

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB Control No. 1660-0008
Expiration Date: 06/30/2026

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

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

SECTION A – PROPERTY INFORMATION		FOR INSURANCE COMPANY USE
A1. Building Owner's Name: BROOKSTONE HOMES, INC.		Policy Number: _____
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 4011 BREAKWOOD DRIVE		Company NAIC Number: _____
City: HOUSTON State: TX ZIP Code: 77025		
A3. Property Description (e.g., Lot and Block Numbers or Legal Description) and/or Tax Parcel Number: HCAD: 0980730000040 LOT 31, IN BLOCK 5 OF TOWNHOUSE MANOR		
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): RESIDENTIAL		
A5. Latitude/Longitude: Lat. 29° 40' 47.75" N Long. - 95° 26' 27.95" W Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983 ☐ WGS 84		
A6. Attach at least two and when possible four clear photographs (one for each side) of the building (see Form pages 7 and 8).		
A7. Building Diagram Number: 8		
A8. For a building with a crawlspace or enclosure(s):		
a) Square footage of crawlspace or enclosure(s): 1,085 sq. ft.		
b) Is there at least one permanent flood opening on two different sides of each enclosed area? ☒ Yes ☐ No ☐ N/A		
c) Enter number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: Non-engineered flood openings: 7 Engineered flood openings: 1		
d) Total net open area of non-engineered flood openings in A8.c: 840 sq. in.		
e) Total rated area of engineered flood openings in A8.c (attach documentation – see Instructions): 250 sq. ft.		
f) Sum of A8.d and A8.e rated area (if applicable – see Instructions): 1,090 sq. ft.		
A9. For a building with an attached garage:		
a) Square footage of attached garage: 552 sq. ft.		
b) Is there at least one permanent flood opening on two different sides of the attached garage? ☒ Yes ☐ No ☐ N/A		
c) Enter number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: Non-engineered flood openings: 5 Engineered flood openings: N/A		
d) Total net open area of non-engineered flood openings in A9.c: 600 sq. in.		
e) Total rated area of engineered flood openings in A9.c (attach documentation – see Instructions): N/A sq. ft.		
f) Sum of A9.d and A9.e rated area (if applicable – see Instructions): N/A sq. ft.		
SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION		
B1.a. NFIP Community Name: CITY OF HOUSTON		B1.b. NFIP Community Identification Number: 480296
B2. County Name: HARRIS	B3. State: TX	B4. Map/Panel No.: 48201C 0865 B5. Suffix: M
B6. FIRM Index Date: 11/15/2019	B7. FIRM Panel Effective/Revised Date: 5/2/2019	
B8. Flood Zone(s): AE	B9. Base Flood Elevation(s) (BFE) (Zone AO, use Base Flood Depth): 51.0'	
B10. Indicate the source of the BFE data or Base Flood Depth entered in Item B9: ☒ FIS ☐ FIRM ☐ Community Determined ☐ Other: _____		
B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☐ NAVD 1988 ☒ Other/Source: NAVD88 (2001 ADJ)		
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No Designation Date: _____ ☐ CBRS ☐ OPA		
B13. Is the building located seaward of the Limit of Moderate Wave Action (LiMWA)? ☐ Yes ☒ No		

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Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 4011 BREAKWOOD DRIVE	FOR INSURANCE COMPANY USE
City: HOUSTON State: TX ZIP Code: 77025	Policy Number: _____
	Company NAIC Number: _____

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, AO, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, A99. Complete Items C2.a–h below according to the Building Diagram specified in Item A7. In Puerto Rico only, enter meters.
- Benchmark Utilized: **HARRIS CO RM #040145** Vertical Datum: **NAVD88 (2001 ADJUSTMENT)**
ELEVATION = 49.55'

Indicate elevation datum used for the elevations in items a) through h) below.

☐ NGVD 1929 ☐ NAVD 1988 ☒ Other: **NAVD88 (2001 ADJUSTMENT)**

Datum used for building elevations must be the same as that used for the BFE. Conversion factor used?

☐ Yes ☒ No

If Yes, describe the source of the conversion factor in the Section D Comments area.

Check the measurement used:

- | | | |
|---|--------------|--|
| a) Top of bottom floor (including basement, crawlspace, or enclosure floor): | 50.2 | ☒ feet ☐ meters |
| b) Top of the next higher floor (see Instructions): | 53.36 | ☒ feet ☐ meters |
| c) Bottom of the lowest horizontal structural member (see Instructions): | N/A | ☒ feet ☐ meters |
| d) Attached garage (top of slab): | 50.21 | ☒ feet ☐ meters |
| e) Lowest elevation of Machinery and Equipment (M&E) servicing the building (describe type of M&E and location in Section D Comments area): | 53.42 | ☒ feet ☐ meters |
| f) Lowest Adjacent Grade (LAG) next to building: ☐ Natural ☒ Finished | 49.7 | ☒ feet ☐ meters |
| g) Highest Adjacent Grade (HAG) next to building: ☐ Natural ☒ Finished | 50.0 | ☒ feet ☐ meters |
| h) Finished LAG at lowest elevation of attached deck or stairs, including structural support: | 50.0 | ☒ feet ☐ 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 state 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.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

☐ Check here if attachments and describe in the Comments area.

Certifier's Name: **MATHEW J PROBSTFELD** License Number: **RPLS 4985**
FIRM #10066100

Title: **PROFESSIONAL LAND SURVEYOR**

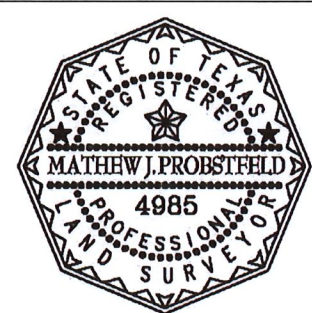
Company Name: **PROBSTFELD & ASSOCIATES**

Address: **515 PARK GROVE, SUITE 102**

City: **KATY** State: **TX** ZIP Code: **77450**

Signature: _____ Date: **8/14/2023**

Telephone: **281.829.0034** Ext.: _____ Email: **LandSurveys@Probstfeld.com**



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

Comments (including source of conversion factor in C2; type of equipment and location per C2.e; and description of any attachments):

A8.b,c) NON ENGINEERED VENT – WITTEN AUTOMATIC 8" X 16" FOUNDATION VENT @ 150 SQ FT COVERAGE AND 68 SQ IN OF NET FREE AIR FLOW.
• FLOOD VENTS: 7 X 120 SQ FT OF COVERAGE = 840 SQ FT OF COVERAGE
• FREE AIR FLOW: 7 X 68 SQ IN = 476 SQ IN OF NET FREE AIR FLOW
FREEDOM VENT FFV-1608 @ 250 SQ FT OF COVERAGE & 31 SQ IN OF FREE AIR FLOW
• FLOOD VENTS: 1 X 250 SQ FT OF COVERAGE = 250 SQ FT OF COVERAGE
• FREE AIR FLOW: 1 X 31 SQ IN = 31 SQ IN
A9.b,c) NON ENGINEERED VENT – WITTEN AUTOMATIC 8" X 16" FOUNDATION VENT @ 150 SQ FT COVERAGE AND 68 SQ IN OF NET FREE AIR FLOW.
• FLOOD VENTS: 5 X 120 SQ FT OF COVERAGE = 600 SQ FT OF COVERAGE
• FREE AIR FLOW: 5 X 68 SQ IN = 340 SQ IN OF NET FREE AIR FLOW
C2e) AIR CONDITIONER.

N/A

(500 YR)

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 4011 BREAKWOOD DRIVE	FOR INSURANCE COMPANY USE
City: HOUSTON State: TX ZIP Code: 77025	Policy Number: _____ Company NAIC Number: _____

SECTION E – BUILDING MEASUREMENT INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO, ZONE AR/AO, AND ZONE A (WITHOUT BFE)

For Zones AO, AR/AO, and A (without BFE), complete Items E1–E5. For Items E1–E4, use natural grade, if available. If the Certificate is intended to support a Letter of Map Change request, complete Sections A, B, and C. Check the measurement used. In Puerto Rico only, enter meters.

Building measurements are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction

*A new Elevation Certificate will be required when construction of the building is complete.

E1. Provide measurements (C.2.a in applicable Building Diagram) for the following and check the appropriate boxes to show whether the measurement is above or below the natural HAG and the 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 1–2 of Instructions), the next higher floor (C2.b in applicable Building Diagram) 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 AUTHORIZED REPRESENTATIVE) CERTIFICATION

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

☐ Check here if attachments and describe in the Comments area.

Property Owner or Owner's Authorized Representative Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Signature: _____ Date: _____

Telephone: _____ Ext.: _____ Email: _____

Comments:

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 4011 BREAKWOOD DRIVE City: HOUSTON State: TX ZIP Code: 77025	FOR INSURANCE COMPANY USE Policy Number: _____ Company NAIC Number: _____
SECTION G – COMMUNITY INFORMATION (RECOMMENDED FOR COMMUNITY OFFICIAL COMPLETION)	
The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Section A, B, C, E, G, or H of this Elevation Certificate. Complete the applicable item(s) and sign below when: 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 state law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.) G2.a. ☐ A local official completed Section E for a building located in Zone A (without a BFE), Zone AO, or Zone AR/AO, or when item E5 is completed for a building located in Zone AO. G2.b. ☐ A local official completed Section H for insurance purposes. G3. ☐ In the Comments area of Section G, the local official describes specific corrections to the information in Sections A, B, E and H. G4. ☐ The following information (Items G5–G11) is provided for community floodplain management purposes. G5. Permit Number: _____ G6. Date Permit Issued: _____ G7. Date Certificate of Compliance/Occupancy Issued: _____ G8. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement G9.a. Elevation of as-built lowest floor (including basement) of the building: _____ ☐ feet ☐ meters Datum: _____ G9.b. Elevation of bottom of as-built lowest horizontal structural member: _____ ☐ feet ☐ meters Datum: _____ G10.a. BFE (or depth in Zone AO) of flooding at the building site: _____ ☐ feet ☐ meters Datum: _____ G10.b. Community's minimum elevation (or depth in Zone AO) requirement for the lowest floor or lowest horizontal structural member: _____ ☐ feet ☐ meters Datum: _____ G11. Variance issued? ☐ Yes ☐ No If yes, attach documentation and describe in the Comments area. The local official who provides information in Section G must sign here. <i>I have completed the information in Section G and certify that it is correct to the best of my knowledge. If applicable, I have also provided specific corrections in the Comments area of this section.</i> Local Official's Name: _____ Title: _____ NFIP Community Name: _____ Telephone: _____ Ext.: _____ Email: _____ Address: _____ City: _____ State: _____ ZIP Code: _____ Signature: _____ Date: _____ Comments (including type of equipment and location, per C2.e; description of any attachments; and corrections to specific information in Sections A, B, D, E, or H):	

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 4011 BREAKWOOD DRIVE	FOR INSURANCE COMPANY USE
City: HOUSTON State: TX ZIP Code: 77025	Policy Number: _____
	Company NAIC Number: _____

SECTION H – BUILDING'S FIRST FLOOR HEIGHT INFORMATION FOR ALL ZONES (SURVEY NOT REQUIRED) (FOR INSURANCE PURPOSES ONLY)

The property owner, owner's authorized representative, or local floodplain management official may complete Section H for all flood zones to determine the building's first floor height for insurance purposes. Sections A, B, and I must also be completed. Enter heights to the nearest tenth of a foot (nearest tenth of a meter in Puerto Rico). **Reference the Foundation Type Diagrams (at the end of Section H Instructions) and the appropriate Building Diagrams (at the end of Section I Instructions) to complete this section.**

H1. Provide the height of the top of the floor (as indicated in Foundation Type Diagrams) above the Lowest Adjacent Grade (LAG):

a) For Building Diagrams 1A, 1B, 3, and 5–9. Top of bottom _____ ☐ feet ☐ meters ☐ above the LAG floor (include above-grade floors only for buildings with subgrade crawlspaces or enclosure floors) is:

b) For Building Diagrams 2A, 2B, 4, and 6–9. Top of next _____ ☐ feet ☐ meters ☐ above the LAG higher floor (i.e., the floor above basement, crawlspace, or enclosure floor) is:

H2. Is all Machinery and Equipment servicing the building (as listed in Item H2 instructions) elevated to or above the floor indicated by the H2 arrow (shown in the Foundation Type Diagrams at end of Section H instructions) for the appropriate Building Diagram?

☐ Yes ☐ No

SECTION I – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and H must sign here. *The statements in Sections A, B, and H are correct to the best of my knowledge.* **Note:** If the local floodplain management official completed Section H, they should indicate in Item G2.b and sign Section G.

☐ Check here if attachments are provided (including required photos) and describe each attachment in the Comments area.

Property Owner or Owner's Authorized Representative Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Signature: _____ Date: _____

Telephone: _____ Ext.: _____ Email: _____

Comments:

ELEVATION CERTIFICATE
IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19
BUILDING PHOTOGRAPHS

See Instructions for Item A6.

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

4011 BREAKWOOD DRIVE

City: **HOUSTON**

State: **TX**

ZIP Code: **77025**

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

Instructions: Insert below at least two and when possible four photographs showing each side of the building (for example, may only be able to take front and back pictures of townhouses/rowhouses). Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." Photographs must show the foundation. When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.



Photo One

DATE TAKEN
08/03/2023

Photo One Caption:

FRONT VIEW

Clear Photo One



Photo Two

DATE TAKEN
08/03/2023

Photo Two Caption:

REAR VIEW

Clear Photo Two

ELEVATION CERTIFICATE
IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19
BUILDING PHOTOGRAPHS

Continuation Page

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

4011 BREAKWOOD DRIVE

City: **HOUSTON**

State: **TX**

ZIP Code: **77025**

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

Insert the third and fourth photographs below. Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.



DATE TAKEN

08/03/2023

Photo Three Caption:

SIDE VIEW

Clear Photo Three



Photo Four

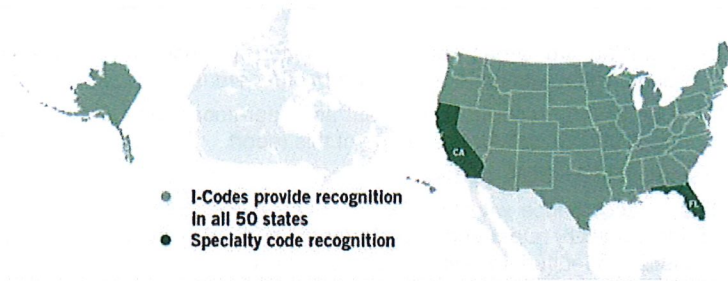
DATE TAKEN

08/03/2023

Photo Four Caption:

SIDE VIEW

Clear Photo Four



ICC-ES Evaluation Report

Reissued March 2022

ESR-4332

This report is subject to renewal March 2024.

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 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 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 (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 (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.
- 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 2021).

7.0 IDENTIFICATION

- 7.1 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).

- 7.2 The report holder's contact information is the following:
- SMART PRODUCT INNOVATIONS, INC.
430 ANDBRO DRIVE, UNIT 1
PITMAN, NEW JERSEY 08071
(800) 507-1527
www.freedomfloodvent.com
info@freedomfloodvent.co

TABLE 1—FREEDOM FLOOD VENT™

MODEL NAME	MODEL NUMBER	MODEL SIZE	COVERAGE (sq. ft.)
Freedom Flood Vent™	FFV-1608	15 ³ / ₄ " X 8 ¹ / ₁₆ "	250

For SI: 1 inch = 25.4 mm

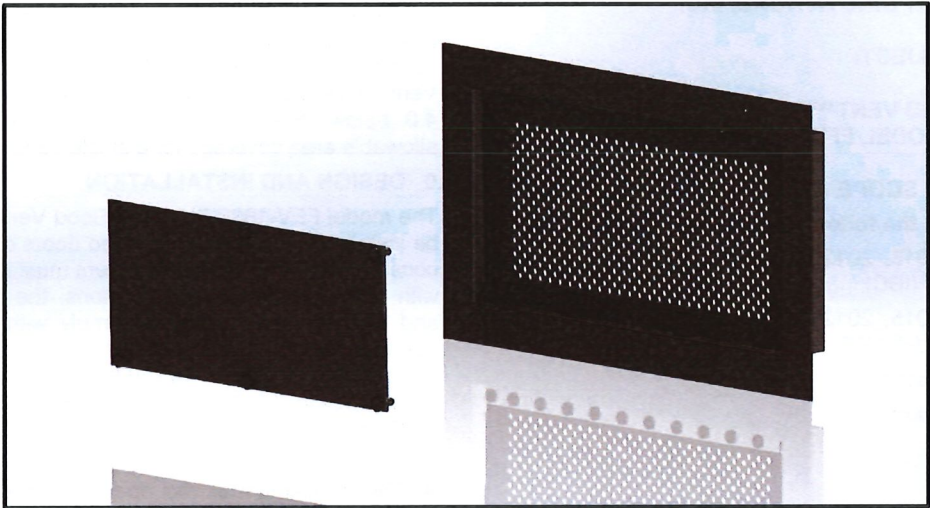


FIGURE 1—MODEL FFV-1608 FREEDOM FLOOD VENT™: SHOWN WITH COVER REMOVED

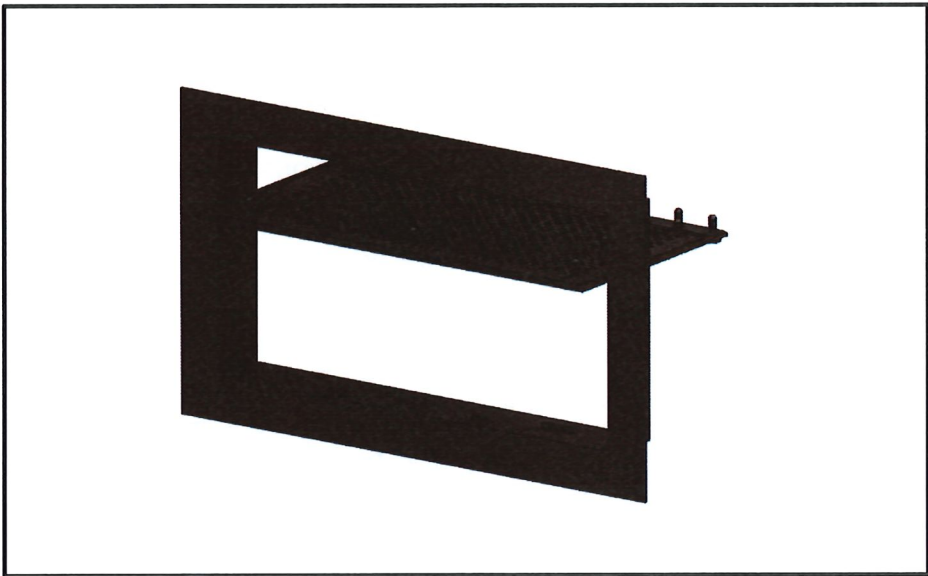


FIGURE 2—MODEL FFV-1608 FREEDOM FLOOD VENT™: SHOWN WITH FLOOD DOOR PIVOTED OPEN