



Hunter®

Underground Systems

www.hunterplastics.co.uk

Issue 1

Gutter Centre Tel: 0330 223 1731 or email: sales@guttercentre.co.uk

Hunter offers a comprehensive range of high quality sewer and drainage systems to overcome the most complicated drainage layout. Like all our products, they are economical, strong and resistant to impact, and are easy to install. There is a range of drainage accessories designed to meet the needs of the most stringent building regulations. Their overall **flexibility ensures that Hunter** can supply all domestic and commercial requirements for foul water and surface water drainage, up to and including the main sewers.

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Underground Contents

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Underground Drainage

Hunter Underground Systems have been designed to ensure you can install and test with confidence. Reliability is inbuilt in all our products offering you peace of mind.

Our products are designed to be:

- Durable and impact resistant
- Light in weight, easy to handle and quick to install
- Smooth bore pipe with longer intervals between joints reduces the risk of blockage and improves flow
- A full range of underground drainage, sewer and associated drainage products
- Easy to install, even in wet conditions
- A comprehensive range of components is available in 110mm, 160mm, 200mm, 250mm and 315mm sizes.

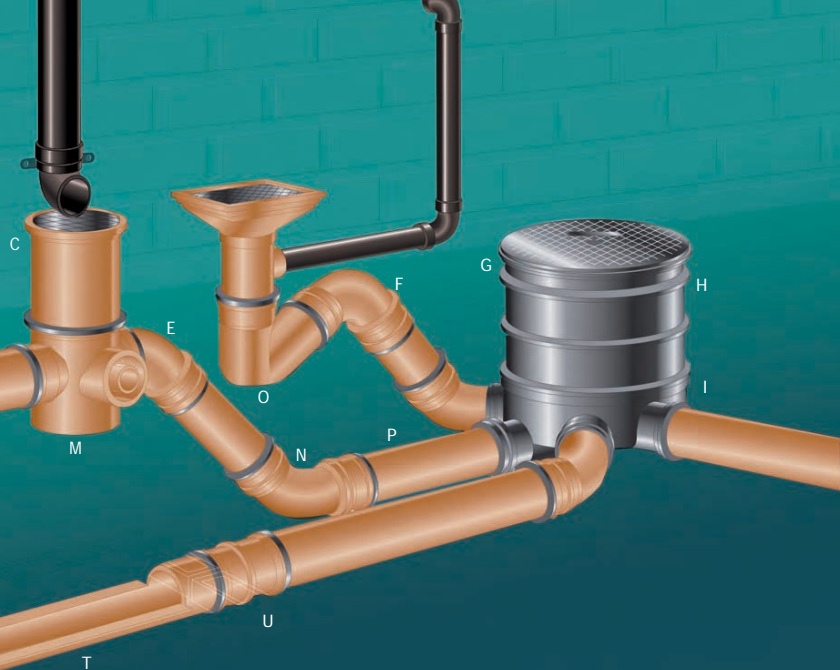
Standards

Hunter Plastics Underground Drainage Systems comply with the requirements of the following European/British standards:

BS4660:2000	Unplasticised PVC underground drain pipes and fittings 110mm & 160mm.
BS EN1404-1.1998	Unplasticised PVC pipes and fittings for gravity sewers 200mm to 315mm.
BS EN752.1996	Drainage and sewer systems outside buildings.



A	Raising Piece	DS72	p29
B	Sealed Back Inlet Plate	DS10	p21
C	Raising Piece	DS48	p20
D	Back Inlet Hopper	DS7	p20
E	Bend	DS331	p11
F	Bend	DS671	p16
G	Cover & Frame	DS62	p28
H	Raising Piece	DS58	p28
I	Chamber Base	DS50	p28
J	Bend	DS671	p16



K	Aluminium. Cover & Frame	DS39	p29
L	Pipe	DS505	p10
M	Bottle Gully	DS46	p20
N	Bend	DS676	p16
O	Tick Gully	DS12	p20
P	Pipe	DS331	p11
Q	Blanking Plug	DS56	p28
R	Shallow Access Chamber Base	DS71	p29
S	Double Socket	DS211	p10
T	Channel Pipe	DS559	p21
U	Slip Coupling	DS212	p10

Underground Drainage

Adjustable Fittings



110mm Twist Lock Bend (DS329)

- Adjusts from 5° - 30°
- 'Twist and Lock' into position
- Push fit socket connection
- Ideal for connecting to chambers



110mm Multiflex Bend & Branch (MFBDO & MFYTO)

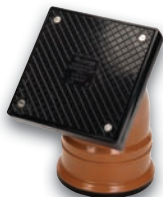
- Manufactured to EN1401
- Bend adjusts: From 0 - 90° and is available in single and double socket.
- Branch adjusts: From 90° - 45° and is available in double and triple socket

Tips & Hints

Like Multiflex Bends and Branches? - Also available in Soil and waste fittings, check out our Plumbing Brochure for more info

Underground Drainage

Access Fittings



110mm Rodding Point (DS670)

- Angled to 45° for fast efficient installation
- Secure four rust proof stainless steel screw fixing
- Mechanically sealed with internal 'o' ring suitable for some internal installations.



110mm Access Junction 45° (DS680 & DS681)

- Single Equal
- Double socketed with a spigot tail for quick installation
- Available in both left and right handed versions.

Underground Drainage

Pipe & Fittings

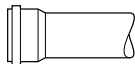
Product Code Product Code

110mm 160mm



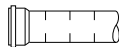
Pipe - Plain Ended

3m length	DS505	DS534
6m length	DS544	DS545



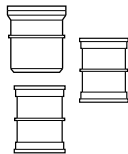
Pipe - Socketed

3m length	DS508	DS548
6m length	DS549	DS550



Pipe - Land Drainage Socketed

6m length	DS546	DS547
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Socket

Single	DS208	DS406
Double	DS211	DS409
Slip Coupling (No internal stop)	DS212	DS410



Junction - Single Equal

87 $\frac{1}{2}$ ° Spigot Tail	DS269	DS427
45° Spigot Tail (DS278 with 2 x 110mm upstands)	DS278	DS430



87 $\frac{1}{2}$ ° Expansion Tail	DS672	
45° Expansion Tail	DS678	DS428

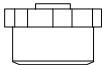








Single Unequal

45° Spigot Tail 160mm x 110mm		DS471
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Underground Drainage

Fittings

		Product Code	Product Code
		110mm	160mm
	Access Fitting - Access Cap		
	Spigot Tail	DS246	DS421
	Socket Plug		
	Also for on-site socket protection	DS214	DS411
	Access Bend		
	87 $\frac{1}{2}$ °	DS326	
	Rodding Point		
	Expansion Tail	DS670	
	Access Pipe		
	Spigot Tail	DS309	
	Access Junction		
	Single Equal Spigot Tail LH 45°	DS680	
	Single Equal Spigot Tail RH 45°	DS681	
	Bend Spigot Tail		
	87 $\frac{1}{2}$ ° Spigot Tail	DS322	DS403
	45° Spigot Tail	DS331	DS404
	30° Spigot Tail	DS318	DS418
	15° Spigot Tail		DS408
	20° Spigot Tail	DS696	
	10° Spigot Tail	DS697	



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Underground Drainage

Non Return Valves

Simple and effective device for reducing the risk of flood damage caused by surface water flowback through the underground drainage system.

Install within an access point between the facility to be protected and the main sewer, any flowback will automatically shut the valve.

In pumped drainage systems, for example, where effluent water is being pumped from a basement, the non return valve will help protect the system in the event of a power failure.

Integral closing handle allows valve to be shut manually for easy system maintenance or cleaning.

Meets with the requirements of the building regulations approved document H1.

Tips & Hints

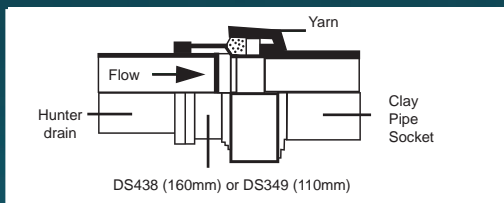
Remember: Rodent control should be taken into account when redeveloping sites. This can be in the form of sealed inspection and intercepting traps such as the Hunter Non Return Valves, available in 110mm, 160mm and 200mm

Connecting to Other Materials

Installation Procedures

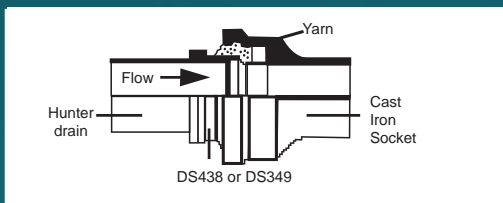
Hunter offer a choice of adapters which connect to existing materials, we have yet to find a connection our range can't make!

Connection to Clay Socket



Place adaptor DS349 or DS438 in the cast iron or clayware socket caulked with gaskin yarn, and apply cement mortar in the conventional manner.

Connection to Cast Iron Socket

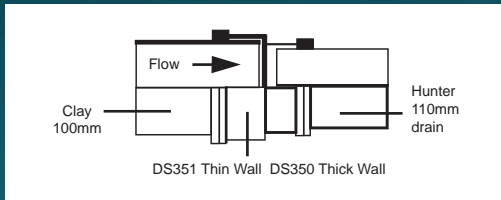


When using the adaptor with a cast iron socket, molten lead or lead wool can be used instead of the cement mortar.

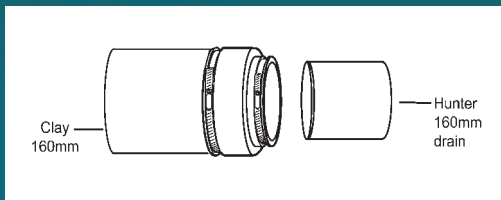


Stuck on a connection on site? Phone our Technical Advice line for help on: 0208 855 9851

Connection to Thick or Thin Wall Clay Spigot



Connection to Thick Clay Spigot



Simple joints can be achieved by installing a DS27 adaptor - push on to clean smooth pipe ends and tighten bands with a screwdriver

Underground Drainage

Bends and Couplings

Product
Code

Product
Code

110mm

160mm



Adjustable Bend

Spigot Tail 5° - 30°

DS329



"Multiflex"

Double Socket

MFBD0

Spigot Tail

MFBSO

Treble Socket

MFYTO

Double Socket

MFYDO



Bend

87¹/₂° Expansion Tail

DS671

DS431

45° Expansion Tail

DS676

DS432

30° Expansion Tail

DS675

20° Expansion Tail

DS674

10° Expansion Tail

DS673



Long Radius

456mm Radius 87¹/₂°

DS555

456mm Radius 45°

DS557

686mm Radius 87¹/₂°

DS556

686mm Radius 45°

DS558

600mm Radius 20°

DS662

600mm Radius 10°

DS661

Underground Drainage

Bends and Couplings

Product
Code

Product
Code

110mm

160mm



Rest Bend

87¹/₂° Expansion Tail

DS663



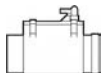
Reducer Level Invert

110mm x 82mm

DS633

160mm x 110mm

DS433



Non Return Valve

Spigot Tail

DS342

DS442



Drain Connector

Soil to Drain (Finned Tail)

S121



PVCu to Cast Iron BS437 Socket

DS349

DS438



PVCu to Thickwall Clay Pipe

DS350



PVCu Thinwall Clayware Spigot

DS351



Inspection Chamber to
Thickwall Clay Pipe

DS347



Inspection Chamber to Thinwall
Clay Pipe

DS348



Multi Rainwater Adaptor (Flexible)

DS24

(Fits 110mm Pipe or Socket, external use only)



Adaptor (Flexible) to 32mm/40mm Waste

DS25



"Eazisleave" Complete With Stainless Steel Clips

Drain Adaptor Coupling

DS26

DS27

PVC-PVC Adaptor

DS28



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Underground Drainage

Bottle Gullies

A wide range of applications to suit most building situations. Hunter bottle gullies can be used to remove surface water from paved pedestrian areas. Side and back boss inlets accept waste water from ground floor domestic appliances and/or rainwater from roofs.

- Ideal for domestic, industrial and commercial installation
- 3 closed bosses accept waste or rainwater pipework from 32mm up to 110mm sizes
- Includes rodding access.

The square top version is sized at 200mm with spacer nibs at the edges to complement block paving and is designed to make finishing neat and simple when installed in slab or block paved areas. The offset top is designed to fit snugly against a wall, reducing the need for time-consuming or untidy finishing.

Tips & Hints

By adding a raising piece the gully grating can be installed where paving is set at varying heights, where a new surface is laid or if deep bedding is required. It can be cut to the desired length to allow the gully to be installed at depths of up to 600mm, reducing the need for additional bends. REMEMBER: always drill out Boss connections as “knocking out” can damage the fitting.

Underground Drainage Fittings

Product Code Product Code

110mm 160mm



Multi Gully Trap

(Use with Standard Hunter Bends to form P, S or Q trap)

DS12



Gully Trap

Expansion Sockets 90° 'P' Trap

DS1



Bottle Gully (includes Grid and Rodding Access)

Circular Top

DS46



Square Top

DS49



Circular Top Open Back Inlet

DS43



Square Top Accessory

(use with DS46) 200mm x 200mm

DS54



Circular Grid-Spare

(Use with DS46, DS49 or DS54)

DS55



Raising Piece (Use with DS46, DS49 or DS54)

DS48



Square Hopper

Solvent Socket Tail

DS3

230mm Spigot Tail

DS2

Spigot Tail complete with Grating

DS4



Back Inlet Hopper

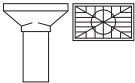



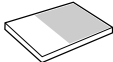





Solvent Socket Tail

DS7

230mm Spigot Tail

DS6

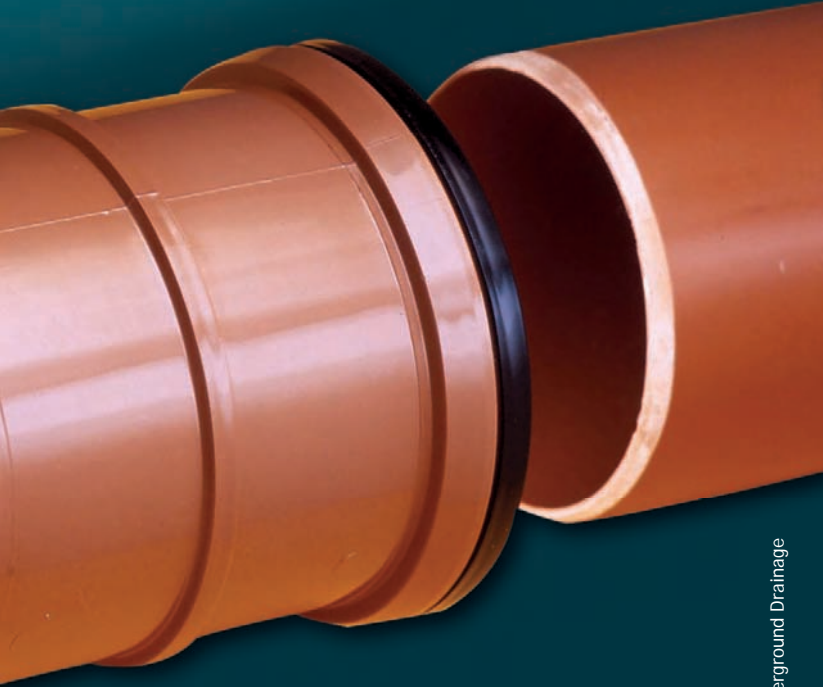
Underground Drainage Fittings

	Product Code	Product Code
	Back Inlet Hopper - Spigot Tail	110mm 160mm
	complete with Grating and Back Inlet Plate	DS8
Gully Accessories		
   	150mm x 150mm Grating	DS20
	150mm x 100mm Back Inlet Plate	DS11
	150mm x 150mm Sealed Cover Plate	DS22
	150mm x 250mm Sealed Back Inlet Plate	DS10
	Drain Leaf Guard	
	Accepts Rainwater Pipes Up to 110mm diameter. To cover drains up to 300mm wide x 265mm	DS500
	Channel Pipe - Plain Ended	
	(Flanges supplied loose)	DS559 DS560
 	Channel Bend	
	45° Left Hand	DS561
	45° Right Hand	DS563
	87½° Left Hand	DS567
	87½° Right Hand	DS568
	Long Radius - Plain Ended	
	87½° 455mm Radius	DS566

Underground Drainage

Tips & Hints

Remember: When planning the drainage layout for new developments, private (i.e. drains that serve more than one property) and public sewers must be positioned so as to make reasonable allowance for the possibility of future extensions without needing to build over the sewer.





Chambers

Inspection and Shallow Access Chamber

Hunter inspection chambers are available in 110mm and 160mm sizes and are designed to offer an easier, more economical alternative to traditionally constructed manholes.

- They are reliable, quick and easy to install with ring seal sockets and a dry joint base to riser assembly.
- Injection moulded in strong polypropylene material with added diameter strengthening ribs offering high resistance against impact damage.
- Designed with Half Channel Invert offering 'improved flow, Conforms to all current building regulations and BS8301.
- With finger friendly removable plugs. Plugs can be pushed out or re-sited as required. Integral support feet makes level bedding simple.
- Manufactured in environmentally-friendly recycled polypropylene.

Tips & Hints

Note: Manholes and sewers are exceptionally dangerous places. It is most strongly recommended that all work on live sewers is undertaken by drainage specialists who have successfully completed a 'Confined Spaces' and/or 'Sewer Working' safety course. Properly trained and accredited tradesmen will have certificates to prove their competence. **DO NOT TAKE RISKS.**

Chambers

Inspection Chambers

Chamber Raising Piece

The chamber raising piece is designed for simple dry-jointing to provide instant watertight joints, and have strengthening ribs and webbing.

Raising pieces can be simply built up to the required overall height between chamberbase and cover.



Chambers



450mm Equal Chamberbase

Manufactured in tough polypropylene material, they are impact resistant and are simple and straightforward to install.

The 450mm chamberbase unit is comprised of four swept inlets at 90° and 45° with a 110mm in/outlet and a built-in fall for efficient flow performance.



450mm Unequal Chamberbase

The 450mm chamberbase unit is comprised of four swept inlets at 90° and 45° with a 160mm in/outlet: 2 x 160mm inlets and 2 x 110mm inlets.

Chambers

Inspection Chambers

Product Code Product Code

110mm 160mm



450mm Equal Chamberbase 263mm Invert

3 Sockets Supplied with Blanking Plugs DS50



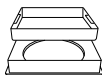
110mm Blanking Plug

Spare DS56



450mm Unequal Chamberbase 360mm Invert

Side Sockets Supplied with Blanking Plugs DS66



580mm x 580mm Square to Round Access Cover

5 Tonnes wheel load suits pedestrian areas/
domestic driveways. (Accepts Paviers) DS65 DS65



Cover and Frame Durable Polypropylene

Durable Polypropylene 3.5 Tonnes wheel load
suits pedestrian areas/domestic driveways DS62



Square Cover and Frame

Durable Polypropylene 3.5 Tonnes wheel load
suits pedestrian areas/domestic driveways DS76



Raising Piece

164mm effective height (For DS50 or DS66) DS58 DS58



Chamberbase Seal

(For DS66 Base to first Riser only) DS67

Chambers

Shallow Access

Product
Code

110mm



230mm Equal Chamberbase 140mm Invert

Side Sockets Supplied with Blanking Plugs

DS71



Raising Piece

(205mm effective height 2 risers form 600mm overall height)

DS72



Cover and Frame

Aluminium

DS39



'O' Ring to form Sealed Access

(for DS39 only)

DS40



PVCu - Round

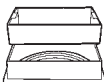
(Sealed Unit)

DS69



PVCu - Square

DS68



Shallow Access Cover

390mm x 390mm Square to Round

3.5 Tonnes wheel load suits pedestrian areas/domestic driveways. (Accepts Paviers)

DS75

Underground Drainage Covers and Frames

For pedestrian areas only



Round Aluminium Cover and Frame (DS39)

- Captive two screw locking system
- Can be sealed using DS40
- For pedestrian areas only



PVC-u Cover and Frame (DS68)

- Captive single screw locking system
- For pedestrian areas only



Square to Round Shallow Access Cover (DS75)

- 390mm x 390mm cover and frame for a variety of landscaping materials
- 3.5 Tonne wheel load
- Two integral lifting levers, including stoppers to prevent dirt build-up

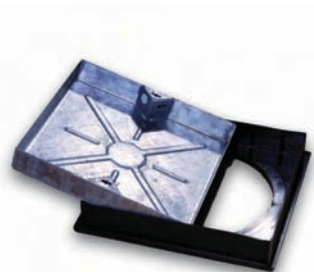
Underground Drainage Covers and Frames

For pedestrian areas only



Round Cover and Frame (DS62)

- Lightweight chamber cover and frame made from toughened polypropylene for easy manual handling
- 3.5 Tonne wheel load
- Captive screw locking system
- Can be fixed to riser system for complete security



Approved by major housebuilders

Square Recessed Cover and Frame (DS65)

- Cover and frame for a variety of materials
- 5 Tonne wheel load
- 580mm x 580mm square sized for use with block paving and other driveway materials
- Two integral lifting levers, including stoppers to prevent dirt build-up

Tips & Hints

"Lightweight access covers should be secured to deter unauthorised access" - Building Regulations Part H

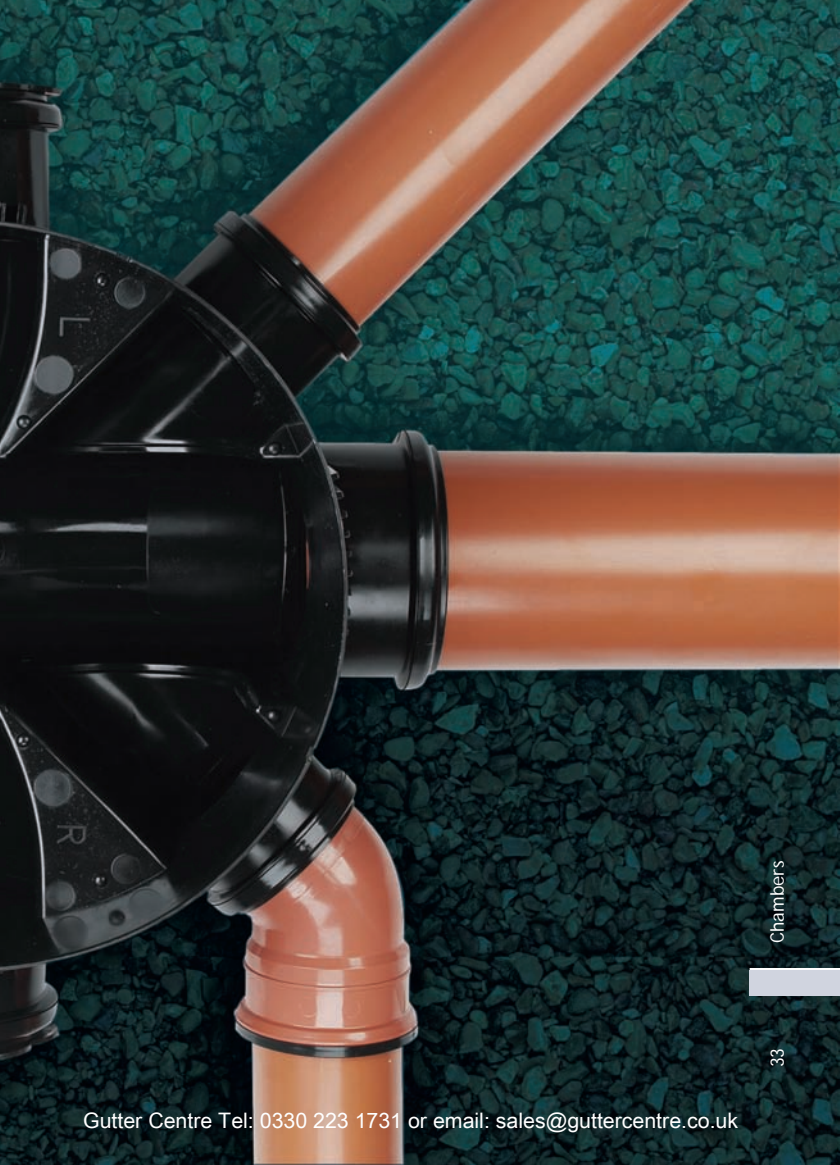
Chambers



Assembly Height Guide

Hunter 450mm Inspection Chambers can be installed up to 1.2m deep. Risers can be cut as required to achieve the final ground level.

	DS50	DS66
Base only	280mm	360mm
Base with 1 riser	444mm	524mm
Base with 2 risers	608mm	688mm
Base with 3 risers	772mm	852mm
Base with 4 risers	936mm	1016mm
Base with 5 risers	1100mm	1180mm





Surface Drainage

Channel Drainage

Hunter surface drainage efficiently removes water from pedestrian areas and domestic driveways.

The unobtrusive design blends perfectly with surrounding materials and is ideal for garage fronts, private driveways and patios.

- Corrosion resistant
- Supplied in packs for ease of storage and handling
- Durable design resists up to 1 tonne wheel load

Tips & Hints

Surface Drainage and Gullies may be connected to the underground drainage system, simply connect via a suitable gully trap.

Surface Drainage

Point Drain Chambers

Product
Code



Courtyard Gully

250mm x 250mm

DCR300

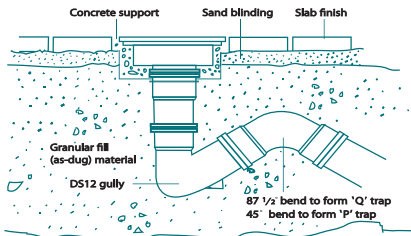
Designed as an inexpensive efficient point drainage to complement our Channel Drainage. Ideal for domestic and commercial garages, wash down paved pedestrian thoroughfares, patios and much more.

Capable of withstanding loads of up to one Tonne (Under 30 mph).

Integral silt trap design prevents accidental loss of components, such as nuts and bolts etc.



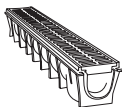
Typical Installation



Surface Drainage

Channel System

Product
Code



Driveway Pack Channel Drain including Grating

Per 1m length

DC1000

1 tonne wheel load (Sold as pack of 3m only)



End Cap/outlet

Fits LH or RH

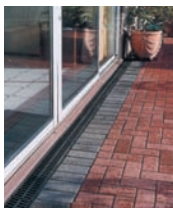
DC731



Debris Trap

For bottom outlet

DC732

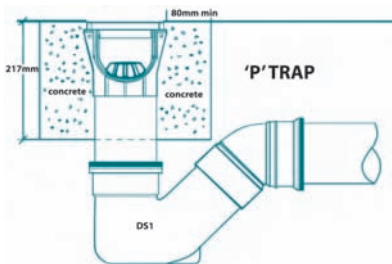


Channel and grille system designed to remove surface water from domestic areas, e.g. driveways, patios etc.

Anti corrosive PVC-u non-slip grille. Grilles have excellent chemical and U/V resistance.

No solvent cements required. Polypropylene channel contains integral silt trap.

Typical Installation



Surface Drainage



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Tips & Hints



Hunter Surface Drainage solutions come with a reversible side or bottom outlet with simple 'knock out' section.



Sewer Systems

Hunter's sewer drainage range of products are light in weight and easy to install.

The high performance integral sealing system ensures that joints remain leak free for years to come.

Available in 160mm, 200mm, 250mm & 315mm.

Manufactured to BS EN 1401-1: 1998

Tips & Hints

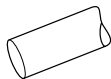
Drains connecting into existing pipework (other than at a manhole) should be prefabricated units to avoid the use of "saddles". Where the use of a saddle is unavoidable, the hole in the existing pipe must be drilled - not broken out.

Underground Drainage

Sewers

	Product Code	Product Code	Product Code
	200mm	250mm	315mm

Pipe - Plain Ended



Plain Ended - 6m	DS744		DS771
Socketed - 6m		DS752	



Single Socket

DS729



Double Socket

DS730 DS753 DS773



Bend

87 $\frac{1}{2}$ ° Spigot Tail	DS731	DS754	DS774
45°	DS732	DS755	DS775
30°	DS733	DS756	
15°	DS728	DS757	DS777



Junction - Single Equal

45° Spigot Tail DS734 DS758

Single Unequal 45°



110mm Spigot Tail			DS779
160mm Spigot Tail	DS735	DS760	
200mm Spigot Tail			DS781

Underground Drainage Sewers

Product Code	Product Code	Product Code
200mm	250mm	315mm



Access Pipe

DS739



Reducer Level Invert

160mm	DS738	DS762
200mm		DS763



Socket Plug

Also for on-site Socket Protection DS737



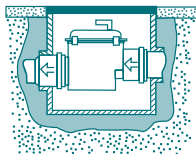
Non Return Valve

Spigot Tail NRV200

Typical Installation

Install the Hunter non-return valve into its own chamber to make periodic inspection easier.

Ensure that it is installed the right way round (socket upstream).



In accordance with Part H of the Building Regulations and British Standards BS EN752: 1998, where a drain is liable to surcharge, measures should be taken to protect any building and ancillary area likely to be adversely affected. The measures necessary to protect a drainage system or building from surcharge should be as simple as possible and be so arranged as to have minimal effect on the drainage system.

Design Information

General Layout

The layout of drains should comply with the relevant Buildings Regulations and British Standard Codes of Practice. The following is intended as a guide only. The layout of any drainage system should be as simple as practicable. The following detailed design considerations apply to all drains.

A drainage system must be planned and laid in such a manner that effluent is conveyed from the house to the sewer, cesspool or other places of disposal as speedily as possible and without causing an unacceptable nuisance, or danger to health. Drains must be constructed so as to be as far as possible self-cleansing and reduce the risk of blockages to a minimum, whilst adequate means of access must be provided for the purpose of inspection, testing and clearing should an obstruction take place. Drains must be watertight to prevent pollution of the surrounding ground by soil wastes, and adequate ventilation is essential.

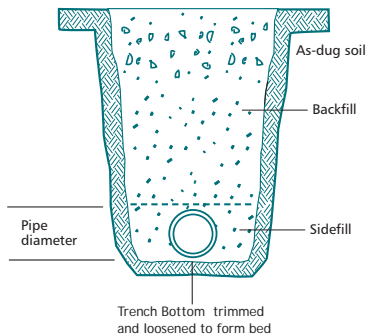
Standards

- PVCu drainpipes and fittings produced in accordance with BS EN 1401-1: 1998 and with BS4660: 1989 should be installed in accordance with:
- BS EN 1295-1: 1998 structural design of buried pipelines under various conditions of loading
- BS EN 1610-1: 1998 construction and testing of drain and sewers
- BS 8000:14: 1989 workmanship on building sites. Code of practice for below ground drainage.
- BS EN 752: Drain and sewer systems outside buildings.
- Approved Document Part H of the Building Regulations 2002 edition

Good practice guide

- 1 Pipes to be laid at such a gradient as to ensure a self-cleansing velocity.
- 2 Pipes to be of sufficient size to cope effectively with the maximum load to be carried.
- 3 Efficient means of ventilation to be provided and maintained.
- 4 Adequate means of access to be provided.
- 5 Length of branch drains to be kept to a minimum and all junctions to be made in the direction of flow.
- 6 Pipes to have watertight joints.
- 7 Every part of the drainage system to be adequately supported.
- 8 So far as circumstances will permit, drains should not pass under buildings.
- 9 Drains to be laid as far as possible in straight lines between points where access is provided.
- 10 Drains not to be laid in close proximity to trees owing to the possibility of damage being caused by roots.

Bedding and Backfilling



For full information on bedding and backfilling procedures, please refer to our website: www.hunterplastics.co.uk

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