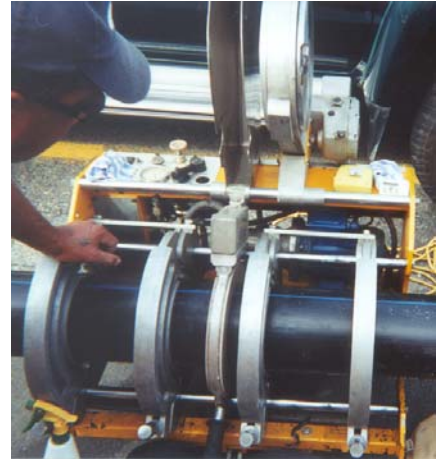


Jointing Of Polyethylene Pipes And Bosspipe

PE pipes are mostly jointed by fusion welding. It is imperative that the surfaces to be welded are not contaminated or misaligned. This is the most likely cause of weld failures.

Butt welding of solid wall pipes is performed by melting the pipe (fitting) ends and holding them together under controlled temperature, time and pressure conditions.

Equipment comprises of a butt fusion machine with planing tool and heating plate. Adequate protection for pipe, fittings and equipment against adverse weather conditions and contamination is advisable.



Main operations:

- Securely fasten the pipes/fittings in the welding machine's clamps.
- Plane the pipe/fitting spigot ends.
- Align of the pipe profiles.
- Clean with Isopropanol impregnated pipewipe and dry the heating plate and pipe.
- Heat and melt of the pipe/fitting end faces using the heating plate.
- Remove the heating plate and join the two molten pipe/fitting end faces together.
- Hold together and cool the joint under pressure.

Only pipes/fitting spigots of the same diameter and wall thicknesses may be butt welded.

Electrofusion jointing of solid wall pipes utilises an integral electrical resistance element incorporated in the mating surface of the fitting which, when connected to an appropriate power supply, melts and fuses the materials of the fitting and inserted pipe together.

Equipment comprises of an electrofusion welding unit or 12 V jumper leads, scraping tool, aligning/re-rounding tools.



Main operations:

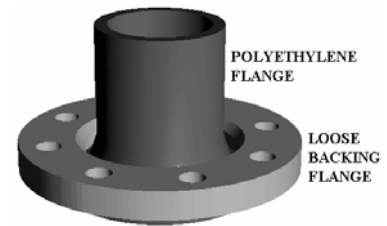
- Remove outer surface of the pipe/fitting spigot.
- Clean with Isopropanol impregnated pipewipe and dry the scraped pipe ends and mating surface of the fitting.
- Measure and mark the depth of pipe penetration into the fitting.
- Correctly position and secure the electrofusion fitting and pipes (use clamps).
- Input welding parameters and weld by application of electric current.
- Cool the joint and release the fixtures.

Pipes of differing diameter and wall thickness may be joined together using an appropriate electrofusion fitting.

No water shall enter the fusion interface area from outside or inside the pipes. Any pulling, bending or rough handling of the pipe string should be avoided until the weld has completely cooled.

Mechanical jointing is generally used for jointing small pipes of diameter 63 mm or less.

For transition from PE pipes to flanged fittings or to pipes made of another material, a [PE stub flange](#) with fitted metal backing ring is fusion joined to PE pipe end and then connected to a mating flange.



[Rubber ring jointing](#) of Bosspipe is performed as follows:

- Align the pipes.
- Clean and dry the inside of the socket and outside of the spigot.
- Mark the depth of spigot penetration into the socket, if witness mark is absent.
- DN225 and DN300 Bosspipe - tightly place clean and dry dedicated rubber ring in the second groove in.
- DN375 and DN450 Bosspipe - tightly place clean and dry dedicated rubber ring in the first groove in.
- Apply joint lubricant to the inside of the socket and to the outside of the rubber ring.
- Position protective timber board vertically on the socket end of pipe being laid and apply steady force using a crowbar.
- Push the pipe home to the witness mark placed on the spigot.

Rubber ring joints between Bosspipe spigots are made using a coupler.

[Jointing to concrete structures](#) of Bosspipe can be made directly or, where watertight connection is required, using an approved manhole connector or an approved hydrophilic compound.

Jointing to concrete structures is performed as follows:

- Make a hole in the manhole wall coaxial with incoming pipe/fitting spigot using a drill or a power saw.
- Clean all work surfaces thoroughly. Remove all grease.
- Insert a manhole connector to a specified projection past inside wall of the manhole.
- Seal all annular gaps by caulking an approved bonding agent (e.g., epoxy mortar) to completely fill all gaps and to form haunches on all sides. NOTE: when using a 'watertight' connector, ensure that haunches fully enclose the strip of hydrophilic compound.
- Join with rubber rings to Bosspipe lines using an integral pipe socket or a coupler.

Lateral connections of DN100 and DN150 PVC or DN110 and DN160 PE pipes to Bosspipe lines are made using junctions. For new lines junctions are supplied with socket on upstream side (either pipe type socket or pre-assembled by RRJ with a coupler). For cutting into existing Bosspipe line, junctions are supplied with spigots on both ends for rubber ring jointing using slip-couplers.