SECTION 23 3423
HVAC POWER VENTILATORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof exhausters.

1.02 RELATED REQUIREMENTS

A. Section 23 0513 - MOTORS FOR HVAC EQUIPMENT.

B. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

A. AMCA (DIR) - [Directory of] Products Licensed Under AMCA International Certified Ratings Program; http://www.amca.org/certified/search/company.aspx.

B. AMCA 99 - Standards Handbook; 2010.

C. AMCA 204 - Balance Quality and Vibration Levels for Fans; 2005.

D. AMCA 210 - Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating; 2007.

E. AMCA (DIR) - [Directory of] Products Licensed Under AMCA International Certified Ratings Program; Air Movement and Control Association International, Inc.; http://www.amca.org/certified/search/company.aspx.

F. AMCA 300 - Reverberant Room Method for Sound Testing of Fans; 2014.

G. AMCA 301 - Methods for Calculating Fan Sound Ratings from Laboratory Test Data; 2014.

H. NEMA MG 1 - Motors and Generators; 2014.

I. UL 705 - Power Ventilators; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. Refer to Section 23 0510 - General HVAC Requirements for submittal procedures.

B. Product Data: Provide data on fans and accessories including fan curves with specified operating point clearly plotted, power, RPM, sound power levels at rated capacity, and electrical characteristics and connection requirements.

C. Manufacturer's Instructions: Indicate installation instructions.

D. Maintenance Data: Include instructions for lubrication, motor and drive replacement, spare parts list, and wiring diagrams.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Fan Belts: One set for each individual fan.

1.05 QUALITY ASSURANCE

A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.06 DELIVERY, STORAGE, AND PROTECTION

A. Refer to Section 23 0510 - General HVAC Requirements for delivery, storage and protection requirements.

B. Do not operate units until ductwork is clean, filters are in place, bearings lubricated, and fan has been test run under observation.

1.07 FIELD CONDITIONS

A. Permanent ventilators may be used for ventilation during construction only after ductwork is clean, filters are in place, bearings have been lubricated, and fan has been test run under observation.

1.08 EXTRA MATERIALS

A. See Section 01 6000 - Product Requirements, for additional provisions.

B. Provide a second adjustable sheave for each belt driven fan to place belt at mid-position of sheave at RPM required for final air balance.

PART 2 PRODUCTS

2.01 POWER VENTILATORS - GENERAL

A. Static and Dynamically Balanced: AMCA 204 - Balance Quality and Vibration Levels for Fans.

B. Performance Ratings: Determined in accordance with AMCA 210 and bearing the AMCA Certified Rating Seal.

C. Sound Ratings: AMCA 301, tested to AMCA 300 and bearing AMCA Certified Sound Rating Seal.

D. Fabrication: Conform to AMCA 99.

E. UL Compliance: UL listed and labeled, designed, manufactured, and tested in accordance with UL 705.

F. Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

2.02 ROOF EXHAUSTERS (RF)

A. Manufacturers: Acme PL, Breidert S, Cook HLC, Greenheck LB, PennBarry LC.

B. Fan Unit: Direct driven with variable speed ECM motor as indicated, with low silhouette spun aluminum housing hinged for servicing with stainless steel restraining cables; resilient mounted motor; 1/2 inch mesh, 0.62 inch thick aluminum wire birdscreen; square base to suit roof curb with continuous curb gaskets.

C. Roof Curb: Curb height shall provide 8 inch clear above roofing, of galvanized steel with continuously welded seams, built-in cant strips, insulation and curb bottom, and factory installed nailer strip.

D. Disconnect Switch: Factory wired, non-fusible, in housing for thermal overload protected motor . Provide NEMA 1 housing for interior locations and NEMA 3R for exterior locations.

E. Backdraft Damper: Gravity actuated, aluminum multiple blade construction, felt edged with offset hinge pin, nylon bearings, blades linked.

F. Direct Drive Units: Provide solid state speed controller on direct driven fans.

PART 3 EXECUTION

3.01 PREPARATION

A. Seal all duct roof penetrations at roof structure air-tight.

B. Ensure exhaust duct is clean and free of debris.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide a second adjustable sheave to place belt at mid-position of sheave at RPM required for final air balance.

C. Install backdraft dampers on inlet to roof and wall exhausters.

3.03 STARTING EQUIPMENT

A. Adjust for proper operation within manufacturer's published tolerances.

B. Demonstrate proper operation of equipment to Owner 's designated representative.

3.04 ADJUSTING

A. Adjust belt alignment and tension for smooth operation.

3.05 SCHEDULES

A. Refer to Schedule on Drawings.

END OF SECTION