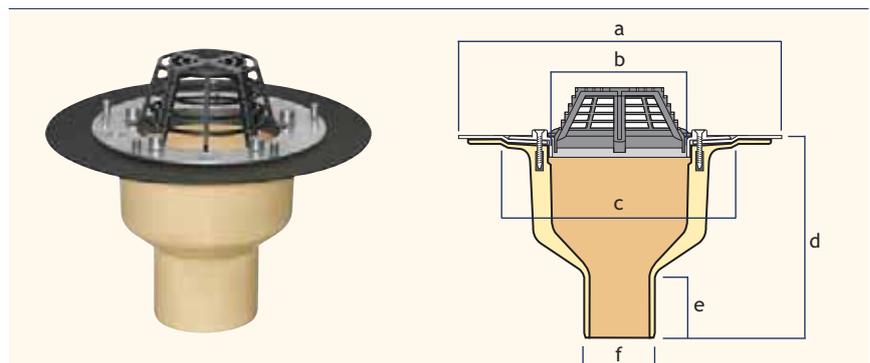
For flat grate, add /F to code reference.

A range of accessories is available for use with special detail requirements (See pages 63).

## Vertical Spigot Outlet - Screw Flange

The Harmer Roof Insulated Vertical Spigot Outlet comprises a rigid foamed polyurethane body 22mm thick and an aluminium screw flange. The screw flange is used to clamp the roof membrane securely to the outlet.

The outlets are supplied with a black polyamid domical grate.



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Flow Rate <sup>1</sup> (l/s)	Product Code	
								Unheated	Heated
75	320	144	250	210	63	75	4.97	1502*	1503*
100	320	144	250	210	75	110	6.53	1504*	1505*

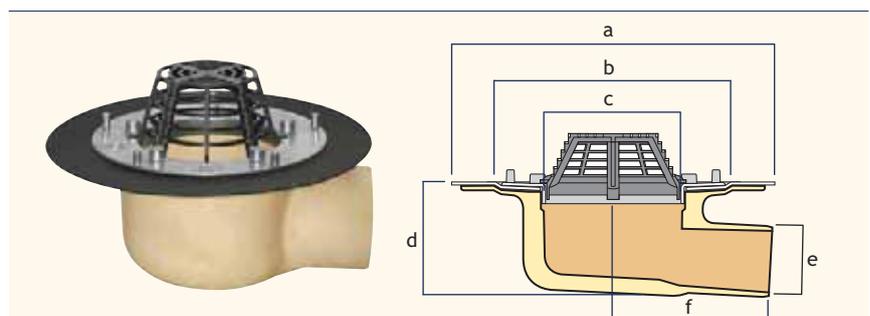
Flow Rate Note 1 (applies to all tables)

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.

## Horizontal Spigot Outlet - Screw Flange

The Harmer Roof Insulated Horizontal Spigot Outlet comprises a rigid foamed polyurethane body 22mm thick and an aluminium screw flange. The screw flange is used to clamp the roof membrane securely to the outlet.

The outlets are supplied with a black polyamid domical grate.



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Flow Rate <sup>1</sup> (l/s)	Product Code	
								Unheated	Heated
75	320	250	146	117	75	165	3.49	1514*	1515*
100	320	335	192	140	110	162	6.10	1516*	1517*

# Insulated Roof Outlets - Accessories

A range of accessories is available for use in connection with Harmer Roof insulated outlets. The accessories are designed to permit the installation of Harmer Roof insulated outlets in both typical and less standard roof constructions - warm roofs, inverted roofs, terrace applications, and concealed under raised paving slabs.

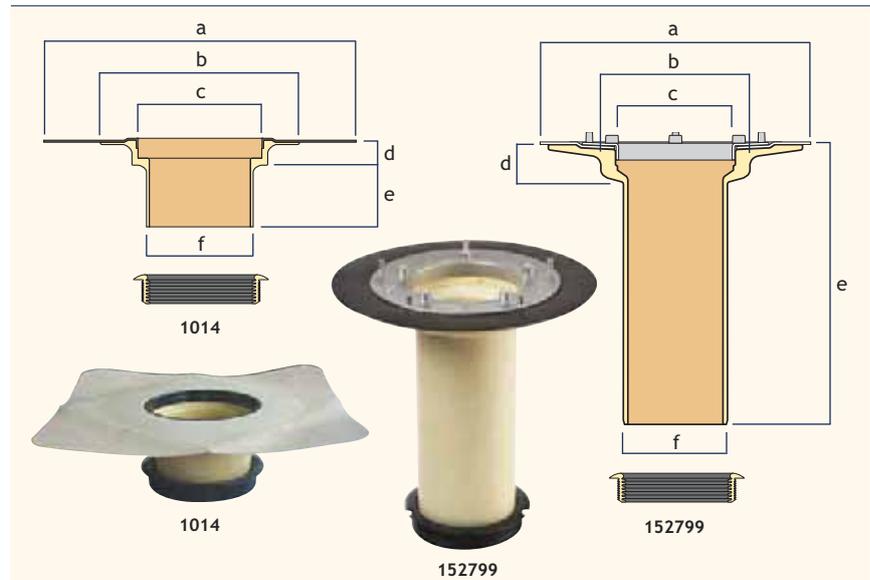
## Extension Pieces

Extension Pieces are for use in warm roof constructions, where the waterproof membrane occurs above the level of the roof deck. They are suitable for insulation thicknesses of 50-335mm.

The Extension Piece is available with a choice of connecting membranes or screw flange.

### Connection to Outlet

The Extension Piece is sealed into the mouth of the insulated outlet by means of a neoprene seal. See application detail on page 65 showing Extension Piece with EB connecting membrane bonded to three-layer roofing felt.



For Use With	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Product Code
Membrane outlets	459	340	189	50	204	170	1014
Screw flange outlets	320	188	146	50	355	132	152799

Extension Pieces are sized for direct connection to Spigots.

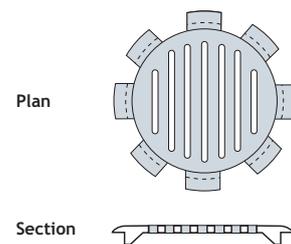
## Flat Grate

Aluminium Flat Grates are also available specifically for installation under paving slabs set on Harmer Modulock or Uni-Ring raised supports. These supports enable rainwater to drain away under paving slabs ballasting the insulation on inverted roofs. Because the grate occurs under the paving slabs, there is no obstruction whatsoever of the paved area. Rainwater simply drains away between the paving slab joints and into the outlets beneath.

Insulated outlet Flat Grates should not be used where they would be exposed to pedestrian traffic. Instead, the Harmer Roof Terrace Kit should be used.

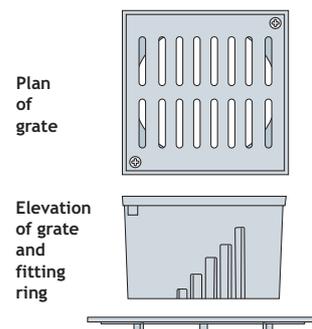
Code reference for grate – use suffix /F after outlet codes if flat grate is required

Flat Grates and Terrace Kits cannot be used with screw flange outlets.



## Terrace Kit

Designed for terrace-type applications exposed to pedestrian traffic. The aluminium alloy Terrace Kit consists of a circular fitting ring which is positioned over the mouth of the outlet. The terrace grate then rests on the ring and can be adjusted up or down to 10 different heights, from 34mm to 100mm, to suit varying thicknesses of insulation and surface finish.



# Insulated Roof Outlets - NBS Specification

A typical NBS Specification for Harmer Insulated Roof Outlets. A full range of NBS specifications and roof drainage calculators are available via Alumasc's 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 INSULATED 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 Insulated Rigid PU

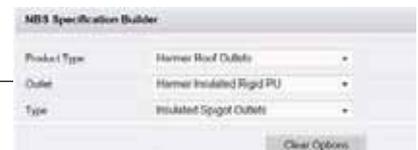
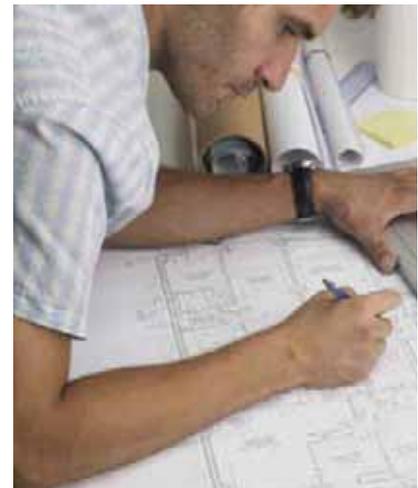
Type: Insulated Spigot Outlets

Size: 75mm

Product Code: 1000 (specify membrane type if used with single ply)

Reference: Harmer Roof Outlets

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.

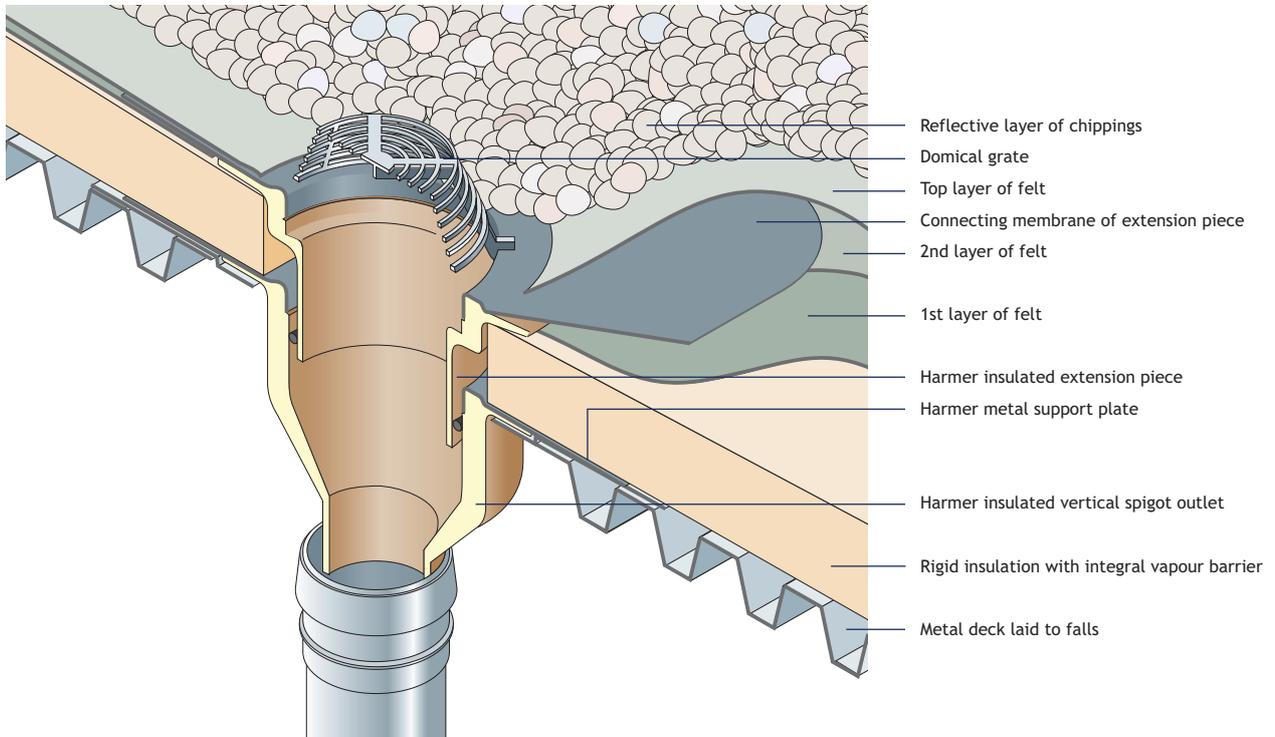
### Key Features

- 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



# Insulated Roof Outlets - Application Details

## Harmer Insulated Outlet and Extension Piece with Connecting Membrane in Warm Roof Metal Deck Construction



## Harmer Insulated Outlet with Connecting Membrane and Cut Down Extension Piece in Inverted Roof Construction

