

## SECTION 237310 - HVAC TERMINAL EQUIPMENT

### Part 1 GENERAL

#### 1.1 STIPULATIONS

- A. The specification section "General Conditions", "Special Requirements" and "General Requirements" form a part of this section and shall have the same force and effect as if printed herewith in full.

#### 1.2 GENERAL

- A. See also previous section titled "GUARANTEE" and "ELECTRICAL EQUIPMENT".

### Part 2 PRODUCTS

#### 2.1 UNIT HEATERS

- A. This Contractor shall furnish and install Unit Heaters of type and size shown and scheduled in the plans. Units shall be installed in strict accordance with this specification. Unit Heaters shall be as manufactured by Trane Co., Vulcan Radiator Company, or Dunham-Bush.
- B. The casing shall be of steel, phosphatized inside and out and finished with baked enamel. The motor mounting panel shall not be less than 18 gauge steel. Casing shall enclose the coil, louvers and fan blades. Louvers to provide 4-way air diffusion.
- C. The fan shall be of aluminum and factory balanced. The fan orifice shall be smooth drawn into the casing back panel.
- D. Coils shall be constructed of plate type aluminum fins mechanically bonded to copper tubes. Coils shall be one-row design for use in steam or hot water systems.
- E. Motors shall be as shown in the schedule, and shall be factory lubricated.
- F. See, also, Section "ELECTRICAL EQUIPMENT" as hereinbefore specified.

#### 2.2 UNIT HEATERS (CABINET TYPE - HOT WATER)

- A. This Contractor shall furnish and install Cabinet Unit Heaters of the type and size shown and scheduled in the plans. Units shall be as manufactured by Trane Co., Vulcan Radiator Company, Dunham-Bush or approved equal and shall be installed in strict accordance with these specifications.
- B. Unit front panels shall be constructed of 16 gauge steel. Cabinet model shall have channel-formed edges around panel perimeter and recessed models shall have four-side overlap front panels with an "M" shaped stiffener running the entire length of the front panel.
- C. All units shall be cleaned, bonderized, phosphatized and flow coated with baked-on primer. A final finish of spray applied baked-on enamel shall be provided by the manufacturer. The color is to be selected by the Professional.
- D. Coils shall be constructed of 5/8" OD seamless copper tubes mechanically bonded to configured aluminum fins with continuous fin collars and sleeved coil end supports. Coils shall have a

maximum working pressure of 300 psig and shall be factory burst-tested at 450 psig and leak tested at 300 psig.

- E. Fan wheels shall be of the double width centrifugal type and constructed of molded, fiberglass reinforced thermo-plastic material. Housings shall be constructed of molded polyester resin, fiber reinforced material, gradually expanded radially and axially. All motors shall have integral thermal overload protection and be capable of starting at 78% of rated voltage. All motors shall be factory run-tested and assembled in the unit prior to shipping.
- F. Filters shall be of the woven glass throw-away type.
- G. Each unit shall be supplied with an integral, unit mounted, three-speed motor speed switch.

## 2.3 CONVECTORS (HOT WATER TYPE)

- A. This Contractor shall furnish and install Convectors (Model W) as manufactured by Trane Co., Vulcan Radiator Company or Dunham-Bush, as indicated and scheduled on the drawings. All ratings shall be in accordance with Commercial Standard CS 140-47. Units shall be installed in a neat and workmanlike manner in accordance with the specifications and the manufacturer's recommendations.
- B. Convector elements shall be constructed of copper tubes expanded and rolled into cast iron headers with contact further strengthened by brass bushings, aluminum fins, ribbed steel side plates and fin tube supports. Fins shall have integral fin collars which space the fins and provide fin-to-tube surface firmly bonded to the tube by mechanical expansion of the tube to insure durability, eliminate noise from loose fins and insure performance at cataloged ratings. End supports shall carry weight of element and be designed to fit over header to provide completely free area from tubes to header. No solder or welded joints or compression couplings shall be permitted. All elements shall withstand 100 lb. air pressure factory tested under water.
- C. Cabinet front and top panels shall be 16 gauge steel. End panels shall be no less than reinforced 18 gauge. Cabinet backs shall be phosphatized, galvanized; front, top and sides shall be phosphatized and painted inside and out with light grey baked enamel finish. The front panel shall be sealed against flanges with 3/8" sponge rubber. Fronts shall be secured in place by quick opening front panel fasteners or camlock fasteners. Cabinet top line rigidity shall be provided by a roll-formed channel section that also permits hinged type mounting of the cabinet front panel for easy access. Access doors are not required with this construction. Convector styling shall match fin-tube enclosure styling.
- D. Unit shall have dampers, factory installed on the heating element and operated by a chain and knob assembly, and air vent assembly and air chamber, used for venting to prevent the accumulation of air in the convector heating element.

## Part 3 EXECUTION

### 3.1 GENERAL

- A. Contractor shall install all equipment in accordance with manufacturer's written instructions, all applicable codes, and recognized industry practices.
- B. After all equipment is installed, it shall be tested to demonstrate proper operation of performance and compliance with the specifications. Equipment not operating correctly shall be field corrected or replaced.

### 3.2 AIR HANDLING UNITS

- A. Install equipment where shown, in accordance with equipment manufacturer's written instructions, and with recognized industry practices, to ensure that units comply with requirements and serve intended purposes. Coordinate with other work, including ductwork, floor construction, roof decking, and piping, as necessary to interface installation of equipment with other work.
- B. Contractor to coordinate the installation of units on spring vibration mounts that comply with manufacturers indicated installation method. External vibration mounts to be eliminated when the unit manufacturer provides unit internal vibration isolation. Units located outdoors will be mounted on the proper Pate type ES equipment support curbs and shall be furnished with the Pate type pipe seals for piping and electrical conduits.
- C. Contractor is responsible for proper mounting height of all units including vibration isolation to accommodate the installation of the condensate drain trap and drain line as indicated on the plans.
- D. Upon completion of installation of equipment, start-up and operate equipment to demonstrate capability and compliance with requirements. Where possible, field correct malfunctioning units, then retest to demonstrate compliance.

**END OF SECTION 237310**