

Ridgistorm-XL Low Flow Channel (LFC) is designed for use in large capacity surface water or foul tanks and sewers where a minimum self-cleansing water velocity is required for low flows. The LFC concentrates the water flow into a narrower channel, increasing the water flow velocity and preventing any pooling of water or settlement of solids within the piping system. In periods of high flow, the open channel will overflow, activating the full volume of the pipe.

This guidance summarises our minimum recommendations for the installation of Ridgistorm-XL LFC as a ring sealed system. There are three standard channel widths available (150, 225 & 300mm) to suit pipe diameters from 900-1800mm and pipe lengths from 1.25-12m.



Trench preparation

Trenches should not be excavated too far in advance of pipe installation, with the installer ensuring that the excavation is adequately supported to guarantee the safety of the works in accordance with all legislation and code of practice. Trenches should be as narrow as practicable, while still maintaining sufficient space for the operation of appropriate compaction equipment, or access for site personnel. The trench width will typically correspond to the pipe outer diameter, plus an additional 150-750mm either side of the pipe; the exact width dictated by the pipe diameter and the assumed installation conditions. Where multiple pipes are installed in a trench, sufficient space should be allowed between adjacent pipes to ensure that material can be placed and compacted. The trench base should be assessed to ensure it has sufficient bearing capacity and meets the required level/gradient. Any soft spots should be excavated and filled with a suitable compacted granular material. Water should not be allowed to accumulate in the trench. Adequate provision should be made for the removal of groundwater, to a consented disposal point, before and during installation.

Pipe bedding

The bedding material is laid below the pipe to provide uniform support and to permit small adjustments of the pipe's line and level. In cases where the 'as dug' material is suitable as pipe surround, imported bedding is not required and the trench bottom should be loosened. Otherwise a minimum 150mm bedding depth of granular material should be placed and compacted in the trench bottom. Bricks, stones, blocks of wood or other similar objects should not be placed below the pipe to facilitate adjustment of line and level; as this may cause high local stress concentrations and pipe deformations.

Table 1: Ring seal joint – Idealised joint dimensions

Pipe Diameter (mm)	Dimensions (mm)				
	ID	OD	X1	X2	Height (H)
900	900	978	208	188	39
1050	1050	1142	243	226	46
1200	1200	1320			60
1500	1500	1642	145	140	71
1800	1800	1946			73

Dimensions based on our standardised SN2 offering, current at the date of publication. All dimensions are nominal. Please refer to Figure 1.

Figure 1: Socket and Spigot dimensions

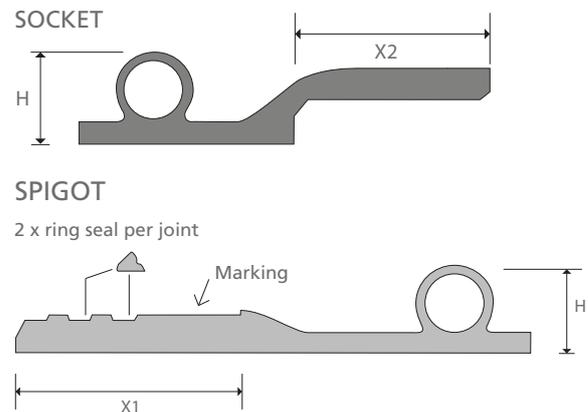
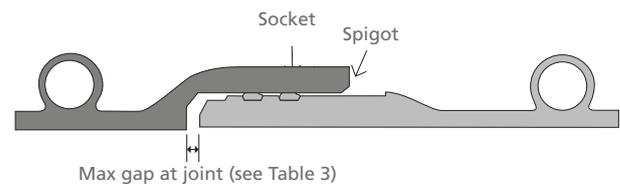


Figure 2: Maximum allowable gap at joint

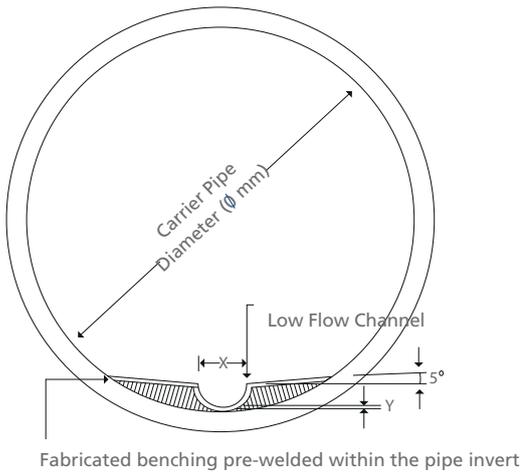


Note: Where the abutment of pipe ends has not been achieved, a sealed system may still be achieved within the tolerances detailed within Table 3 (overleaf).

Table 2: Low Flow Channel dimensions

Channel Width (mm) X	Channel Height (mm) Y
150	14
225	21
300	27.5

Figure 3: Low Flow Channel dimensions

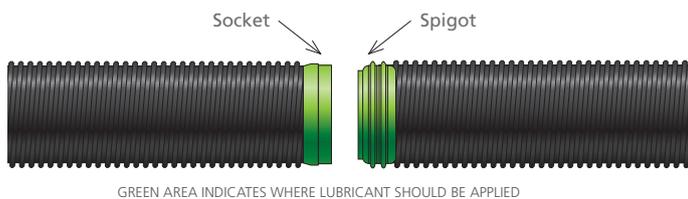


Installation Process

1. Install the first section of Ridgistorm-XL LFC pipe, ensuring correct position of the Low Flow Channel (line, level and orientation). Partially backfill to hold the pipe in position for insertion of the next pipe.
2. Place the seals in the milled grooves of the spigot (2 per joint). Ensure the socket and spigot are free from debris, clean if necessary.



3. Apply a generous amount of Polypipe lubricant all around the spigot end, seals and inside of the socket.



4. Measure the internal depth of the receiving socket and mark the spigot end accordingly. Refer to 'X1' and 'X2' in Figure 1.
5. Place the pipe spigot against the receiving socket, ensuring correct alignment of the two Low Flow Channels. Locate an appropriate piece of wood/plate or a Ridgistorm-XL Jointing Frame at the end of the pipe to be pushed home; this will spread the load and prevent damage to the pipe when pushing. Avoid dragging the pipe ends as this may cause damage to the sealing surfaces. Using mechanical assistance (i.e. the back of a digger bucket or similar), slowly push the wood/plate or jointing frame until the pipe is fully home, (up to the pre-marked insertion line, see Figure 1). Once fully home, check that a correctly aligned and continuous Low Flow Channel has been formed between the two pipes, adjust by repeating the process if necessary.
6. Backfill over the new pipe in order to hold it in place. Joints should not be left for long periods without backfill or unsecured as the pipes may creep out of the sockets. This will cause a gap in the joint on the inside wall of the pipe. If you find that the pipes are creeping out as soon as the machine is removed, push the pipe back home fully and secure the pipe, while backfill is applied.

CROSS SECTION OF TRENCH

FIRST PIPE HELD IN PLACE BY BACKFILL WHERE POSSIBLE



Table 3: Maximum allowable pipe jointing tolerances

Pipe ID (mm)	Maximum gap at joint (mm)
900	7.9
1050	9.2
1200	10.5
1500	13.1
1800	15.7

Note: If required, larger gaps ($\leq 25\text{mm}$) can be welded over by Polypipe's Site Services Team.

When installing a Ridgistorm-XL LFC pipe system; where the 'maximum gap at joint' (refer to Table 3) is exceeded or is deemed to be unacceptable, our Site Services Team are able to attend site to undertake in-situ extrusion welding at the internal pipe joint. It should be noted that this service is only available where the joint gap is less than 25mm, at an additional cost.

Please contact our Technical Team on **+44 (0) 1509 615100** for further details.

Sidefill placement

Once a pipe section has been laid and successfully jointed, pipe surround material should be evenly placed and compacted* across the width of the trench, in accordance with the design and specification.

Trafficking of the pipe should not be allowed until minimum cover depths have been achieved.

If used, trench supports should be progressively removed during placement and compaction of the sidefill material.

*** Required compaction levels may be achieved through an appropriate method of work, related to:**

- Fill material specification
- Thickness of placed layer
- Compaction plant being used

Alternatively, if required, compaction may be verified by in-situ tests.

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