

**SECTION 23 3416
CENTRIFUGAL HVAC FANS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Backward inclined centrifugal fans.
- B. Accessories.

1.2 RELATED REQUIREMENTS

- A. Section 23 3100 - HVAC Ducts
- B. Section 23 3300 - Air Duct Accessories: Backdraft dampers.

1.3 REFERENCE STANDARDS

- A. ABMA STD 9 - Load Ratings and Fatigue Life for Ball Bearings; 2015.
- B. AMCA (DIR) - (Directory of) Products Licensed Under AMCA International Certified Ratings Program; 2015.
- C. AMCA 99 - Standards Handbook; 2016.
- D. AMCA 210 - Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating; 2016.
- E. AMCA 300 - Reverberant Room Method for Sound Testing of Fans; 2014.
- F. AMCA 301 - Methods for Calculating Fan Sound Ratings from Laboratory Test Data; 2014.

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on centrifugal fans and accessories including fan curves with specified operating point clearly plotted, power, RPM, sound power levels for both fan inlet and outlet at rated capacity, and electrical characteristics and connection requirements.
- C. Maintenance Data: Include instructions for lubrication, motor and drive replacement, spare parts list, and wiring diagrams.

1.5 QUALITY ASSURANCE

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

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect motors, shafts, and bearings from weather and construction dust.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Greenheck Fan Corp.; SQ Series.

2.2 PERFORMANCE REQUIREMENTS

- A. Performance Ratings: Determined in accordance with AMCA 210 and bearing the AMCA Certified Rating Seal.
- B. Sound Ratings: AMCA 301, tested to AMCA 300, and bear AMCA Certified Sound Rating Seal.
- C. Fabrication: Comply with AMCA 99.
- D. Air Flow: 395 cfm.
- E. Motor: 1/6 hp.
 - 1. 120 volts, single phase, 60 Hz.

2.3 WHEEL AND INLET

- A. Backward Inclined: Steel or aluminum construction with smooth curved inlet flange, heavy back plate, backwardly curved blades welded or riveted to flange and back plate; cast iron or cast steel hub riveted to back plate and keyed to shaft with set screws.

2.4 HOUSING

- A. Heavy gage steel, spot welded for AMCA 99 Class I and II fans, and continuously welded for Class III, adequately braced, designed to minimize turbulence with spun inlet bell and shaped cut.

2.5 BEARINGS AND DRIVES

- A. Bearings: Heavy duty pillow block type, selfgreasing ball bearings, with ABMA STD 9 life at 100,000 hours.
- B. Shafts: Hot rolled steel, ground and polished, with keyway, protectively coated with lubricating oil, and shaft guard.

2.6 ACCESSORIES

- A. Discharge Dampers: Parallel blade heavy-duty steel damper assembly with blades constructed of two plates formed around and welded to shaft, channel frame, sealed ball bearings, with blades linked out of air stream to single control lever.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install flexible connections between fan inlet and discharge ductwork; refer to Section 23 3300. Ensure metal bands of connectors are parallel with minimum one inch flex between ductwork and fan while running.
- C. Provide backdraft dampers on discharge of exhaust fans and as indicated.

END OF SECTION