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**SECTION 23 82 00**  
**CONVECTION HEATING AND COOLING UNITS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Convectors.

**1.2 RELATED REQUIREMENTS**

- A. Section 01 30 00 - Administrative Requirements.
- B. Section 01 60 00 - Product Requirements.
- C. Section 01 78 00 - Closeout Submittals.
- D. Section 23 09 13 - Instrumentation and Control Devices for HVAC.
- E. Section 23 09 23 - Direct-Digital Control System for HVAC.
- F. Section 23 21 13 - Hydronic Piping.
- G. Section 23 21 14 - Hydronic Specialties.

**1.3 REFERENCE STANDARDS**

- A. AHRI Directory of Certified Product Performance - Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Current Edition.
- B. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2021.
- C. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2022.

**1.4 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

**1.5 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Listed manufacturers and series are for reference only and do not promote any single product. Series are provided for reference, and should not be used as an ordering model number. Accessories and options may be custom components purchased separately.
- C. Product Data: Provide manufacturer's most current catalog data sheet for equipment indicating rough-in size, finish, and accessories. Manufacturer's data sheets on each item of equipment and device, shall be clearly marked up to identify the items, accessories and options to be used on the project.
  - 1. Include rated capacities, operating characteristics, furnished specialties, and accessories.
  - 2. Include mounting brackets, control panels, thermostat and options.
  - 3. Include wiring diagrams: Power, signal and control wiring.
- D. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.
  - 1. Refer to Section 01 78 00 - Closeout Submittals.

**1.6 WARRANTY**

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

**PART 2 PRODUCTS**

**2.1 SEE SECTION 01 60 00 FOR ADDITIONAL REQUIREMENTS.**

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**2.2 HYDRONIC CONVECTORS**

- A. Manufacturers:
  - 1. Modine Manufacturing Company.
  - 2. Sterling Hydronics, a Mestek Company.
  - 3. Vulcan Radiator, a Mestek Company.
  - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Perform factory run test under normal operating conditions, water, and steam flow rates.
- C. Heating Elements: Seamless copper tubing mechanically expanded into evenly spaced aluminum fins and cast iron headers, steel side plates and supports, factory air pressure tested at 100 psi under water, with means of adjusting pitch of element.
- D. Cabinet: 16 gauge, 0.0598 inch sheet steel front and top, 18 gauge, 0.0478 inch sheet steel back and ends; exposed corners rounded; easily secured removable front panels, adequately braced and reinforced for stiffness.
- E. Finish: Factory applied baked primer coat.
- F. Damper: Where not thermostatically controlled, provide knob-operated internal damper at enclosure air outlet.
- G. Access Doors: For otherwise inaccessible valves, provide factory-made permanently hinged access doors, 6 by 7 inch minimum size, integral with cabinet.

**PART 3 EXECUTION****3.1 INTERFACE WITH WORK OF OTHER SECTIONS**

- A. Confirm framing and support members.
- B. Confirm rough-in and framing of walls and partitions with supports for equipment and accessories.

**3.2 EXAMINATION**

- A. Verify that surfaces are suitable for installation.
- B. Verify that field measurements are as indicated on drawings.
- C. Examine areas to receive equipment for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- D. Controls:
  - 1. Verify signal power, voltage, phase and current is available and of the correct characteristics.
  - 2. Verify rough-in for control connections to verify actual locations before installing.
- E. Maintain clearances to combustibles and service clearances.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.3 INSTALLATION**

- A. Install in accordance with the following:
  - 1. Federal, state and local codes.
  - 2. Manufacturer's instructions.
  - 3. NFPA 90A.
- B. Install equipment level and plumb.
- C. Convectors:
  - 1. Install where indicated.

**3.4 CLOSEOUT ACTIVITIES**

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- A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.

**END OF SECTION 23 82 00**