SECTION 238216.14 - ELECTRIC-RESISTANCE AIR COILS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section includes electric resistance 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.
   B. Shop Drawings: Include diagrams for power, signal, and control wiring.

1.4 COORDINATION
   A. Coordinate size, location and installation of coils with air-handling units to suit conditions and to ensure proper operation.

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
   A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      1. Brasch Manufacturing Co., Inc.
      2. Chromalox, Inc.
      3. Dunham-Bush, Inc.
      4. INDEECO
5. Trane

B. Testing Agency Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Coil Assembly: Comply with UL 1995.

D. Heating Elements: 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.

E. High-Temperature Coil Protection: Disk-type, automatically reset, thermal-cutout, safety device; serviceable through terminal box without removing heater from duct or casing.
   1. Secondary Protection: Load-carrying, manually reset or manually replaceable, thermal cutouts; factory wired in series with each heater stage.

F. Frames: Galvanized-steel channel frame, minimum 0.052 inch thick.

G. Control Panel:
   1. Unit mounted with disconnecting means and overcurrent protection.
   2. Indoor control panels shall be NEMA 1 construction. Outdoor control panels shall be NEMA 3R construction with water-tight hubs for incoming power and control connection.
   3. Include the following controls:
      a. Magnetic contactor.
      b. Mercury contactor.
      c. SCR controller:
      d. Time-delay relay.
      e. Pilot lights; operate on load ratio.
      f. Airflow proving switch.
      g. Heating proving switch.

H. Heater shall be capable of being installed in negative or positive pressure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine air-handling unit casings to receive air coils for compliance with requirements for installation tolerances and other conditions affecting coil performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install coils level and plumb.
B. Clean coils using materials and methods recommended in writing by manufacturers, and clean inside of casings and enclosures to remove dust and debris.

3.3 CONNECTIONS

A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
   1. Operational Test: After electrical circuitry has been energized, operate electric coils to confirm proper unit operation.
   2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

B. Prepare test and inspection reports.

END OF SECTION 238216.14