

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 00 10 – General Instructions.
- .2 Section 01 35 29.06 – Health and Safety Requirements.
- .3 Section 21 05 01 – Common Work Results for Mechanical.
- .4 Section 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment.

1.2 REFERENCES

- .1 Air Conditioning and Mechanical Contractors (AMCA)
 - .1 AMCA 99-2003, Standards Handbook.
 - .2 AMCA 301-2006, Methods for Calculating Fan Sound Ratings from Laboratory Test Data.
- .2 American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME)
 - .1 ANSI/AMCA 210-2007, Laboratory Methods of Testing Fans for Aerodynamic Performance Rating.
 - .2 ANSI/AMCA 300-85, Reverberant Room Method for Sound Testing of Fans.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 1.181-99, Ready-Mixed Organic Zinc-Rich Coating.

1.3 SYSTEM DESCRIPTION

- .1 Performance Requirements:
 - .1 Capacity: flow rate, total static pressure, bhp, efficiency, revolutions per minute, power, model, size, sound power data as specified.
 - .2 Fans: statically and dynamically balanced, constructed in conformity with AMCA 99.
 - .3 Sound ratings: comply with AMCA 301, tested to AMCA 300.
 - .4 Performance ratings: based on tests performed in accordance with ANSI/AMCA 210. Supply unit with AMCA certified rating seal.

1.4 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 00 10 – General Instructions. Include product characteristics, performance criteria, and limitations.

- .2 Shop Drawings:
 - .1 Submit shop drawings and product data in accordance with Section 01 00 10 – General Instructions.
- .3 Provide:
 - .1 Fan performance curves showing point of operation, BHP and efficiency.
 - .2 Sound rating data at point of operation.
- .4 Indicate:
 - .1 Motors, bearings, shaft details.
- .5 Closeout Submittals:
 - .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 00 10 – General Instructions.

1.5 QUALITY ASSURANCE

- .1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.6 MAINTENANCE

- .1 Extra Materials:
 - .1 Furnish list of individual manufacturer's recommended spare parts for equipment, include:
 - .1 Bearings and seals.
 - .2 Addresses of suppliers.
 - .3 List of specialized tools necessary for adjusting, repairing or replacing.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, shipping, handling and unloading:
 - .1 Deliver, store and handle in accordance with Section 01 00 10 – General Instructions.
 - .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Waste Management and Disposal
 - .1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 00 10 – General Instructions.

Part 2 **Products****2.1** **FANS GENERAL**

- .1 Motors:
 - .1 Sizes as specified.
 - .2 Continuous duty motors located outside the airstream
 - .3 Pre-lubricated ball bearings.
 - .4 Drives shall be sized at minimum 150% of drive horsepower.
 - .5 With integrated overload protection.
- .2 Factory primed before assembly in colour standard to manufacturer.
- .3 Permanently lubricated, heavy duty ball bearing.
- .4 Vibration isolation: to Section 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment.
- .5 Flexible connections galvanized steel metal frame 0.01 mm thick with Fabric clenched by means of double locked seams. UL approved.

2.2 **CENTRIFUGAL ROOF EXHAUST FAN FOR GENERATOR ENCLOSURE**

- .1 Provide direct drive centrifugal roof exhaust fan complete with downblast, motor enclosure, shroud, curb cap, windband and birdscreen.
- .2 Construction:
 - .1 Wheel: aluminum, non overloading, backward inclined centrifugal, statically and dynamically balanced in accordance to AMCA 99.
 - .2 Housing: heavy gauge aluminum, rigid internal support structure.
 - .3 Housing support and drive frame; heavy gauge steel.
 - .4 Birdsreen: galvanized steel.
- .3 Characteristic:
 - .1 Air flow rate: 189 L/s
 - .2 Static pressure: 37.4 Pa
 - .3 Fan: 1300 rpm
 - .4 Motor HP: 1/30

Part 3 **Execution****3.1** **MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.2 FAN INSTALLATION

- .1 Install fans as indicated, complete with rubber vibration isolator specified in Section 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment, flexible electrical leads and flexible connections.
- .2 Provide sheaves and belts required for final air balance.
- .3 Bearings and extension tubes to be easily accessible.
- .4 Access doors and access panels to be easily accessible.

3.3 ANCHOR BOLTS AND TEMPLATES

- .1 Size anchor bolts to withstand seismic acceleration and velocity forces.

3.4 CLEANING

- .1 Proceed in accordance with Section 01 00 10 – General Instructions.
- .2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION