



A cost-effective, ICC-ES certified and FEMA compliant foundation flood vent that covers 250 sq. ft. of an enclosed area.

VENT FEATURES:

- ICC-ES certified, FEMA, NFIP and building code compliant
- Provides natural air ventilation
- Usable in crawl spaces, garages & full-height enclosures
- Relieves hydrostatic pressure
- Allows for bi-directional flow of flood waters & debris
- Winter shield included
- Robust polycarbonate design



MADE IN USA



See it in action online!

MODEL NUMBERS

FFV-1608-W
FFV-1608-B

DIMENSIONS

16"W x 8"H x 2"D

ROUGH OPENING

16.25" x 8.25"

FLOOD PROTECTION

250 sq. ft. per unit

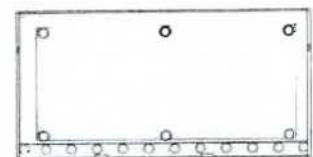
CERTIFICATION



NATURAL AIR VENTILATION

31 sq. in. per unit
without winter shield

VENTS SHOWN WITH INCLUDED WINTER SHIELD:



AVAILABLE VENT COLORS:

WHITE BLACK

ICC-ES Evaluation Report

ESR-4332

Reissued March 2026

This report also contains:

- [CA Supplement](#)

Subject to renewal March 2028

- [FL Supplement](#)

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DIVISION: 08 00 00— OPENINGS Section: 08 95 43— Vents / Foundation Flood Vents	REPORT HOLDER: SMART PRODUCT INNOVATIONS, INC.	EVALUATION SUBJECT: FREEDOM FLOOD VENT® AUTOMATIC FOUNDATION FLOOD VENT: MODEL FFV-1608	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024, 2021, 2018, 2015, 2012, 2009 and 2006 [International Building Code® \(IBC\)](#)
- 2024, 2021, 2018, 2015, 2012, 2009 and 2006 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Physical operation
- Water flow
- Weathering

2.0 USES

The model FFV-1608 Freedom Flood Vent® is used to equalize hydrostatic pressure on walls of enclosures subject to rising or falling floodwaters. With the cover removed, the model FFV-1608 also provides natural air ventilation.

3.0 DESCRIPTION

3.1 General:

The model FFV-1608 Freedom Flood Vent® is an engineered mechanically operated in-wall flood vent (FV) that automatically allows floodwater to enter an enclosed area and exit. The FV is comprised of a polycarbonate frame with mounting flange and a polycarbonate horizontally pivoting door. When subjected to rising water, the model FFV-1608 Freedom Flood Vent® door is activated and pivots to allow water and debris to flow in either direction to equalize hydrostatic pressure from one side of the enclosure to the other. The FV features a removable polycarbonate cover. The FV door will activate and pivot when subjected to rising water with or without the polycarbonate cover installed.

3.2 Engineered Opening:

The FV complies with the design principle noted in Section 2.7.2.2 and Section 2.7.3 of ASCE/ SEI 24-14 (2024, 2021, 2018 and 2015 IBC and IRC) [Section 2.6.2.2 of ASCE/ SEI 24-05 (2012, 2009, 2006 IBC and IRC)] 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, Freedom Flood Vent® FVs must be installed in accordance with Section 4.0 below. See [Table 1](#) for vent size and maximum allowable area coverage for a single vent.

4.0 DESIGN AND INSTALLATION

The model FFV-1608 Freedom Flood Vent® is designed to be installed into walls or overhead doors of existing or new construction. Installation of the vent must be in accordance with the manufacturer’s instructions, the applicable code, and this report. In order to comply with the engineered opening design principle noted in Sections 2.7.2.2 and 2.7.3 of ASCE/ SEI 24-14 (2024, 2021, 2018 and 2015 IBC and IRC) [Section 2.6.2.2 of ASCE/ SEI 24-05 (2012, 2009, 2006 IBC and IRC)], the Freedom

Flood Vent® 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 250 square feet (23.2 m2) of enclosed area.
- Below the base flood elevation.
- With the bottom of the vent located a maximum of 12 inches (305.4 mm) above the higher of the final interior grade or floor and the finished exterior grade immediately under each opening.

5.0 CONDITIONS OF USE:

The Freedom Flood Vent® described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The model FFV-1608 Freedom Flood Vent® unit must be installed in accordance with this report, the applicable code and the manufacturer’s published installation instructions. In the event of a conflict, the instructions in this report shall govern.
- 5.2 The model FFV-1608 Freedom Flood Vent® unit must not be used in place of “breakaway walls” in coastal high hazard areas, but are permitted for use in conjunction with breakaway walls in other areas.
- 5.3 Use of the Freedom Flood Vent as under-floor space ventilation is outside the scope of this report.
- 5.4 FFV-1608 Freedom Flood Vent® is manufactured in Gastonia, North Carolina under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364), dated August 2015 (editorially revised February 2024).

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4332) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, the Freedom Flood Vent® model described in this report must be identified by a label bearing the manufacturer’s name (Smart Product Innovations, Inc.) and the evaluation report number (ESR-4332).
- 7.3 The report holder’s contact information is the following:

SMART PRODUCT INNOVATIONS, INC.
19 MANTUA ROAD
MOUNT ROYAL, NEW JERSEY 08061
(800) 507-1527
www.freedomfloodvent.com
info@freedomfloodvent.com

TABLE 1—FREEDOM FLOOD VENT®

MODEL NAME	MODEL NUMBER	MODEL SIZE	COVERAGE ¹ (ft²)
Freedom Flood Vent®	FFV-1608	15 ³ / ₄ " X 8 ¹ / ₁₆ "	250

For SI: 1 inch = 25.4 mm

¹The enclosed coverage area in square feet is equivalent to the performance of the same number of square inches of non-engineered openings.

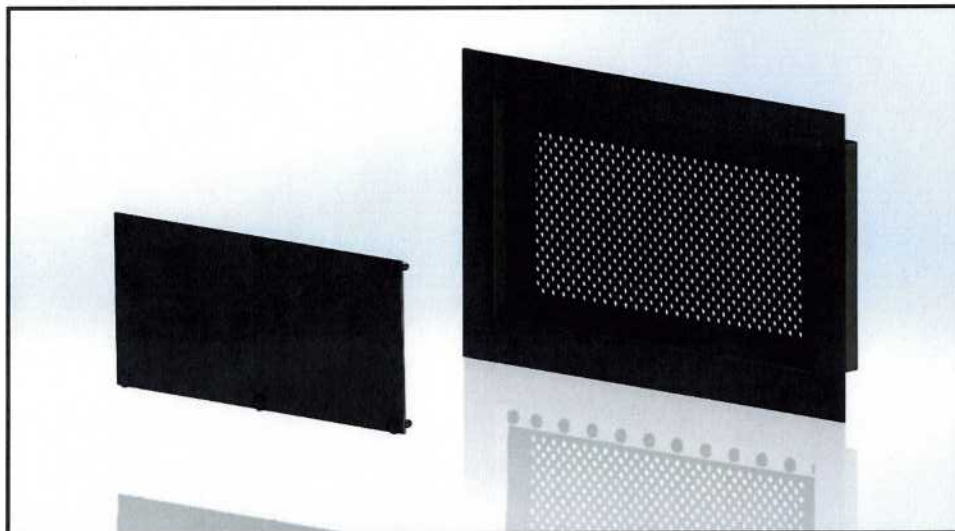


FIGURE 1—MODEL FFV-1608 FREEDOM FLOOD VENT®: SHOWN WITH COVER REMOVED

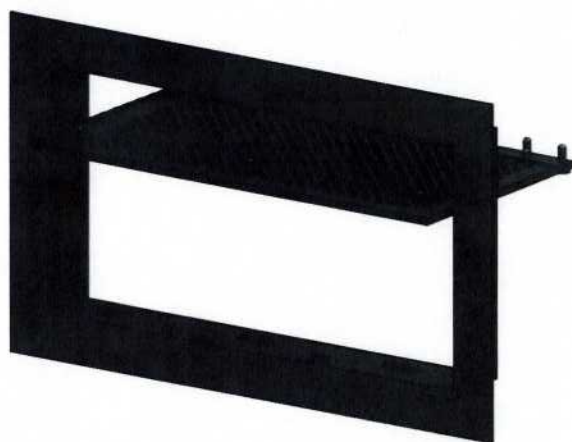


FIGURE 2—MODEL FFV-1608 FREEDOM FLOOD VENT®: SHOWN WITH FLOOD DOOR PIVOTED OPEN

ICC-ES Evaluation Report

ESR-4332 CA Supplement

Reissued March 2026

This report is subject to renewal March 2028.

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A Subsidiary of the International Code Council®

DIVISION: 08 00 00—OPENINGS

Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART PRODUCT INNOVATIONS, INC.

EVALUATION SUBJECT:

FREEDOM FLOOD VENT® AUTOMATIC FOUNDATION FLOOD VENT: MODEL FFV-1608

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Freedom Flood Vent® Automatic Foundation Flood Vent: Model FFV-1608, described in ICC-ES evaluation report [ESR-4332](#), has also been evaluated for compliance with codes noted below.

Applicable code editions:

- 2022 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Freedom Flood Vent® Automatic Foundation Flood Vent: Model FFV-1608, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4332](#), complies with CBC Chapter 12 provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 12 and 16, as applicable.

2.1.1 OSHPD: The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA: The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Freedom Flood Vent® Automatic Foundation Flood Vent: Model FFV-1608, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4332](#), complies with the CRC, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report.

This supplement expires concurrently with the evaluation report, reissued March 2026.

ICC-ES Evaluation Report

ESR-4332 FL Supplement

Reissued March 2026

This report is subject to renewal March 2028.

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DIVISION: 08 00 00—OPENINGS

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Applicable code editions:

- 2023 Florida Building Code—Building
- 2023 Florida Building Code—Residential

2.0 CONCLUSIONS

The Freedom Flood Vent® Automatic Foundation Flood Vent: Model FFV-1608, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4332](#), complies with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design requirements must be determined in accordance with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report [ESR-4332](#) for the 2021 *International Building Code*® (IBC) meet the requirements of *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable.

Use of the Freedom Flood Vent® Automatic Foundation Flood Vent: Model FFV-1608 has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential*.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission). Florida Rule 61G20-3 is applicable to products and/or systems which comprise the building envelope and structural frame for compliance with the structural requirements of the Florida Building Code.

This supplement expires concurrently with the evaluation report, reissued March 2026.



398 E DANIA BEACH BLVD. SUITE 338, DANIA BEACH, FL 33004

Product Evaluation Report

of

Smart Vent Products, Inc.

Dual Function Smart Vent Model #1540-510

Dual Function Stacked Smart Vent Model #1540-511

Insulated Flood Vent Model #1540-520

Insulated Stacked Flood Vent Model #1540-521

Insulated Wood Wall Flood Vent Model #1540-570

for

Florida Product Approval

FL# FL5822

Report No. 5022

Current Florida Building Code

Method:	2 – B (Engineering Evaluation)
Category:	Structural Components
Sub – Category:	Products Introduced as a Result of New Technology
Other Sub – Category:	Ventilation
Product:	Automatic Foundation Flood Vents (AFFV)
Material:	Stainless Steel
Product Dimensions:	See Installation Instructions

Prepared For:

Smart Vent Products, Inc.

19 Mantua Road

Mount Royal, NJ 08061

Prepared by:

Hermes F. Norero, P.E.

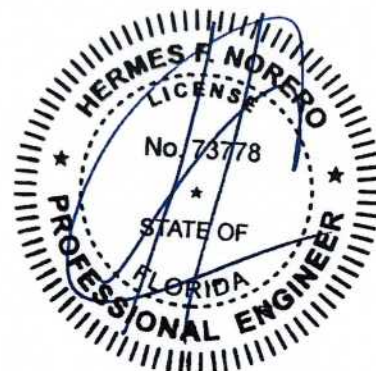
Florida Professional Engineer # 73778

Date: 8/11/2023

Contents:

Evaluation Report Pages 1 – 4

Digitally signed by Hermes F. Norero, P.E.
Reason: I am approving this document
Date: 2023.08.14 14:38:41 -04'00'



Hermes F. Norero, P.E.
Florida P.E. No. 73778

Manufacturer: Smart Vent Products, Inc.

Product Category: Structural Components

Product Sub-Category: Products Introduced as a Result of New Technology

Compliance Method: State Product Approval Rule (2)(b)

Product Name:
Dual Function Smart Vent Model #1540-510
Dual Function Stacked Smart Vent Model #1540-511
Insulated Flood Vent Model #1540-520
Insulated Stacked Flood Vent Model #1540-521
Insulated Wood Wall Flood Vent Model #1540-570

Scope:

This is a Product Evaluation Report issued by Hermes Norero, P.E. (FL # 73778) for **Smart Vent Products, Inc.** based on Method 2b of the State of Florida Product Approval, Department of Business and Professional Regulation - Florida Building Commission.

Hermes F. Norero, P.E. does not have nor will acquire financial interest in the company manufacturing or distributing the product or in any other entity involved in the approval process of the product named herein.

This product has been evaluated for use in locations adhering to the current Florida Building Code.

See Installation Instructions provided by **Smart Vent Products, Inc.**, verified by Hermes F. Norero, P.E. (FL # 73778) for specific use parameters.

Limits of Use:

1. This product has been evaluated and is in compliance with the current Florida Building Code, including the "High Velocity Hurricane Zone" (HVHZ).
2. Product anchors shall be as listed and spaced as shown on details. Anchor embedment into substrate material shall be beyond wall dressing or stucco.
3. When used in areas requiring wind borne debris protection this product complies with Chapter 16 of the Florida Building Code and does not require an impact resistant covering.
4. Site conditions that deviate from the details of the drawings require further engineering analysis by a licensed engineer or registered architect.
5. See Installation Instructions for size and design pressure limitations.
6. Wall construction shall meet requirements of Section 1612 of the FBC as deemed technically relevant due to site conditions.

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- Quality Assurance:** The manufacturer has demonstrated compliance of ventilation products in accordance with the Florida Building Code for manufacturing under a quality assurance program audited by an approved quality assurance entity through **Architectural Testing, Inc.** (FBC Organization #: QUA1844)
- Performance Standards:** The product described herein has been tested per:
- ASTM E330-14
 - ASCE 24-14
 - TAS 202-94
- Code Compliance:** The product described herein complies with current FBC Section 1708.2 and the intent of current FBC Section 1612.5(1)(1.2).
- Referenced Data:**
1. Product Testing performed by **Architectural Testing, Inc.**
(FBC Organization #: TST1558)
Report: 01-42966.01 Dated: 11/15/02
38957.102-122-44 11/16/05
60619.01-122-47 11/16/05
61877.01-122-44 01/06/06
94135.01-109-18 08/31/09
Signed & Sealed by: Michael D. Stremmel, P.E. FL # 65868
 2. Product Testing performed by **Blackwater Testing, Inc.**
(FBC Organization #: TST10394)
Report: BT-SVP-16-001 Dated: 01/06/17
Signed & Sealed by: Constantine Bortes, P.E. FL # 77915
 3. Quality Assurance
Architectural Testing, Inc.
(FBC Organization #: QUA1844)
 4. ICC Evaluation Service
ESR-2074: Meets requirements of AC364
Reissued February 2017
Revised November 2017

Installation: Refer to Installation Instructions by the Manufacturer for installation requirements.

Design Pressure:

Design Pressures
+100/-100 PSF

Equivalence of Test Standards:

Various test standards have been evaluated for differences in test methodology, if any, between tested editions of the test standards listed below and those editions referenced in the current Florida Building Code. **Smart Vent Products, Inc.** has tested their products to the following test standard edition(s):

- 1) ASTM E330-02

Chapter 35 of the current Florida Building Code references the following editions of the above mentioned test standards:

- 1) ASTM E330-14

After review of the above mentioned referenced standards and editions, it has been found that the results and tests carried out meet the requirements for compliance. All referenced standards have been found to be equivalent.



398 E DANIA BEACH BLVD. SUITE 338, DANIA BEACH, FL 33004

August 14, 2023

TO: Mr. Mike Graham
President
Smart Vent Products, Inc.
19 Mantua Road
Mount Royal, NJ 08061

FROM: Hermes F. Norero, P.E.
Building Drops, Inc.

RE: FloodVent – Impact Requirements

Dear Mr. Graham,

The purpose of this letter is to evaluate the impact (wind-borne debris) requirements for your FloodVENT product, according to the 8th Edition Florida Building Code (FBC), 2021 International Building Code (IBC), 2021 International Residential Code (IRC), and ASCE 7 engineering standards.

According to the FBC Section 1626.1(c), all parts of the building envelope protection shall meet impact test criteria except for vents in a garage with four or fewer cars. The size of the vent is not to exceed the minimum required design area by more than 25%.

The typical FloodVENT opening size, as indicated by the manufacturer, is 15.25" x 5", or 0.53 square feet (sf). Typically two vents are installed per wall, which provides a total net open area of 1.06 sf per installation. The total net open area provided by the vents is regarded as insignificant such that the openings do not compromise the enclosure category of the structure.

An enclosed building is one defined as not partially enclosed and not open. An open building is defined as a building with each wall being at least 80% open. A garage with flood vents does not fall within the definition of an open building.

A partially enclosed building is defined as a building that complies with both of the following:

1. The total area of openings in a wall that receives positive external pressure exceeds the sum of the areas of openings in the balance of the building envelope (walls and roof) by more than 10%.
2. The total area of openings in a wall that receives positive external pressure exceeds 4 sf or 1% of the area of that wall, whichever is smaller, and the percentage of openings in the balance of the building envelope does not exceed 20 percent.

Hermes F. Norero, P.E.
Florida P.E. No. 73778



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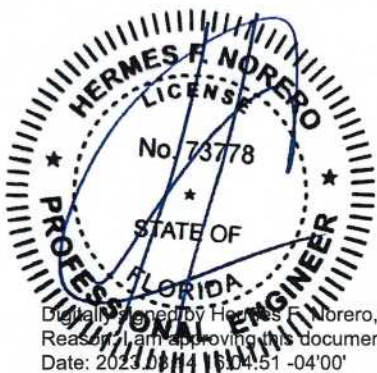
A standard garage wall is approximately 25 feet long by 8 feet tall. This equals an approximate wall area of 200 sf. The typical net open area for two flood vents, as described above, is 1.06 sf, which is less than 4 sf and less than 1% of the wall area. It can also be assumed that 1.06 sf does not exceed more than 10% of the remaining open areas of the garage. Therefore, a garage with flood vents cannot be considered a partially enclosed building.

In my professional opinion, the flood vents manufactured by Smart Vent Products, Inc. do not require additional impact (wind-borne debris) protection devices to be placed over them so that they can continue functioning as flood vents. The vents do not increase the amount of openings in a wall or building such that the building classification changes from enclosed to partially enclosed.

In addition, the 8th Edition FBC has specified applicable governing authorities to establish special flood hazard areas as per FEMA specification under 8th Edition FBC section 1612.3. This product has been evaluated, dependent to specific site conditions, to meet the minimum requirements of the National Flood Insurance Program (NFIP) flood plain management requirements (44 CFR) with respect to flood openings for enclosed areas for the purpose of equalizing hydrostatic pressure resulting from flooding. The product has been evaluated to conform to design principles noted in Section 2.6.2.2 of ASCE 24 for a maximum rate of rise and fall of 5.0 feet per hour by the ICC-ES under evaluation report ESR-2074. Thus, the product may be used in wall construction to comply with 8th Edition FBC Section 1612.5(1)(1.2).

Please feel free to contact me should you have any questions regarding this evaluation.

Best Regards,



Hermes F. Norero, P.E.
FL P.E. No. 73778

Digitally signed by Hermes F. Norero, P.E.
Reason: I am approving this document
Date: 2023.08.14 14:46:14 -04'00'

DETAIL DIAGRAM
MODEL 1540-520
FLOOD VENT INSULATED

CLIP SLOTS USE TWO TOP
AND TWO BOTTOM

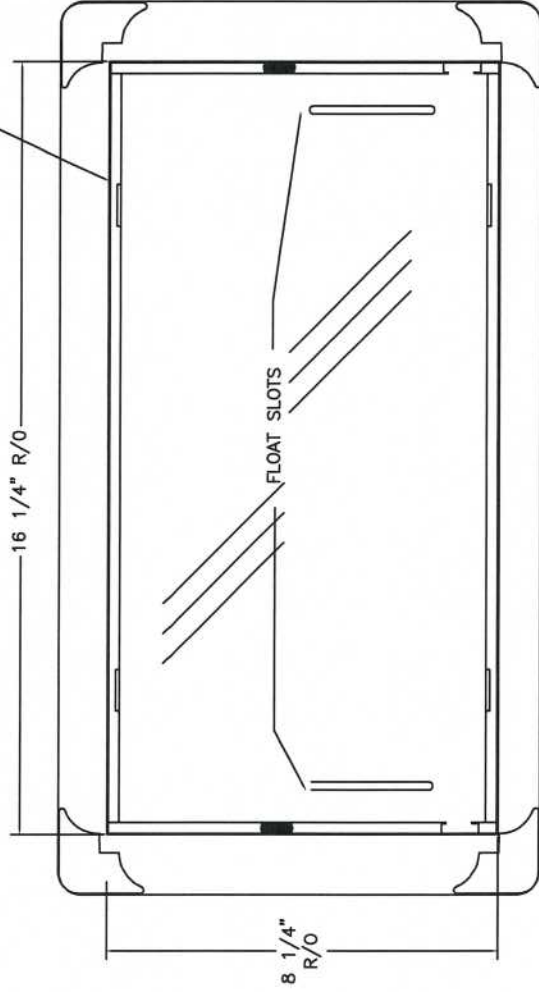


FIGURE 1
FRONT VIEW

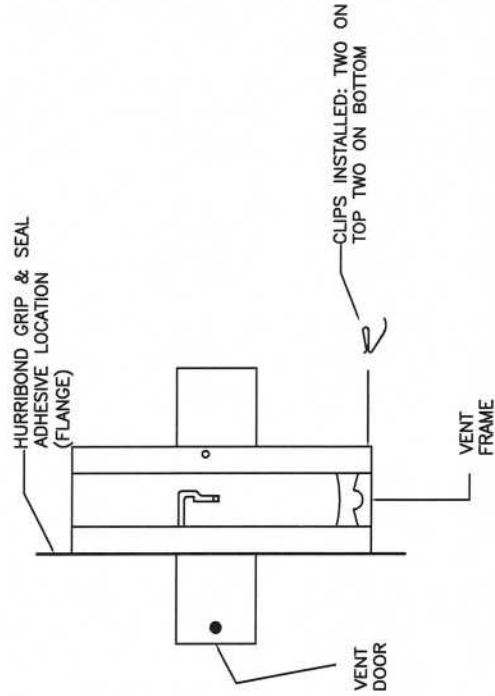


FIGURE 2
SIDE VIEW

FIGURE 3
SIDE VIEW

12\" MAX FROM
FINAL GRADE

SMART VENT Foundation Flood Vents 19 MANTUA ROAD MOUNT ROYAL, NJ 08061		FLOOD VENT INSULATED MODEL 1540-520		REV B	
SMART VENT® 877-441-8368 WWW.SMARTVENT.COM		SIZE A		DWG NO. 1540-520	
		DATE: 6-21-16		SHEET 1 OF 2	



Smart VENT

877- 441- 8368

www.smartvent.com

INSTALLATION INSTRUCTIONS
& DETAILS
MODEL 1540-520
FLOODVENT INSULATED
REV. 9-21-18

INSTALLATION INSTRUCTIONS

1. REMOVE VENT DOOR FROM VENT FRAME. (TURN UPSIDE DOWN, ROTATE BOTTOM OF DOOR OUTWARD AND SLIDE OUT)
2. PREPARE A CLEAN 16.25" WIDE BY 8.25" HIGH ROUGH OPENING (APPROX. 1 BLOCK WIDE X 1 BLOCK HIGH) FOR EACH VENT. ENSURE THE BOTTOM OF THE ROUGH OPENING IS NO MORE THAN 12" ABOVE THE FINISHED GRADE.
3. APPLY A BEAD OF HURRIBOND GRIP & SEAL OR EQUIVALENT ADHESIVE AROUND THE BACK OF THE FLANGE ON THE VENT FRAME. (FIG. 2)
4. INSERT INSTALLATION CLIPS INTO THE TWO SLOTS ON THE TOP AND TWO SLOTS ON THE BOTTOM OF THE FRAME.
5. THE SPRING ARM OF THE CLIPS SHOULD BE ON THE OUTSIDE OF THE VENT FRAME.
COMPRESS THE BOTTOM TWO CLIPS AND BEGIN SLIPPING THE FRAME INTO THE OPENING. ENSURE THAT THE BOTTOM CLIPS ARE IN THE OPENING BEFORE ALLOW THEM TO DECOMPRESS.
6. WITH THE FRAME NOW IN THE OPENING, AND THE BOTTOM SPRINGS IN PLACE, COMPRESS THE TOP SPRINGS AND PUSH THE VENT FRAME INTO THE OPENING COMPLETELY UNTIL THE FRAME IS FLUSH WITH THE WALL.
7. RE-CHECK THAT FRAME IS SQUARE AND SLOTS ARE CLEAR OF DEBRIS, AND CAULK.
8. INSTALL THE DOOR INTO FRAME BY GRASPING THE BOTTOM OF DOOR (WITH FLOAT PINS DOWN) AND FRONT (SMALL SCREEN IN FRONT). SLIDE DOOR INTO FRAME AND ROTATE UNTIL IT IS LATCHED.
9. INSERT THE TOP STRAPS INTO THE TOP TWO STRAP SLOTS ABOUT TWO CLICKS.
10. TO OPEN THE DOOR INSERT TWO CREDIT CARDS INTO THE FLOAT SLOTS AS SHOWN IN THE DIAGRAM. THIS WILL UNLATCH THE DOOR FOR REMOVAL AND CLEANING.

DETAIL SPECIFICATIONS:

MATERIAL: STAINLESS STEEL

OPERATION: AUTOMATIC NON-POWERED ACTIVATION AND OPERATION

INSTALLATION:

SECURED W/ 4 STAINLESS STEEL INSTALLATION CLIPS INCLUDED AND AN ADHESIVE

HYDROSTATIC RELIEF: 200 SQ. FT PER VENT

REQUIREMENTS: MINIMUM OF 2 VENTS PER ENCLOSED AREA MOUNTED ON AT LEAST TWO DIFFERENT WALLS

COLORS: STAINLESS (STANDARD)

EXTERIOR POWDER COATED WHITE, WHEAT, GRAY, AND BLACK (AVAILABLE)

MEETS THE REQUIREMENTS FOR ENGINEERED OPENINGS AS SET FORTH BY:
FEMA, NFIP, ICC, & ASCE
SUPPORTIVE DOCUMENTS, TB 1-08, 44CFR 60.3(C)(5), ASCE 24-14
ICC EVALUATION # ESR-2074

