SECTION 15870

FANS

PART 1 GENERAL

1.1 WORK IN THIS SECTION

A. Extent of fan work required by this section is indicated on drawings and schedules, and by requirements of this section.

B. Types of fans specified in this section include the following:

1. Utility fans.

C. Refer to Division 16 for the following work; not work of this section.

1. Power supply wiring from power source to power connection on ventilators. Include starters, disconnects, and required electrical devices.

1.2 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of power and gravity ventilators, of types and sizes required, whose products have been in satisfactory use in similar service for not less than 3 years.

B. Codes and Standards:

1. AMCA Compliance: Provide power ventilators that have been tested and rated in accordance with AMCA standards, and bear AMCA Certified Ratings Seal.

2. UL Compliance: Provide power ventilators that are listed by UL and have UL label affixed.

3. UL Compliance: Provide power ventilators that are designed, manufactured, and tested in accordance with UL 705 "Power Ventilators".

4. NEMA Compliance: Provide motors and electrical accessories complying with NEMA standards.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for power and gravity ventilators, including specifications, capacity ratings, dimensions, weights, materials, accessories furnished, and installation instructions.

B. Maintenance Data: Submit maintenance data and parts list for each type of fan, and control. Include this data, product data, shop drawings, and wiring diagrams.

PART 2 PRODUCTS

2.1 UTILITY FANS

A. Provide utility fans of sizes and arrangement as indicated, and of capacities and having accessories as scheduled.

B. Fan Units: Provide factory-assembled and tested fan units consisting of housing, wheel, fan shaft, bearings, and fan drive.

C. Clean, condition, and prime paint sheet metal parts prior to final assembly. Apply final coat of enamel to exterior surfaces after assembly.

D. Housings: Construct of heavy-gage steel with side sheets fastened to scroll sheets by means of deep lock seam. Provide round inlet collar, slip joint discharge duct connection. Construct housings to be convertible to 8 standard discharges. Provide adjustable motor supports.

E. Wheels: Provide forward curved, backward inclined wheels or airfoil as scheduled. Provide swayed hubs. Balance wheels statically and dynamically.

F. Shafts: construct of AISC 1040 ground and polished steel. Apply rust-preventive coating.

G. Bearings: Provide self-aligning, grease-lubricated, pillow block type bearings, selected for minimum average life (AFBMA LD50U) of 100,000 hours.

H. Motors: Provide open drip-proof energy efficient motors with ball or sleeve bearings. Provide split phase or capacitor start motors for fractional horsepower, with resilient base. Provide induction motors for integral horsepower, with rigid base. Motor shall be suitable for outdoor application (weather proof housing).

I. Drives: Provide V-belt drives for fractional horsepower motors selected roe 1.2 service factor. Provide V-belt drives for integral horsepower motors selected for 1.4 service factor. Provide adjustable pitch sheave, selected for midpoint at design conditions.

J. Accessories: Provide the following accessories as indicated and/or schedules:

1. Drain Connections: Provide 3/4 inch threaded coupling drain connection at lowest point of housing.

2. Inlet Screens: Provide removable heavy wire mesh inlet screens on fan inlets that do no have ducts connected to inlet.

3. Utility set for range hoods shall be constructed as per codes and UL labeled for grease ducts extraction. Motor shall be sealed off from air stream. Complete with grease trough.

4. Special Coatings: Provide air dried "Heresite" protective coatings on fans handling corrosive fumes. Heresite #P-403 base coating and #L-66 top coating on all surfaces in contact with the air stream.

K. Manufacturers: Subject to compliance with requirements, provide utility fans of one of the following:

1. Loren Cook Co.
2. Greenheck.
3. Barry Blower; A Marley Co.
4. Brod and McClung-Pace Co.
5. ILG Industries, Inc.
6. New York Blower Co.
7. Trane Co.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine areas and conditions under which power gravity ventilators are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF VENTILATORS/FANS

A. General: Except as otherwise indicated or specified, install ventilators in accordance with manufacturer's installation instructions and recognized industry practices to insure that ventilators serve their intended function.

B. Coordinate ventilator/fan work with work of roofing, walls, and ceiling, as necessary for proper interfacing.

C. Ductwork: Refer to Division 15 section "Ductwork". Connect ducts to ventilators in accordance with manufacturer's installation instructions.

1. Solder bottom joints and up 2 inches of side joints of duct under roof ventilator to retain any moisture entering ventilator.

D. Remove shipping bolts and temporary supports within ventilators. Adjust dampers for free operation.

3.3 FIELD QUALITY CONTROL

A. Testing: After installation of ventilators has been completed, test each ventilator/fan to demonstrate proper operation of units at performance requirements specified. When possible, field correct malfunctioning units, then retest to demonstrate compliance. Replace units that cannot be satisfactorily corrected.

3.4 ADJUSTING AND CLEANING

A. Cleaning: Clean factory-finished surfaces. Repair any marred or scratched surfaces with manufacturer's touch-up paint.

END OF SECTION