

# ELEVATION CERTIFICATE

Important: Read the instructions on pages 1-9.

38107 10/1/15

OMB No. 1660-0008  
 Expiration Date: July 31, 2015

## SECTION A - PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

A1. Building Owner's Name Forrest B. Beverly ✓  
 A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.  
636 North Creekside Drive  
 City Murrells Inlet ✓ State SC ZIP Code 29576

Policy Number

Company NAIC Number

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)  
Horry County Tax Parcel Number 197-17-07-005 ✓

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) Residential  
 A5. Latitude/Longitude: Lat. 33.572899 Long. -79.013229 Horizontal Datum:  NAD 1927  NAD 1983

OK  
 10-1-15

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.  
 A7. Building Diagram Number 7 ✓

A8. For a building with a crawlspace or enclosure(s):  
 a) Square footage of crawlspace or enclosure(s) 2549 sq ft  
 b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade 13  
 c) Total net area of flood openings in A8.b 2600 sq in  
 d) Engineered flood openings?  Yes  No  
 A9. For a building with an attached garage:  
 a) Square footage of attached garage N sq ft  
 b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade NA  
 c) Total net area of flood openings in A9.b NA sq in  
 d) Engineered flood openings?  Yes  No

## SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number <u>Horry County 450104</u> ✓		B2. County Name <u>Horry</u> ✓		B3. State <u>South Carolina</u> ✓	
B4. Map/Panel Number <u>45051C0734</u> ✓	B5. Suffix <u>H</u> ✓	B6. FIRM Index Date <u>9/17/2003</u> ✓	B7. FIRM Panel Effective/Revised Date <u>8/23/1999</u> ✓	B8. Flood Zone(s) <u>AE</u> ✓	B9. Base Flood Elevation(s) (Zone AO, use base flood depth) <u>13</u> ✓

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.  
 FIS Profile  FIRM  Community Determined  Other/Source: \_\_\_\_\_  
 B11. Indicate elevation datum used for BFE in Item B9:  NGVD 1929  NAVD 1988  Other/Source: \_\_\_\_\_  
 B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)?  Yes  No  
 Designation Date: \_\_\_\_\_  CBRS  OPA

## SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on:  Construction Drawings\*  Building Under Construction\*  Finished Construction  
 \*A new Elevation Certificate will be required when construction of the building is complete.  
 C2. Elevations - Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.  
 Benchmark Utilized: NGS PIDD 1488 Vertical Datum: NAVD 88  
 Indicate elevation datum used for the elevations in items a) through h) below.  NGVD 1929  NAVD 1988  Other/Source: \_\_\_\_\_  
 Datum used for building elevations must be the same as that used for the BFE.

Check the measurement used.

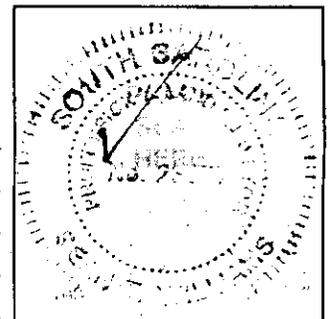
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	<u>7.83</u> ✓	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
b) Top of the next higher floor	<u>18.35</u> ✓	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
c) Bottom of the lowest horizontal structural member (V Zones only)	<u>NA</u> ✓	<input type="checkbox"/> feet <input type="checkbox"/> meters
d) Attached garage (top of slab)	<u>7.30</u> ✓	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	<u>17.06</u> ✓	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
f) Lowest adjacent (finished) grade next to building (LAG)	<u>6.87</u> ✓	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
g) Highest adjacent (finished) grade next to building (HAG)	<u>7.44</u> ✓	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	<u>7.07</u> ✓	<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters

## SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

Check here if comments are provided on back of form. Were latitude and longitude in Section A provided by a licensed land surveyor?  Yes  No  
 Check here if attachments.

Certifier's Name <u>Sean T. Williams</u>	License Number
Title <u>Land Surveyor</u>	Company Name <u>Williams Survey Company, LLC</u>
Address <u>1480 Alford Rd</u>	City <u>Conway</u> State <u>SC</u> ZIP Code <u>29526</u>
Signature <u>[Signature]</u>	Date <u>9/30/2015</u> Telephone <u>843-365-1975</u>



**ELEVATION CERTIFICATE, page 2**

<b>IMPORTANT: In these spaces, copy the corresponding information from Section A.</b>	<b>FOR INSURANCE COMPANY USE</b>
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 636 North Creekside Drive	Policy Number:
City Murrells Inlet State SC ZIP Code 29576	Company NAIC Number:

**SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)**

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments

Signature

Date 9/30/2015

**SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)**

For Zones AO and A (without BFE), complete Items E1–E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B, and C. For Items E1–E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).

a) Top of bottom floor (including basement, crawlspace, or enclosure) is \_\_\_\_\_  feet  meters  above or  below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is \_\_\_\_\_  feet  meters  above or  below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8–9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is \_\_\_\_\_  feet  meters  above or  below the HAG.

E3. Attached garage (top of slab) is \_\_\_\_\_  feet  meters  above or  below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is \_\_\_\_\_  feet  meters  above or  below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance?  Yes  No  Unknown. The local official must certify this information in Section G.

**SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION**

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

Property Owner's or Owner's Authorized Representative's Name

Address

City

State

ZIP Code

Signature

Date

Telephone

Comments

Check here if attachments.

**SECTION G – COMMUNITY INFORMATION (OPTIONAL)**

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8–G10. In Puerto Rico only, enter meters.

G1.  The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2.  A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3.  The following information (Items G4–G10) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued
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G7. This permit has been issued for:  New Construction  Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building: \_\_\_\_\_  feet  meters Datum \_\_\_\_\_

G9. BFE or (in Zone AO) depth of flooding at the building site: \_\_\_\_\_  feet  meters Datum \_\_\_\_\_

G10. Community's design flood elevation: \_\_\_\_\_  feet  meters Datum \_\_\_\_\_

Local Official's Name

Title

Community Name

Telephone

Signature

Date

Comments

Check here if attachments.

# Building Photographs

See Instructions for Item A6.

**IMPORTANT:** In these spaces, copy the corresponding information from Section A.

FOR INSURANCE COMPANY USE

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.  
636 North Creekside Dr

Policy Number:

City Murrells Inlet

State SC

ZIP Code 29576

Company NAIC Number:

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8. If submitting more photographs than will fit on this page, use the Continuation Page.



# Building Photographs

Continuation Page

**IMPORTANT: In these spaces, copy the corresponding information from Section A.**

FOR INSURANCE COMPANY USE

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.  
636 North Creekside Dr

Policy Number:

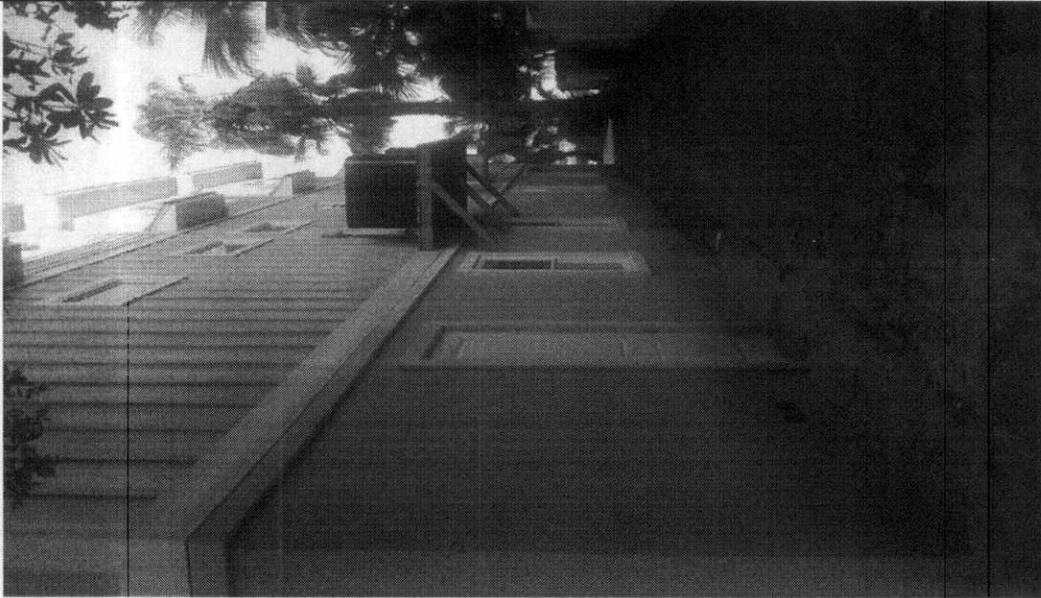
City Murrells Inlet

State SC

ZIP Code 29576

Company NAIC Number:

If submitting more photographs than will fit on the preceding page, affix the additional photographs below. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8.





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# ICC-ES Report

## ESR-2074

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Reissued 02/2015

This report is subject to renewal 02/2017.

DIVISION: 08 00 00—OPENINGS

SECTION: 08 95 43—VENTS/FOUNDATION FLOOD VENTS

REPORT HOLDER:

**SMARTVENT PRODUCTS, INC.**

430 ANDBRO DRIVE, UNIT 1  
PITMAN, NEW JERSEY 08071

EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS: MODELS #1540-520; #1540-521; #1540-510;  
#1540-511; #1540-570; #1540-574; #1540-524; #1540-514



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**ICC-ES Evaluation Report****ESR-2074\***

Reissued February 2015

This report is subject to renewal February 2017.

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DIVISION: 08 00 00—OPENINGS  
Section: 08 95 43—Vents/Foundation Flood Vents

## REPORT HOLDER:

SMARTVENT PRODUCTS, INC.  
430 ANDBRO DRIVE, UNIT 1  
PITMAN, NEW JERSEY 08071  
(877) 441-8368  
[www.smartvent.com](http://www.smartvent.com)  
[info@smartvent.com](mailto:info@smartvent.com)

## EVALUATION SUBJECT:

SMART VENT® AUTOMATIC FOUNDATION FLOOD VENTS;  
MODELS #1540-520; #1540-521; #1540-510; #1540-511;  
#1540-570; #1540-574; #1540-524; #1540-514

## 1.0 EVALUATION SCOPE

## Compliance with the following codes:

- 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

## Properties evaluated:

- Physical operation
- Water flow

## 2.0 USES

The Smart Vent® units are engineered mechanically operated flood vents (FVs) employed to equalize hydrostatic pressure on walls of enclosures subject to rising or falling flood waters. Certain models also allow natural ventilation.

## 3.0 DESCRIPTION

## 3.1 General:

When subjected to rising water, the Smart Vent® FVs internal floats are activated, then pivot open to allow flow in either direction to equalize water level and hydrostatic pressure from one side of the foundation to the other. The FV pivoting door is normally held in the closed position by a buoyant release device. When subjected to rising water, the buoyant release device causes the unit to unlatch, allowing the door to rotate out of the way and allow flow.

The water level stabilizes, equalizing the lateral forces. Each unit is fabricated from stainless steel. Smart Vent® Automatic Foundation Flood Vents are available in various models and sizes as described in Table 1. The SmartVENT® Stacking Model #1540-511 and FloodVENT® Stacking Model #1540-521 units each contain two vertically arranged openings per unit.

## 3.2 Engineered Opening:

The FVs comply with the design principle noted in Section 2.6.2.2 of ASCE/SEI 24 for a maximum rate of rise and fall of 5.0 feet per hour (0.423 mm/s). In order to comply with the engineered opening requirement of ASCE/SEI 24, Smart Vent FVs must be installed in accordance with Section 4.0.

## 3.3 Ventilation:

The SmartVENT® Model #1540-510 and SmartVENT® Overhead Door Model #1540-514 both have screen covers with 1/4-inch-by-1/4-inch (6.35 by 6.35 mm) openings, yielding 51 square inches (32 903 mm<sup>2</sup>) of net free area to supply natural ventilation. The SmartVENT® Stacking Model #1540-511 consists of two Model #1540-510 units in one assembly, and provides 102 square inches (65 806 mm<sup>2</sup>) of net free area to supply natural ventilation. Other FVs recognized in this report do not offer natural ventilation.

## 4.0 DESIGN AND INSTALLATION

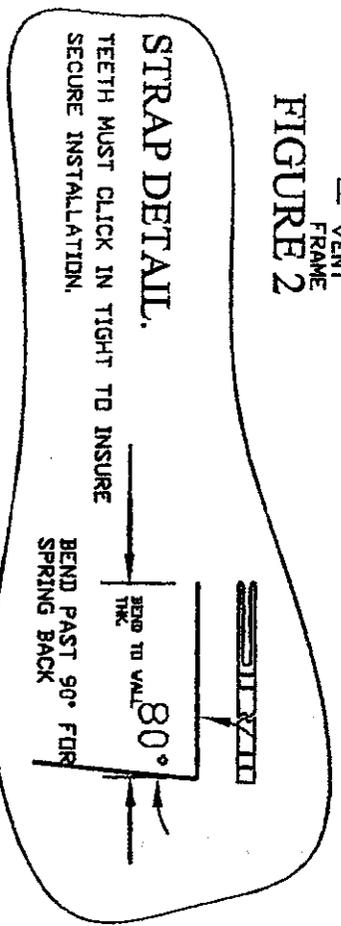
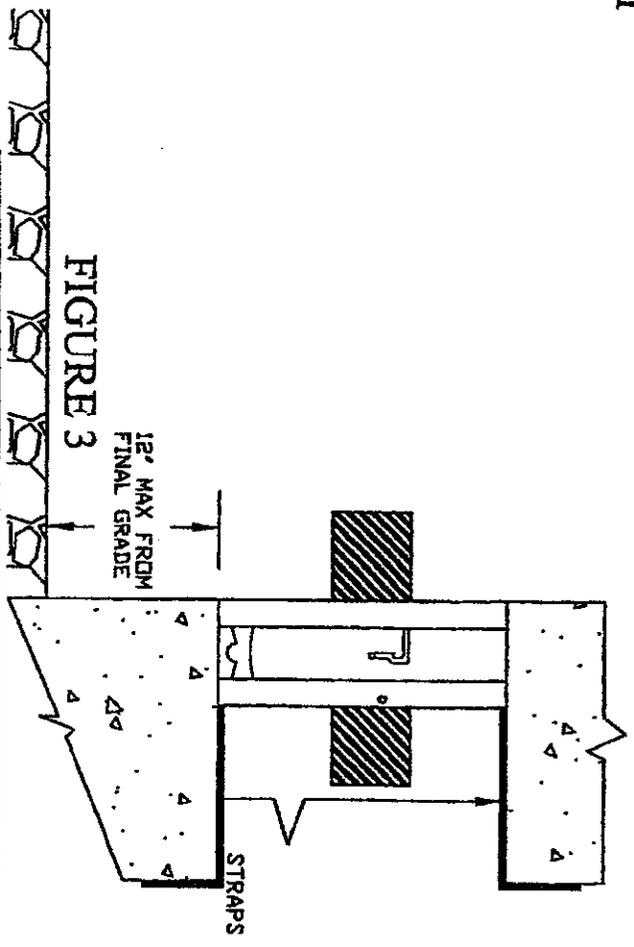
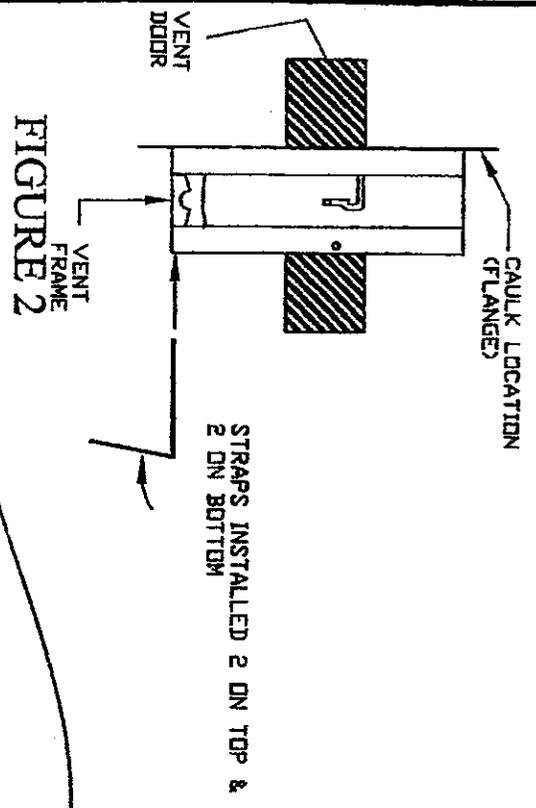
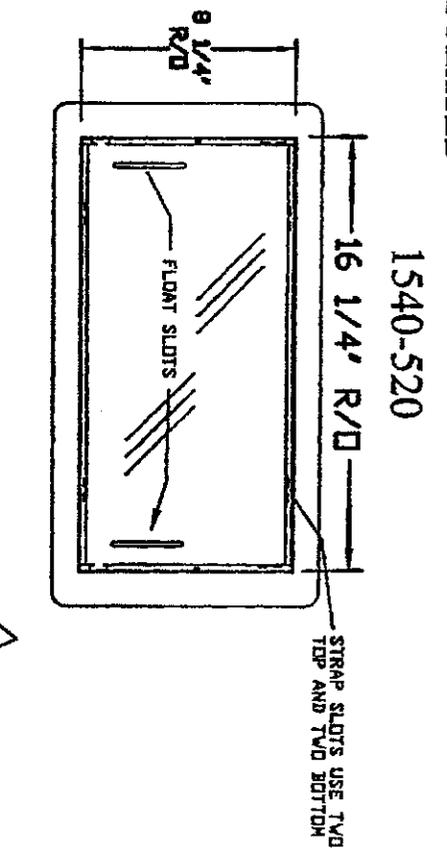
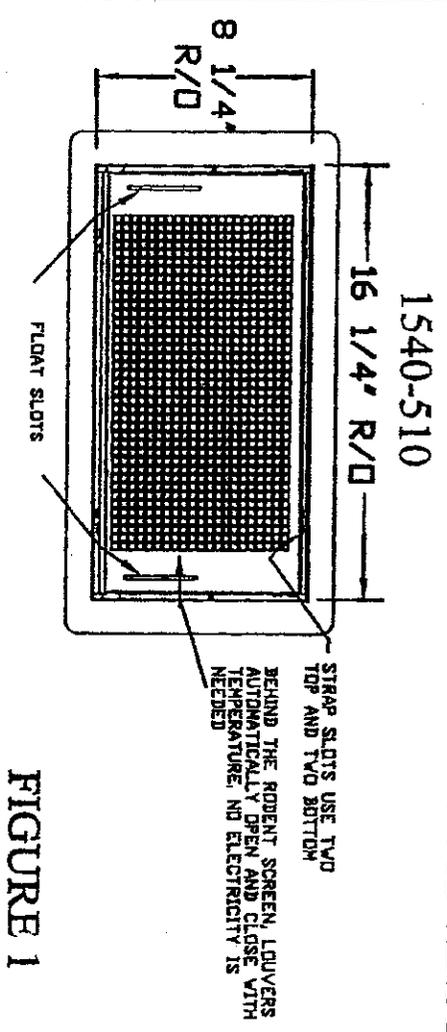
SmartVENT® and FloodVENT® are designed to be installed into walls or overhead doors of existing or new construction from the exterior side. Installation of the vents must be in accordance with the manufacturer's instructions, the applicable code and this report. The mounting straps allow mounting in masonry and concrete walls up to 12 inches (305 mm) thick. In order to comply with the engineered opening design principle noted in Section 2.6.2.2 of ASCE/SEI 24, the Smart Vent® FVs must be installed as follows:

- With a minimum of two openings on different sides of each enclosed area.
- With a minimum of one FV for every 200 square feet (18.6 m<sup>2</sup>) of enclosed area, except that the SmartVENT® Stacking Model #1540-511 and FloodVENT® Stacking Model #1540-521 must be installed with a minimum of one FV for every 400 square feet (37.2 m<sup>2</sup>) of enclosed area.
- Below the base flood elevation.
- With the bottom of the FV located a maximum of 12 inches (305.4 mm) above the higher of the final

\*Revised July 2015

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**DETAIL DIAGRAM**  
**MODELS 1540-510 & 1540-520**  
**DUAL FUNCTION FLOOD AND VENTILATION VENT &**  
**FLOOD VENT INSULATED**



TOLERANCES UNLESS OTHERWISE SPECIFIED: XX .0005 XXX .001 KXXX .0005		 <b>Smart Vent</b> 877-441 8368 WWW.SMARTVENT.COM	
THE ABOVE DRAWING CONTAINS IN THE DRAWING AND REVISIONS LISTED ON THE DRAWING INFORMATION UNLESS THE WRITTEN PERMISSION OF SMARTVENT INC. IS PROVIDED.			
DATE	2-1-07	SHEET	1 OF 2
REV	0	DWG NO.	1540-5XX
REV	A	SIZE	A
SMART VENT Foundation Flood Vents 450 Amherst Dr. Flemington NJ 08521 DUAL FUNCTION FLOOD AND VENTILATION VENT & FLOOD VENT INSULATED MODELS 1540-510 & 1540-520			



## **MATERIAL REVIEW & MAINTENANCE INSTRUCTIONS**

### **Objective:**

When we set out to design our flood vent products, a comprehensive study was conducted to determine the most important design attributes that would be needed to insure that our customers received the best product available. Because our company started on the shores of the East Coast of New Jersey, everyone placed durability as their number one concern.

### **Durability:**

After extensive research, including review of many less expensive materials, we choose to make the bulk of the components for our vents from stainless steel. Salt will pit stainless steel unless it is rinsed with water. We recommend that the vent be washed with fresh water twice a year. Any red rust or minor surface pitting can be removed with "commercial de-rusting solutions."

The mechanism that operates the automatic louvers on models 1540-510, 1540-511, 1540-514 and 1540-550 is also entirely made from stainless steel, and water rinsing will reduce corrosion and dirt build-up. Prior to final inspection and testing, the louver mechanism is lubricated with a dry film lubricant. This over the counter lubricant should be applied at minimum one time per year, or when needed. Rinse the louver mechanism, let dry, then spray all of the moving parts. Note: Wet lubricants or grease will allow dirt and sand to accumulate on the moving parts. Use only dry film lubricants.

The bi-metal coil is made from highly engineered materials. The composite contains a large portion of Nickel and the finished coil is secondarily heat-treated, which forms a protective barrier to protect it from the elements. A squirt of dry film lubricant into the coil chamber during maintenance will extend its life.

The floats are manufactured from engineered plastics. An ultra-violet inhibitor was blended into the raw material before molding to insure that the sun does not degrade the functional or dimensional characteristics of the material. Insert a thin blade or a credit card into each side of the vent door's float slot, and the door will easily push open. Rinse the float cavity, then apply a small amount of dry film lubricant on the float, where it contacts the frame.

Like any product, the care one gives will determine its life. We have used the best American materials, along with the best engineering and manufacturing professionals to build our products. With just a little care, your vents will function carefree for many years.



grade or floor and finished exterior grade immediately under each opening.

are permitted for use in conjunction with breakaway walls in other areas.

**5.0 CONDITIONS OF USE**

The Smart Vent® FVs 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 Smart Vent® FVs must be installed in accordance with this report, the applicable code and the manufacturer’s installation instructions. In the event of a conflict, the instructions in this report govern.
- 5.2 The Smart Vent® FVs must not be used in the place of “breakaway walls” in coastal high hazard areas, but

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364), dated October 2013 (editorially revised May 2014).

**7.0 IDENTIFICATION**

The Smart VENT® models recognized in this report must be identified by a label bearing the manufacturer’s name (Smartvent Products, Inc.), the model number, and the evaluation report number (ESR-2074).

**TABLE 1—MODEL SIZES**

MODEL NAME	MODEL NUMBER	MODEL SIZE (in.)	COVERAGE (sq. ft.)
FloodVENT®	1540-520	15 <sup>3</sup> / <sub>4</sub> " X 7 <sup>3</sup> / <sub>4</sub> "	200
SmartVENT®	1540-510	15 <sup>3</sup> / <sub>4</sub> " X 7 <sup>3</sup> / <sub>4</sub> "	200
FloodVENT® Overhead Door	1540-524	15 <sup>3</sup> / <sub>4</sub> " X 7 <sup>3</sup> / <sub>4</sub> "	200
SmartVENT® Overhead Door	1540-514	15 <sup>3</sup> / <sub>4</sub> " X 7 <sup>3</sup> / <sub>4</sub> "	200
Wood Wall FloodVENT®	1540-570	14" X 8 <sup>3</sup> / <sub>4</sub> "	200
Wood Wall FloodVENT® Overhead Door	1540-574	14" X 8 <sup>3</sup> / <sub>4</sub> "	200
SmartVENT® Stacker	1540-511	16" X 16"	400
FloodVent® Stacker	1540-521	16" X 16"	400

For SI: 1 inch = 25.4 mm; 1 square foot = m<sup>2</sup>

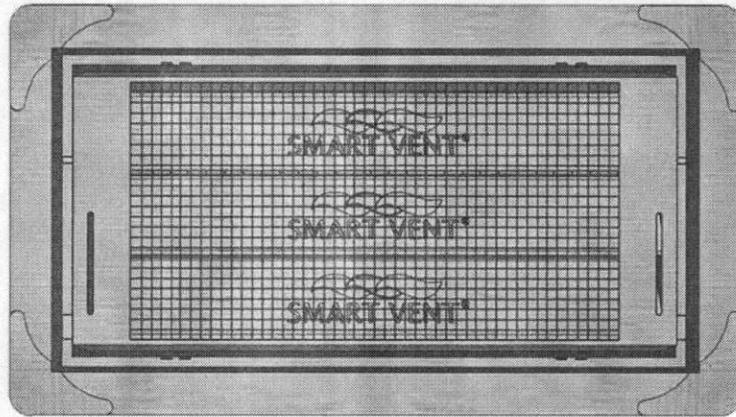


FIGURE 1—SMART VENT: MODEL 1540-510

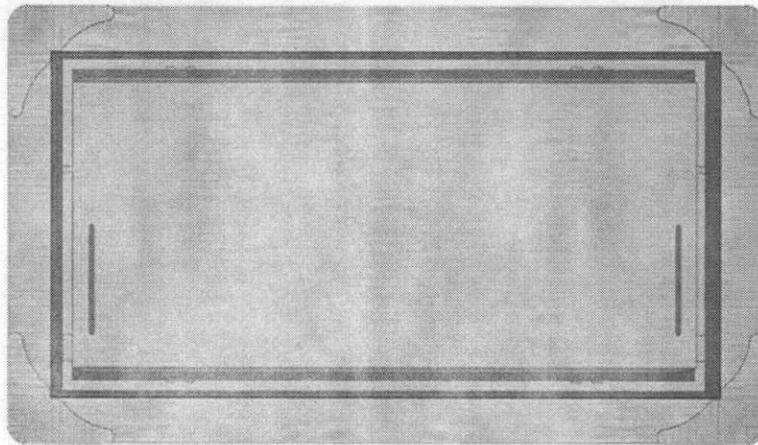


FIGURE 2—SMART VENT MODEL 1540-520

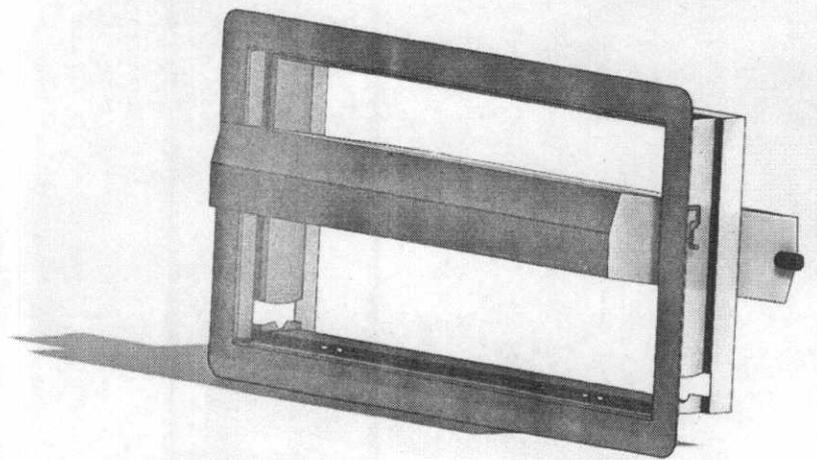


FIGURE 3—SMART VENT: SHOWN WITH FLOOD DOOR PIVOTED OPEN