

ROSEWOOD MIDDLE DEMOLITION

SECTION 238216 – AIR COILS

PART 1 - GENERAL

1.1. SUMMARY

- A. Section includes heating and cooling air coils.

1.2. SUBMITTALS

- A. Product Submittals: For each type of product include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each air coil. Include rated capacities, operating characteristics, and pressure drops for each air coil.

1.3. QUALITY ASSURANCE

- A. Electrical Components, Devices and Accessories: UL listed and labeled as defined by NFPA 70, the National Electric Code, or equivalent by a qualified testing agency marked for the intended location and application and accepted by the Authority Having Jurisdiction and Engineer.
- B. Mechanical Equipment and Materials: UL listed and labeled as defined by State Building Codes or equivalent by a qualified testing agency marked for the intended location and application and accepted by the Authority Having Jurisdiction and Engineer.
- C. Testing and listing laboratories of mechanical and electrical equipment shall be accredited by the North Carolina Building Code Council (NCBCC).

PART 2 - PRODUCTS

2.1. GENERAL REQUIREMENTS

- A. Performance Ratings: Hydronic and refrigerant coils shall be tested and rated according to AHRI 410 and ASHRAE 33. Electric resistance coils shall be listed and labeled according to NFPA 70 and assembled according to UL 1995.

2.2. HYDRONIC COILS

- A. Description: Coils shall be factory tested to 300 psig and rated for a minimum working pressure of 200 psig and minimum temperature of 325 deg F. Coil tubes shall be ASTM B 743 seamless copper expanded into fin collars for permanent fin-tube bond and expanded into header for permanent leak-tight joints. Coil fins shall be copper or aluminum. Coil headers shall be cast-iron with drain and air vent tapings for coils 32-inches tall and less and seamless copper tube with brazed joints and prime coated for coils taller than 32-inches. Coil casings shall be minimum 16 gauge galvanized steel channel frame for slip-in or flanged mounting.

2.3. REFRIGERANT COILS

- A. Description: Coils shall be factory tested to 450 psig and rated for a minimum working pressure of 300 psig. Coil tubes shall be ASTM B 743 seamless copper expanded into fin collars for permanent fin-tube bond and expanded into header for permanent leak-tight joints. Coil fins shall be copper or aluminum. Suction and distribution piping shall be ASTM B 88, Type L copper tube with brazed

ROSEWOOD MIDDLE DEMOLITION

joints. Coil casings shall be minimum 16 gauge galvanized steel channel frame for slip-in or flanged mounting.

2.4. ELECTRIC RESISTANCE COILS

- A. Description: Heating elements shall be open-coil resistance wire of 80 percent nickel and 20 percent chromium, supported and insulated by floating ceramic bushings recessed into casing openings, and fastened to supporting brackets. Coil casings shall be minimum 16 gauge galvanized steel channel frame for slip-in or flanged mounting.
1. High-Temperature Coil Protection: Disk-type, automatically reset, thermal-cutout, safety device; serviceable through terminal box without removing heater from duct or casing.
 2. Secondary Protection: Load-carrying, manually reset or manually replaceable, thermal cutouts; factory wired in series with each heater stage.
 3. Control Panel: Unit- mounted with disconnecting means and overcurrent protection with SCR modulating control; non-fused safety disconnect switch interlocked with heater terminal box cover; air flow proving switch; time delay relay; differential pressure switch; 24V control transformer; and automatic reset thermal cutouts pre-wired to the control circuit.
 4. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70 by a qualified testing agency accepted by the Authority Having Jurisdiction and marked for intended location and application.
 - a. Listing agencies of electrical and mechanical equipment shall be accredited by the North Carolina Building Code Council (NCBCC).

2.5. DRAIN PANS

- A. Description: Drain pans shall be stainless steel. Alternative materials, such as galvanized steel and plastic, are not acceptable. Construct insulated pans with drain connection at the lowest point(s) and comply with ASHRAE 62.1. Pans shall extend beyond coil length and width, upstream and downstream of coil face, and under coil header and exposed piping

PART 3 - EXECUTION

3.1. EXAMINATION

- A. Examine ducts, plenums, and casings to receive air coils for compliance with requirements for installation tolerances and other conditions affecting coil performance.
- B. Examine roughing-in for piping systems to verify actual locations of piping connections before coil installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2. INSTALLATION

- A. Install coils level and plumb.
- B. Install coils in metal ducts and casings constructed according to SMACNA's "HVAC Duct Construction Standards, Metal and Flexible."
- C. Clean coils using materials and methods recommended in writing by manufacturers, and clean inside of casings and enclosures to remove dust and debris.

ROSEWOOD MIDDLE DEMOLITION

- D. Install drain pan under each cooling coil. Connect to condensate trap and drainage.
- E. Straighten bent fins on air coils.

3.3. CONNECTIONS

- A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to coils to allow service and maintenance.
- C. Hydronic Coils: Connect water piping with unions and shutoff valves to allow coils to be disconnected without draining piping. Control valves are specified in Section 239010 and other piping specialties are specified in Section 232116.
- D. Refrigerant Coils: Connect refrigerant piping according to Section 232300.
- E. Electric Resistance Coils: Ground equipment and connect wiring in accordance with NFPA 70 and Division 26.

END OF SECTION 238216