# METHOD STATEMENT FOR INSTALLATION OF HOT AND COLD WATER SUPPLY POLYPROPYLENE AND ETHYLENE COPOLYMERS (PPR) PIPING

| REVISION HISTORY | ISSUE DATE | DESCRIPTION | REVIEW / STATUS |
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| PREPARED BY: | REVIEWED BY: | APPROVED BY: |
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| QA QC ENGINEER | MAINTENANCE MANAGER | DEP. HEAD |
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## 1.0. Scope & Objective

This method statement covers the detailed procedure for Domestic Hot and Cold Water supply (PPR) piping Installation works. This procedure defines the method used to ensure that the supply & installation are as per the contract specification requirements and approved shop drawings.

## 2.0. References & Standards

- Project Specification PPR piping.
- Pipe Schedule as per the approved Material Submittal Ref: 0000

## 3.0. Definitions

| | | |
|---|---|---|
| Project | - | X |
| Client | - | xxxxxxxx |
| Project MGR | - | xx |
| Consultant | - | xxxxxxxx |
| Main Contractor | - | xxxxxxxx |
| MEP Sub Contractor | – | xxxxxxxx |
| MS | - | Method Statement |
| WI | - | Work Instructions |
| IR | - | Inspection Request |
| MSDS | - | Material safety data sheet |
| PPE | - | Personal Protective Equipment |
| MIR | - | Material Inspection Request |
| QCE | - | Quality Control Engineer |
| QA | - | Quality Assurance |
| IR | - | Inspection Request |

## 4.0. Responsibilities/ Supervision

The project Manager shall have the overall responsibility of the installation for quality and safety. He shall maintain the planning progress and coordination of works with the consultant/client.

MEP Engineer shall be responsible for monitoring the day-to-day activities at the site, for materials, drawings, testing, and allocation of resources to work areas on site, and the quality requirements and execution of Quality control measures for the project in coordination with Project/Site Engineer(s). He shall report to the Project Manager. The engineer shall be responsible for the execution Installation and testing of Domestic Water supply piping as per this method statement and lead the construction team for the safe work execution at the site and shall use the latest revised approved construction drawings.

Supervisor/Foreman shall be directly responsible for the day-to-day job at the site, for coordinating work with technicians or any other staff assigned to his area. In coordination with the MEP engineer, the supervisor shall be responsible for planning, scheduling, monitoring, and measuring of timely completion of jobs as per client/project requirements. Safety In charge shall be responsible for the health & safety aspects on site as per the HSE Manual.

## 5.0. Procedure

### 5.1. Work Preparation

5.1.1. Ensure that all the safety requirements are in place by the contractor work permit & HSE plan as detailed below.

5.1.2. The aspiration is to continually improve health and safety standards and to provide work environments and performance that are considered industry-leading. A programmed health and safety policy has been established and published. This policy sets out the goals and commitment and manages health and safety across the program.

5.1.3. The MEP Engineer reviews the material documents (Material Test Certificates) for compliance with the requirements of the purchase order and applicable specifications. The MEP Engineer checks the raw material for visual & dimensional parameters as per the requirements of the functional or equivalent specifications and decides on acceptance or rejection of the lot in totality or individual quantity.

5.1.4. Ensure that the latest revisions of the approved working drawings are being used. Note that any areas of the drawing are subject to revision, work should not proceed in these areas until an updated drawing has been used.

5.1.5. Ensure that all workers are aware of the correct materials handling procedure to ensure the best quality of workmanship.

5.1.6. Ensure the materials are inspected as per the relevant approved test Certificates

# 6.0. Materials

## 6.1. Material Supply

6.1.1. The quality of materials should be according to the Client, Data Sheet, specifications drawings, and approved METHOD STATEMENT. All the materials shall conform to approved Material submittals and as noted on the drawings. The material shall be free from surface defects. Approved materials / Suppliers will be used

6.1.2. All material supplied shall be stored in a safe condition with proper care taken during storage to ensure that no damage occurs, which renders the materials unserviceable. All material shall be stored at the storage place above the ground on the platforms, skids, or concrete blocks. All the material procured shall be properly documented.

6.1.3. After receipt of the material MEP Engineer is responsible shall verifying the material and forwarding the material inspection report for quality acceptance. The MEP Engineer will also inspect the material and confirm material specifications.

## 6.2. Materials, Equipment's & Tools List

6.2.1. PPR Pipes
6.2.2. PPR Welded Fittings
6.2.3. PPR Threaded Fittings
6.2.4. EPDM Hanging Clamps
6.2.5. Supports & Accessories
6.2.6. Hacksaw frame with Blade
6.2.7. All Types of Screwdriver
6.2.8. Spanner
6.2.9. Spirit level
6.2.10. Rubber Hammer
6.2.11. Measurement Tape
6.2.12. PPR Welding machine by the available Voltage rating
6.2.13. Drilling Machines
6.2.14. Ladders/Scaffoldings

## 6.3. Storage of Materials

6.3.1. Unloading the materials at the site and storing them shall be in place, agreed and approved by Main Contractor and near to their points of erection.

6.3.2. Care should be taken while unloading so that civil work may not be damaged.

6.3.3. The materials should be kept in store.
6.3.4. Materials stored shall be only for this project and as per the progress of work.
6.3.5. Special attention is to be taken for items expiring dates and those that need special conditions.
6.3.6. All store materials will be controlled by the storekeeper and the materials stored as per the manufacturer's written instruction & recommendation.

## 6.4. Protection Stored Materials

6.4.1. The storekeeper will be responsible for preparing an inventory of all equipment, fittings, and accessories.
6.4.2. All fittings and accessories are stocked in racks with a demarcation of items.
6.4.3. All materials and equipment are to be kept well protected from the direct sun, dust, and water.
6.4.4. All equipment, fittings, and accessories shall be issued from the stores to the site as per approval of the Project manager.
6.4.5. Only approved material shall be stored, not approved material should not be stored
6.4.6. Store to be provided with adequate, safety equipment in the event of accidents like fire, etc.

## 6.5. Method & Sequence of Work

6.5.1. Preliminary Activities/Approvals
- Submit material submission for approval of all required pipes, fitting, specifications, and all other related accessories.
- Submit shop drawings for approval detailing pipework routes, levels, slopes, etc. ensuring with all other services and the building structure.
- Submit MIR for all materials received at the Site.
- Submit Method Statement, Risk Assessment for approval

6.5.2. Preparatory installation requirements
- Before installation of the Water Supply System, the supervisor and foreman will verify and ensure that all the safety requirements have been complied with.
- The QC will inspect all the materials delivered to the workplace and ensure that these are the required approved materials and also for damage or defect. Materials found not to be as per requirement or with damage or defect will be set aside. These will be properly labeled and returned to the warehouse

- The supervisor and foreman will examine surfaces to receive water supply system works for compliance with installation tolerances and other required conditions, as described in the installation requirement. Installation will not proceed until unsatisfactory conditions have been corrected.

6.5.3. Preparatory Installation requirements

- Installation shall be made as per the approved shop drawing with the compliance specification.
- Before proceeding with the Installation Pipes and fittings should be adequately cleaned.
- Mark the routing of the pipe as per the Approved drawing and coordination layout.
- Drill the location of piping support
- Install the pipe support as per standard as manufacturer's recommendation
- To make a proper thermo-fusion joint by using a PPR welding machine, the pipes shall be cut perpendicular to the axis and the cut edge shall be smoothened off from any sharp edges.
- The depth of the socket shall be marked on the pipes as per manufacturer recommendations.
- Once the pipes and fittings are ready, the heating element reaches the set temperature the fixing process shall be started
- Fix the pipes as per the approved shop drawing
- Install exposed interior and exterior piping at right angles or parallel to building walls, diagonal runs are prohibited, unless otherwise indicated.
- Install piping tight to slabs, beams, joists, columns, walls, and other building elements. Allow sufficient space above removable ceiling panels to allow for ceiling panel removal.
- Locate groups of pipes parallel to each other; provide adequate space to permit valve servicing.
- Install fittings for changes in direction and branch connections.
- Install sleeves for piping penetrations of walls, ceilings, slabs, and floors.
- Install Water hammer arrestors as per position supplier recommendation
- Install Electric Water Heaters as per position supplier recommendation
- Provide Proper Identification labels as per the standards.

6.5.4. Inspection & Testing

- During installation, notify the Consultant at least 24 hours before the inspection is made. Perform the tests specified below in the presence of the discipline Engineer.
- Notify HSE before starting the testing and Obtain PTW.
- Make sure all the termination points are plugged with test plugs
- Provide adequate air vent requirements in the highest points to release the trapped air during water filling.
- Make sure all necessary safety requirements are provided including housekeeping, adequate lighting, and a Barricade with warning tapes before starting the testing
- Pressurize the system @4bar and wait for 15 minutes to check for Primary observation.
- Calibrated Pressure gauges should be provided as per the requirement.
- If no leakages are found Pressurize the system @ 1.5 times the working pressure or 8 bar whichever is higher for 24 hours.
- If any leakage/drop is found rectify the area at the earliest.
- Provide required documentation to obtain approval

**Records**

- Inspection Request with a checklist
- Calibration Certificate for Pressure Gauges
- Approved Method Statement & Risk Assessment

## 7.0. Resource Requirement

7.1.1. Personnel Protective Equipment:

- Helmets
- Safety Shoes
- Coveralls
- Masks
- Earplug
- Hand Gloves
- Face shield
- Goggles

7.1.2. Housekeeping

- All workplaces where personnel are working will be cleaned from scrap materials derived from their work ensuring a clean and healthy work environment as well as to maintain free access and egress in the event of emergency.

## 8.0. Control of Safety & Health Hazards

8.1. Implementation of Health and safety mechanisms and checks shall be done as per contract agreement and approval.

8.2. The safety in charge shall carry out the necessary routine inspections.

8.3. Emergency Rescue Arrangements:

- Main Contractors Emergency rescue arrangement procedure will be followed.
- In case of emergency, the safety in charge will stop the work.
- He will put into action the emergency arrangements as described in the Safety Manual.

8.4. Risk Controls:

- Risk assessment and controls are carried out for the following activity/ hazards and are enclosed with this method statement.
- Using Hand Tools
- Disposal of waste material
- Designated waste collection point to be provided
- All loose materials will be secured
- All waste should be segregated

8.5. Training

- Tradesmen performing the described work will be experienced technicians.
- If deemed necessary specific teams/ Individuals will undergo further training and awareness programs for this activity by the Project/ QA-QC Departments.
- Toolbox talks will provide general training and awareness for each activity and also in health & safety matters and precautions.

## 9.0. QA/QC Documentation

The following Form(s)/ Checklist(s) shall be used to verify the above activity to ensure that this activity is carried out as per the contract requirements.

9.1. Method Statement
9.2. Job card.
9.3. Applicable inspection report

## 10.0. Distribution

10.1. Installation Team
10.2. Safety staff
10.3. Project Manager
10.4. Site Engineer
10.5. Workshop In-charge

## 11.0. Attachments

11.1. Risk Assessment
11.2. Inspection and Test Plan
11.3. Checklist