



## INSTALLATION GUIDE. AQUAFLOW Underground Drainage.

### Trench Detail and Backfill Material

The trench should be constructed 300mm wider than the outside diameter of the pipe to be installed. Where the “as dug” material is suitable, the bottom of the trenches may be trimmed to form a pipe bed. The material can also be used as side fill and backfill. Imported granular backfill materials such as pea shingle, used in accordance with the recommendations of BS5955 Part 6: 1980 Appendix A, having a nominal particle size not exceeding 10mm, should be used as required up to and over the crown of the pipe. When this has been achieved the “as dug” material can be replaced into the trench. Once 300mm of material has been replaced, mechanical compaction can commence.

### Testing

Testing of all drainage installations should be carried out in accordance with the requirements of the appropriate approving authority, using either air or water testing. References should be made to current editions of Building Regulations (Approved Document ‘H’) BS EN752:1997 and BS EN 1610:1998. Where drainage appears inside buildings, BS EN 12056 should also be consulted.

### Jointing

#### Pipe End Preparation

When cutting pipes ensure that all ends are chamfered and are free from swarf, grit and dirt.

#### Ring Seal Joints

The **AQUAFLOW** Ring Seal Joint acts as both a seal and expansion joint. The following sequence should be adhered to:

- Check that all ring seal sockets are properly located in their recessed position.
- Ensure spigots and ring seal sockets are dry, clean and free from grit and dirt.
- Lubricate all ring seal fittings lightly, using only a lubricant recommended for the assembly of PVCu pipes and fittings. This will allow for a fast and efficient connection.
- Ensure all pipes and fittings are in the correct position.
- Insert pipe fully into the socket, then withdraw pipe by a minimum of 12mm, this will allow for expansion.

### Adaptors

External rainwater Downpipes can be connected directly to a surface water drain or, depending on the design, via a gully trap to the underground drainage system.

The diameter of **AQUAFLOW'S** 110mm PVCu above and below ground drainage systems are the same and therefore a direct connection may be achieved without the use of an adaptor. Where rainwater pipes connect directly to a drain, a suitable reducer will be required as follows:

- ADS6 110mm x 68mm Rainwater adaptor for Round downpipe.
- ADS7 110mm x 65mm Rainwater adaptor for Square Downpipe.



Connection to other materials such as Cast Iron, Supersleeve and Hepsleeve, is achieved by the use of a range of rigid and flexible couplings and adaptors.

### **Access and Rodding Points**

Access is very important on all installations for testing, inspection, and removal of any blockage or debris. Rodding in both directions can be achieved by using a Mini Access Chamber (MAC) or 450mm Large Inspection Chamber in conjunction with access fittings.

Rodding points are more usually used in storm water drainage systems where the rodding point is located at the head of the drain run connection to a chamber, and being no further than 22 metres away from the chamber. The rodding point should be enclosed in a concrete surround to provide support and to ensure that it does not become mislaid at ground level.

### **Inspection Chambers**

#### **Mini Access Chamber (MAC)**

A mini access chamber has a relatively narrow riser shaft, and is used for inspecting, clearing, and rodding a drain line. The narrowness of the riser shaft permits limited clearing and rodding to a maximum depth to invert of 600mm. Any unused side connections should be sealed with a plain socket plug. Should bends be required to change direction, these should be sited at the point of entry to the chamber. Side branches of the chamber should not be used to change direction of the main flow, as a self-cleansing flow through the chamber cannot be guaranteed. Intermediate depths can be achieved by cutting a riser at the indicated points. The frame and cover should also be adjusted to suit the level of the adjacent ground and surrounded in a minimum of 50mm of concrete.

#### **Large Inspection Chamber**

##### ***Incorporating Non Man Entry Restricted Access Cover & Frame***

The large diameter of the riser shafts of inspection chambers enables them to be installed to a maximum depth to invert of 1200mm when used in conjunction with a 470mm opening cover and frame. The chamber complies with Approved Document H of the Building Regulations 2000 by using the 350mm reduced opening cover and frame for installations over 1200mm up to a maximum of 3000mm invert depth. The chamber is installed on a suitable bed dependent on the quality of the trench and backfill materials. Backfilling is continued up to approximately 50mm of the finished ground level.

The frame and cover are placed on a bed of concrete around the top of the uppermost shaft, and adjusted to the finished level. The frame is securely fixed through the wall of the chamber at the set location points using selftapping screws. The cover is then secured to the frame with the captive screws. It is impossible for the cover to be removed without undoing the screws.

Any unused side connections should be sealed with a plain socket plug.

Should bends be required to change direction, these should be sited at the point of entry to the chamber.

Side branches of the chamber should not be used to change the direction of the main flow, as a self-cleansing flow through the chamber cannot be guaranteed.