

SECTION 23 8101 - TERMINAL HEAT TRANSFER UNITS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Unit heaters.
- B. Cabinet unit heaters.

1.02 RELATED SECTIONS

- A. Drawings and General Provisions of the Contract apply to this section.

1.03 SUBMITTALS

- A. Product Data: Provide typical catalog of information including arrangements.
- B. Shop Drawings:
 - 1. Indicate cross sections of cabinets, grilles, bracing and reinforcing, and typical elevations.
 - 2. Submit schedules of equipment and enclosures typically indicating length and number of pieces of element and enclosure, corner pieces, end caps, cap strips, access doors, pilaster covers, and comparison of specified heat required to actual heat output provided.
 - 3. Indicate mechanical and electrical service locations and requirements.,
- C. Samples: Submit one sample of each radiation cabinet detailed.
- D. Manufacturer's Instructions: Indicate installation instructions and recommendations.
- E. Project Record Documents: Record actual locations of components and locations of access doors in radiation cabinets required for access or valving.
- F. Operation and Maintenance Data: Include manufacturers descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.
- G. Warranty: Submit manufacturer's warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

- B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. or testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

1.05 EXTRA MATERIALS

- A. Provide two sets of filters.

PART 2 - PRODUCTS

2.01 UNIT HEATERS

- A. Manufacturers:
 - 1. The Trane Company
 - 2. Slant/Fin Corporation
 - 3. Sterling Hydronics/Mestek Technology, Inc.
 - 4. Modine
- B. Coils: Seamless copper tubing, silver brazed to steel headers, and with evenly spaced aluminum fins mechanically bonded to tubing.
- C. Casing: Minimum 0.0478 inch steel with threaded pipe connections for hanger rods.
- D. Finish: Factory applied baked enamel of color as selected.
- E. Fan: Direct drive propeller type, statically and dynamically balanced, with fan guard; horizontal models with permanently lubricated sleeve bearings; vertical models with grease lubricated ball bearings.
- F. Air Outlet: Adjustable pattern diffuser on projection models and two-way louvers on horizontal throw models.
- G. Motor: Permanently lubricated sleeve bearings on horizontal models, grease lubricated ball bearings on vertical models.
- H. Control: Local multi-speed disconnect switch.
- I. Capacity: As scheduled on the drawings.
- J. Electrical Characteristics: As scheduled on the drawings.

2.02 CABINET UNIT HEATERS

A. Manufacturers:

1. Berko
2. Slant/Fin Corporation
3. Sterling Hydronics/Mestek Technology, Inc.
4. The Trane Company
5. Modine

- B. Coils: Evenly spaced aluminum fins mechanically bonded to copper tubes, designed for 100 psi and 220 degrees F.
- C. Cabinet: Minimum 0.0598 inch steel with exposed corners and edges rounded, easily removed panels, glass fiber insulation integral air outlet and inlet grilles. Recessed units shall form plaster stop. Units in ceilings shall have duct collars.
- D. Finish: Factory applied baked enamel of color as selected on visible surfaces of enclosure or cabinet.
- E. Fans: Centrifugal forward-curved double-width wheels, statically and dynamically balanced, direct driven.
- F. Motor: Tap wound multiple speed permanent split capacitor with sleeve bearings, resiliently mounted.
- G. Control: Multiple speed switch, factory wired, located in cabinet.
- H. Filter: Easily removed 1 inch thick glass fiber throw-away type, located to filter air before coil.
- I. Mixing Dampers: Where indicated, mixing sections with dampers.
- J. Capacity: As Scheduled on the drawings.
- K. Electrical Characteristics as scheduled on the drawings.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

- B. Install equipment exposed to finished areas after walls and ceiling are finished and painted. Do not damage equipment or finishes.
- C. Protection: Provide finished cabinet units with protective covers during balance of construction.
- D. Unit Heaters: Hang from building structure, with pipe hangers anchored to building, not from piping. Mount as high as possible to maintain greatest headroom unless otherwise indicated.
- E. Cabinet Unit Heaters: Install as indicated. Coordinate to assure correct recess size for recessed units.
- F. Units with Cooling Coils: Connect drain pan to condensate drain.
- G. Install electric heating equipment including devices furnished by manufacturer but not factory-mounted. Furnish copy of manufacturer's wiring diagram submittal. Install electrical wiring in accordance with manufacturer's submittals.

3.02 CLEANING

- A. After construction is completed, including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.
- B. Touch-up marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.
- C. Install new filters.

END OF SECTION 23 8101