
***O'HAGIN ATTIC VENTILATION PRODUCTS ARE IN
COMPLIANCE WITH THE REQUIREMENTS OF THE MOST
RECENT BUILDING CODES FOR ATTIC VENTILATION***

The following Technical Bulletin addresses situations where there is a question as to whether, or not, O'HAGIN attic ventilation products for clay and concrete tile may be used to meet the requirements of the 2021 International Residential Code, Section R806 (Roof Ventilation) and/or the 2021 International Building Code, Chapter 12, Section 1202 (Ventilation).

I. BACKGROUND

Various building codes have set forth requirements for the ventilation of enclosed interior attic spaces for residential construction. Since the early 1990's, the patented line of O'Hagin Attic Ventilation products for clay and concrete tile have provided an aesthetically pleasing solution to meet the code required attic ventilation needs for residential construction. We have over 25,000,000 attic vents installed across the United States. O'Hagin provides the industry preferred solution for attic ventilation for both builders and building code officials.

II. BUILDING CODE ACCEPTED AND APPROVED

From early on, O'Hagin has been an industry leader in obtaining approvals for our attic ventilation products for clay and concrete tile roofing applications.

A. SBCCI (1999 STANDARD BUILDING CODE) AND IBC (1998 INTERNATIONAL ONE AND TWO FAMILY DWELLING CODE) APPROVED

O'HAGIN has been approved to meet code-required attic ventilation under both SBCCI and IBC for over 25 years.

B. O'HAGIN attic ventilation products are currently covered by ICC-ES Legacy Report No. 9650A for code compliance officials ease of reference.

1. ICC-ES Report No. 9650A relies on the earlier code versions cited above.
2. There has been no significant change in the building code requirements or code language since 1998.
3. ICC-ES is merely a technical agency that performs a desk review of independent third party reports and provides a "private" report based on the information provided. These reports can be helpful to code officials as a reference source; however, a review of the underlying code sections at issue is necessary.

4. Even ICC-ES cautions on their website, as follows:

“[neither product listings nor ICC-ES reports] should be considered a product approval. Only the code official has the authority to approve the use of a product in his jurisdiction.”

III. EARLY CODE PROVISIONS – 1999 STANDARD BUILDING CODE AND THE INTERNATIONAL ONE AND TWO FAMILY DWELLING CODE (1998 EDITION)

A. 1999 STANDARD BUILDING CODE

The 1999 Standard Building Code sets forth, in pertinent part, as follows:

SECTION 2309 ROOF AND CEILING FRAMING

2309.7 Ventilation of attic space

2309.7.1 For gabled and hipped roofs, ventilation shall be provided to furnish cross ventilation of each separate attic space with weather protected vents. All vents shall be screened to protect the interior from intrusion of birds. The ratio of total net free ventilating area to the area of the ceiling shall be not less than 1/150. That ratio may be reduced to 1/300 provided:

1. A vapor retarder having a permeance not exceeding one perm is installed on the warm side of the ceiling, or
2. At least 50% of the required ventilating area is provided by ventilators located in the upper portion of the space to be ventilated (at least 3 ft (914 mm) above eave or cornice vents) with the balance of the required ventilation provided by eave or cornice vents.

B. THE INTERNATIONAL ONE AND TWO FAMILY DWELLING CODE (1998 EDITION)

The International One and Two Family Dwelling Code (1998 Edition) sets forth, in pertinent part, as follows:

SECTION 806 ROOF VENTILATION

806.1 Ventilation required. When determined necessary by the building official because of atmospheric or climatic conditions, enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation of each separate space by ventilating openings protected against the entrance of rain or snow. Ventilating openings shall be provided with corrosion-resistant wire mesh, with the least dimension being 1/8 inch (3.2 mm).

806.2 Minimum area. The total net free ventilating area shall not be less than 1/150 of the area of the space ventilated except that the total area is permitted to be reduced to 1/300, provided at least 50 percent and not more than 80 percent of the required ventilating area is

provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents. As an alternative, the net free cross-ventilation area shall be permitted to be reduced to 1/300 when a vapor barrier having a transmission rate not exceeding 1 perm (57 mg/s · m² · Pa) is installed on the warm side of the ceiling.

806.3 Vent clearance. Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of 1-inch (25.4 mm) space shall be provided between the insulation and the roof sheathing at the location of the vent.

As such, both the 1999 Standard Building Code and the International One and Two Family Dwelling Code (1998 Edition) both require, generally, as follows:

- A. Enclosed attic spaces must be ventilated with ventilation openings covered with wire mesh with a minimum opening of 1/8 inch
- B. The total net free ventilating area shall not be less than 1/150 of the area of the space ventilated, EXCEPT that ratio may be reduced under certain conditions to 1/300:
 - 1. 50% high (but not more than 80%), “balance” low, vent placement
 - 2. Vapor barrier (1 perm)

IV. CURRENT CODE PROVISIONS HAVE VERY SIMILAR LANGUAGE AND THE SAME BASIC REQUIREMENTS - THE 2021 INTERNATIONAL RESIDENTIAL CODE AND/OR THE 2021 INTERNATIONAL BUILDING CODE

A. 2021 INTERNATIONAL RESIDENTIAL CODE

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 ¼ inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than ¼ 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 ¼ 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 and shall be protected to prevent the entry of birds, rodents, snakes, and other similar creatures.

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. Not less than 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. The balance of the required *ventilation* provided shall be located in the bottom one-third of the attic space. 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.

B. 2021 INTERNATIONAL BUILDING CODE

SECTION 1202 VENTILATION

1202.2.1 Ventilated attics and rafter spaces. Enclosed *attics* and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than 1/150th of the area of the space ventilated. Ventilators shall be installed in accordance with manufacturer's installation instructions.

Exception: The net free cross-ventilation area shall be permitted to be reduced to 1/300 provided both 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.

As such, both the 2021 International Residential Code and the 2021 International Building Code both require, generally, as follows:

- A. Enclosed attic spaces must be ventilated with ventilation openings covered with wire mesh with a minimum opening of 1/16 inch
- B. The total net free ventilating area shall not be less than 1/150 of the area of the space ventilated, EXCEPT that ratio may be reduced under certain conditions to 1/300:
 - 1. 50% high (but not less than 40%), 50% low (but not more than 60%), vent placement
 - 2. Vapor barrier (1 perm)

V. CONCLUSION

In sum, there has been no significant change in the building code as it pertains to attic ventilation in, literally, decades.

Furthermore, there has been no significant change to the O'Hagin Cloaked Vent Tile over the same time period.

As such, O'Hagin's Cloaked Vent Tile Attic Ventilation Products meet the requirements of both the 1998/1999 Building Codes and the current building codes of 2021.

Literally, tens of millions of satisfied customers and thousands of familiar code officials stand as the ultimate proof that O'Hagin products offer superior attic ventilation solutions.

The patented O'Hagin Balanced Ventilation System utilizes O'Hagin vents strategically placed both high (near the ridge for exhaust) and low (near the eave for intake). All low vents (intake) should be uniformly installed a minimum of 12 inches above the attic insulation, and all high vents (exhaust) should be uniformly installed two (2) to three (3) courses below the ridge assembly unless prevented by structural framing. This strategic vent placement system promotes superior passive ventilation throughout the attic via full optimization of the natural wind and thermal effects.

O'Hagin requires the proper care in handling, placement and installation of O'Hagin ventilation products. Please see our limited warranty for any additional limitations or exclusions that may apply.

May, 2023