

WLC Couplings - Spiral Wound Pipe



The extruded strip used for Spiral Wound pipe couplings has a sharp 'V' profile under the clamp band. This allows the point of the 'V' to be pushed into any surface irregularity and maintain even compression around the full circumference of the pipe.

Coupling Design

Couplings for Spiral Wound pipe up to and including DN1500 are usually produced at 300mm wide. Larger couplings are 400mm wide.

- Sizes DN400 to DN600 use single bolt housings on each clamp band and worm drive adjusters on the shear band.
- Sizes DN700 to DN1200 use single bolt housings on the clamp bands and the shear bands.
- Sizes DN1350 to DN1500 use double bolt housings on both clamp bands and shear bands.
- Sizes DN1600 to DN2400 are as above but use 400mm wide seals.

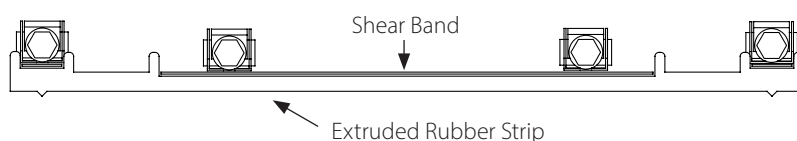
These arrangements allow the coupling to accommodate the manufacturing tolerances of the pipes. Typically, the single bolt arrangement allows 15mm of diametrical adjustment and this doubles to 30mm for the larger couplings.

Size Range	Coupling Width	Clamp Band		Shearband	
		Type	Torque	Type	Torque
DN300 - DN600	300mm	Single M8 Bolt	20Nm	Worm Drive Clamps	13Nm
DN700 - DN900	300mm	Single M8 Bolt	20Nm	M8 Bolts Single Adjustment	20Nm
DN1000 - DN1200	300mm	Single M8 Bolt	25Nm	M8 Bolts Single Adjustment	25Nm
DN1350 - DN1500	300mm	Double M8 Bolts	25Nm	M8 Bolts Double Adjustment	25Nm
DN1600 - DN2400	400mm	Double M8 Bolts	25Nm	M8 Bolts Double Adjustment	25Nm

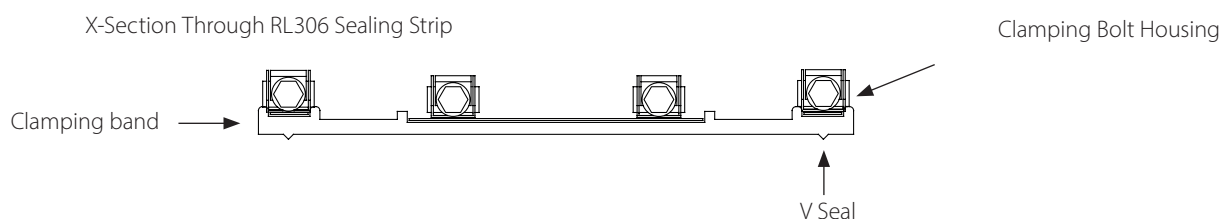


Testing

X-Section Through RL405 Sealing Strip



X-Section Through RL306 Sealing Strip



Testing was carried out with internal pressure and deflection, vacuum and deflection, internal pressure and deformation and vacuum and deformation.

Sizes up to DN1050 had 0.3 Bar of vacuum with 2° deflection, 1.0 Bar internal pressure with 2° deflection and 1.0 Bar internal pressure with 5% deformation.

Sizes up to DN2400 had 0.3 Bar of vacuum with 0.8° deflection, 0.5 Bar internal pressure with 0.8° deflection and 0.3 Bar of vacuum with 5% deformation.

Material

The rubber seals are manufactured from EPDM and comply with BS EN 681. Stainless Steel Shearbands and Clamps are supplied in Grade 1.4301 (304) Stainless steel.

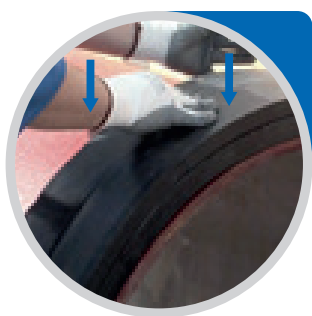
Installation Tools

- The following tools will be needed during the installation process.
- Measure
- Marker
- Torque Wrench with a 13mm and 8mm socket for worm drive clamps.

Preparation

- The pipes should be clean and free from dirt and debris where the couplings are positioned.
- Any damage or score marks present in the location of the coupling should be smoothed out.
- The bedding should be removed from the floor of the trench in the location of the coupling.
- Ensure the couplings are kept as clean as possible prior to installation

Installation



6 easy steps

1. To ensure that the coupling is fitted centrally over the joint, use a dimension of half the width of the coupling and mark a pipe to indicate the final position of the coupling.
2. If the coupling has been stored for a long period of time or subjected to the elements it may be necessary to re-lubricate. For this we recommend lubricating underneath both the clamp and shearband clamps using a soap based lubricant. Bolts should be lubricated using copper-slip or similar.
3. Fit rubber sleeve or coupling over pipe end and slide a short distance along the pipe.
4. Position pipe in trench.
5. Position next pipe in trench. Keep the gap between the pipe ends to a minimum. (Ensure that a coupling has been positioned at the other end of this pipe in preparation for the next joint).
6. Slide coupling over the joint. This is best achieved by rotating the coupling around the pipe in alternate directions whilst pushing in the direction of the joint. Line up edge of the coupling with the mark previously applied.
7. If the steel bands are already fitted on the coupling then ensure they are sitting within the correct locating ribs and slide them round to ensure all tensioning devices are in accessible positions.
8. If the steel bands are not fitted then slide one end under the pipes, draw both ends together and locate the trunnion in the housing. Ensure they are sitting within the correct locating ribs. Move the tensioning devices to accessible positions.
9. Tighten up all tensioning devices gradually and evenly to the required torque indicated on the coupling label. Ensure that the screw tails slide in the housing during tightening. Check the torque on all tensioning devices prior to backfilling.
10. Replace the granular bedding under the coupling and compact into the void to provide continuous support along the pipe.
11. Because of the relatively high coefficient of thermal expansion of the HDPE pipe material it is important, particularly when installation is carried out during hot weather, that back filling is completed as far as possible and the pipe is allowed to cool to ambient soil temperatures. The tensioning devices should then be tightened to their required torque when the pipe has fully contracted.

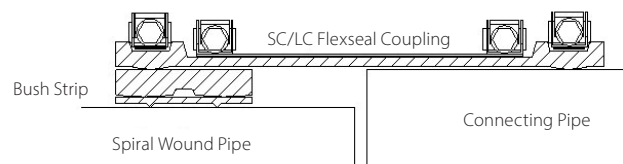
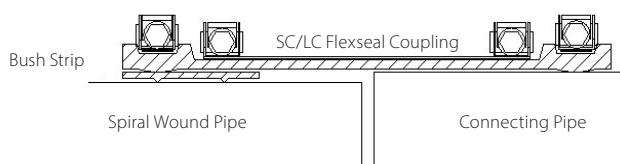


Connecting Spiral Wound pipe to a different pipe material

Spiral Wound is the smaller pipe

The coupling used would be to suit the larger pipe material, so would be a Flexseal SC or LC coupling.

Flexseal have a 4mm Spiral Wound bush that is designed to seal onto the surface of Spiral Wound pipe, this bush should be fitted in direct contact with the Spiral Wound pipe. Any other bushes required (fig 2) can be normal Flexseal bushes and applied on top of the Spiral Wound bush. The Spiral Wound bushes have been specifically designed to give the same sealing properties as the Spiral Wound profile as such can allow compression on the undulating surfaces of the Box pipe.

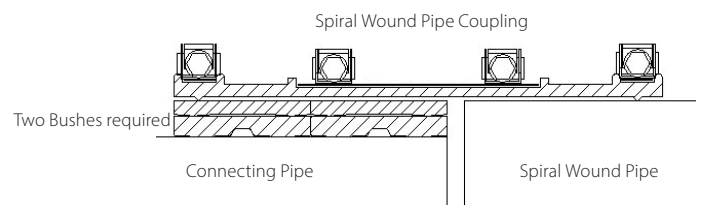
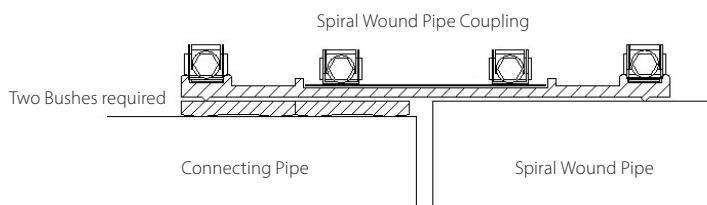


Typical arrangement for bushes when the Spiral Wound pipe has the smallest outside diameter

Spiral Wound is the larger pipe

Standard bushes can be used along with the Spiral Wound coupling when two dissimilar pipes are being jointed and the bush is in contact with the non- Spiral Wound pipe.

However in these circumstances two bushes will be required laid next to one another as the edge of the shear band is approximately 75mm from the edge of the coupling so the bushes need to be positioned side by side to support the coupling when tightened down.



Typical arrangement for bushes when the Spiral Wound pipe has the largest outside diameter

General Information

Quality, Standards and Approvals

Fernco has been certified by the British Standards Institution (BSI) as a company of assessed capability, with a quality management system which meets the requirements of BS EN ISO 9001:2015

Fernco UK, part of a global group of companies, are the leaders in wastewater connection innovation; utilising the most advanced methods and techniques for precision-manufactured products, all of which comply with or exceed relevant British and European standards to ensure reliability and sustainability.

Environment

Fernco operate Environmental Management Systems which are certified to ISO 14001: 2015.

Supply

Fernco are proud members of the Builders Merchants Federation (BMF). All Fernco products are supplied through a national and global network of distribution and merchant partners. For stockist details, contact Fernco.

Technical Support

Fernco have a team of product experts on hand to support all customers with technical support and advice.

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