

ULTRA-RIB

Rib reinforced drainage & sewer system



Structurally designed with a higher stiffness (Class 8) and giving improved resistance to buckling, Ultra-Rib is an all-socket gravity sewer system which combines the proven benefits of PVCu with a unique design of pipe. Manufactured by the patented 'Ultra Moulding Process', solid wall Ultra-Rib pipes have a concentric, externally rib-reinforced profile and a smooth bore, resulting in a system which is:

- Robust, yet light in weight
- Easy to joint, with high performance sealing ring
- Corrosion resistant
- Higher stiffness for easier installation
- Excellent flow and self-cleansing characteristics
- Equivalent bore size to traditional materials
- Full range of adaptors to other materials
- Reduced bedding requirement - BBA approved for 150mm Ultra-Rib

BSI Kitemark

The 150mm, 225mm and 300mm diameter Ultra-Rib sewer systems carry the latest BSI Kitemark, licence number KM 56662, to WIS 4-35-01 (formerly WIS 4-31-05), 'Specification for solid wall concentric external rib-reinforced uPVC sewer pipe'.

Authority Specification

Ultra-Rib pipes are manufactured in the United Kingdom under a BS Quality System and Plan agreed by the British Standards Institution and the Water Research Centre (WRC). Ultra-Rib pipe is produced to the Water Industry Specification WIS 4-35-01 (formerly WIS 4-31-05), 'Specification for thermoplastics structured wall pipes, joints and couplers with a smooth bore for gravity sewers'.

Approvals

WAA Sewer for Adoption

(4th Edition 1995) Clause 4.2.22, Sub Clause 3.

WAA Civil Engineer Specification for the Water Industry

(4th Edition 1993) Section 2, Clause 2.32, Sub Clause 3.

Scottish Association of Directors of Water and Sewerage Services and Department of the Environment for Northern Ireland Standard Specification for Water and Sewerage Schemes - Third Edition. Series 300 Clause 343.1.1.

Adoptable Sewer & Drainage

BBA Certificate 97/3335

Highway Drainage

BBA Certificate 89/R044

Pipe Design & Applications

Ultra-Rib is designed for use on adoptable or private buried gravity sewers at depths of up to 10 metres and highway drainage. The system can be used in conjunction with BS EN 1401 PVCu pipes and fittings or connected to clay or concrete pipes and fittings using Ultra-Rib adaptors.

Fittings Design

Ultra-Rib fittings are all-socketed and, where appropriate, are reinforced with radial ribs throughout the body section. Fittings designed to connect to BS EN 1401 have fitted ring seals inside the socket. All Ultra-Rib jointing sockets are plain and are sealed by the rings fitted to the external spigot of the Ultra-Rib pipe, as shown in Figure 1.

Sealing Rings

All Ultra-Rib sealing rings must be ordered separately, as required. Sealing rings are manufactured, in all cases, from a synthetic rubber material, not natural rubber and do not support bacterial growth.

Materials

Pipes and fittings are manufactured from unplasticized Polyvinyl Chloride PVCu

Colour

Pipe & fittings - golden brown.

Pipe Bundle Quantities

150mm	30 lengths
225mm	12 lengths
300mm	9 lengths

Jointing

Unlike traditional methods for jointing PVCu pipes, the Ultra-Rib seal ring is positioned on the pipe spigot rather than retained within a pipe or fitting socket.

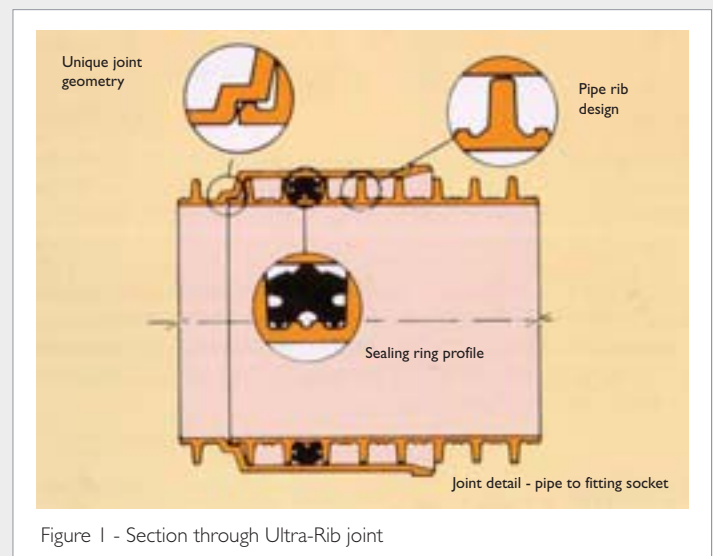


Figure 1 - Section through Ultra-Rib joint

Preparation

Ensure that the two ribs that retain the sealing ring are sound.

Cutting

Pipe must be cut midway between the ribs. The design of the ribs allows pipes to be cut square with accuracy with a 10 t.p.i. saw. Remove any swarf from the pipe end - a chamfer is not required.

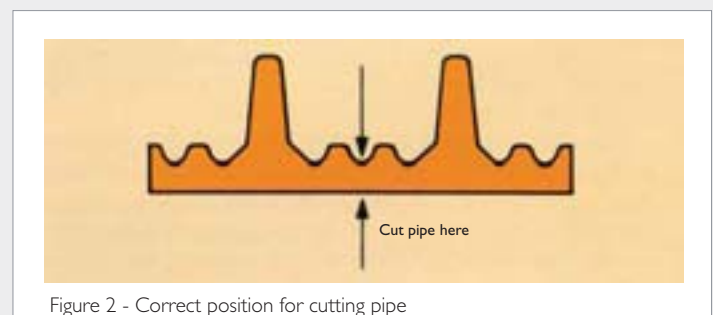


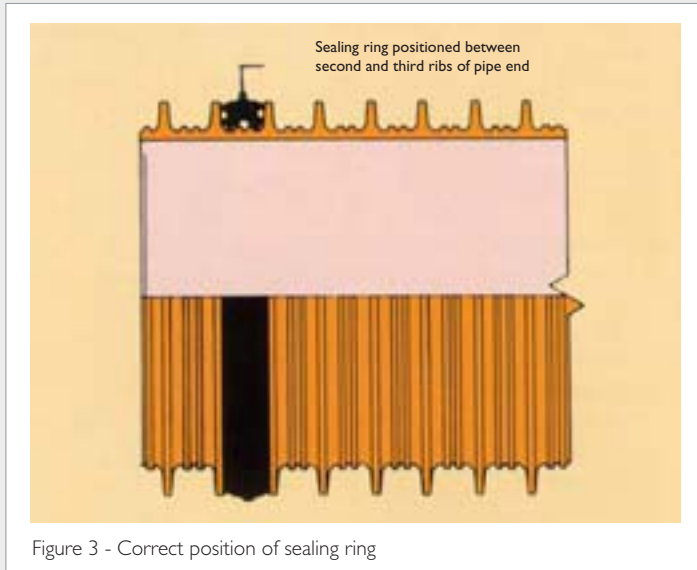
Figure 2 - Correct position for cutting pipe

1. Clean pipe spigots and sockets

All dust, dirt and grit which could prevent an effective seal must be removed from pipe ends and socket.

2. Position sealing rings

The correct position is as indicated in Figure 3 ie. between the second and third ribs of the pipe end. Ensure the seal ring is correctly seated and not twisted.



3. Apply lubricant

Immediately prior to jointing, Brett Martin lubricant should be applied to the inside of the lip of the socket and to the sealing ring, ensuring that neither become contaminated with dirt. It should be noted that excessive application of lubricant may enable joints to move during testing, thus affecting results.

4. Make joint

Offer the pipe up to the socket, align pipe and push home. Alignment is important to facilitate jointing. Improper alignment will make it difficult to joint.

Alignment is critical even if the pipe is to be subsequently deflected to line and gradient.

NB. Any such subsequent deflection should be limited to three degrees.

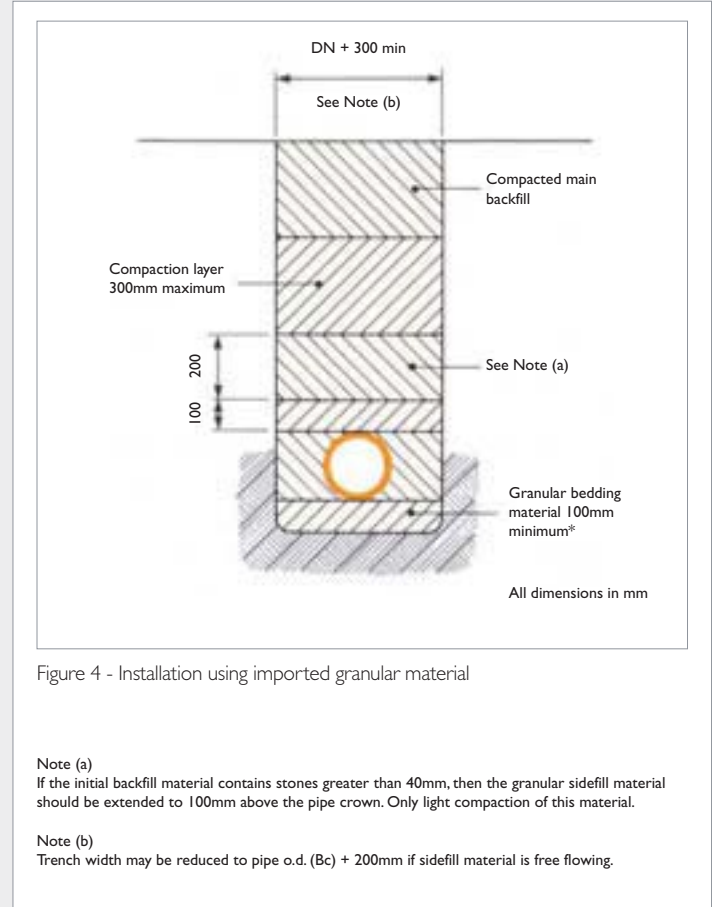
The force required to push the pipe home will vary according to pipe size and ambient temperature.

Whatever method is used to apply the necessary force, care must be taken to ensure that there is no risk of damaging the pipe ends or ribs. The most convenient method is to use a lever ensuring the pipe end is protected.

A good technique is to lift the spigot end of the pipe by passing a rope underneath. This makes it easier to align spigot into socket.

Mechanical pushing or pulling methods are unnecessary and may introduce undue force. If circumstances dictate that such methods are used, over insertion should be avoided. Pulling methods must use fabric straps and not chains around the pipe. The fifth rib entering the socket indicates adequate insertion of the spigot.

If imported material is to be used as the bedding material, the trench should be excavated to a minimum of 100mm below invert level to allow for the pipeline bedding material (see Figure 4). In conditions where the trench bottom is wet, soft or irregular, it may be necessary to increase this thickness. Imported bedding material should be properly placed to provide a uniform bed for the pipeline. Bricks or other hard material should not be placed under the pipes for temporary or permanent support.



* Minimum bedding requirements - 150mm Ultra-Rib
The minimum bedding requirement for 150mm Ultra-Rib is 50mm in accordance with BBA Agrément Certificate 97/3335, Detail Sheet 3.

Placement of sidefill material

After a section of the pipeline has been laid and tested, the material used for the pipeline bed should be extended to the pipe crown. This material should be placed evenly on both sides of the pipeline and compacted to the level specified. Trench supports should be withdrawn prior to compaction of the sidefill material thus ensuring proper compaction between the pipeline and trench walls. The sidefill material should be worked under the side of the pipe to minimise voids. Should the material in the initial backfill zone contain particles greater than 40mm, then the sidefill material should be extended to a level of 100mm above the crown and completely cover the pipeline (see Figure 4).

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