

PIONEER SERVICES

**Method Statement for VRF System Installation**

**1. Purpose**

To outline the method for the safe and efficient installation of a VRF air conditioning system, ensuring compliance with manufacturer specifications and project standards.

**2. Scope**

This method covers the installation process of indoor and outdoor VRF units, refrigerant piping, drainage, wiring, and system commissioning.

**3. Responsibilities**

* **Project Engineer**: Oversee installation, ensure compliance.
* **Supervisor**: Manage team and daily site activities.
* **Technicians**: Execute installation as per instructions.
* **QA/QC Inspector**: Verify quality and adherence to the method.

**4. Materials and Equipment**

* VRF Outdoor and Indoor Units
* Copper Refrigerant Pipes (insulated)
* PVC Drain Pipes
* Cable Trays, Control Cables, Power Cables
* Insulation Material (Nitrile Rubber, etc.)
* Vacuum Pump, Manifold Gauge Set, Nitrogen Cylinder
* Ladders, Lifting Tools, PPE

**5. Installation Procedure**

**5.1 Site Preparation**

* Verify that all civil works are complete.
* Confirm the installation area is clean and accessible.
* Ensure safety measures are in place.

**5.2 Indoor Unit Installation**

1. Mark positions as per approved drawings.
2. Fix mounting brackets or hanging rods.
3. Mount the indoor unit securely.
4. Connect refrigerant pipes, drainage pipe (with slope), and control cables.

**5.3 Outdoor Unit Installation**

1. Place unit on vibration isolators on the foundation or platform.
2. Maintain clearance as per manufacturer recommendations.
3. Connect main refrigerant lines and electrical power cables.
4. Install weatherproof protection if required.

**5.4 Refrigerant Piping Work**

1. Route copper piping as per schematic drawing.
2. Ensure slopes, pipe sizing, and elevation changes are correct.
3. Pressure test the system using nitrogen (typically 500 psi).
4. After leak check, evacuate the system with a vacuum pump.

**5.5 Electrical & Control Wiring**

1. Route cables through trays/conduits as per electrical layout.
2. Connect control wiring between indoor and outdoor units.
3. Label and number cables for identification.

**5.6 Drainage**

1. Install insulated PVC drain piping from each unit.
2. Ensure slope (1:100 minimum) to prevent water stagnation.
3. Test drain by pouring water through the drain tray.

**6. Testing & Commissioning**

* Conduct leak tests and vacuuming.
* Charge refrigerant if needed (some systems are pre-charged).
* Power up the system.
* Record parameters (pressures, temperatures, ampere readings).

**7. Safety Measures**

* All technicians must wear PPE.
* Use certified lifting tools for heavy units.
* Follow lock-out/tag-out (LOTO) during electrical works.

**8. Quality Control**

* Installation as per approved shop drawings and specs.
* Leak testing records to be maintained.
* Visual inspection of all joints and insulation.

**9. Documentation**

* As-built drawings
* Leak test certificates
* Commissioning report
* Manufacturer’s operation manuals

