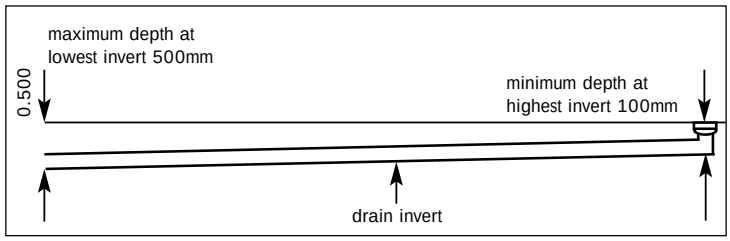
11.00 RODDING AND TESTING

Hunter Underground Systems

11.00 Testing and Rodding

11.01 TESTING

Testing drains for air or water-tightness should be carried out at the initial installation to find any defects prior to backfilling the trenches and then on completion of the installation prior to hand-over of the property. The requirements listed below are for PVCu pipes up 300mm diameter in compliance with 2002 Edition of Approved Document H of the Building Regulations.



WATER TESTING

To prevent fittings being forced off of the pipe during water testing prior to backfilling, we insist that the pipe and fitting be anchored at changes of direction and at blank ends. The pipes should be anchored by partially backfilling the trench with a suitable material well compacted without displacing the pipeline. To prevent movement the pipe should be completely covered with the joints kept clear for inspection

The drainage system should be filled with water up to a maximum of 500mm, measured above the lowest invert of the test section. The test section should not extend further than will give a minimum depth of l00mm measured from the invert at the highest part of the drain.

Approved Document H recommends a penod of one hour for conditioning, however, as there is nothin in a PVCu pipe system that would absorb water this may not be necessary. The water level should be topped up as necessary to keep the water level within ten millimetres of the required level to maintain th test pressure for thirty minutes. The losses per square metre of surface area should not exceed 0.1 litres for test lengths with only pipelines or 0.20 litres for test lengths including pipelines and manholes, 0.40 litres for tests with only manholes and inspection chambers alone (i.e. no pipelines).

A change in water level may be due to one or more of the following causes a) Exposure of the pipes to direct sunlight, or changes in ambient temperatures when pipes are laid will cause expansion or contraction in Unplasticized polyvinyl chloride (PVCu) pipes. b) Trapped air. c) Leakage past testing bags and plugs. d) Improperly assembled joints. E) Improperly bedded pipes and sockets may create inadequate support at the sockets causing leaks

AIR TESTING

Pipework should be pressurised to 110mm water gauge on a manometer and held for five minutes prior to testing. This should be followed by a test of100mm held for seven minutes, the pressure should not drop more than 25mm in that period.

HEAD OF DRAIN ACCESS

Using the standard range of Hunter fittings, various combinations of rodding points may be formed - (as illustrated here and in section 1.06).

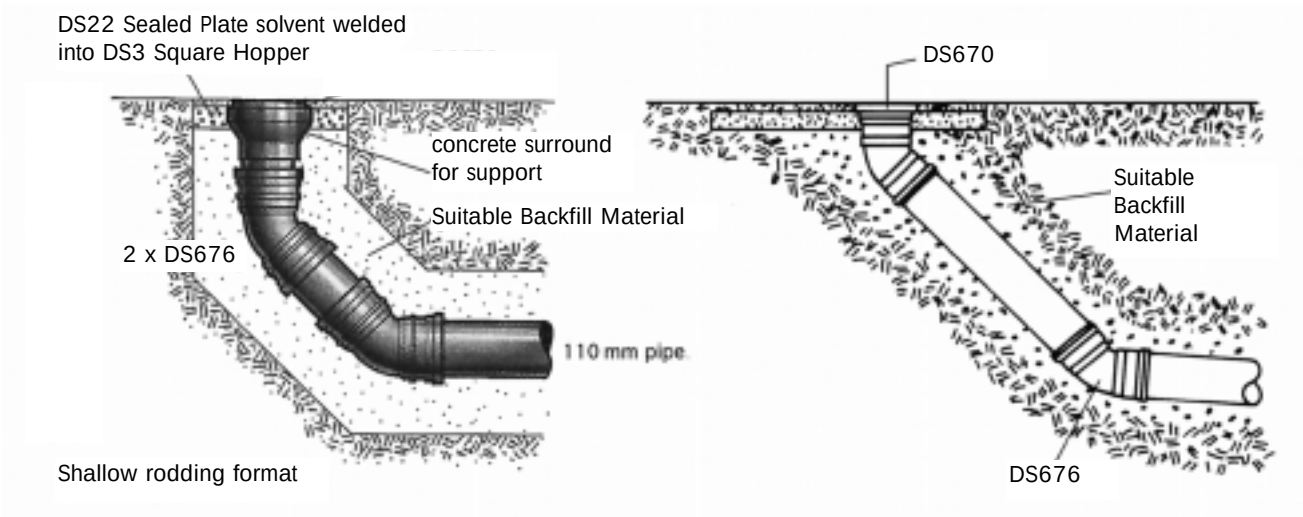
By using this method of installation considerable savings may be made over the traditional form of manhole construction. This provides a vandal-proof access but should only be situated in paths or borders.

RODDING

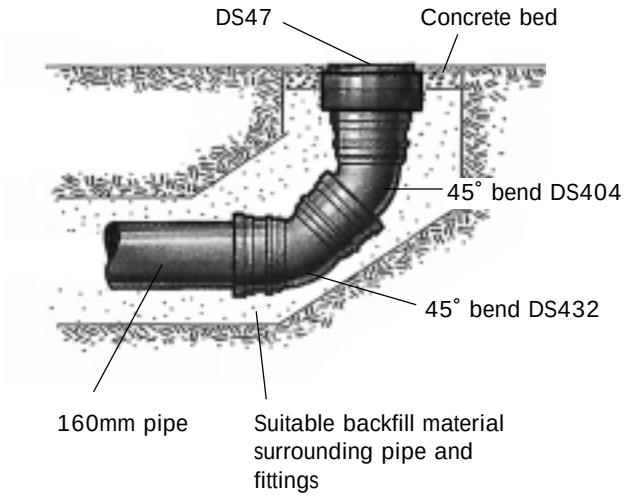
The Local Authority Bye-laws and the Building Regulations require that access must be provided for the purpose of cleaning and maintenance. The operation and maintenance of drains and sewers outside buildings is governed by BS EN 752-7: 1998.

The longer lengths and smooth bore of the Hunter PVCu pipes reduce the likelihood of blockages, but should this occur, it is recommended that flexible, rods are used. Pointed or boring type fittings are not recommended for use with them.

The rotary movement of the cleaning cable is protected from the PVCu pipe by a spiral wound sheaf.



160mm HEAD OF DRAIN ACCESS USING ALTERNATIVE SEALED ACCESS DS47



This detail is suitable for shallow invert depths but may be extended with the insertion of appropriate length of socketed pipe fitted between the top and bottom bend.

11.02 RODDING ACCESS FITTINGS

Rodding Eye installations comprise a 45˚ Sealed Rodding Access a length of pipe and a 45˚ Short Radius Bend to drain.

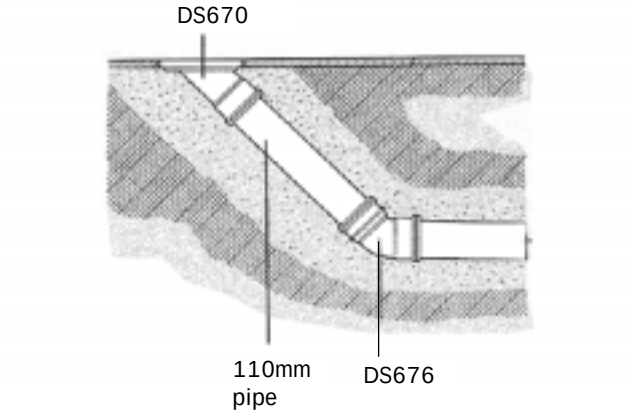
11.03 INSTALLATION OF SEALED RODDING ACCESS FITTINGS

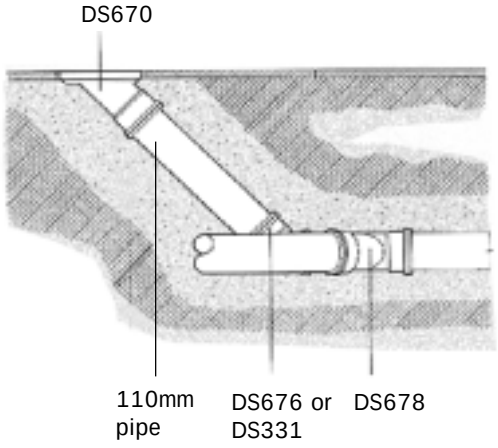
Obtain intermediate rodding access by placing the Sealed Rodding Access at ground level and connecting it via a length of pipe and a 45˚ Bend to a 45˚ Junction on the main drain.

Wherever rodding access points are installed, access must also be provided both inside the house and at the gully. Internally fit an Access Pipe at or near the base of the soil stack. In addition, if the ground floor WC connects direct to drain, fit a removable WC Connector.

Outside the house, provide direct access to the drain through either, the Hunter Bottle Gully or through an Access Bend fitted to the outlet of the Universal Gully. (See Gully section).

110mm Rodding Eyes can be used for access to larger diameter drains by fitting the appropriate Reducer at the terminal connection*. Rodding Eyes should be set in or next to paved areas to make rodding easier.





11.04 JETTING

High pressure water jetting is now used extensively and is a recommended technique for the general cleaning, de-scaling and removal of blockages in underground pipework.

"SEWER JETTING CODE OF PRACTICE"

The Code of Practice for Sewer Jetting published by The Water Research Centre contains detailed guidance on the use of this type of equipment for drain and sewer maintenance. Adherence to the recommendations contained in this document is strongly advised when jetting all pipe materials.

The Code of Practice recommends for all house drainage systems and sewers where exact details of the condition, age and pipe material cannot be verified that a jetting pressure of 130 bar (1900 psi) is not exceeded. Independent jetting trials for blockage clearance in PVCu pipes have conclusively demonstrated that the improved hydraulic performance and smoother internal bore allows most types of blockages to be removed using standard rear facing jet nozzles at jetting pressures well below the maximum recommended in the Code.

The Code of Practice recommends for all pipe materials that static jetting above 1900 psi is used only following confirmation that the pipeline being jetted is in good structural condition. Where up to date and accurate records of the condition of the sewer are unavailable a CCTV survey may be required prior to jetting above 1900 psi.

The Code of Practice recommends a maximum jetting pressure of 180 bar (2600 psi) for PVCu pipes, when using a standard jet head.

USE OF HIGH PRESSURE/LOW FLOW TRAILER TYPE JETTING RIGS

Where the distance from the access point to the blockage exceeds the travel capability of the standard jet head running at 180 bar (2600 psi) the use of a low impact jet head will allow higher pressures (thus great running distance) to be achieved without increased risk of pipe damage.

The jet head manufacturer's recommendations for maximum operating pressures should be observed when using these types of jet head.

11.05 ACCESS FOR CLEANING

Inspection Chambers

As with open channel manholes, the Shallow Access Chamber and 450mm Inspection Chambers are easily rodded in all directions.

Bottle Gully

The Hunter Bottle Gully allows easy rodding of the drain through the Gully itself. Using the Bottle Gully saves the expense of providing a bend with access plus a purpose made cover and frame.
(See section 9.00 Gullies).

To obtain access to the drain, lift the grating by inserting a screwdriver under its edge. The access plug has to be turned to be removed.

Before replacing the plug, clean and lubricate all mating surfaces.