SECTION 23 3423 - HVAC POWER VENTILATORS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Roof exhausters.

B. Cabinet fans.

C. Ceiling exhaust fans.

1.02 RELATED SECTIONS

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

1.03 REFERENCES

A. AMCA 99 - Standards Handbook; Air Movement and Control Association International, Inc.

B. AMCA 210 - Laboratory Methods of Testing Fans for Aerodynamic Performance Rating; Air Movement and Control Association International, Inc.; (ANSI/AMCA 210, same as ANSI/ASHRAE 51).

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

D. AMCA 300 - Reverberant Room Method for Sound Testing of Fans; Air Movement and Control Association International, Inc.

E. AMCA 301 - Methods for Calculating Fan Sound Ratings from Laboratory Test Data; Air Movement and Control Association International, Inc.

F. NEMA MG 1 - Motors and Generators; National Electrical Manufacturers Association.

G. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations; National Fire Protection Association.

H. UL 705 - Power Ventilators; Underwriters Laboratories Inc.

1.04 SUBMITTALS

A. 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.

B. Manufacturer's Instructions: Indicate installation instructions.

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

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Kitchen Range Hood Exhaust Fans: Comply with requirements of NFPA 96.

C. 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.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Do not operate fans for any purpose until ductwork is clean, filters are in place, bearings have been lubricated, and fan has been test run under observation.

1.07 EXTRA MATERIALS

A. Supply two sets of belts for each fan.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Greenheck

B. Loren Cook Company

C. PennBarry

2.02 ROOF EXHAUSTERS OR VENTILATORS

A. Product Requirements:

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

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

3. Fabrication: Conform to AMCA 99.

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

B. Performance and electrical characteristics as scheduled on the drawings.

C. Fan Unit: V-belt or direct driven as indicated, with spun aluminum or upblast spun aluminum with grease tray housing for kitchen exhaust fans, resilient mounted motor; 1/2 inch mesh, 0.62 inch thick aluminum wire birdscreen; square base to suit roof curb with continuous curb gaskets.

D. Roof Curb: 8 inch, 12 inch, 16 inch, 20 inch, 24 inch high self-flashing of galvanized steel or aluminum with continuously welded seams, built-in cant strips, insulation and curb bottom, interior baffle with acoustic insulation, curb bottom, ventilated double wall, hinged curb adapter, and factory installed nailer strip.

E. Disconnect Switch: Factory wired, non-fusible, in housing for thermal overload protected motor and wall mounted multiple speed switch, and wall mounted multiple speed switch or solid state speed controller, and wall mounted solid state speed controller.

F. Backdraft Damper: Gravity actuated, aluminum multiple blade construction, felt edged with offset hinge pin, nylon bearings, blades linked, and line voltage motor drive, power open, spring return.

G. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheave selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

2.03 CABINET AND CEILING EXHAUST FANS

A. Performance and electrical characteristics as scheduled on the drawings.

B. Centrifugal Fan Unit: V-belt or direct driven with galvanized steel housing lined with acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge.

C. Disconnect Switch: Cord and plug in housing for thermal overload protected motor and wall mounted switch, and wall mounted multiple speed switch, and wall mounted solid state speed controller.

D. Grille: Molded white plastic, Aluminum, or Aluminum with baked white enamel finish.

E. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheaves selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Secure roof or wall exhausters with cadmium plated steel or stainless steel lag screws to roof curb or structure.

C. Extend ducts to roof or wall exhausters into roof curb or structure. Counterflash duct to roof or wall opening.

D. Hung Cabinet Fans:

1. Install fans with resilient mountings and flexible electrical leads.

2. Install flexible connections between fan and ductwork. Ensure metal bands of connectors are parallel with minimum 1 inch flex between ductwork and fan while running.

E. Provide sheaves required for final air balance.

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

G. Provide backdraft dampers on outlet from cabinet and ceiling exhauster fans and as indicated.

END OF SECTION 23 3423