

Method Statement – Installation of Duct with Insulation & Accessories

1. SCOPE & PURPOSE:

1.1. This “Method Statement” covers the nature and type of work for the installation of HVAC Ducts and Accessories in the building and the frequency of which the inspections are to be carried out.

1.2. This procedure also covers the method of installation and inspection of Internal & External of HVAC Ducting with Accessories.

2. REFERENCES & RELATED DOCUMENTS

2.1. Project Quality Plan

2.2. Quality Control Plan

2.3. Project Specifications

2.4. Approved Shop Drawings

2.5. Manufacturer Installation Recommendations

2.6. Manufacturer Product Data Sheets

5. EQUIPMENT & TOOLS:

5.1. Sheet Cutter

5.2. Hand Drilling Machine

5.3. Hammer

5.4. Duct Lifter

5.5. Sand Paper and Files

5.6. Measuring Tape

5.7. Sprit Level

5.8. Ducting Tools

5.9. Ladders.

6. SAFETY:

- 6.1. Ensure only trained persons shall operate the power tools.
- 6.2. Ensure all concerned personals shall use PPE and all other items as required.
- 6.3. Ensure adequate lighting is provided in the working area at night time.
- 6.4. Ensure deep excavations are provided with barricade, tape, safety nets and provided with ladders.
- 6.5. Ensure service shaft opening are provided with barricade, tape, safety nets.

7. WORK SEQUENCE & METHODOLOGY:

- 7.1. Check all material delivered to site is inspected properly by QA/QC Engineer and check it is stored properly as per manufacturer recommendations.
- 7.2. RFI shall be raised, for the inspection of material received, By Company Engineer.
- 7.3. Work shall be carried out by the site staff under strict supervision and guidance of the concerned Supervisors / Foremen's / Engineers.
- 7.4. The QA/QC Engineer shall check all the installations as per the Installation Check list.
- 7.5. RFI shall be prepared by QA/QC Engineer and will be submitted to Company for their inspection and approval.
- 7.6. QA/QC Engineer shall coordinate with Main Contractor and arrange inspection for installation, by Company Engineer.
- 7.7. QA/QC Engineer is responsible for all installation activities for getting the work inspected / approved by Company Engineer.

8. FABRICATION OF HVAC DUCTS:

- 8.1. Approved Fabricated ducts, elbows, transitions, offsets and branch connections with approved Galvanized Sheet metals, according to approved shop drawings, project specification and SMACNA standards in Workshop or factory.
- 8.2. Thickness of Galvanized Sheet shall strictly follow as per project specification
- 8.3. Duct mastic shall be used for jointing the ducts.
- 8.4. Ensure ducts are free from internal roughness, rust formation and sharp edges and corners.
- 8.5. Raise RFI for Inspection of HVAC Ducts, by Company Engineer.

9. INSULATION OF HVAC DUCTS:

- 9.1. Fiber glass thermal insulation board shall be used for insulation as per specification.
- 9.2. Check all approved materials and accessories are readily available on site.
- 9.3. Insulation materials shall be applied during dry condition.
- 9.4. Sharp cutters with straight angles shall be used for cutting insulation materials.
- 9.5. Install insulation hanger pins as per manufacturer recommendations in the entire circumference of the Ducts and all surfaces of fittings and transitions.
- 9.6. Apply approved adhesives (IDEAL 81-10) on the entire circumference of the ducts and to all surfaces of fittings and transitions.
- 9.7. Impale approved insulation over the ducts and press gently on ducts, elbows, transitions, etc., with full insulation segments for each surface with the least number of joint practical.
- 9.8. Apply approved aluminum tape on the joints of insulation segments in a way no air can penetrate through insulation joints.
- 9.9. Cover the approved FOIL sheet properly on the entire circumference of the Insulated duct and pull sheet tight and smooth.
- 9.10. Use foil recommended Tape to seal the joints in a way no air can penetrate through the joints
- 9.11. Prepare a mock-up of HVAC Duct with insulation and raise Request for Inspection for the same, by Consultant.
- 9.12. All ducts passing through concrete or masonry walls the gap between construction openings and insulated ducts shall be sealed with approved sealant.
- 9.13. Fire Damper, volume control damper shall be fixed matching the duct layout and shall be fixed to the ducting layout by means of S clip or Flange type joints and riveted and sealed with approved duct mastic

10. INSTALLATION OF HVAC DUCTS:

- 10.1. Fix the Box outs as per approved shop drawings and specification, during the construction of structural elements.
- 10.2. Install supports or brackets for ducting as per specification, approved shop drawing and site conditions for each individual case (i.e. Slab and Walls etc.).
- 10.3. Mark the location of ducting as per the approved layout and site conditions.
- 10.4. Install insulated ducts as per approved layout and site conditions.

- 10.5. S clip, Ductmate flanges and angle shall be used for jointing ducts and plumbed to duct.
- 10.6. Approved duct mastic will be used in the joints to avoid air penetrations.
- 10.7. Volume Control Dampers, Fire Dampers and accessories shall be installed as per approved shop drawings and manufacturer recommendations.
- 10.8. Insulate all the joints as mentioned in section 08 and make air flow labeling with approved materials as per specification.
- 10.9. Apply insulation for ducts continuously crossing walls and partitions except the fire rated walls.
- 10.10. Fire Dampers will be installed in the ducting layout which is passing through the Fire Rated walls.
- 10.11. Non insulated ducts shall be provided in fire rated walls, fire and smoke dampers shall be fixed with insulated ducts. Minimum 25mm gap shall be maintained on all sides of the ducts.
- 10.12. Gap between the walls and ducts Fiber Glass Insulation will be rammed properly and sealed with approved mastic both sides of walls.
- 10.13. Access panels shall be provided near to all fire dampers for future cleaning, inspecting and maintenance purpose.
- 10.14. Flexible ducts shall be connected from branch duct to air outlet as per approved shop drawings and the same shall be supported properly as per manufacturer recommendations
- 10.15. Approved Flexible Duct Connector shall be installed in Expansion Joints and HVAC Equipment connections to HVAC Ducts by means of S type cleat joints and will be riveted and sealed with approved duct sealant
- 10.16. Raise RFI for inspection of Installation of HVAC Ducts with all Dampers and accessories, by Company Engineer.

11. INSTALLATION OF AIR OUTLETS:

- 11.1. Approved make, type and model Grilles, Diffusers, Register, Slot Diffusers, Bar Grilles and Exhaust Disc Valves shall be installed as per approved material submittal.
- 11.2. Air outlets models and type shall be installed as per approved shop drawing and manufacturer recommendations.
- 11.3. All air outlets shall be plumbed and fixed properly.
- 11.4. All air outlets shall be installed with air tight connections with ducts.

11.5. Approved sealant shall be used to seal the connections between the ducts and air outlets.

11.6. Corners of air outlets shall be sealed by silicon sealant matches to match wall or ceiling finishing.

11.7. All air outlets shall not have direct contact to supports, in case of contact it will be insulated with approved insulation materials.

11.8. Raise RFI for inspection of installation of Air Outlets, by Company Engineer.

12. INSTALLATION OF SOUND ATTENUATORS:

12.1. Approved make, type and model Sound Attenuators shall be installed as per approved material submittal.

12.2. All Sound Attenuators sizes shall match the HVAC Ducting.

12.3. Galvanized angles and channels shall be used for supporting all sound attenuators.

12.4. Sound Attenuators shall be connected with ducting by flange which is already provided by the manufacturer.

12.5. All Sound Attenuator shall be insulated as mentioned in sec.09 (of this document).

12.6. Raise RFI for inspection of installation of Sound Attenuators, by Company Engineer.