

HARMER

DRAINAGE SYSTEMS

 Rainclear Systems •

Harmer Balcony Outlets and Modulock Channels



*Don't forget that we do these too
when you need them to conform
with the new regs*

Aluminium Roof Outlets - Balcony Detail Outlets

Harmer Roof Balcony Detail outlets are designed for use with concrete balcony structures and are fitted with flat grates for safe drainage in pedestrian accessed areas. Balconies provide additional living space both in new build and refurbishment projects. AWMS can manufacture bespoke products especially for modern balconies on high-rise commercial developments.

Introduction

The range consists of the traditional large sump outlet and a NEW shallow sump range which incorporates a wide selection of grating options in Stainless Steel and Nickel Bronze for use with epoxy resin finishes and tiled areas. Harmer Balcony outlets are ideal for use with all types of waterproofing membranes including mastic asphalt, elastomeric felts, liquid plastics and most single ply systems.

The Harmer Balcony Detail range can be combined with Alumasc rainwater products including Flushjoint and Heritage pipework to provide continuous drainage in series on multi-storey buildings. Colour matching and bespoke manufacture of the rainwater system are catered for through Alumasc's made to order service.

The balcony outlet range is also suitable for use with the Modulock range of drainage channels and paving supports in areas where level access or permeable drainage is required.



Mini Balcony Outlet

The new Harmer aluminium mini balcony outlet provides an unobtrusive solution for use on balcony applications. The shallow 50mm sump is designed to avoid interference with steel reinforcement and is easily installed in new and refurbishment applications. The standard range consists of 63mm and 83mm diameter outlet sizes. Other Round, Square and Rectangular outlet connections for use with Alumasc rainwater systems are available on request.

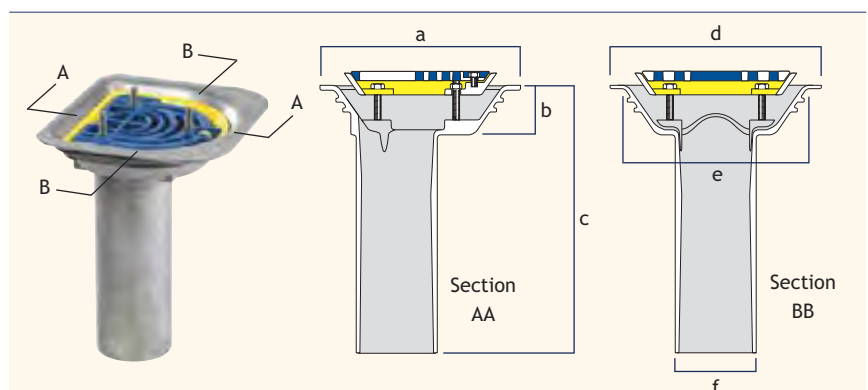
Standard Grate

Similar in function to the deep sump Harmer Detail Balcony outlet, the grating fits level with the clamping ring regardless of the thickness of waterproofing membrane.

Rainwater pipes from upper level balconies can either freely discharge over the grating or the cut-outs in the grating can be removed on site to allow the rainwater pipe to discharge within the sump area. (See application detail on page 40)

Flow Rate Note 1 (applies to table)

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



Outlet Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Flow Rate ¹ (l/s)	Load (tonne)	Weight (kg)	Product Code
50	197.5	50	270	215	185	63	1.7	0.3	1.6	2BO/M
75	197.5	50	270	215	185	83	4.8	0.3	1.7	3BO/M

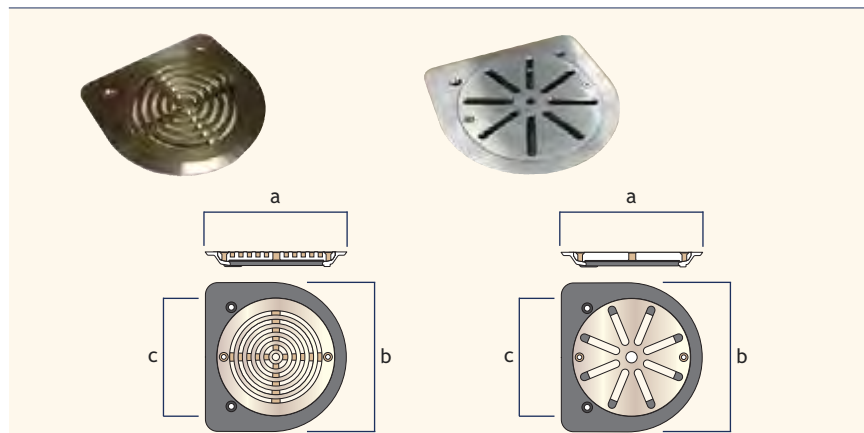
Aluminium Roof Outlets - Balcony Detail Outlets

Fixed Height Grate Options

For added quality and finished appearance of any Harmer Mini Balcony outlet installation, a choice of stainless steel or nickel bronze gratings can be fitted.

After waterproofing to the outlet and the clamp ring has been fastened down, an adaptor bezel is fitted to the clamp ring which allows for the fitting of a Star pattern or Concentric Ring grate.

Gratings are available in stainless steel or nickel bronze.



Material	Grate Type	a (mm)	b (mm)	c (mm)	Flow Rate ¹ (l/s)	Load Class	Weight (kg)	Product Code
Stainless steel	Star	165.5	175	137.5	3.3*	K3	1.1	/SS
Stainless steel	Concentric ring	165.5	175	137.5	2.1*	K3	1.1	/RS
Nickel bronze	Star	165.5	175	137.5	3.3*	K3	1.1	/SN
Nickel bronze	Concentric ring	165.5	175	137.5	2.1*	K3	1.1	/RN

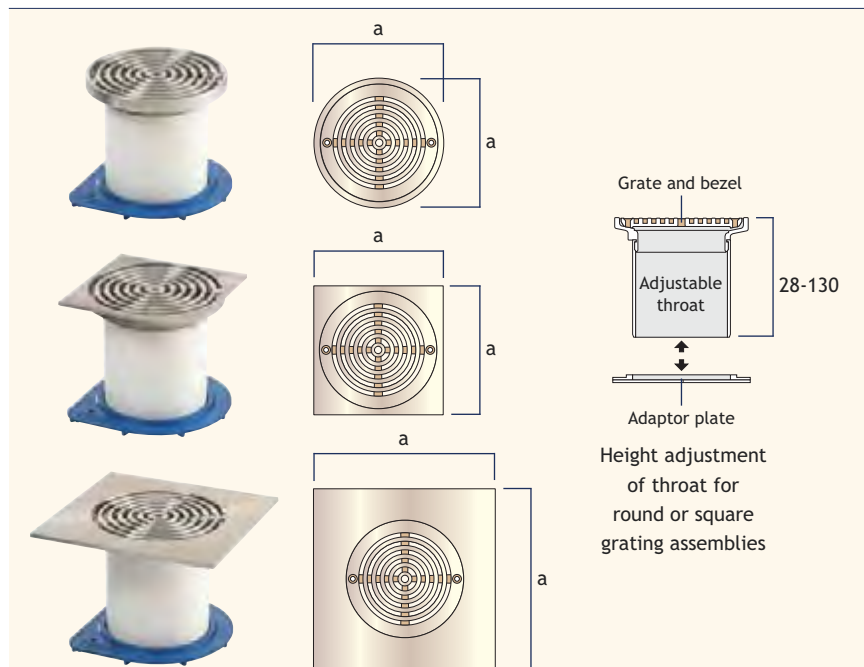
*Flow rate on 2BO/M is restricted to 1.69 l/s in accordance with BS EN 12056 pipe capacity

Adjustable Height Grate Options

In addition to fixed height grates, height adjustable grates and bezels in stainless steel or nickel bronze are also available.

After waterproofing to the balcony outlet and the clamp ring has been fastened down, an adaptor plate is fitted to the clamp ring which allows for the insertion of a height adjustable throat complete with round or square grating assembly.

The standard plastic throat can be cut down to the required height of paved or tiled surrounds. This is particularly useful where paving slabs are being laid on Harmer Modulock Raised Deck Supports.



Material	Grate Type	a (mm)	Flow Rate ¹ (l/s)	Load Class	Weight (kg)	Product Code
Stainless steel	Round 150mm	150	3.3*	K3	1.3	/C15S
Stainless steel	Square 150mm	150	3.3*	K3	1.3	/S15S
Stainless steel	Square 200mm	200	3.3*	K3	1.8	/S20S
Nickel bronze	Round 150mm	150	3.3*	K3	1.3	/C15N
Nickel bronze	Square 150mm	150	3.3*	K3	1.3	/S15N
Nickel bronze	Square 200mm	200	3.3*	K3	1.8	/S20N

*Flow rate on 2BO/M is restricted to 1.69 l/s in accordance with BS EN 12056 pipe capacity

Aluminium Roof Outlets - Balcony Detail Outlets

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

Large Balcony Outlet

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

Balcony outlets can also be connected to Alumasc's aluminium Flushjoint and Heritage rainwater pipes.

Flat grates can be supplied with holes punched out to receive 50, 75 or 100mm nominal bore rainwater downpipes. When ordering pre-punched grates, add the following suffixes shown in blue to the product codes:

2BO/**2H** for 50mm pipe

3BO/**3H** for 75mm pipe

4BO/**4H** for 100mm pipe

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

The Balcony outlet can be used with an extension piece.

Please see Harmer couplings available (page 32).

Grate Extension Piece

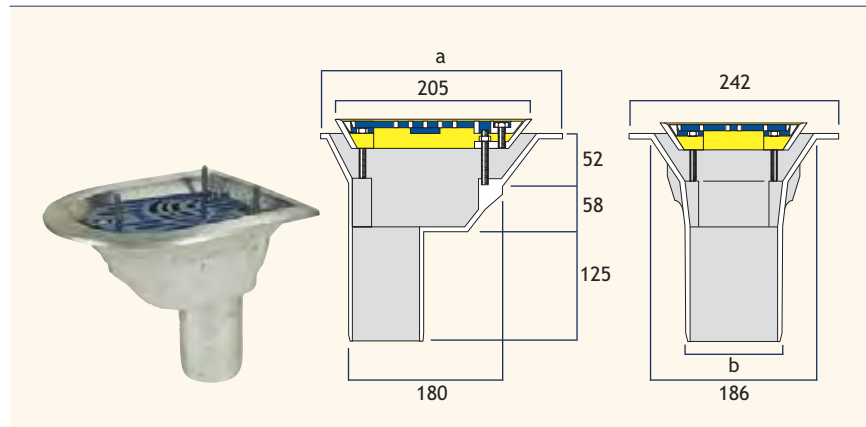
The Grate Extension Piece is for applications where it is necessary to raise the level of the grate above the body of the outlet such as in inverted roof construction.

The extension piece can be cut down if necessary to suit the thickness of paving or tiles. This can be done easily on site with a hacksaw, or, if required, extension pieces can be trimmed prior to delivery.

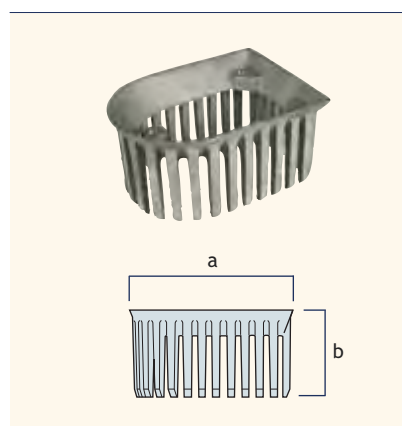
The Grate Extension Piece is supplied with one set of stainless steel extension studs per outlet.

Flow Rate Note 1 (applies to table)

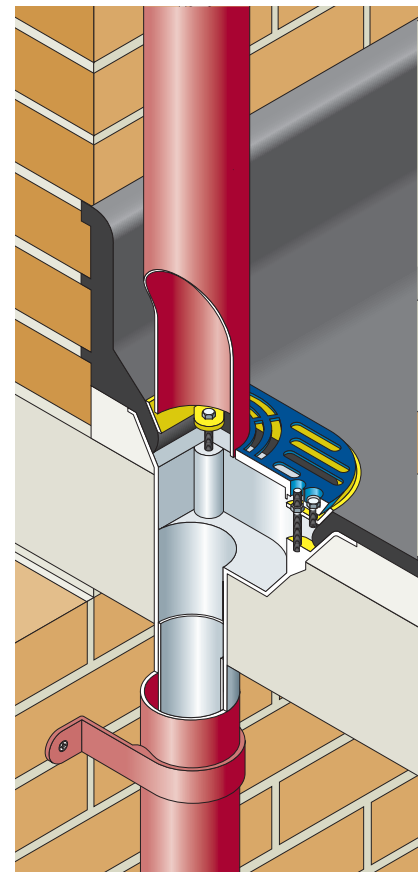
Flow rates are in litres per second based on flow rate test data. Where tested flow rates are greater than pipe capacity limits of BS EN 12056, the pipe capacity limit has been shown. Contact Harmer Technical Services for variable outlet performance to specific depth of water and rainfall intensity.



Outlet Size (mm)	a (mm)	b (mm)	Flow Rate ¹ (l/s)	Weight (kg)	Product Code
50	270	60	1.69	2.8	2BO
75	270	83	4.97	3.1	3BO
100	270	110	8.41	3.3	4BO



Outlet Size (mm)	a (mm)	b (mm)	Product Code
50	220	115	BO/EP
75	220	115	BO/EP
100	220	115	BO/EP



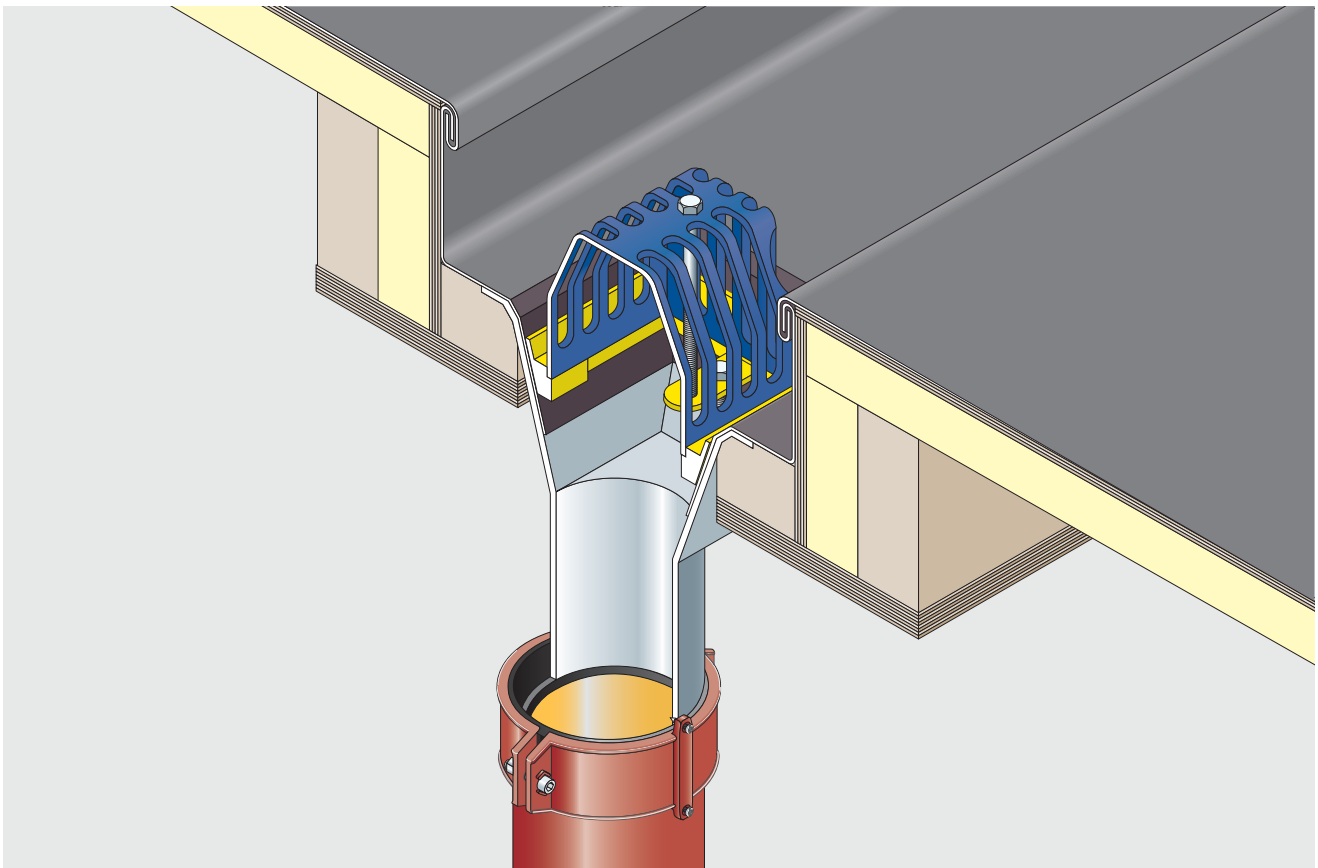
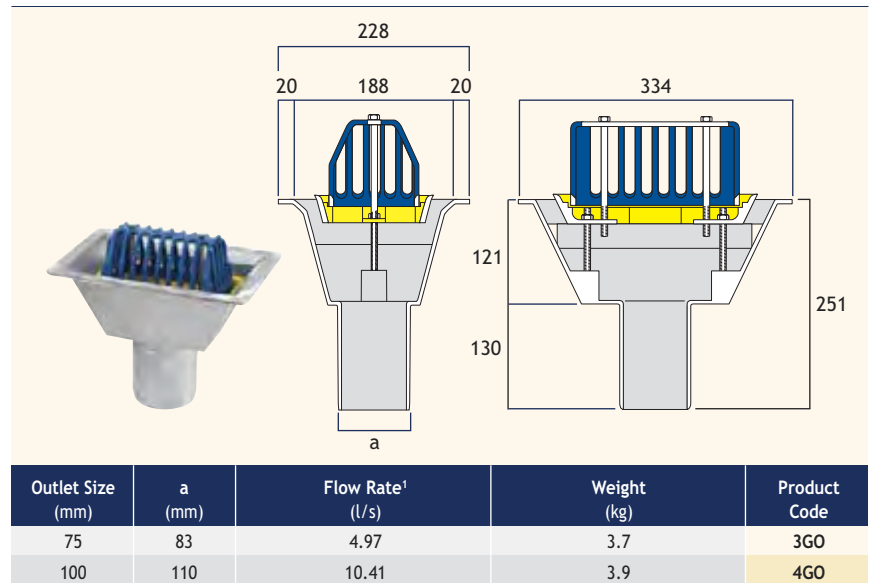
Aluminium Roof Outlets - Gully Detail Outlets

Harmer Roof Gully Detail outlets should be used in roof constructions incorporating formed drainage channels. They are specially designed to suit internal flat roof gutters.

Gully Outlet

Gully outlets are suitable for direct connection to: Cast iron pipework to BS EN 877 and BS 416, HDPE pipework and PVC O-ring socketed pipework to BS 4514 (3GO and 4GO outlets). Please see Harmer couplings available (page 32).

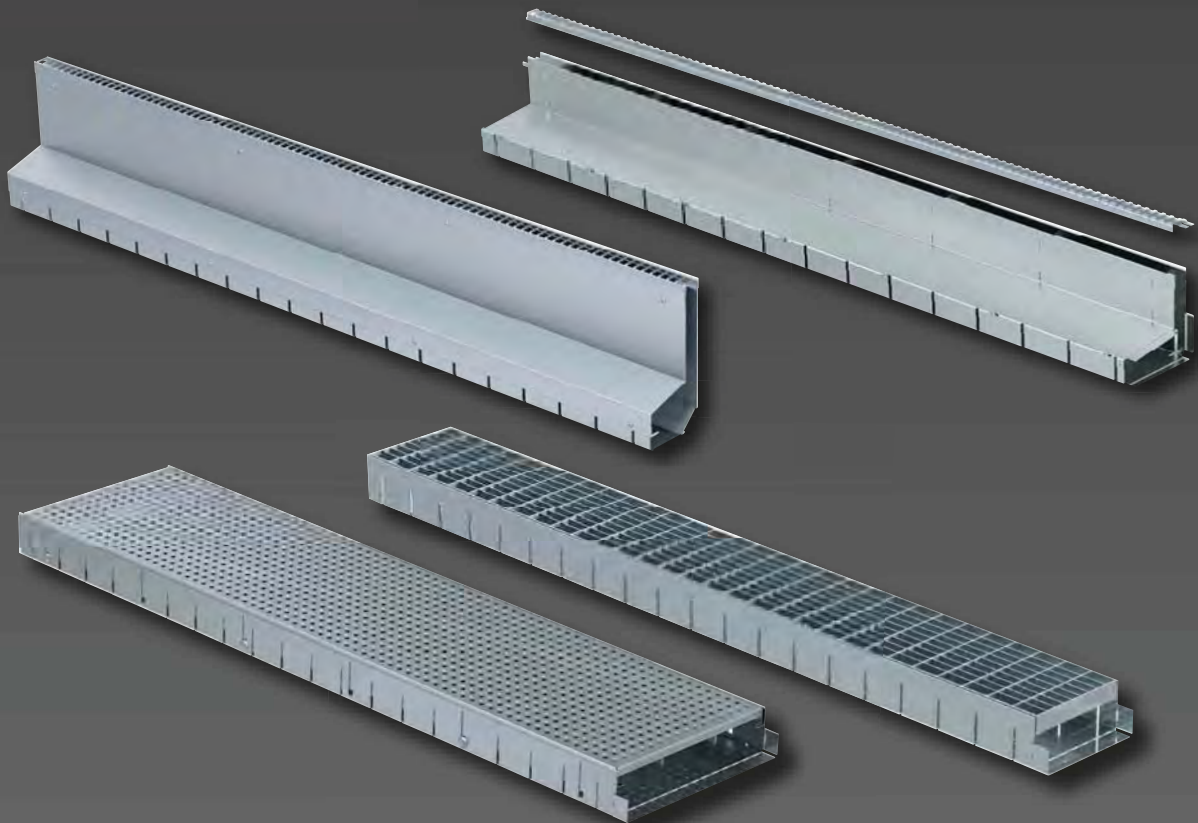
Spigots are sized to suit nominal diameter pipework shown in the table opposite.



Harmer Roof Drainage The Modulock Channel Drain Ranges

The advanced, linear, steel drainage ranges are for use within a raised deck structure.

Combining threshold drainage with the level access requirements of Part M, the channel drains can be used in their own right, or especially with Harmer Modulock Raised Deck Supports.



Modulock Roof Channel Drains - Benefits

Harmer Modulock Channel Drain ranges are highly versatile linear drainage systems designed to provide the ideal level access drainage solution where rainwater run-off and percolation are required to be intercepted at the perimeter of a building or across thresholds and points of access into and out of a building, and then ducted away to drainage outlets.

Compliances

- Harmer Modulock Channel Drains ensure Level Access compliance with pedestrian loadings to Class K3 in accordance with Approved Document M access to buildings and other regional requirements.

Safety

- A drainage system that intercepts rainwater and improves safety at point of access.

Protection

- Buildings are protected from weathering at the vulnerable point where hard surface meets structure. Ponding water is prevented and freeze thaw attack on masonry is eliminated.

Performance

- Modulock Channels form part of the overall rainwater drainage plan for most types of flat roof or deck construction including balconies and terraces within pedestrian areas permitting K3 Class loading.

Versatility

- Modulock Channels can be used on podium decks, terraces and balcony areas in conjunction with Harmer Rainwater Outlets and Modulock Pedestal Support systems.

Compatibility

- Harmer Modulock Channel Drains are used on all types of raised deck construction where drainage at the façade and across entrances is a requirement. Compatible with inverted roof, warm roof, Green roof and podium deck construction.

Application

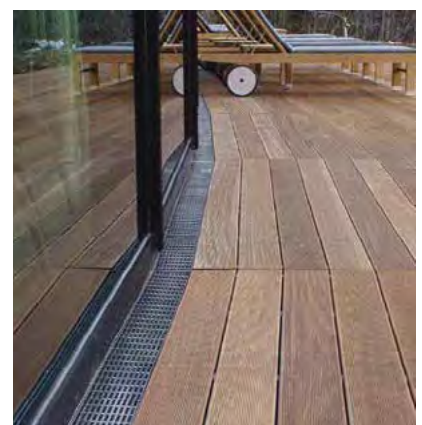
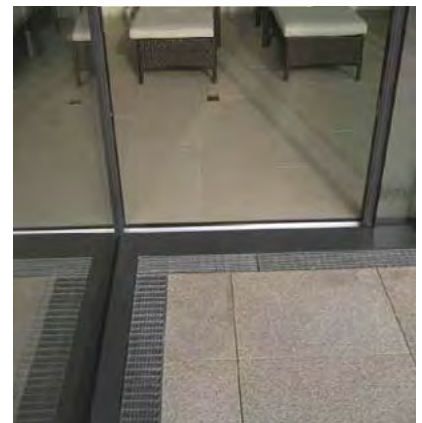
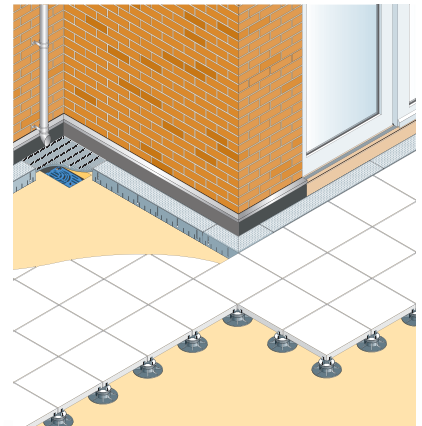
- A rainwater channel system in three nominal width sizes consisting of slotted sides with either a grill or slotted grating. Rainwater runoff is collected at hard surface level whilst percolation is relieved at membrane level.

Material

- Channels and gratings are available in Grade 304 stainless steel or galvanised mild steel.

Installation

- Straight line end to end installation with simple location clips ensures the system is fully stable whilst butt joint, site formed irregular angles accommodate change in direction. Gratings adjust vertically within the channel to elevate and correct cross falls and any irregularities in the supporting surface.




Modulock Roof Channel Drains - Product Range Summary

Designed for perimeter drainage of inverted roof and warm roof constructions, the Harmer Modulock Straight Channel range, manufactured in either stainless steel or galvanised mild steel, is available in 130mm, 200mm and 250mm widths, with either variable or fixed depths.

Two types of Harmer Modulock Slot Channel are also available - Facade and Terrace. The Facade range is manufactured in either stainless or galvanised steel. The Terrace range is manufactured in stainless steel only.

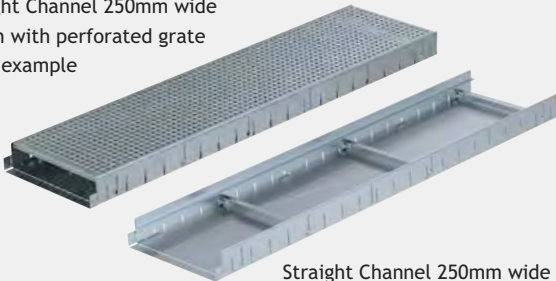
Straight Channels and Grates

Straight Channel 130mm wide shown with mesh grate as an example



Straight Channel 130mm wide

Straight Channel 250mm wide shown with perforated grate as an example



Straight Channel 250mm wide

2000mm, 1000mm and 500mm long channels in two widths of 130mm and 250mm, available in fixed heights of 55mm, 75mm and 140mm, or with adjustable heights ranging from 55-90mm and 90-150mm. The channels can have either perforated or closed sides. The channels are manufactured in stainless steel Grade 304 or galvanised mild steel.

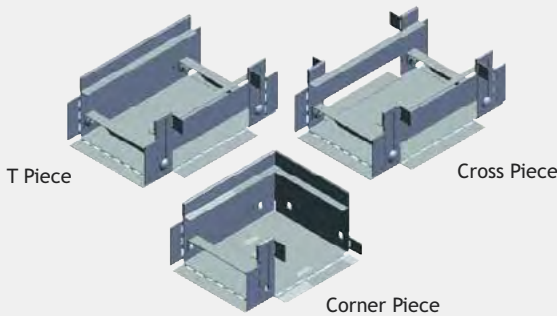
The 130mm wide channels have a choice of 6 types of grate. The 250mm wide channels have a choice of 4 types of grate. The grates have Load Class K3. The grates are manufactured in stainless steel Grade 304 or galvanised mild steel.

A 200mm wide channel in a fixed height of 55mm with a mesh grate is also available in 1000mm and 500mm lengths.

Channel lengths slot together via tongue and groove joints.

See pages 78, 79, 80 and 81.

90° Connections - Corner Pieces, Cross Pieces and T-Pieces for Straight Channels



T Piece

Cross Piece


Corner Piece

Prefabricated 90° Corners, Cross Pieces and T-pieces are used with the 130mm and 250mm wide channels. They have adjustable heights ranging from 55-90mm and 90-150mm. The 90° connections are manufactured in stainless steel Grade 304 or galvanised mild steel.

As with the channels, the 90° connections slot together via tongue and groove joints.

See pages 78 and 80.

Outlet Channels and Drain Trap for Straight Channels



Drain Trap components

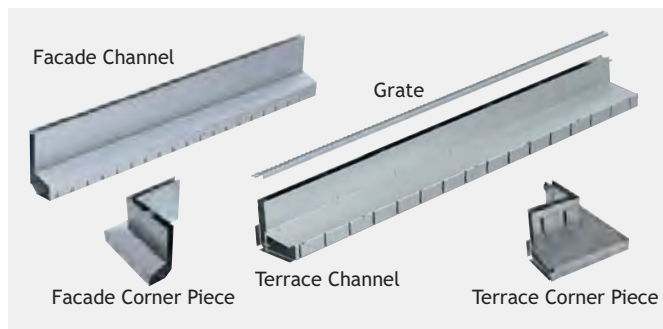
Adjustable height and fixed height channels are available with vertical drainage outlets. They can be used with a drain trap.

See pages 79 and 81.

Modulock Roof Channel Drains - Product Range Summary

130mm and 250mm wide Straight Channels are available in either fixed depth versions or as versions that can be altered in depth using the integral adjustment mechanism. The 200mm wide Straight Channel is only available in a fixed depth version. For the 130mm and 250mm wide Straight Channels, grates are available in six and four different profiles respectively. The 200mm wide version has just one grate profile. All grates can be made in stainless steel or galvanised mild steel. Facade Slot Grates are available in stainless or galvanised steel. Terrace Slot Grates are available in stainless steel only. Laid directly on the structural deck, all Straight and Slot Channels are rated Load Class K3.

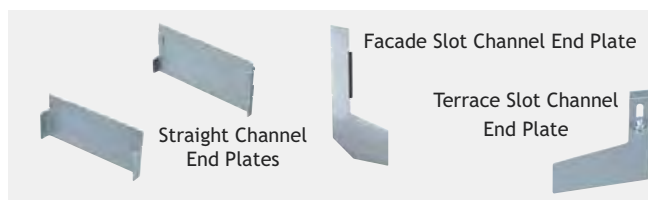
Facade & Terrace Slot Channels, Grate and 90° Corner Pieces



Facade Slot Channels are located directly against a facade where an architectural, narrow slot is required. Channels, Corner Pieces and Grates are available in stainless or galvanised steel. No height adjustment is provided.

Terrace Slot Channels are used for small terrace areas where paving construction depth is shallow (80-130mm). See pages 83 and 84.

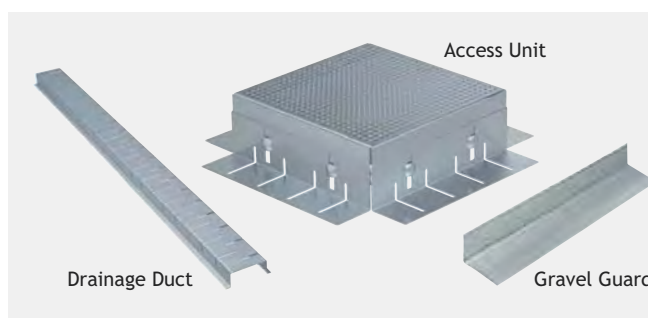
End Plates



End Plates are channel stops that prevent leaves and wind-blown rubbish from congesting the waterway. Vermin are prevented from using the channel as a means of escape.

See pages 79, 81, 83 and 84.

Standard Accessories



There is a range of accessories for the Modulock Channel Drain systems to ensure successful installation in most types of roof construction.

The range includes Access Units and Grates, Maintenance Units and Grates, Gravel Guard and Drainage Duct.

See page 82.

Green Roof Accessories



There is a range of accessories for the Modulock Channel Drain system to ensure its successful installation in most types of roof construction.

The range includes an adjustable height access chamber, access chamber extension and 600mm high perforated access chamber also with height adjustability.

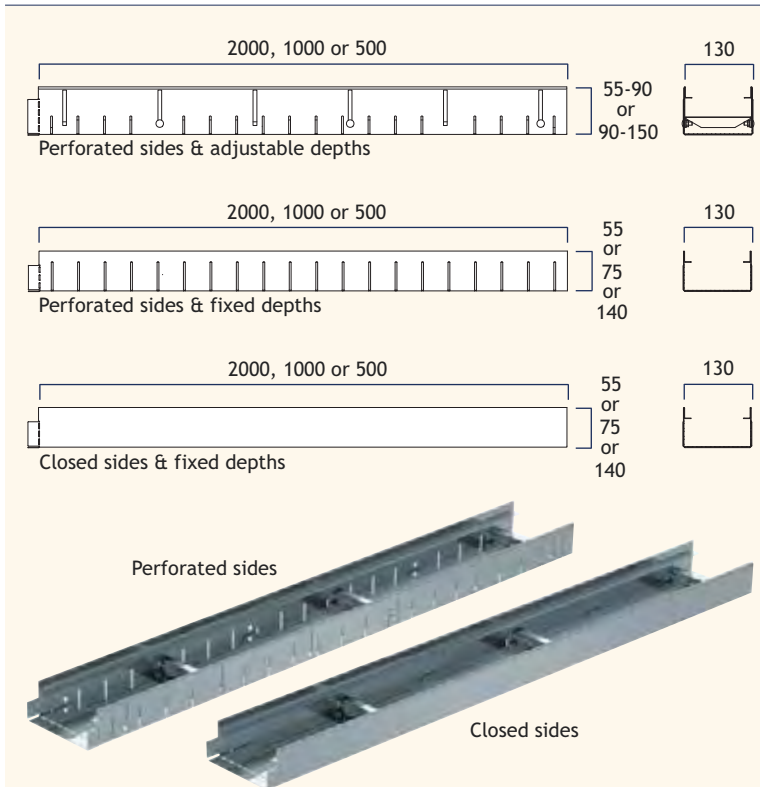
See page 85.

Modulock Roof Channel Drains - Product Tables

Straight Channels: 130mm Wide

130mm Straight Channels

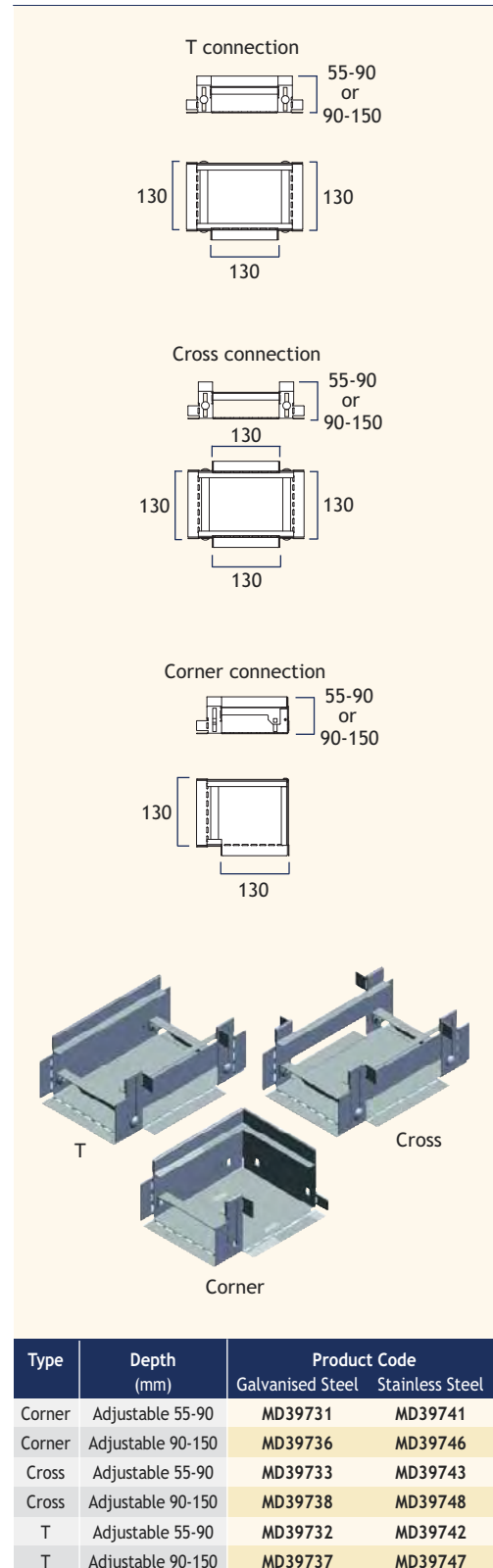
The Channel Drains are 130mm wide and made in 2000mm, 1000mm and 500mm lengths, with a choice of perforated or open sides. The depths of the Channels can be adjustable or fixed. The Channel lengths are slotted together.



Channel Side Type	Length (mm)	Depth (mm)	Product Code	
			Galvanised Steel	Stainless Steel
Perforated	2000	Adjustable 55-90	MD39162	MD39262
Perforated	2000	Adjustable 90-150	MD39182	MD39282
Perforated	2000	Fixed 55	MD39132	MD39232
Perforated	2000	Fixed 75	MD39142	MD39242
Perforated	2000	Fixed 140	MD39152	MD39252
Closed	2000	Fixed 55	MD39135	MD39235
Closed	2000	Fixed 75	MD39145	MD39245
Closed	2000	Fixed 140	MD39155	MD39255
Perforated	1000	Adjustable 55-90	MD39161	MD39261
Perforated	1000	Adjustable 90-150	MD39181	MD39281
Perforated	1000	Fixed 55	MD39131	MD39231
Perforated	1000	Fixed 75	MD39141	MD39241
Perforated	1000	Fixed 140	MD39151	MD39251
Closed	1000	Fixed 55	MD39134	MD39234
Closed	1000	Fixed 75	MD39144	MD39244
Closed	1000	Fixed 140	MD39154	MD39254
Perforated	500	Adjustable 55-90	MD39160	MD39260
Perforated	500	Adjustable 90-150	MD39180	MD39280
Perforated	500	Fixed 55	MD39130	MD39230
Perforated	500	Fixed 75	MD39140	MD39240
Perforated	500	Fixed 140	MD39150	MD39250
Closed	500	Fixed 55	MD39133	MD39233
Closed	500	Fixed 75	MD39143	MD39243
Closed	500	Fixed 140	MD39153	MD39253

Corner, Cross & T Connections

These prefabricated components provide a continuous change of direction and slot together with the Straight Channels. Depths are adjustable.



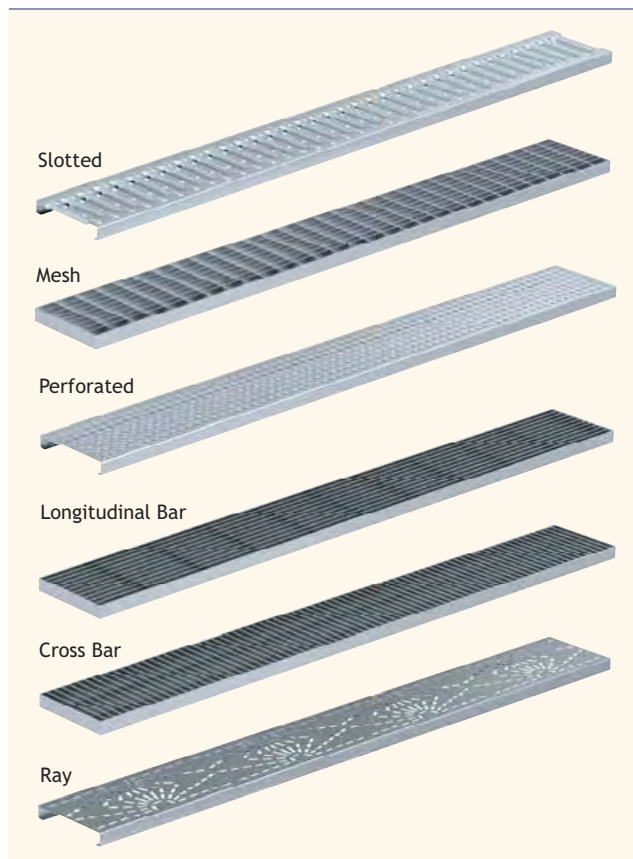
Type	Depth (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Corner	Adjustable 55-90	MD39731	MD39741
Corner	Adjustable 90-150	MD39736	MD39746
Cross	Adjustable 55-90	MD39733	MD39743
Cross	Adjustable 90-150	MD39738	MD39748
T	Adjustable 55-90	MD39732	MD39742
T	Adjustable 90-150	MD39737	MD39747

Modulock Roof Channel Drains - Product Tables

Straight Channels: 130mm and 200mm Wide

Grates

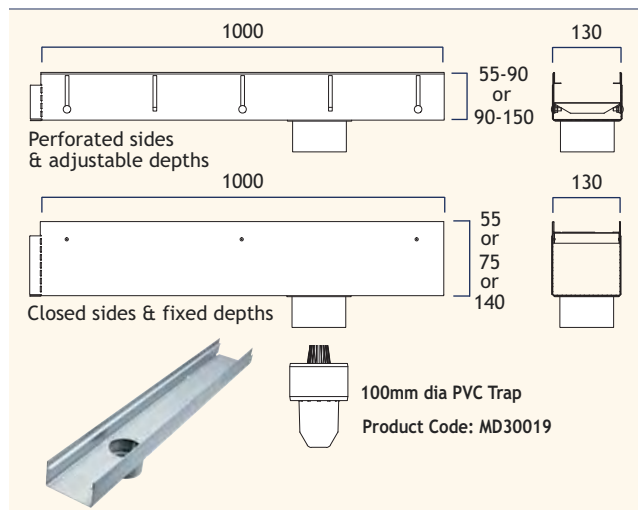
Grates are 130mm wide and available in 6 different designs in either stainless steel or galvanised steel. 90° corners can be butt jointed or mitred on site.



Grate Type	Grate Length (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Slotted	1000	MD37302	MD37332
Slotted	500	MD37303	MD37333
Mesh	1000	MD37300	MD37330
Mesh	500	MD37301	MD37331
Perforated	1000	MD37304	MD37334
Perforated	500	MD37305	MD37335
Longitudinal Bar	1000	MD37306	MD37336
Longitudinal Bar	500	MD37307	MD37337
Cross Bar	1000	MD37308	MD37338
Cross Bar	500	MD37309	MD37339
Ray	1000	MD37310	MD37340
Ray	500	MD37311	MD37341

Outlet Channels & Trap

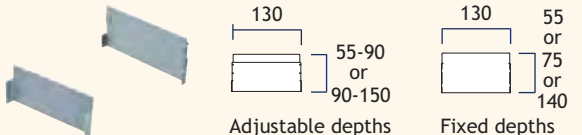
The Outlet Channels slot together with the Straight Channels. The depths can be adjustable or fixed, with a choice of perforated or open sides. The trap fits inside the outlet of the channel.



Channel Side Type	Depth (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Perforated	Adjustable 55-90	MD39703	MD39708
Perforated	Adjustable 90-150	MD39704	MD39709
Closed	Fixed 55	MD39700	MD39705
Closed	Fixed 75	MD39701	MD39706
Closed	Fixed 140	MD39702	MD39707

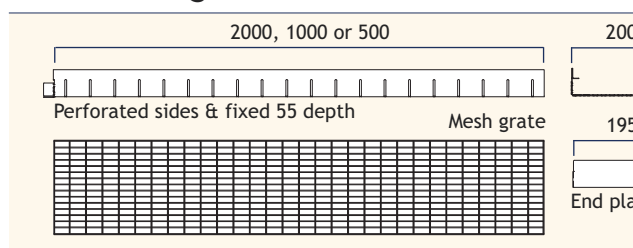
End Plates

End Plates form a stop to the channel drain and are available to suit fixed height or adjustable height Straight Channels. Vermin are prevented from using the channel as a means of escape.



Depth (mm)	Product Code	
	Galvanised Steel	Stainless Steel
Adjustable 55-90	MD39373	MD39383
Adjustable 90-150	MD39374	MD39384
Fixed 55	MD39370	MD39380
Fixed 75	MD39371	MD39381
Fixed 140	MD39372	MD39382

200mm Straight Channel + Grate + End Plate



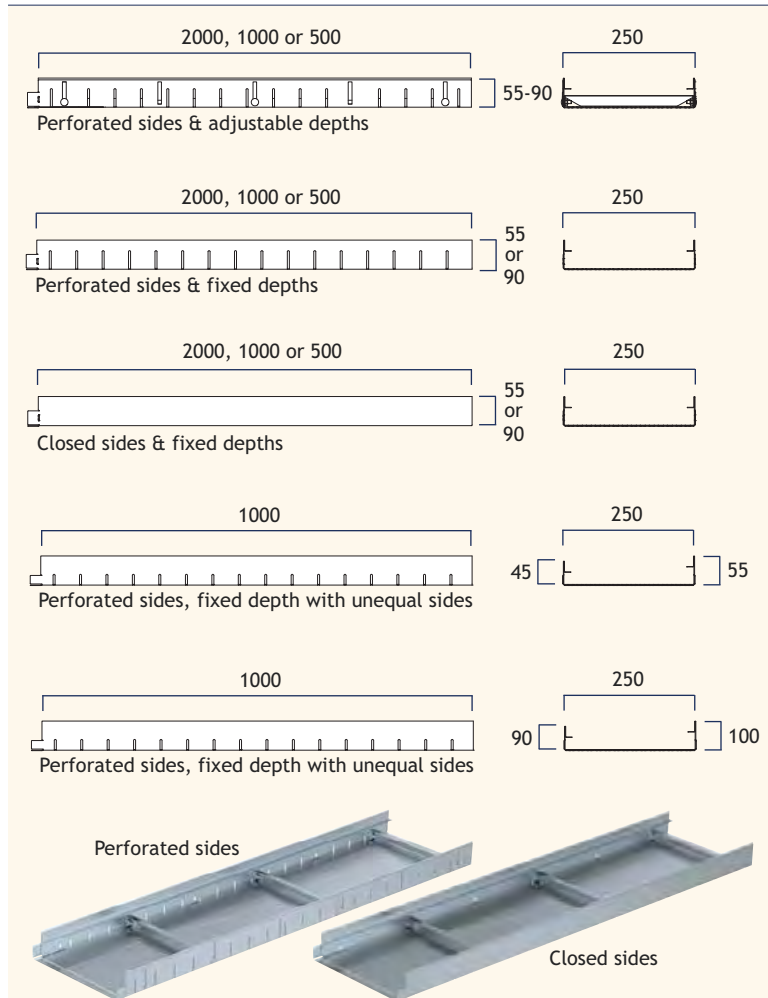
Component	Type	Length	Depth	Product Code	
				Galvanised Steel	Stainless Steel
Channel	Perforated	2000	Fixed 55	MD42432	MD42532
Channel	Perforated	1000	Fixed 55	MD42431	MD42531
Channel	Perforated	500	Fixed 55	MD42430	MD42530
Grate	Mesh	1000	-	MD42600	MD42630
Grate	Mesh	500	-	MD42601	MD42631
End Plate	-	-	Fixed 55	MD42670	MD42680

Modulock Roof Channel Drains - Product Tables

Straight Channels: 250mm Wide

250mm Straight Channels

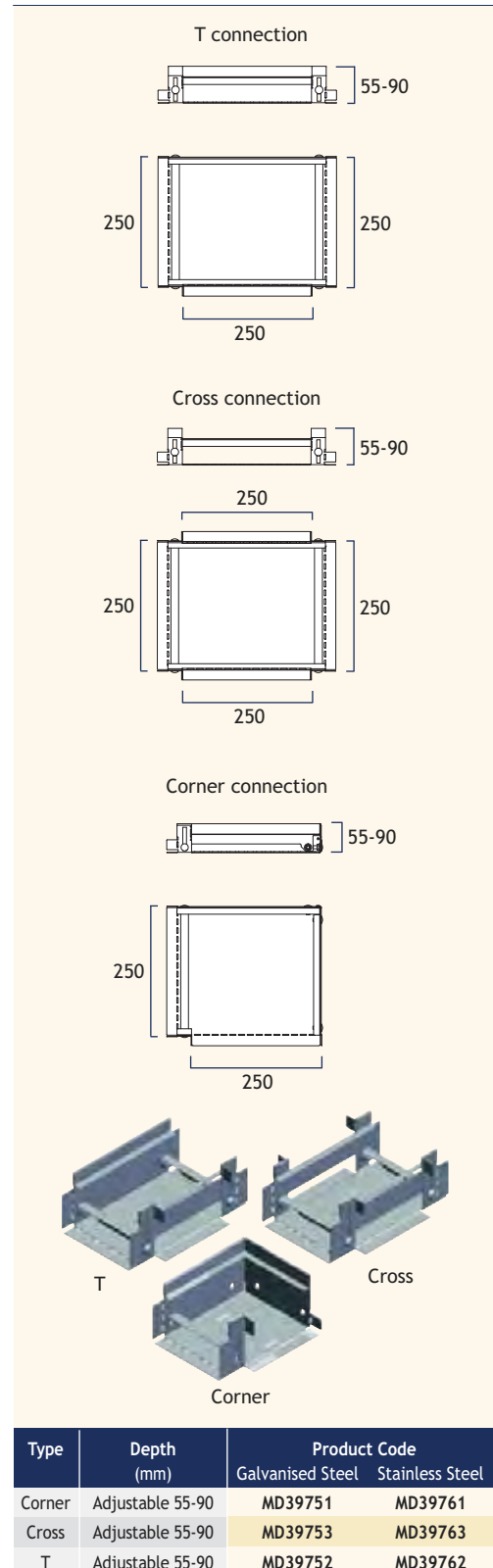
The Channel Drains are 250mm wide and made in 2000mm, 1000mm and 500mm lengths, with a choice of perforated or open sides. The depths of the Channels can be adjustable or fixed. The Channel lengths are slotted together.



Channel Side Type	Channel Length (mm)	Channel Depth (mm)	Product Code	
			Galvanised Steel	Stainless Steel
Perforated	2000	Adjustable 55-90	MD39462	MD39562
Perforated	2000	Fixed 55	MD39432	MD39532
Perforated	2000	Fixed 90	MD39452	MD39552
Closed	2000	Fixed 55	MD39435	MD39535
Closed	2000	Fixed 90	MD39455	MD39555
Perforated	1000	Adjustable 55-90	MD39461	MD39561
Perforated	1000	Fixed 55	MD39431	MD39531
Perforated	1000	Fixed 90	MD39451	MD39551
Perforated	1000	Unequal Fixed 45/55	MD39476	MD39576
Perforated	1000	Unequal Fixed 90/100	MD39471	MD39571
Closed	1000	Fixed 55	MD39434	MD39534
Closed	1000	Fixed 90	MD39454	MD39554
Perforated	500	Adjustable 55-90	MD39460	MD39560
Perforated	500	Fixed 55	MD39430	MD39530
Perforated	500	Fixed 90	MD39450	MD39550
Closed	500	Fixed 55	MD39433	MD39533
Closed	500	Fixed 90	MD39453	MD39553

Corner, Cross & T Connections

These prefabricated components provide a continuous change of direction and slot together with the Straight Channels. Depths are adjustable.



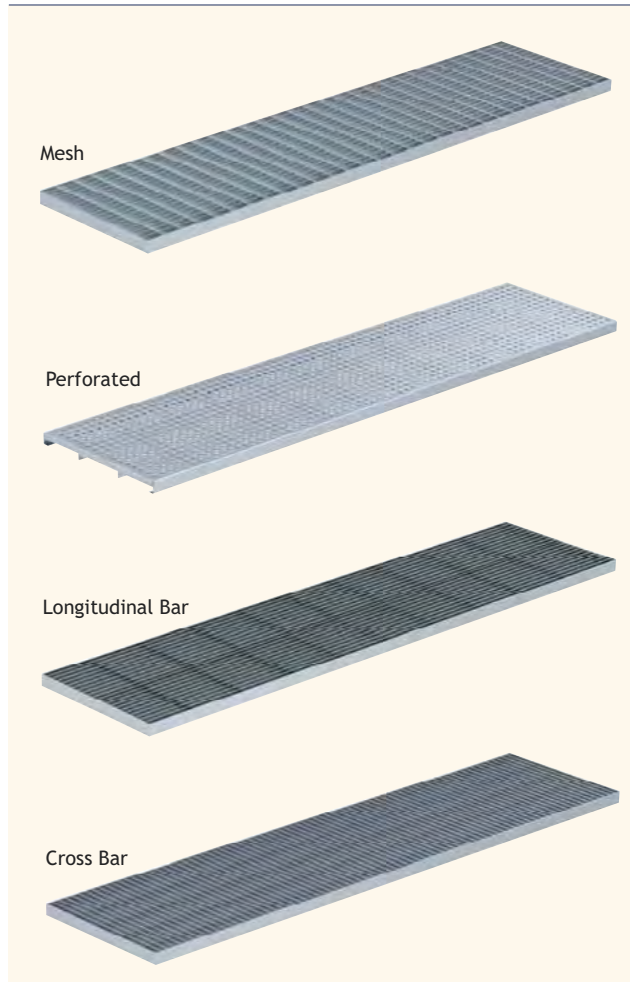
Type	Depth (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Corner	Adjustable 55-90	MD39751	MD39761
Cross	Adjustable 55-90	MD39753	MD39763
T	Adjustable 55-90	MD39752	MD39762

Modulock Roof Channel Drains - Product Tables

Straight Channels: 250mm Wide

Grates

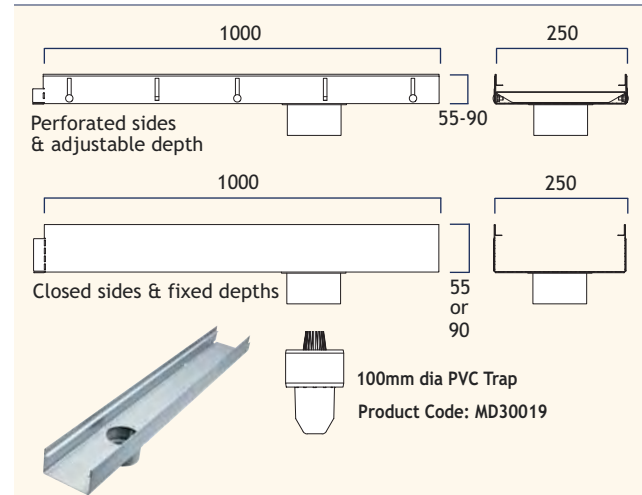
Grates are 250mm wide and available in 4 different designs in either stainless steel or galvanised steel. 90° corners can be butt formed or mitred on site.



Grate Type	Grate Length (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Mesh	1000	MD39600	MD39630
Mesh	500	MD39601	MD39631
Perforated	1000	MD39606	MD39636
Perforated	500	MD39607	MD39637
Longitudinal Bar	1000	MD39602	MD39632
Longitudinal Bar	500	MD39603	MD39633
Cross Bar	1000	MD39604	MD39634
Cross Bar	500	MD39605	MD39635

Outlet Channels & Trap

The Outlet Channels slot together with the Straight Channels. The depths can be adjustable or fixed, with a choice of perforated or open sides. The trap fits inside the outlet of the channel.



Channel Side Type	Depth (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Perforated	Adjustable 55-90	MD39713	MD39718
Closed	Fixed 55	MD39711	MD39716
Closed	Fixed 90	MD39714	MD39719

End Plates

End Plates form a stop to the channel drain and are available to suit fixed height or adjustable height Straight Channels. Vermin are prevented from using the channel as a means of escape.

The image shows technical drawings of end plates. The left diagram shows an adjustable depth end plate (55-90mm) with a length of 250mm. The right diagram shows a fixed depth end plate (55 or 90mm) with a length of 250mm.

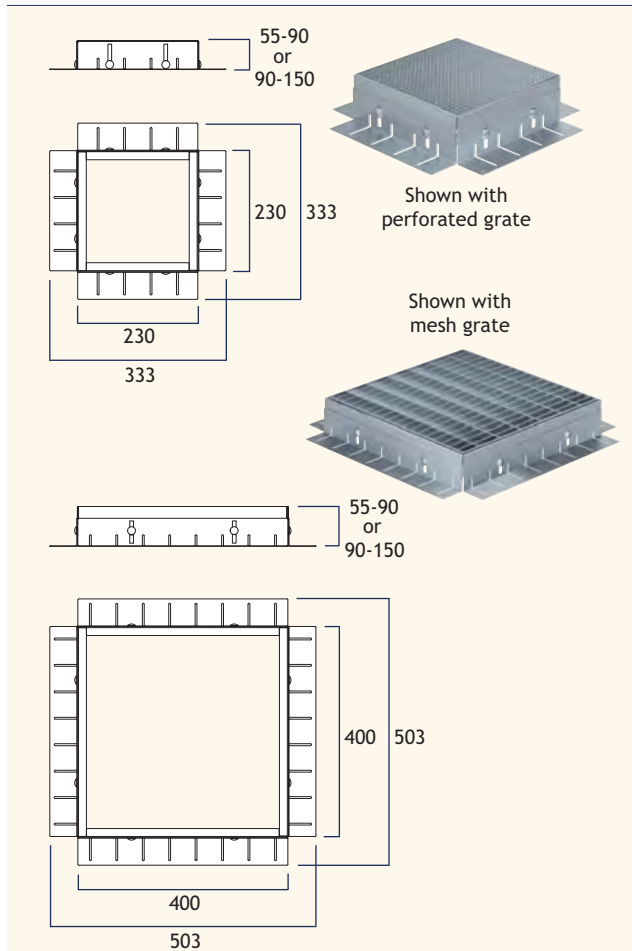
Depth (mm)	Product Code	
	Galvanised Steel	Stainless Steel
Adjustable 55-90	MD39672	MD39682
Fixed 55	MD39670	MD39680
Fixed 90	MD39671	MD39681

Modulock Roof Channel Drains - Product Tables

Accessories for 130mm/200mm/250mm Straight Channels

Maintenance Access Units

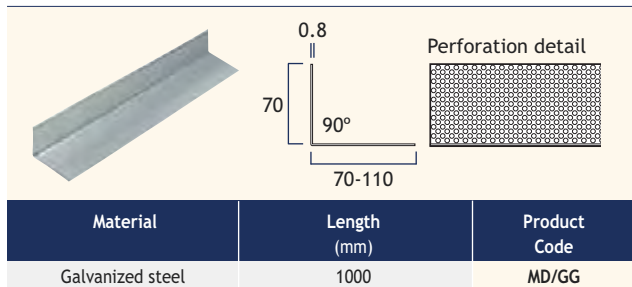
Access Units provide an efficient means of maintaining an unobstructed waterway within the channels.



Size (mm)	Depth (mm)	Product Code	
		Galvanised Steel	Stainless Steel
230 x 230	Adjustable 55-90	MD37801	MD37821
230 x 230	Adjustable 90-150	MD37804	MD37824
400 x 400	Adjustable 55-90	MD37802	MD37822
400 x 400	Adjustable 90-150	MD37805	MD37825

Gravel Guard (Perforated)

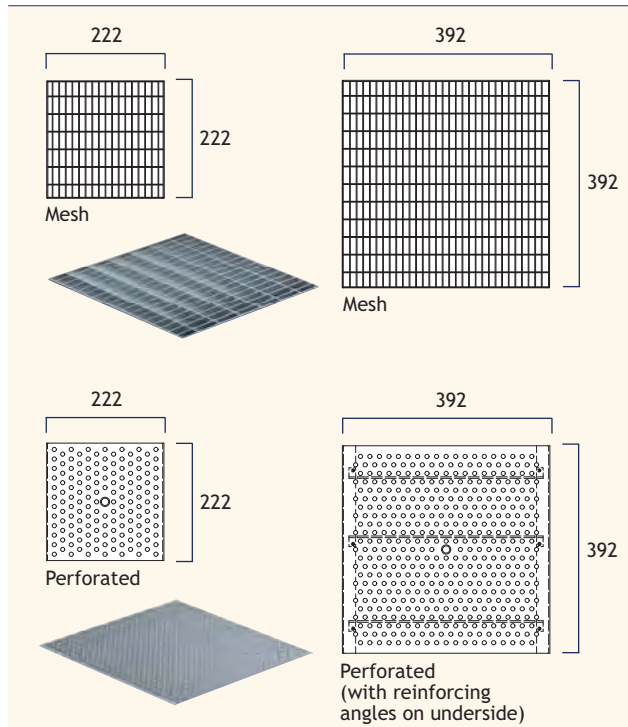
A mesh galvanised steel retaining strip 70mm to 110mm upstand for edge detailing to channel sections where gravel ballast is required.



Material	Length (mm)	Product Code
Galvanized steel	1000	MD/GG

Grates for Maintenance Access Units

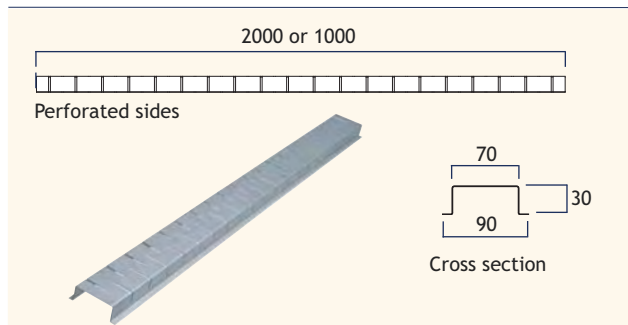
The Grates to the maintenance access units provide protection to the drainage system whilst giving additional rainwater drainage to paved areas.



Grate Type	Grate Size (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Mesh	222 x 222	MD37830	MD37831
Mesh	392 x 392	MD37834	MD37835
Perforated	222 x 222	MD37832	MD37833
Perforated	392 x 392	MD37836	MD37837

Drainage Duct

A slotted drainage duct is laid within the deck build-up to connect between channels and rainwater outlet positions. They can be used as an economical alternative to channels.



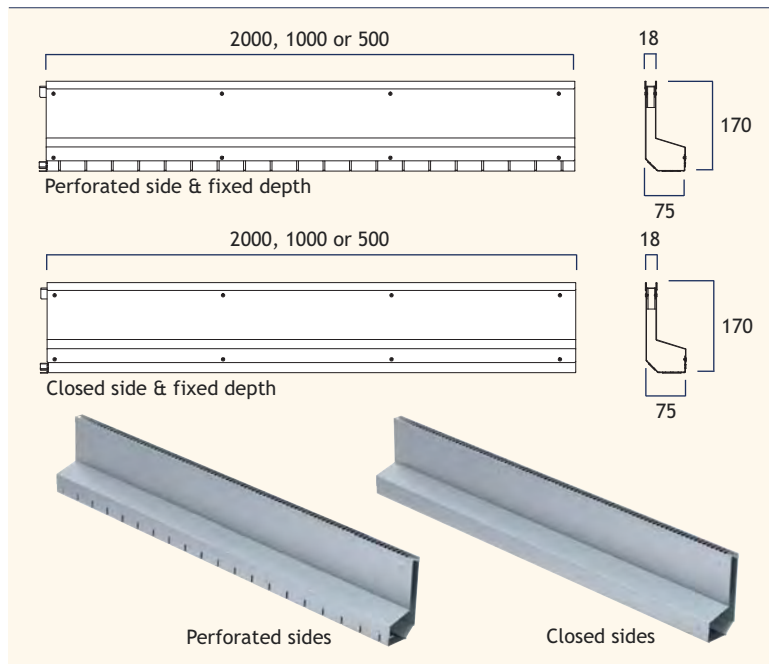
Length (mm)	Product Code	
	Galvanised Steel	Stainless Steel
2000	MD37851	MD37861
1000	MD37852	MD37862

Modulock Roof Channel Drains - Product Tables

Facade Slot Channels

Facade Slot Channels

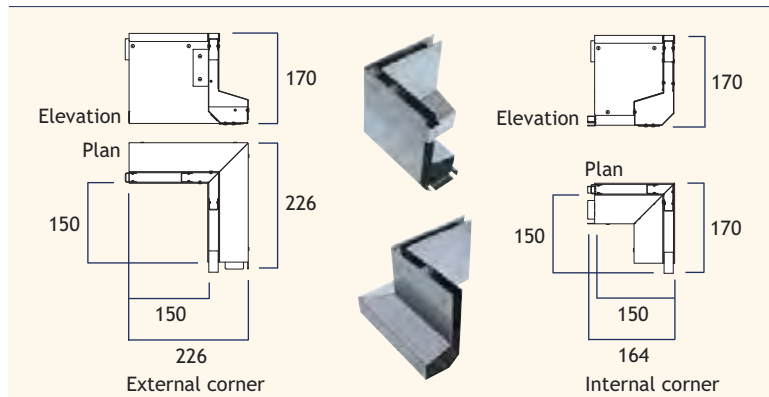
The Slot Channel Drains take up the minimum amount of space to provide drainage of facade rainwater run-off. The channel lengths are connected together via a tongue and groove jointing mechanism.



Channel Side Type	Channel Length (mm)	Channel Depth (mm)	Product Code	
			Galvanised Steel	Stainless Steel
Perforated	2000	Fixed 170	MD37905	MD37925
Closed	2000	Fixed 170	MD37902	MD37922
Perforated	1000	Fixed 170	MD37904	MD37924
Closed	1000	Fixed 170	MD37901	MD37921
Perforated	500	Fixed 170	MD37903	MD37923
Closed	500	Fixed 170	MD37900	MD37920

External and Internal Corner Connections

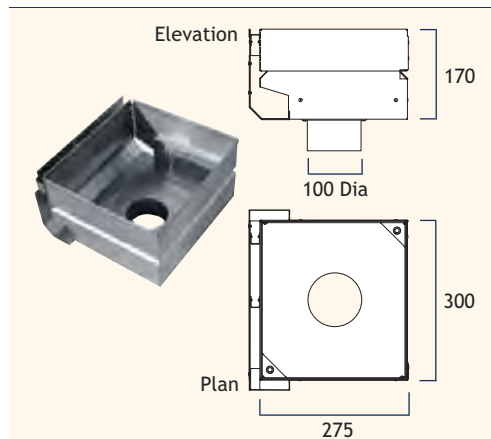
These prefabricated components provide a continuous change of direction and connect to the Channel lengths via a tongue and groove jointing mechanism.



Corner Type	Plan Size (mm)	Depth (mm)	Product Code	
			Galvanised Steel	Stainless Steel
External	226 x 226	Fixed 170	MD37971	MD37981
Internal	170 x 164	Fixed 170	MD37972	MD37982

Maintenance Unit with Outlet

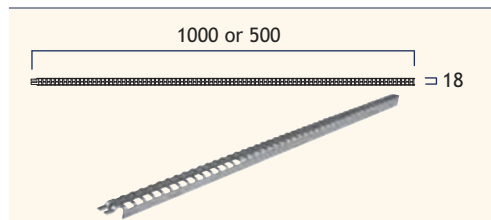
These units provide an efficient means of maintaining an unobstructed waterway within the channels and give direct access to an outlet pipe.



Size (mm)	Depth (mm)	Product Code	
		Galvanised Steel	Stainless Steel
300 x 275	Fixed 170	MD37970	MD37980

Slot Grate

The Slot Grate offers a visually unobtrusive method of providing drainage of rainwater run-off to facade elements.



Grate Type	Length (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Square hole	1000	MD37951	MD37956
Square hole	500	MD37950	MD37955

End Plates

End Plates form a stop to the channel length. Vermin are prevented from using the channel as a means of escape.

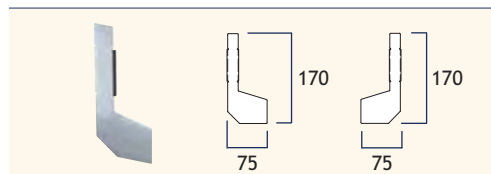


Plate Type	Depth (mm)	Product Code	
		Galvanised Steel	Stainless Steel
Left hand	Fixed 170	MD37973	MD37983
Right hand	Fixed 170	MD37974	MD37984

Note: For Drainage Duct details see page 82.

Modulock Roof Channel Drains - Product Tables

Terrace Slot Channels

Terrace Slot Channels

The stainless steel Slot Channel Drains take up the minimum amount of space to provide drainage of terrace rainwater run-off. The channel lengths are connected together via a tongue and groove jointing mechanism.

Channel Side Type	Channel Length (mm)	Channel Depth (mm)	Product Code Stainless Steel
Perforated	1000	Adjustable 80-130	MD38030
Perforated	1000	Fixed 100	MD38020
Closed	1000	Adjustable 80-130	MD38010
Closed	1000	Fixed 100	MD38000

External and Internal Corner Connections

These prefabricated components provide a continuous change of direction and connect to the Channel lengths via a tongue and groove jointing mechanism.

Corner Type	Plan Size (mm)	Depth (mm)	Product Code Stainless Steel
External	200 x 200	Adjustable 80-130	MD38050
Internal	200 x 200	Adjustable 80-130	MD38055

Maintenance Unit with Outlet

These units provide an efficient means of maintaining an unobstructed waterway within the channels and give direct access to an outlet pipe.

Size (mm)	Depth (mm)	Product Code Stainless Steel
500 x 100	Adjustable 81-130	MD38040

Slot Grate

The Slot Grate offers a visually unobtrusive method of providing drainage of rainwater run-off to terrace paving.

Grate Type	Length (mm)	Product Code Stainless Steel
Square hole	1000	MD37956
Square hole	500	MD37955

End Plates

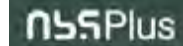
End Plates form a stop to the channel length. Vermin are prevented from using the channel as a means of escape.

Plate Type	Depth (mm)	Product Code Stainless Steel
Left or right hand	Adjustable 80-130	MD38060

Note: For Drainage Duct details see page 82.

Modulock Roof Channel Drains - NBS Specification

A typical NBS Specification for Harmer Modulock Channel Drains. A full range of NBS specifications and roof drainage calculators are available via the Harmer online NBS Specification Builder at www.harmerdrainage.co.uk. For project specific specification advice, contact Harmer Technical Services.



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 MODULOCK CHANNEL DRAINAGE SYSTEM
- Manufacturer: Alumasc Water Management Solutions,
Station Road, Burton Latimer,
Kettering, NN15 5JP
Tel: 01536 383810
Website: www.harmerdrainage.co.uk, Email: info@alumascwms.co.uk

- Outlet: Harmer Stainless Steel Channel Drain
- Grate Type: Slotted MD37332
- Grate Size: 130mm wide x 50mm deep x 1000mm long
- Product Code: Channel MD39261, adjustable 55-90
- Reference: Harmer Modulock Channel Drains
- Accessories: 90° Corner Connection, End Plates, Drainage Duct



Create Harmer Drainage NBS specifications by selecting the required product range, profile, size and finish by visiting: 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



Modulock Roof Channel Drains - Installation

Installation Considerations for Straight and Slot Channels

These installation considerations conform to currently accepted workmanship standards.

Read the following items with the installation procedure set out on page 88.

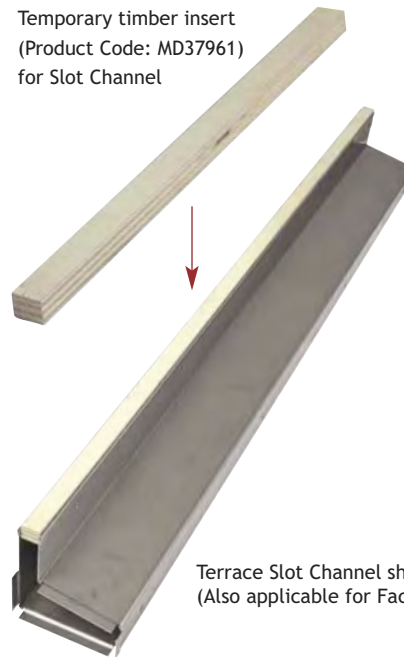
- Modulock Channel Drains are set up on a waterproof membrane or in a gravel-bed or in drainage concrete appropriate for local conditions. Channels with a variable height can be adjusted to have a horizontal top edge and a sloping invert level.
- The channels can be used in front of doors on escape routes or buildings with flush thresholds - in these positions use the mesh-type grates.
- Set out the channels from the drainage outlet.
- The joints between the individual channel bodies can be sealed or glued with suitable sealants.
- 90° connections (cross, corner or T pieces) for Straight Channels can be used to alter the configuration of the channel system.
- Similarly, 90° connections (corner pieces only) for Slot Channels can be used to alter the configuration of the channel system.
- Take care to avoid damaging the channels during the laying of the adjacent paving and bedding materials. Before laying the paving and bedding materials, make sure that the grates are temporarily inserted and the channels are braced adequately against compression.
- A timber insert (Product Code: MD37961) is available for temporary use with Slot Channels to protect the channels from detritus during subsequent building works.
- In areas where enhanced chemical attacks (eg de-icing agents, acids, bases, etc.) are to be expected, we recommend to install channels and gratings made out of stainless steel (eg 1.4571 - V4A).

NOTE FOR GALVANISED CHANNELS:

Where galvanised steel has been cut, immediately apply a coating of cold galvanise paint to all exposed, clean surfaces.



Temporary timber insert
(Product Code: MD37961)
for Slot Channel

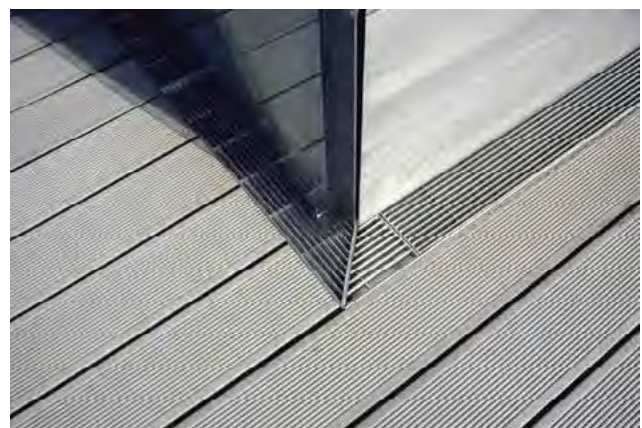


Terrace Slot Channel shown
(Also applicable for Facade Channel)

Care and Maintenance

Harmer Modulock Channels only require minimum maintenance but periodic inspection and in areas where leaf congestion might occur it is advisable to keep the channels free from blockage.

- Carry out a visual inspection bi-annually.
- Protect hands with industrial gloves when installing and inspecting.
- Clear any builders rubbish from inside the drain.
- Grates should only be cleaned with a plastic brush.
- Jetting or flushing may be necessary - check outlet positions.
- DO NOT USE bleach type drain cleaners or brick cleaning acids otherwise galvanised surfaces will be seriously damaged.



Modulock Roof Channel Drains - Application Details

Level Access Threshold using Straight Channels

