

ICC-ES Evaluation Report

ESR-2484

Issued November 1, 2010

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**DIVISION: 07 00 00—THERMAL AND MOISTURE
PROTECTION**
Section: 07 72 27—Eave Vents

REPORT HOLDER:

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EVALUATION SUBJECT:

**SMARTVENT CONTINUOUS ATTIC INTAKE VENT
(UNDER SHINGLE)**

1.0 EVALUATION SCOPE**Compliance with the following codes:**

- 2009 *International Building Code*® (IBC)
- 2009 *International Residential Code*® (IRC)
- Other Codes (see Section 8.0)

Properties evaluated:

- Ventilation of attic spaces
- Weather resistance
- Wind uplift resistance

2.0 USES

The SmartVent Continuous Attic Intake Vents are used to provide required attic ventilation in accordance with IBC Section 1203.2 or IRC Section R806 when installed in conjunction with ridge vents to provide natural ventilation of enclosed attic and rafter spaces. The vents are intended for installation with asphalt shingle, cedar, slate, cement tile, clay tile and metal shingle roof coverings.

3.0 DESCRIPTION**3.1 General:**

SmartVent is $\frac{3}{4}$ inch thick (19 mm) at the leading edge with factory-applied weather guard fabric, and tapers to $\frac{5}{32}$ inch thick (4.0 mm) within the 10.5-inch (267 mm) width of the product. SmartVent has descending strips from 4-ply to 3-ply to 2-ply to 1-ply, creating the tapered effect of the finished 3-foot (914 mm) lengths. There are air spaces with a width of approximately $1\frac{1}{4}$ inches (31.8 mm) between the strips to allow airflow to travel in all directions. Smart

Vent allows a net-free ventilation area (NFVA) of 8.9 square inches per linear foot ($57\text{ cm}^2/305\text{ mm}$).

3.2 Material:

SmartVent is constructed of corrugated polyethylene plastic and is classified as CC2 plastic under IBC Section 2606.4. The weather guard fabric is made of a nylon/polyester mixture.

4.0 DESIGN AND INSTALLATION**4.1 Design:**

The required ventilation area must be determined, and sufficient length of SmartVents must be installed to provide adequate ventilation in accordance with IBC Section 1203.2 and IRC Section R806.

4.2 Wind Resistance:

SmartVent Continuous Attic Intake Vents can be installed on buildings in areas having a maximum basic wind speed of 100 miles per hour (160 km/h), on structures having a maximum mean roof height of 40 feet (12.2 m) in Exposure B, C and D areas.

4.3 Installation:

The roof slope must be a minimum of 4:12 (33 percent slope). SmartVent must be installed in the lower portion of the roof as close as practical to the eaves. Ridge vents or other approved exhaust vent products must be installed in the upper portion of the space being ventilated. There must be nothing within the attic rafter spaces that blocks the free flow of air from eave to ridge.

A 1-inch-wide (25 mm) slit must be cut into the roof deck sheathing at 6 to 7 inches (152 mm to 178 mm) from the drip edge or lift edge of the SmartVent. The $10\frac{1}{2}$ -inch-by-3-foot pieces are laid in line to form a continuous vent. For installation in association with roof coverings that are required by the code to be classified, see Section 5.3. The end piece of SmartVent, along the gable end, must be wrapped with fabric and installed in accordance with the manufacturer's published installation instructions. SmartVent must be nailed every 11 inches (305 mm), with galvanized or stainless steel nails having a minimum shank diameter of 0.12 inch (3.1 mm) and head diameter of $\frac{3}{8}$ inch (9.5 mm). The nails are driven along the nail line starting at the beginning edge and matching the nails at the top of the SmartVent. The nails must penetrate $\frac{3}{4}$ inch (19.1 mm) into the roof sheathing or through the sheathing, whichever is less. After the SmartVent is installed, underlayment meeting the requirements of Section 1507.2.8 of the IBC or Section 905.2.3 of the IRC, as

applicable, must be laid on top. The roof is then shingled in accordance with the roof covering manufacturer's requirements using fasteners with increased length to provide the minimum fastener penetration. The first shingle course overlaying the SmartVent must extend approximately $\frac{3}{4}$ inch (19.1 mm) beyond the lift edge of the SmartVent.

5.0 CONDITIONS OF USE

The SmartVent Continuous Attic Intake Vents described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The vents are installed in accordance with this report and the manufacturer's published instructions. The manufacturer's published installation instructions must be available on the jobsite at all times during installation. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 Use of SmartVent Continuous Attic Intake Vents is not permitted in Groups H, I-2 and I-3 occupancies.
- 5.3 For installation with roof coverings that are required by the applicable code to be classified, all of the following conditions apply:
 - 5.3.1 SmartVent use is limited to buildings where roofs are not required to have a fire-resistance rating, unless the buildings are equipped throughout with an automatic sprinkler system in accordance with IBC Section 903.3.1.1.
 - 5.3.2 The maximum area of continuous aggregate attic vents must not exceed 100 ft² (9.29 m²) and the aggregate area of the vents and any light-transmitting roof panels is limited to 25 percent of the floor area of the room or space served.
 - 5.3.3 Individual continuous attic vents must be separated from each other and from any light-transmitting roof panels by a distance of not less than 4 feet (1220 mm) measured in the horizontal plane, unless the building is equipped throughout with an automatic sprinkler system in accordance with IBC Section 903.3.1.1.

5.3.4 Attic vents must not be installed within 6 feet (1830 mm) of any exterior wall required by Section 705.8 of the IBC to have protected wall openings.

5.4 Where roof diaphragm continuity is affected by the installation of continuous vents, roof diaphragm nailing requirements must be addressed in accordance with the applicable code and vent installation must be approved by the code official.

5.5 Attic vents are limited to installation on roofs having a minimum slope of 4:12 (33 percent slope).

5.6 SmartVents must be covered with roof coverings that comply with the requirements of the applicable code.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Attic Vents (AC132), dated February 2010.

7.0 IDENTIFICATION

Packaging for the SmartVent Continuous Attic Intake Vents described in this report bears the manufacturer's name (DCI Products) and address, the product description, the evaluation report number (ESR-2484) and directions for use of the product. Each individual vent is identified with the DCI Products name, the ICC-ES evaluation report number (ESR-2484) and the net-free ventilation area (8.9 in²/ft).

8.0 OTHER CODES

In addition to the codes listed in Section 1.0, the products described in this report were evaluated for compliance with the requirements of the 2006 *International Building Code*[®] (2006 IBC) and the 2006 *International Residential Code*[®] (2006 IRC). The products comply with the 2006 IBC and the 2006 IRC just as described in Sections 2.0 through 7.0 of this report, except the wording of Section 5.3.4 should be revised to read as follows:

For installation in association with roof coverings that are required by the applicable code to be classified, attic vents must not be installed within 6 feet (1830 mm) of any exterior wall required by 2006 IBC Section 704.8 to have protected wall openings.

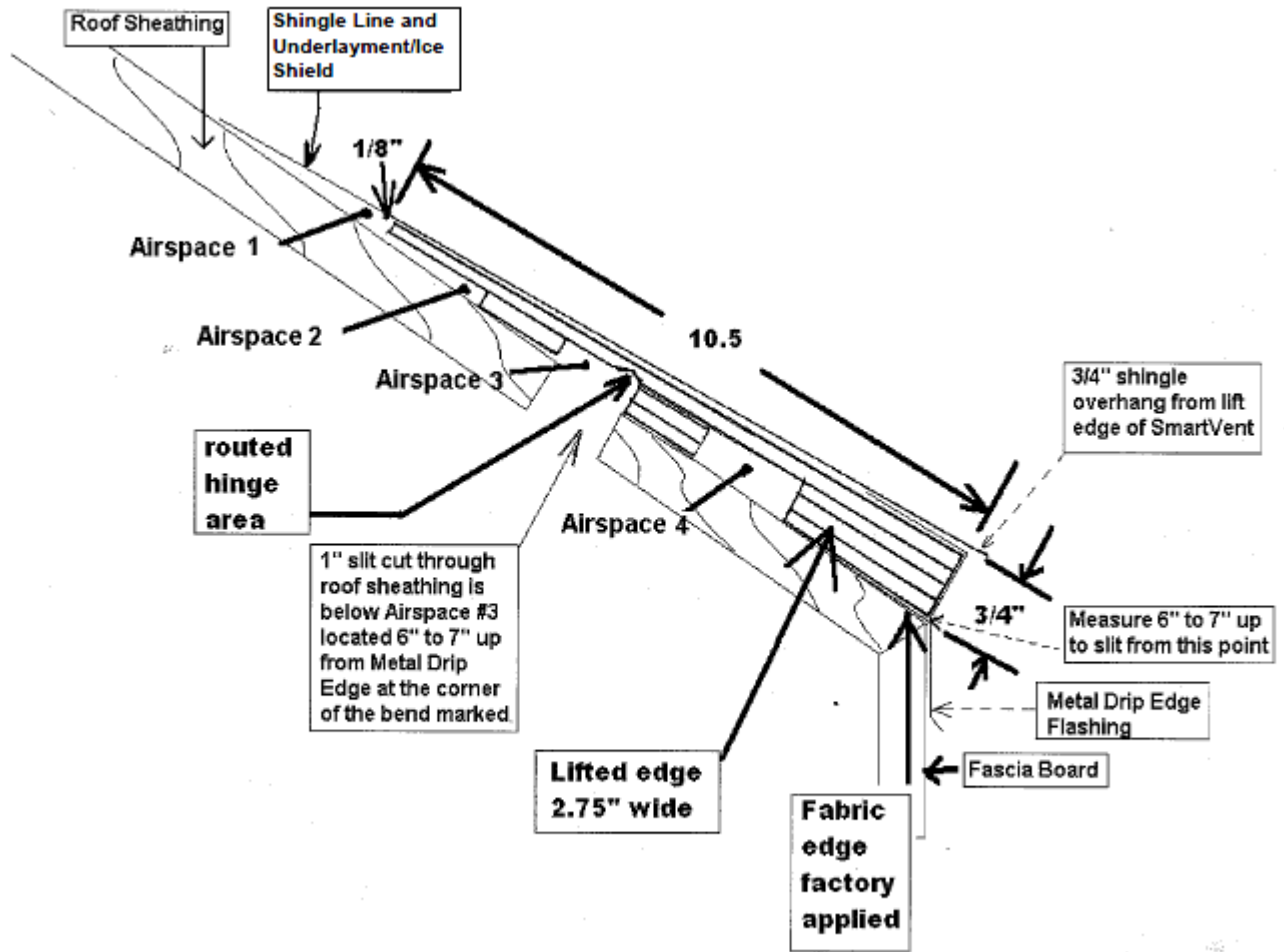


FIGURE 1—SMARTVENT CROSS SECTION

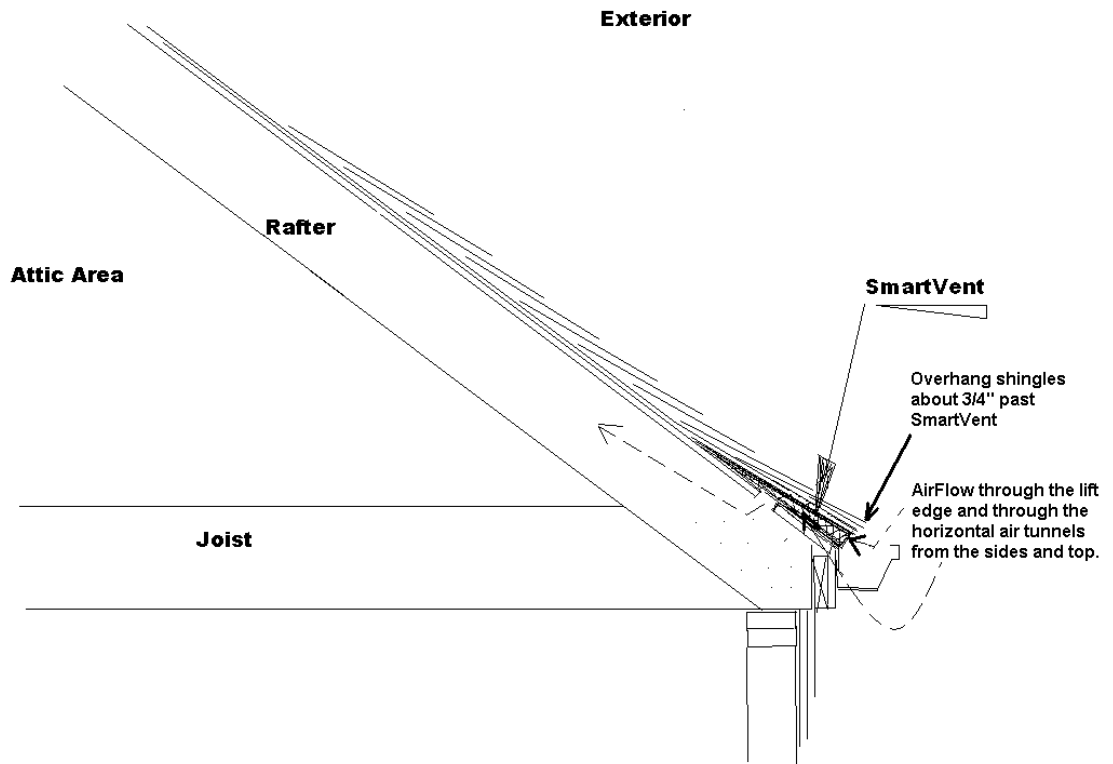


FIGURE 2—SMARTVENT INSTALLED AT EAVE/RAKE EDGE