MecFlow

MecFlow Tooling

Technical Bulletin

MecFlow is a reliable, multi-layer, WRAS approved water supply system, ideal for medium to high-rise commercial and multi-occupancy buildings.

This simple alternative to traditional water supply systems brings all the benefits of PP-RCT, including its strength, durability and a B-s1, d0 fire classification rating according to EN 13501.

The MecFlow system of pipes and fittings has 3 methods of thermo-weld jointing – socket, electro and butt fusion - which all use a source of heat to facilitate an effective weld process.

This bulletin outlines the tooling required to prepare and weld the MecFlow system as per the Polypipe Building Services guidelines outlined in the Technical Product Brochure, focusing on tool use for different pipe sizes

Cleaning and Marking

Prior to any scraping or welding, the MecFlow surfaces should be cleansed using a lint-free cotton cloth and an isopropyl alcohol-based cleaner (91% by volume or greater). The most appropriate method of marking MecFlow pipes for cutting, scraping and welding is to use a chinagraph pencil.

Cutting

There are several methods of correctly cutting MecFlow pipe. In all cases, the cut should be square and smooth.

Manual pipe cutting of diameters up to 40mm can be undertaken using ratchet cutters. Tube cutters, with a cutting wheel deep enough for the MecFlow wall thickness, can be used for diameters up to 160mm. A fine-toothed hand saw is also a suitable method.

Cutting using powered saws, such as circular, band and reciprocating, is typically more appropriate for larger diameters such as 160mm.

It is important that, post cutting, any debris is removed and the pipe is de-burred using a de-burring tool.

Scraping

Pipe scraping is only required when utilising electrofusion welding to joint MecFlow pipes with MecFlow electrofusion couplings. This process removes the oxidation layer which, if not removed, could compromise the quality of the joint.

There are two main types of pipe scraper/peeler:

Turbo scrapers are rotating tools which, in conjunction with a power drill, allow fast and precise scraping of MecFlow pipes up to 125mm in diameter. Up to 63mm in diameter, the turbo scrapers also comprise a trimming feature that can be used to correct unevenly cut pipes.

MecFlow

MecFlow Tooling

Technical Bulletin

Rotary scrapers are manually operated tools which allow precise scraping of MecFlow pipes above 50mm in diameter. When utilising an electrofusion coupling as a slip-coupling, please ensure the rotary scraper has the capacity to undertake the extended length of peeling required.

Socket Fusion Welding

Pipes will require bevelling with a pipe beveller just prior to this method of jointing.

For all methods of socket fusion welding MecFlow pipes to MecFlow socketed fittings, Type A socket and spigot welding irons are required.

Up to 63mm in diameter, the socket fusion welding of pipes to socketed fittings can be completed by hand. This will require a socket fusion plate welding tool and the relevantly sized welding irons.

Jig-based socket welding machines, used in conjunction with a power drill and socket fusion welder with the relevantly sized socket and spigot welding irons, are suitable for in-situ socket fusion jointing of pipes to socketed fittings up to 125mm in diameter.

Bench-based fusion welding machines are suitable for pre-fabrication of assemblies, using socket fusion jointing of pipes to socketed fittings between 25 and 125mm in diameter. Generally, benched based machines come complete with welding irons, please ensure they are Type A.

It is advisable to use a contact temperature probe & digital thermometer to ensure hot plates have reached their optimum welding temperature.

Please see electrofusion and butt fusion welding below for details of larger diameter MecFlow jointing.

Electrofusion Welding

40-volt pressure pipe electrofusion welding machines, with a barcode scanner and 4mm terminal connections, are suitable for the electrofusion of MecFlow pipes using MecFlow electrofusion couplings. Please remember, pipe scraping is required for this method of jointing (see Scraping section above).
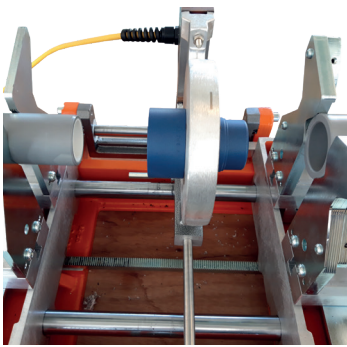
Butt Fusion Welding

MecFlow pipes of 40mm in diameter and above can be jointed using this method. 160mm diameter MecFlow pipes also use this method to join to the fittings.

Several pressure pipe butt fusion welders are available, ranging from manual to fully automatic operation. The welding machine used should be suitable for use with PP-RCT pipes and fittings with a standard dimensional ratio (SDR) of 11. It must have correctly sized clamp sets for the pipe diameter being jointed, a planer, a hot plate and a manometer. For ≤125mm diameter the drive system can either be a mechanical hand or hydraulic, for >125mm diameter a hydraulic drive system must be used.

It is advisable to use a contact temperature probe & digital thermometer to ensure hot plates have reached their optimum welding temperature.

Polypipe
Building Services

MecFlow

MecFlow Tooling

Technical Bulletin

The vast majority of tooling mentioned in this Technical Bulletin are available for hire or purchase though most leading tool hire companies.
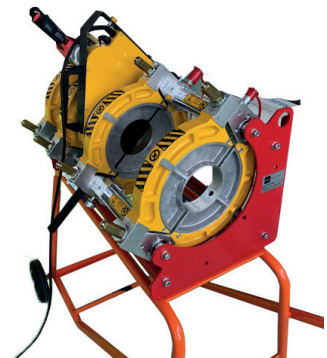
Please remember, more detailed information on the design, specification and installation of the MecFlow system is available in the Technical Product Brochure. Please go to www.polypipe.com/commercial-building-services/technical-hub/mecflow to download your copy.

Socket Fusion Welding

Electrofusion Welding

Butt Fusion Welding

Polypipe
Building Services