

SECTION 23 8216 - COILS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Book Division 01 Specification Sections, apply to this Section.
- B. Refer to project air handling unit specification section(s) for additional requirements and conditions affecting coil selections for AHU's.

1.2 SUMMARY

- A. Section includes hydronic air coils.

1.3 ACTION SUBMITTALS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings for Duct Mounted Coils: Reflected ceiling plans, drawn to scale, on which coil location and ceiling-mounted access panels are shown and coordinated with each other.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For air coils to include in operation and maintenance manuals.
- B. Northwestern University Maintenance Requirement Forms, see Division 01.

1.6 SPECIAL WARRANTY

- A. Five (5) years, see Division 01.

PART 2 - PRODUCTS

2.1 DESCRIPTION

- A. ASHRAE Compliance: Comply with applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."

2.2 COILS - GENERAL

- A. Performance Ratings: Tested and rated according to AHRI 410 and ASHRAE 33.
- B. Minimum Working-Pressure/Temperature Ratings: 200 psig (1380 kPa), 325 deg F.
- C. Source Quality Control: Factory tested to 300 psig (2070 kPa).
- D. Coils for air handling units shall be slide-out style, not face bolted, so they can be removed without affecting the structural integrity of the unit. Coil connections to be Schedule 40 red brass. Vent and drain connections shall be stainless steel pipe and extend to the exteriors of the units.
- E. Tubes: ASTM B 743 copper, minimum 0.020 inch thick.
- F. Fins: Aluminum, minimum 0.006 inch thick.
- G. Headers: Cast iron with cleaning plugs and drain and air vent tapings, seamless copper tube with brazed joints, prime coated, or steel with brazed joints, prime coated.
- H. Frames: Galvanized-steel channel frame, minimum 0.052 inch thick for slip-in or flanged mounting, as best suited to actual field conditions (verify in field).
- I. Maximum face velocity for cooling coils to be ***[Determined by AE for the project and listed here and/or shown on drawing schedules.]***
- J. Maximum face velocity for heating and other non-cooling coils to be ***[Determined by AE for the project and listed here and/or shown on drawing schedules.]***
- K. Manufacturers: Same as associated air handling unit if in a unit, or by Heatcraft, Marlo, or Aerofin.

2.3 COILS - HEAT RECOVERY

- A. Tubes: ASTM B 743 seamless copper, minimum 0.024 inch thick, 5/8" O.D..
- B. Fins: Aluminum, minimum 0.006 inch thick. Maximum allowable fin spacing shall be 10 fins per inch.
- C. Rows: Maximum number of rows deep to be 8.
- D. Casings: Minimum 16 gage, Type 304 stainless steel, with stainless steel end supports top and bottom.

2.4 COILS - HOT WATER PREHEAT AND REHEAT

- A. Tubes: ASTM B 743 seamless copper, minimum 0.024 inch thick, 5/8" O.D..
- B. Fins: Aluminum, minimum 0.006 inch thick. Maximum allowable fin spacing shall be 10 fins per inch.
- C. Rows: Maximum number of rows deep to be 8.
- D. Casings: Minimum 16 gage, galvanized steel, with galvanized steel end supports top and bottom.

2.5 COILS - CHILLED WATER

- A. Tubes: ASTM B 743 seamless copper, minimum 0.035 inch thick, 5/8" O.D..
- B. Fins: Aluminum, continuous plate type, minimum 0.006 inch thick. Maximum allowable fin spacing shall be 10 fins per inch.
- C. Rows: Maximum number of rows deep to be 8.
- D. Casings: Minimum 16 gage, Type 304 stainless steel, with stainless steel end supports top and bottom.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine units, 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." Provide new adjacent ductwork/transitions as required, and re-insulate.
- C. Straighten bent fins on air coils.
- D. Clean coils using materials and methods recommended in writing by manufacturers, and clean inside of casings and enclosures to remove dust and debris.

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JOB # _____

FOR: _____
ISSUED: 03/29/2017

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. Connect water piping with unions and shutoff valves to allow coils to be disconnected without draining piping. Control valves are specified in Section 25 0000 "Integrated Automation" and other piping specialties are specified in Section 23 2113 "Hydronic Piping" and Section 23 2116 "Hydronic Piping Specialties."

END OF SECTION 23 8216