

Method Statement – Installation of HVAC Riser Duct Works

1.0 Scope:

1.1. This method statement defines the HVAC Riser Duct work and accessories installation within Project –as per specification and DW-144.

2.0 Material:

- 2.1. Pre fabricated ducts made of G.I. Sheet conforming to JIS G3302 (1994) Coating type Z27 (Zinc Coating 2758 gm/m²).
- 2.2. Companion flanges for ducts factory fabricated of G.I. Sheet steel of suitable gauge or G.I. angles, and S & C type drive cleats.
- 2.3. Threaded rods, G.I. angles and ‘C’ channels for supporting system.
- 2.4. Fiber glass thermal insulation as per approved submittal.
- 2.5. Adhesive as per approved submittal for fixing duct insulation.
- 2.6. Duct sealant.
- 2.7. VAVs, VCDs, Fire dampers and Access doors.

3.0 Method:

3.1 Storage:

- 3.1.1. When off-loading, the ducts shall be carefully lowered to ensure no damage to edges or duct surface.
- 3.1.2. All ducts shall be stored properly and protected to safeguard ducts from any abrasions / damages.
- 3.1.3. Insulation material shall be stored in proper storage place and shall not be exposed to direct sunlight.
- 3.1.4. Duct sealant and adhesive for insulation shall be stored in enclosed area as per manufacturer’s recommendations.

3.2 Preparation:

- 3.2.1. All ducts shall be fabricated as per attached construction schedules.
- 3.2.2. All riser ducts shall have companion flanges, which will be fixed to the ducts with aluminum pop rivets as fasteners. Care shall be taken to seal the corners and the transverse joints with approved duct sealant.

3.2.3. Ducts prepared as above with suitable companion flanges shall be joined together on the floor, to form manageable lengths.

Wherever branch take off collars are to be taken, suitable cut out shall be made in the ducts. The size of cut out shall be equal to the duct surface and secured using aluminum pop rivets and the joint between collar flange and duct surface shall be sealed with approved duct sealant.

Wherever flexible ducts are to be fixed, a suitable diameter prefabricated collar, shall be fixed to the main duct using dovetail joining system.

3.2.4. If the ducts prepared and assembled as above require insulation, the surface of duct shall be cleaned with cloth to remove dust etc. and applied with approved adhesive for proper fixation of insulation.

3.2.5. Insulation sheet of suitable thickness shall be cut to the size of duct to be insulated. Refer attached insulation schedule for various ducts.

3.2.6. Adhesive is applied at various points on the surface and all over the periphery of the cut to size insulation sheet.

3.2.7. The adhesive is allowed to dry for some time and the insulation sheet shall be firmly fixed to the duct. If any edge of the cut insulation sheet is visible the same shall be sealed with self-adhesive aluminum foil tape.

3.2.8. Ducts assembled on floor, as detailed above shall be insulated for the full length of the duct assembly, leaving out 50mm on either side from the end of the length of duct assembly.

Over Head Protection

Protection shall be provided by Main Contractor high level.

Lighting

Shall be provided by Main Contractor

3.3 Installation:

3.3.1. The layout of duct to be installed shall be decided and marked as per approved drawing.

3.3.2. Position of duct supports shall be marked on the underside of the slab / structural member/vertical walls as the case may be and mechanical anchor fasteners shall be installed in slab or suitable clamps shall be installed if support to be taken from structural member. The support details and spacing shall be as per approved drawings.

3.3.3. Galvanized steel angle, channel cut to required size of duct shall be fixed to the support brackets.

3.3.4. Assembled, as above, ducts shall be lifted manually up to the shaft and by motorized which inside the shaft as required and as per site conditions, and shall be installed on channel brackets as shown in the drawing.

Similarly the next length of duct shall be erected and two are joined together either by means of suitable companion flanges with elastomeric gaskets and fastened with zinc coated bolts, nuts and washers.

3.3.5. On laying the ducts as detailed above to form the required layout, the ducts shall be properly aligned and leveled to maintain distances as per approved drawings.

3.3.6. Necessary the working platform at each floor level (Grating) shall be done by Main Contractor prior to installation of services to avoid damages to finished products conditions shall be made. Duct supports shall be taken at each floor / vertical wall as the case may be and shall be as per approved drawings.

3.3.7. After the alignment and leveling of ducts, the joints left without insulation shall be insulated with the insulation material as detailed above.

4.0 Inspection:

4.1. Initially a sample installation of ducts involving various components shall be installed and offered for consultant's inspection. This agreed installation will form the basis for installation of all duct work within the project.

4.2. After the duct installation MEP Contractor's QC Engineer shall inspect the complete installation and offer the same for consultant's inspection.

4.3. Each section duct work will be offered for Consultants inspection prior to covering.

5.0 Safety:

5.1. Safety precautions shall be followed in line with the established project safety plan.

6.0 References:

6.1 Project Specification

6.2 DW144

6.3 Approved shop drawings as applicable.

6.4 SMACNA

7.0 Attachments:

7.1 Duct Construction Schedule

7.2 Insulation Schedule