

## SECTION 233423 - HVAC POWER VENTILATORS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Bathroom Wall Exhaust Fans
  - 2. Bathroom Ceiling Exhaust Fans
  - 3. Inline Centrifugal Fans

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Operation and maintenance data.

#### 1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. AMCA Compliance: Fans shall have AMCA-Certified performance ratings and shall bear the AMCA-Certified Ratings Seal.

### PART 2 - PRODUCTS

#### 2.1 GENERAL

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on the Contract Drawings or comparable product by one of the following:
  - 1. Broan-NuTone LLC.
  - 2. Greenheck Fan Corporation.
  - 3. Loren Cook Company.
  - 4. NuTone Inc.

#### 2.2 BATHROOM WALL EXHAUST FANS

- A. General Requirements:
  - 1. Housing: Galvanized steel low-profile design to fit within depth of wall with backdraft damper at duct connection.
  - 2. Motor: Plug-in, permanently lubricated, and removable.
  - 3. Fan Wheel: Plastic.

4. Grille: Plastic, white grille.
5. Termination: Wall or roof cap, refer to Contract Drawings.
6. Capacities and Characteristics: Refer to schedule on Contract Drawings.
7. Required Accessories: Refer to schedule on Contract Drawings.

## 2.3 BATHROOM CEILING EXHAUST FANS

### A. General Requirements:

1. Housing: Galvanized steel with backdraft damper at duct connection.
2. Motor: Plug-in, permanently lubricated, and removable.
3. Fan Wheel: Plastic.
4. Grille: Plastic, white grille.
5. Termination: Wall or roof cap, refer to Contract Drawings.
6. Capacities and Characteristics: Refer to schedule on Contract Drawings.
7. Required Accessories: Refer to schedule on Contract Drawings.
8. Note: Provide radiation damper when fan is installed in a rated ceiling assembly.

## 2.4 INLINE CENTRIFUGAL FANS

### A. General Requirements:

1. Housing: Aluminum or galvanized steel with backdraft damper at duct connection, inlet and outlet duct connections, and support attachments for hanging.
2. Direct-Drive Units: Motor mounted in airstream, factory wired to disconnect switch located on outside of fan housing.
3. Belt-Driven Units: Motor mounted on adjustable base, with adjustable sheaves, enclosure around belts within fan housing, and lubricating tubes from fan bearings extended to outside of fan housing.
4. Fan Wheel: Aluminum, airfoil blades welded to aluminum hub.
5. Motor and Drive Cover: Epoxy-coated steel.
6. Vibration Isolation: Elastomeric hangers and flexible connections to ductwork with thrust restraint.
7. Capacities and Characteristics: Refer to schedule on Contract Drawings.
8. Required Accessories: Refer to schedule on Contract Drawings.

## 2.5 SOURCE QUALITY CONTROL

- A. Certify sound-power level ratings according to AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.
- B. Certify fan performance ratings, including flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests according to AMCA 210, "Laboratory Methods of Testing Fans for Aerodynamic Performance Rating." Label fans with the AMCA-Certified Ratings Seal.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Ceiling Units: Suspend units from structure; use steel wire or metal straps.
- B. Support suspended units from structure using threaded steel rods.
- C. Install units with clearances for service and maintenance.

#### 3.2 CONNECTIONS

- A. Install ducts adjacent to power ventilators to allow service and maintenance.

#### 3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
  - 1. Verify that shipping, blocking, and bracing are removed.
  - 2. Verify that unit is secure on mountings and supporting devices and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
  - 3. Verify lubrication for bearings and other moving parts.

#### 3.4 ADJUSTING

- A. Comply with requirements in Division 23 Section "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing procedures.

END OF SECTION 233423