

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Utility set fans.
 - 2. Centrifugal roof ventilators.

1.2 SUBMITTALS

- A. Product Data: Include rated capacities, furnished specialties, and accessories for each type of product indicated and include the following:
 - 1. Certified fan performance curves with system operating conditions indicated.
 - 2. Certified fan sound-power ratings.
 - 3. Motor ratings and electrical characteristics, plus motor and electrical accessories.
 - 4. Material gages and finishes, including color charts.
 - 5. Dampers, including housings, linkages, and operators.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 1. Wiring Diagrams: Power, signal, and control wiring. Differentiate between manufacturer-installed and field-installed wiring.
 - 2. Design Calculations: Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
 - 3. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include auxiliary motor slides and rails, and base weights.
- C. Coordination Drawings: Show roof penetration requirements and reflected ceiling plans drawn to scale and coordinating roof penetrations and units mounted above ceiling. Show the following:
 - 1. Roof framing and support members relative to duct penetrations.
 - 2. Ceiling suspension assembly members.
 - 3. Size and location of initial access modules for acoustical tile.
 - 4. Ceiling-mounted items including light fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
- D. Maintenance Data: For power ventilators to include in maintenance manuals specified in Division 1.

1.3 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Belts: One set for each belt-driven unit.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Utility Set Fans:
 - a. Conform to AMCA 210 Performance Ratings and AMCA 301 Sound Ratings.
 - b. Fan shall be direct driven utility fan type in AMCA Arrangement 10 with a single width, single inlet housing. All aluminum airstream construction and all steel components shall be coated with a minimum of 2-4 mils of Permatector (Polyester Urethane), electrostatically applied and baked. Wheel shall be aluminum centrifugal backward inclined flat or airfoil blade type.
 - c. Manufacturer by Loren Cook Company, Greenheck, Penn Ventilation, or approved equal.
 - 2. Centrifugal Roof Ventilators:
 - a. Conform to AMCA 210 Performance Ratings and AMCA 301 Sound Ratings.
 - b. Spun aluminum upblast exhaust fan; with backward-inclined aluminum blower wheel; resilient mounted motor. Prefer direct drive
 - c. Manufacturer by Loren Cook Company, Greenheck, Penn Ventilation, or approved equal.

2.2 SOUND DATA SCHEDULE

- A. Provide sound pressure levels (SPL) in dB and "dB(A)" ratings at 5 feet from the exhaust fan. Submit exhaust fan sound data for approval.

PART 3 - EXECUTION

3.1 GENERAL

- 1. Install as required by engineer and manufacturer to maintain warranty.

3.2 DEMONSTRATION

- A. Engage a factory-authorized service representative to train the University's maintenance personnel to adjust, operate, and maintain power ventilators.
 - 1. Train the University's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment and schedules.
 - 2. Review data in maintenance manuals. Refer to Division 1.
 - 3. Schedule training with the University through Design/Builder, with at least seven days' advance notice.

END OF SECTION