

**SECTION 23 05 00  
HVAC COMMON WORK  
COMMON WORK RESULTS FOR HVAC**

**PART 1 GENERAL**

**0.01 GENERAL REQUIREMENTS**

**THE CONTRACTOR IS REFERRED TO THE INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS, NYCHA CONTRACTS; THE SPECIAL NOTICE TO CONTRACTORS; THE FORM OF PROPOSAL; THE FORM OF BID BOND; DIVISION 01 - GENERAL REQUIREMENTS OF THE CONTRACT SPECIFICATIONS; THE CONTRACT DRAWINGS AND ALL AMENDMENTS AND ADDENDA THERETO; ALL OF WHICH GOVERN THE WORK OF THIS SECTION.**

**0.02 SUMMARY**

- A. This Section includes the following:
  - 1. Equipment installation requirements common to equipment sections.
  - 2. Painting and finishing.
  - 3. Supports and anchorages.

**0.03 DEFINITIONS**

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct chases, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and chases.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.
- F. The following are industry abbreviations for rubber materials:
  - 1. EPDM: Ethylene-propylene-diene terpolymer rubber.
  - 2. NBR: Acrylonitrile-butadiene rubber.

**0.04 SUBMITTAL**

- A. Welding certificates.
- B. EQUIPMENT SUBMITTALS ITEMS
  - 1. Refrigerant system piping between condensing units (Outdoor mounted) and indoor units applicable to system equipment scheduled: data sheets, catalog cuts
  - 2. Programmable thermostats and controllers, smoke detector: data sheets, catalog cuts
  - 3. Dampers, VD, FSD, and FD: data sheets, catalog cuts
  - 4. Central controls: equipment controller, related system schematic wiring. Individual controller and system Controller data sheets, catalog cuts
  - 5. Thermostat controls, smoke detector: data sheets, catalog cuts
  - 6. Conduits for control wiring and Control cable
  - 7. Equipment support schematic for roof mounting Condensing unit installation.
  - 8. Duct and pipe insulation.

9. Duct support accessories, connection accessories, Flexible ducts and flex connections, shop drawings
10. Duct and duct accessory fabrication, shop drawing and or cat cut
11. General arrangement and routing of paired refrigerant piping along roof surfaces, and exterior wall. Fabrication, shop drawing and or applicable hardware accessory catalog cut.
12. System Refrigerant piping layout, as shop drawing and or cat cut
13. System Electrical wiring.
14. ATC submittal: Control ladder diagram specific to each system under seasonal mode of operation as shop drawings submittal.
15. Pipe curbs, and curb fabrication, Pipe support accessories shop drawing and or cat cut
16. Shop drawing of equipment support of roof. Submittal shall include steel component fabrication, and related hardware as support accessories for roof mounted pipe and equipment curb as shop drawing and or cat cut as required.
17. Shop drawing of suspended and horizontal equipment support from ceiling of support through adjacent existing structure and or structural steel. Submittal shall include steel component fabrication and related hardware as support accessories shop drawing and or catalog cut(s).
18. HVAC diffusers and supply and exhaust grilles shop drawing and or cat cut
19. HVAC Testing and Balancing procedures
20. HVAC commissioning procedures
21. Shop drawing of control accessories including dampers, sensors, and actuators.

#### **0.05 QUALITY ASSURANCE**

- A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code--Steel."
- B. Steel Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
  1. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- C. Electrical Characteristics for HVAC Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.
- D. Installer Qualifications: All subcontractors, including temperature control sub contractor, Testing and Balancing and Commissioning sub contractor shall be independent of each other and contractor Each sub-contractor shall be hired by contractor. Contractor shall provide such proof to Authority. The Contractor shall seek approval to retain such subcontractor services from the Authority prior to start of work.

#### **0.06 COORDINATION**

- A. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction, to allow for HVAC installations.
- B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- C. Coordinate requirements for access panels and doors for HVAC items requiring access that are concealed behind finished surfaces. Access panels and doors are specified in Division 08 Section "Access Doors and Frames."

## **PART 2 PRODUCTS**

### **1.01 (NOT APPLICABLE)**

## **PART 3 EXECUTION**

### **2.01 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS**

- A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.
- B. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
- C. Install HVAC equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
- D. Install equipment to allow right of way for piping installed at required slope.

### **2.02 PAINTING**

- A. Painting of HVAC systems, equipment, and components is specified in Sections 09 91 00 Painting and Finishing.
- B. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

### **2.03 ERECTION OF METAL SUPPORTS AND ANCHORAGES**

- A. Refer to Division 05 Section "Metal Fabrications" for structural steel.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor HVAC materials and equipment.
- C. Field Welding: Comply with AWS D1.1.

### **2.04 ERECTION OF WOOD SUPPORTS AND ANCHORAGES**

- A. Cut, fit, and place wood grounds, nailers, blocking, and anchorages to support, and anchor HVAC materials and equipment.
- B. Select fastener sizes that will not penetrate members if opposite side will be exposed to view or will receive finish materials. Tighten connections between members. Install fasteners without splitting wood members.
- C. Attach to substrates as required to support applied loads.

**END OF SECTION 23 05 00 23 05 00**