

SECTION 15835

EXHAUST FAN VENTILATOR

******* Active Ventilation Products, Inc. manufacturers passive and powered exhaust ventilators, tube skylights, and combination skylight and ventilator units.**

This guide can be used to prepare a specification for Aura Fan Ventilator, a roof mounted, wind-assisted, electric fan exhaust ventilator.

The specification section is organized by placing information in three standard parts:

PART 1 - GENERAL Describes administrative and procedural requirements.

PART 2 - PRODUCTS Describes materials, products, and accessories to be incorporated into the construction project.

PART 3 - EXECUTION Describes how the products will be installed at the construction site.

Throughout this product guide specification, references are made to other specification sections that might be contained in the project manual. These references are presented as examples and coordination reminders. For each project, these references will need to be revised to reflect actual sections being used.

Within the specification text, Imperial dimensions are presented first in brackets followed by System International Metric (SI) equivalents also in brackets. Depending on project requirements, either the Imperial or the SI metric equivalents will need to be deleted.

The specifier will need to edit this product specification for a specific project to reflect the options and applications being used. The guide section has been written so that most editing can be accomplished by deleting unnecessary requirements and options. Options are indicated by []. Notes to assist the specifier in selecting options and editing the specification guide are printed in bold and indicated with ***. For final editing, all brackets and notes will need to be deleted from the guide.**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Roof mounted, wind assisted, electric fan exhaust ventilator including [roof mounting flanges] [extension collars] [roof adapters] [dampers].

******* Aura Fan Ventilator can be installed on asphalt shingle, clay and concrete tile, metal panel, and built-up and single ply membrane roofs. Select appropriate paragraph from the**

following to reflect project conditions. *****

- B. Section 07310 - Shingles: Asphalt shingle roofing to receive ventilator.
- C. Section 07320 - Roof Tiles: [Clay] [Concrete] tile roof system to receive ventilator.
- D. Section 07410 - Metal Roof Panels: Metal roof system to receive ventilator.
- E. Section 07500 - Membrane Roofing: [Built-up] [Single ply] membrane roofing to receive ventilator.
- F. Section 16100 - Wiring Methods: Electrical power for ventilator fan.

1.2 REFERENCES

****** List by number and full title reference standards referred to in remainder of specification section. *******

- A. National Fire Protection Association (NFPA): NFPA 70 - National Electric Code.

1.3 PERFORMANCE REQUIREMENTS

- A. Ventilators shall have been tested to:

- 1. Withstand [110 miles per hour] [177 kilometers per hour] wind without damage.

******* Amount of air exhausted with electric fan of Aura Fan Ventilator depends on ventilator diameter and horsepower of motor. Refer to Active Ventilation Products literature for air quantities mechanically exhausted by specific models. *******

- 2. Mechanically exhaust air from [_____] [inches] [mm] diameter ventilator using electric fan with [_____] HP motor: [_____] [CFM] [CMM].

******* When electric fan is not operating, Aura Fan Ventilator is designed to passively exhaust air. Quantity of air exhausted in this manner depends on wind speed and ventilator size. Refer to Active Ventilation Products literature for air quantities passively exhausted by specific models. *******

- 3. Passively exhaust air from [_____] [inches] [mm] diameter ventilator:
 - a. At [4 MPH] [6.4 KPH]: [_____] [CFM] [CMM].
 - b. At [5.2 MPH] [8.4 KPH]: [_____] [CFM] [CMM].
 - c. At [7.4 MPH] [11.9 KPH]: [_____] [CFM] [CMM].
 - d. At [9.8 MPH] [15.8 KPH]: [_____] [CFM] [CMM].

- e. At [11 MPH] [17.7 KPH]: [_____] [CFM] [CMM].

1.4 SUBMITTALS

A. Provide in accordance with Section 01330 - Submittal Procedures:

1. Product data for ventilator, fan, motor, roof mounting flanges, [collar extensions] [roof adapters] [dampers]. Include data showing compliance with Paragraph 1.2.
2. Shop drawings: Indicate dimensions, construction, and installation details. Provide wiring diagram for electric fan and controls.
3. Manufacturer's installation and maintenance instructions.
4. Copy of warranty required by Paragraph 1.4 for review by Architect.

1.5 WARRANTY

A. Provide under provisions of Section 01780 - Closeout Submittals: Lifetime warranty to initial owner to cover defects in ventilator materials and workmanship.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Active Ventilation Products, Inc.

1. Address:

P.O. Box 1521
Newburgh, New York 12551-1521

2. Telephone: 800-247-3463 or 845-565-7770
3. FAX: 845-562-8963
4. Website: www.roofvents.com
5. E-mail: roofvents@aol.com

B. Requests to use equivalent products of other manufacturers shall be submitted in accordance with Section 01630 - Product Substitution Procedures.

2.2 PASSIVE EXHAUST VENTILATORS

Active Ventilation Products, Inc., P.O. Box 1521, Newburgh, New York 12551-1521
PHONE: 800-247-3463; FAX: 845-562-8963; WEBSITE: www.roofvents.com

******* Various models of Aura Fan Ventilator are manufactured by Active Ventilation Products, Inc. ranging in size from 6 to 48 inches (152 to 1219 mm) inside diameter. Model number refers to diameter of ventilator. For example No. AV-6 has 6 inches (152 mm) inside diameter. Edit the following paragraph to reflect model number required. *******

- A. Type: Roof mounted, circular, wind assisted, electric fan exhaust ventilator; Aura Fan Ventilator Model No. [AV-6] [AV-8] [AV-10] [AV-12] [AV-14] [AV-16] [AV-18] [AV-24] [AV-36] [AV-42] [AV-48].
- B. Material: Heavy gauge aluminum.

******* Aura Fan Ventilator is provided as mill finished aluminum or with powder paint coating. *******

- C. Finish of exposed to view surfaces: [Electrostatically applied powder paint coating. Color selected from manufacturer's standard range.] [Mill finished aluminum.]
- D. Construction: Cylinder shaped ventilator lid with slotted vertical vanes is mounted over propeller fan installed in inside cylinder and collar.

******* Bottom of ventilator lid is cone shaped diverter to direct air flow out of ventilator. As an option Aura Fan Ventilator can be equipped with backdraft damper positioned over propeller fan. Damper is cone shaped and takes the place of the cone in direction air flow outward. Damper is thermostatically controlled. Edit the following paragraph to reflect if cone or backflow damper is required. *******

- 1. Equip inside of ventilator lid with cone shaped [diverter] [thermostatically controlled backdraft damper] to direct air flow outward. Position above propeller fan.

******* Aura Fan Ventilator operates either electrically or passively. On some days Aura Fan Ventilator can provide needed ventilation without use of electric motor and hence conserve energy. *******

- E. Operation:

******* Standard fan control is an ON/OFF wall switch. Optional controls are timer, humidistat, or thermostat. *******

- 1. Electrical operation: Electric fan rotates exhausting air heat and moisture. Fan is controlled by [wall switch] [timer] [humidistat] [thermostat].
- 2. Passive operation: Outside air moving against slotted vanes is directed to creates venturi effect which pulls air from within [building] [attic] [_____] expelling heat and moisture.

******* Refer to Active Ventilation Products literature for ventilator dimensions, free vent**

area, and other attributes. Edit the following paragraphs to reflect selected model. *****

F. Size:

1. Inside diameter: [_____] [inches] [mm].
2. Outside diameter: [_____] [inches] [mm].
3. Height: [_____] [inches] [mm].

******* Refer to Active Ventilation Products literature for horse power, RPM's, amperage, number of blades, and diameter for selected model. *******

G. Electric fan: Integral propeller type fan and electric motor unit complying with NFPA 70 and listed by Underwriters' Laboratories, Inc. (UL) as suitable for the purpose indicated.

1. Horse power: [1/55] [1/25] [1/15] [1/3] [1/2] [3/4] HP.
2. Speed: [_____] RPM.
3. Amperage: [_____] amps.
4. Propeller fan diameter: [_____] [inches] [mm].
5. Number of propeller blades: [4] [5].

******* Various roof mounting flanges are provided to accommodate type of roofing system. Flanges are either square or round. Edit the following paragraph to reflect project requirements. *******

H. Roof mounting flange: [_____] [inches] [mm] [square] [round] flange fabricated from [[0.025 inch] [0.6 mm] aluminum and designed to accommodate [shingle] [membrane] roofing.] [dead soft aluminum and capable of being formed to [clay] [concrete] roof tiles.]

******* Aura Fan Ventilator can be mounted directly on roof or one or more collar extensions can be added to provide a ventilator stack ranging in height from 1 to 18 inches (25 to 457 mm). Include the following paragraph if collar extensions are required. *******

I. Collar extensions: Equip ventilator with extension collars to provide [_____] [inches] [mm] high stack.

******* Aura Fan Ventilator can be installed on built-up, single ply, shingle, tile, and metal roofs as well as on existing roof curbs, vents, and chimneys. Both flat and pitched roofs are suitable substrates although adapters may be required for steep pitches and some roof profiles. Contact Active Ventilation Products, Inc. for special mounting conditions. Edit**

the following paragraph to reflect project conditions. *****

- J. Roof adapters: Provide aluminum adaptor to accommodate [[_____] degrees roof pitch.] [[_____] roof profile.] [existing [roof curbs] [vents] [chimneys].]
- K. Sealants: Type as recommended by manufacturer for application and type of roof substrate.
- L. Fasteners: Corrosion resistant screws, nails, staples or other fasteners of type, size, and spacing as recommended by manufacturer for application and type of roof substrate.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate provision of fan ventilator with roof system specified in Section [_____] - [_____] to ensure compatibility of substrate to receive ventilator.
- B. Coordinate electrical requirements for electric fan to ensure proper power source, conduit, wiring, and boxes are provided.
- C. Examine site conditions and verify that structural supports and openings are properly sized, prepared, and ready to receive fan ventilator.

3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved shop drawings. Coordinate with installation of roofing system, curbs, and flashings to ensure weathertightness.

******* Aura Fan Ventilators are typically located high on rear roof slope, below rigid line with single units centered and multiple units equally spaced. *******

- B. Locate ventilators as indicated on Drawings. Ensure openings do not conflict with roof framing members. Accurately cut opening in roof substrate using template and pilot hole.

******* Depending on type of roof system; nailers, rigid insulation, or rigid roof may be required. *******

- C. Install [preservative treated wood nailers] [rigid board roof insulation] [rigid roof board] as detailed on Drawings and approved shop drawings.
- D. Apply bituminous paint on aluminum surfaces in contact with dissimilar metals.

******* Include the following paragraph if Aura Fan Ventilator is installed on asphalt**

shingle roof. *****

- E. Roof mounting flange installation on shingle roof:
1. At location of opening, ensure roofing nails are removed. Roll back up-slope shingles.
 2. Apply sealant to bottom of roof mounting flange and between roof shingles to receive ventilator. Slide roof flange under up-slope shingles such that shingles cover one half of flange.
 3. Anchor roof mounting flange securely to roof structure with 4 minimum fasteners per side.
 4. Install sealants to fasteners and shingle edges to achieve weathertightness.

******* Include the following paragraph if Aura Fan Ventilator is installed on clay or concrete tile roof. *******

- F. Roof mounting flange installation on [clay] [concrete] tile roof:
1. Prior to installation of roof tile, install lower flanged curb flashing to roof substrate over opening with appropriate fasteners.
 2. Install sealants to fasteners and flashing edges to achieve weathertightness.
 3. After roof tile is installed to level of ventilator and covers down-slope side of lower flashing, push ventilator mounting flange onto lower flashing.
 4. Anchor up-slope side of dead soft aluminum roof mounting flange to roof substrate.
 5. Install remaining tiles over up-slope portion of ventilator mounting flange. Form bottom portion of dead soft aluminum flange to profile of roof tiles.
 6. Provide temporary cap over roof mounting flange opening.

******* Include the following paragraph if Aura Fan Ventilator is installed on metal panel roof system. *******

- G. Roof mounting flange installation on metal panel roof:
1. Ensure openings are centered between ribs of metal roof panel and there is sufficient flat surface to accommodate roof mounting flange.
 2. Apply butyl tape sealant to bottom of roof mounting flange around complete perimeter. Use nylon spacers between roof panel and flange to eliminate sealant

migration due to compression.

3. Fasten roof mounting flange with self-tapping hex head coated fasteners with metal washer and neoprene sealing washer of size and spacing as recommended by manufacturer.
4. Provide temporary cap over roof mounting flange opening.

******* Include the following paragraph if Aura Fan Ventilator is installed as part of built-up membrane roofing system. *******

H. Roof mounting flange installation on built-up membrane roofing system:

1. Install roof mounting flange as part of built-up roof membrane. Provide temporary cap for flange opening.
2. Set mounting flange in plastic roofing cement.
3. Securely anchor flange to roof substrate with fasteners of type, size, and spacing recommended by manufacturer.
4. Install flexible base flashing over roof mounting flange as part of roofing operation.

******* Include the following paragraph if Aura Fan Ventilator is installed as part of single ply membrane roofing system. *******

I. Roof mounting flange installation on single ply membrane roofing system:

1. Install roof mounting flange as part of single ply membrane roofing. Provide temporary cap for flange opening.
 2. Trim corners of mounting flange to provide smooth radius without sharp points.
 3. Apply butyl tape sealant or roofing mastic to bottom of roof mounting flange. Set mounting flange over roof opening onto single ply roof membrane.
 4. Securely anchor flange to roof substrate with fasteners of type, size, and spacing recommended by manufacturer.
 5. Install piece of single ply roofing over roof mounting flange. Secure with adhesive, heat welding, or other procedure as part of roofing operation.
- J. After roof system installation is complete, remove temporary cap and install ventilator collar onto mounting flange. Attach with fasteners and apply sealant to collar and flange joint.

- K. Fan connection: Connect ventilator fan to modular connector system in accordance with NFPA 70. Test fan operation and controls. Correct deficiencies.

******* Include the following paragraph if automatic dampers are required. *******

- L. Test dampers and adjust for proper operation.

END OF SECTION