

# RB402-13

R806.1, R806.2, R806.3, R806.4, R806.5

## Proposed Change as Submitted

**Proponent:** Charles S. Bajnai, Chesterfield County, VA., representing ICC Building Code Action Committee and Virginia Building and Code Officials Association (bajnaic@chesterfield.gov), Joseph Lstiburek, Building Science Corporation

Revise as follows:

### SECTION R806 ROOF VENTILATION

~~**R806.1 Ventilation required.** Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, or similar material with openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air.~~

~~**Exception:** Attic ventilation shall not be required when determined not necessary by the code official due to atmospheric or climatic conditions.~~

~~**R806.2 Minimum vent area.** The minimum net free ventilating area shall be 1/150 of the area of the vented space.~~

~~**Exception:** The minimum net free ventilation area shall be 1/300 of the vented space provided one or more of the following conditions are met:~~

- ~~1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.~~
- ~~2. At least 40 percent and not more than 50 percent of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located no more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the required ventilation provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.~~

~~**R806.1 Ventilation.** The requirements for vented and unvented attic space and enclosed rafter space shall be in accordance with this section.~~

~~**R806.2 Vented attics.** Vented attics shall have a minimum net free ventilation area at least 1/300 of the area of the vented space. Between half and two thirds of the provided ventilation shall be installed at the eaves. The ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, or similar material with openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air.~~

**~~R806.3 Vent and insulation clearance.~~** Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of a 1-inch (25 mm) space shall be provided between the insulation and the roof sheathing and at the location of the vent.

**R806.4 R806.2.1 Installation and weather protection.** Ventilators shall be installed in accordance with manufacturer's installation instructions. Installation of ventilators in roof systems shall be in accordance with the requirements of Section R903. Installation of ventilators in wall systems shall be in accordance with the requirements of Section R703.1.

**R806.5 R806.3 Unvented attic and unvented enclosed rafter assemblies.** Unvented *attic* assemblies (spaces between the ceiling joists of the top *story* and the roof rafters) and unvented enclosed rafter assemblies (spaces between ceilings that are applied directly to the underside of roof framing members/rafters and the structural roof sheathing at the top of the roof framing members/rafters) shall be permitted if all the following conditions are met:

1. The unvented *attic* space is completely contained within the *building thermal envelope*.
2. No interior Class I vapor retarders are installed on the ceiling side (*attic* floor) of the unvented *attic* assembly or on the ceiling side of the unvented enclosed rafter assembly.
3. Where wood shingles or shakes are used, a minimum  $\frac{1}{4}$ -inch (6 mm) vented air space separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In Climate Zones 5, 6, 7 and 8, any *air-impermeable insulation* shall be a Class II vapor retarder, or shall have a Class III vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Either Items 5.1, 5.2 or 5.3 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
  - 5.1. *Air-impermeable insulation* only. Insulation shall be applied in direct contact with the underside of the structural roof sheathing.
  - 5.2. Air-permeable insulation only. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing as specified in Table R806.5 for condensation control.
  - 5.3. Air-impermeable and air-permeable insulation. The *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing as specified in Table R806.5 for condensation control. The air-permeable insulation shall be installed directly under the *air-impermeable insulation*.
  - 5.4. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

**Reason:** This proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 6 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

1. This section was rewritten to clarify vented and unvented attics. The current charging language in the first sentence of Section R806.1 says that all attics shall have cross ventilation, and yet Section R806.5 acknowledges unvented attics. The new Section R806.1 offers charging language for both conditions.
2. More importantly however, Section 806.2 now incorporates the concepts that were passed in Portland for the IBC, namely that more than half of the incoming ventilation for attics should come from low sources (eaves) and exit up high (roof vent, mechanical vents, gable end vents, etc.). A range is provided:  $\frac{1}{2}$  to  $\frac{2}{3}$  should be low at the eaves for proper chimney effect. Currently the code would allow 100% of the attic ventilation to be from ridge vents...where would the cross ventilation come from?

**Cost Impact:** The code change proposal will not increase the cost of construction.

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**Committee Action Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This change would eliminate some venting configurations, such as gable end vents that have proved reliable for years. Also, there are some situations where eave vents cannot be installed. The committee likes the proposed reorganization and the proponent should rework and bring back.

**Assembly Action:**

**None**

**Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**R806.2 Vented attics.** Vented attics shall have a minimum net free ventilation area at least 1/300 of the area of the vented space. ~~Between half and two thirds of the provided ventilation shall be installed at the eaves. A minimum of 50 percent and a maximum of 60 percent of the provided ventilation shall be served by eave, gable or cornice vents. The remaining ventilation shall be located no more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically.~~ The ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, or similar material with openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air.

*(Portions of code change proposal not shown remain unchanged)*

**Commenter's Reason:** The ICC Building Code Action Committee (BCAC) is submitting this public comment to address the code development committees concerns.

1. Working with opponents, the BCAC further reduced the amount of ventilation area required at the eaves to a maximum of 60% of the total required ventilation area;
2. added optional methods of venting at the lowest portions of attics: gable and cornice vents; and
3. clarified where the upper ventilation shall be measured from: *3' measured vertically.*

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Final Action:

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