Method Statement for Installation Of HDPE Piping

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SUMMARY OF REVISION HISTORY

Rev.	Date	Section	Page(s)	Description of Change

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1.0. SCOPE

Below is a classic method statement for the installation of HDPE piping network or domestic water supply system.

2.0. PURPOSE

This method statement outlines the procedure for the installation of High-Density Polyethylene (HDPE) piping systems. The purpose is to ensure that the installation is carried out in a safe and efficient manner, adhering to industry standards and best practices.

3.0. RESPONSIBILITIES

Project Manager: Overall responsibility for the successful execution of the installation process.
Site Engineer: Supervision of installation activities, ensuring compliance with the method statement and safety regulations.
Installation Team: Execution of the installation works, including cutting, welding, and jointing of HDPE pipes.

4.0. MATERIAL AND EQUIPMENT

HDPE pipes, fittings, and accessories as per approved specifications.
Welding machine and accessories (e.g., heating plates, cutting tools, clamps, etc.).
Pipe supports and anchoring systems.
Testing equipment (e.g., pressure testing pump, pressure gauges).
Hand tools (e.g., wrenches, screwdrivers, measuring tape, etc.).
Personal protective equipment (PPE) for all personnel involved.

5.0. STORAGE OF MATERIAL

Store the hdpe piping material in a covered and dry space. Use adequate manpower during the unloading of the HDPE pipes for proper unloading of the pipes. Protect and cover all the piping and accessories with polythene sheets before pipe installation work will start.

6.0. TOOLS REQUIRED FOR HDPE PIPING INSTALLATION

- Suitable lifting equipment i.e. crane or forklift shall be used to shift the pipes from stored place to the installation site. All necessary safety precautions as per established safety procedure shall be implemented during shifting and installation.
- The pipe lengths shall be cut according to the approved shop drawing, and shall be joined using butt fusion welding and electro-fusion welding as applicable.
- Mechanical hand tool
- Cutting Tools
- Drilling Machine
- HDPE butt fusion and welding machine

7.0. JOINTING OF HDPE PIPING & FITTINGS

Smaller diameter HDPE pipes i.e. up to 75-mm will be joined using the hot plate welding, while the pipes above 75-mm shall be joined using a butt fusion machine and as recommended by butt welding machine supplier.

8.0. JOINING DISSIMILAR MATERIALS

Use transition fittings as an alternative for joining of plastic to metal. These transition fittings are normally pull-out resistant and seal tight with pressure and tensile values greater than that of the plastic pipe part of a system.

They are commonly available with a short segment of plastic pipe for joining to the plastic pipe section. The metal end is available with a bevel, for butt-welding, with male pipe threads, or is grooved for a Victaulic style or flanged for connecting to an ANSI 150-pound flanged.

9.0. HDPE ELECTRO FUSION WELDING METHOD

For HDPE electro-fusion welding, HDPE accessories are provided with spigot ends. The spigot ends are provided with low irregularities and the welding sleeve has projections to allow their exact distance apart to be determined.

- HDPE electro-weld sleeve is provided with 2 socket ends which can be welded in a single operation.
- Welding equipment sends current through the resistance wires in the electro-weld socket for a set period. Both electro-weld sockets are welded at the same time.
- Electro-weld socket has stops on the interior. The socket has two contact pins on the outside for the connection of the welding equipment.
- There are two welding indicators which appear during and after the welding operation. These indicate that the welding has been reached and that the welding pressure has been applied.
- The connector cables from the welding equipment should be connected to electro-weld socket.

- This will illuminate “connection” indicator lamp.
- Press the start button. The welding indicator lamp will illuminate. Once the welding time is complete the lamp automatically extinguishes and the current supply switches off.
- Check the weld indicators. They should have emerged by around 2mm.

10.0. BUT WELDING OF HDPE PIPES

METHOD STATEMENT FOR INSTALLATION OF HDPE PIPING

In butt welding (pipes 75mm and smaller) both pipe ends are placed against a hot plate at a constant temperature and pressure.

The plastic pipe ends are now pressed together so that the molecules of the material are transferred between them. Before starting hot plate welding the equipment shall be checked for the following items:

- The hot plate temperature must be 210 C.
- The hot plate must be clean and free of grease.
- Ensure that the two pipe brackets and the two pipe supports are correctly aligned.
- Both pipe clamps must be adjusted so that they hold the pipe tightly enough to withstand the force of the welding process.
- Press the pipe ends against hot plate by briefly applying a high pressure. Continue heating very low pressure until an up stand of 1 mm has formed.
- Quickly remove the hot plate and slowly increase the welding pressure.
- Hold the welding pressure steady and allow the weld to cool.
- Remove the joint and inspect the weld. An irregular weld seam should be rejected.

Install the hdpe pipe according to approved shop drawing.
The installed hdpe pipe shall be inspected by the consultant.
After approval for installation conduct the hydro pressure testing of the HDPE piping system.

11.0. ATTACHMENTS