

ELECTROFUSION JOINTING OF POLYETHYLENE PIPE AND FITTINGS FOR CONVEYANCE OF GASEOUS FUELS

In electrofusion jointing, the socket or the fitting are incorporated with an electrical resistance which, when connected to an appropriate power supply, melts and fuse the materials of the pipe and the fitting together. The effectiveness of the jointing depends upon the correct preparation of the jointing surfaces and ensuring the surfaces to be jointed have satisfactory contact during the welding and cooling cycles.

Proper pipe clamps and other approved method of restraining, aligning and re-rounding the pipes during the fusion cycle should be used.

Procedure:

- Before starting of the jointing, the pipe ends opposite to the welding zone should be covered to prevent airflow through the pipeline during heating and cooling cycles.
- The pipe ends to be jointed are to be cut square and burrs removed.
- The pipe ends are then to be wiped clean with disposable, lint free material to remove dirt, mud etc. The pipe ends may be washed with clean water, if necessary, and then dried completely with lint free material.
- The depth of penetration of the fitting is to be measured by placing the socket without removing from the bag alongside the pipe end and a witness mark be put at half the fitting length to indicate the area to be scrapped.
- By using an appropriate pipe scrapper the entire surface of the pipe area as marked above, is to be scrapped upto a depth of approximately 0.3mm. Metal files, rasps, emery paper etc are not suitable for the purpose.
- The scrapped surface are then to be wiped with an authorized Isopropanol impregnated pipe wipe to remove any residual dusts. Methylated spirits, acetone, methyl ethyl ketone (MEK) or other solvents are not recommended for wiping the scrapped area.
- It must be ensured that the prepared surfaces are completely dry before the next procedure.



- By using pipe clamps or other suitable means the pipe is to be secured properly so that it does not move during the fusion cycle. The pipe end and the fitting are then checked for correct alignment.
- The required jointing time is to be noted as indicated on the fitting. The control box display should also be checked for showing the correct time.
- The power is to be switched on and the start button of the Control Box is pressed. The display is to be checked for proceeding of the heating cycle.
- On completion of the heating cycle, one or both the melt indicators will rise. If there is no apparent movement of either indicator, the joint will be considered as unsatisfactory and the cause be investigated.
- If the joint is satisfactory, it should then be left in the clamps for the specified cooling period.