

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: FOLLOW THE INSTRUCTIONS ON PAGES 8-15



OMB Control Number: 1660-0008
Expiration: 11/30/2018

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 Mark Olver				Policy Number:		
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 2500 Jamaica Street File # 14080368				Company NAIC Number:		
City Sarasota		State FL		Zip Code 34231		
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) Property ID # 0075100025						
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) Residential						
A5. Latitude/Longitude: Lat. <u>27°17'54.9".N.</u> Long. <u>82°30'29.5".W.</u> Horizontal Datum: <input checked="" type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983						
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.						
A7. Building Diagram Number <u>1B</u>						
A8. For a building with a crawlspace or enclosure(s):				A9. For a building with an attached garage:		
a) Square footage of crawlspace or enclosure(s) <u>N/A</u> sq ft		b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade <u>N/A</u>		a) Square footage of attached garage <u>640</u> sq ft		b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade <u>4</u>
c) Total net area of flood openings in A8.b <u>N/A</u> sq in		d) Engineered flood openings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		c) Total net area of flood openings in A9.b <u>820</u> sq in		d) Engineered flood openings? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION						
B1. NFIP Community Name & Community Number Sarasota County 125144			B2. County Name Sarasota			B3. State FL
B4. Map/Panel Number 125144 0142	B5. Suffix E	B6. FIRM Index Date 09/03/1992	B7. FIRM Panel Effective/ Revised Date 09/03/1992	B8. Flood Zone(s) AE	B9. Base Flood Elevation(s) (Zone AO, use base flood depth) 11	
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in item B9: <input type="checkbox"/> FIS Profile <input checked="" type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____						
B11. Indicate elevation datum used for BFE in item B9: <input checked="" type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____						
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Designation Date: <input type="checkbox"/> CBRS <input type="checkbox"/> OPA						
SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)						
C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings* <input type="checkbox"/> Building Under Construction* <input checked="" type="checkbox"/> 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: <u>SITE BENCHMARK EL. = 7.00'</u> Vertical Datum: <u>NGVD 1929</u>						
Indicate elevation datum used for the elevations in items a) through h) below. <input checked="" type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> 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>11.6</u>		<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters		
b) Top of the next higher floor		<u>N/A</u>		<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters		
c) Bottom of the lowest horizontal structural member (V Zones only)		<u>N/A</u>		<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters		
d) Attached garage (top of slab)		<u>7.7</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>A/C 11.5</u>		<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters		
f) Lowest adjacent (finished) grade next to building (LAG)		<u>5.5</u>		<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters		
g) Highest adjacent (finished) grade next to building (HAG)		<u>7.2</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>N/A</u>		<input checked="" type="checkbox"/> feet <input type="checkbox"/> meters		

ELEVATION CERTIFICATE, page 2

OMB Control Number: 1660-0008
Expiration: 11/30/2018

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. 2500 Jamaica Street		Policy Number:	
City Sarasota	State FL	Zip Code 34231	Company NAIC Number:
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.			
<input type="checkbox"/> Check here if attachments.		Were latitude and longitude in Section A provided by a licensed land surveyor? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Certifier's Name Robert O Drake		License Number 5929	
Title Project Manager		Company Name Red Stake Surveyors, Inc.	
Address 7123 Proctor Road		City Sarasota	State FL
		Zip Code 34241	
Signature 		Date 08/08/2016	Telephone 941-923-9997
Copy all pages of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.			
Comments (including type of equipment and location, per C2(e), if applicable) Section B - Flood insurance rate map (FIRM) information to be verified at local F.E.M.A. control office. C2(e.) AIR CONDITIONER (NORTH SIDE OF STRUCTURE)			
Signature 		Date 8/8/16	
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 _____ . _____		<input type="radio"/> feet <input type="radio"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG.	
b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ . _____		<input type="radio"/> feet <input type="radio"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the LAG.	
E2. For Building Diagrams 6-9 with permanent flood openings provided in Section A Items 8 and/or 9 (see page 8 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ . _____			
		<input type="radio"/> feet <input type="radio"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG.	
E3. Attached garage (top of slab) is _____ . _____			
		<input type="radio"/> feet <input type="radio"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG.	
E4. Top of platform of machinery and /or equipment servicing the building is _____ . _____			
		<input type="radio"/> feet <input type="radio"/> meters <input type="checkbox"/> above or <input type="checkbox"/> 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? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> 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 or Owner's Authorized Representative's Name			
Address	City	State	ZIP Code
Signature	Date	Telephone	
Comments			
<input type="checkbox"/> Check here if attachments.			

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. 2500 Jamaica Street			For Insurance Company Use: Policy Number
City Sarasota	State FL	ZIP Code 34231	Company NAIC Number

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least two 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." If submitting more photographs than will fit on this page, use the Continuation Page, following.



Front View



Rear View

Certification of Engineered Flood Openings

In accordance with NFIP, FEMA TB 1-08, and ASCE/SEI 24-05

I hereby certify that the **Crawl Space Door Systems flood vents 816CS, 1220CS, 1232CS, 1616CS, 1624CS, 1632CS, 2032CS, 2424CS, and 2436CS** are designed in accordance with the requirements of the NFIP "Flood Insurance Manual" (2011) to provide automatic equalization of hydrostatic flood forces by allowing for the entry and exit of floodwaters, when properly installed and sized as set forth below. This certification follows the design requirements and specifications established in FEMA Technical Bulletin 1-08, "Openings in Foundation Walls and Walls of Enclosures Below Elevated Buildings in Special Flood Hazard Areas", and the ASCE Standard for "Flood Resistant Design and Construction" (ASCE/SEI 24-05). The actual vent opening measurements were determined and certified by Mr. Christopher Mark Loney, Virginia PE No. 029000. Calculations are based on the spreadsheet formulas, and "Review of certification of Engineered Flood Openings, dated January 16, 2012" prepared by Dr. Georg Reichard, Associate Professor of Building Construction, Virginia Tech.

Design Characteristics

Section 2.6.2.2 of ASCE 24 provides an equation to determine the required net area of engineered openings (A_o) for a given enclosed area (A_e). This equation is based on the hydraulic formula for the flow rate across sharp edged orifices. I have utilized this equation to calculate 1) the respected flow rate through the individual openings between louvers; 2) the flow rate through the main frame opening in case the louver is blown out during a flood event; and 3) the flow rate of water flowing through louver blades following hydraulic short tube theory. The ultimate maximum total enclosed area (A_e) that can be serviced by a single vent has then been determined by utilizing the lowest flow rate of the three assessed scenarios for each vent and is listed in Table 1.

These values are based on the following assumptions:

- In absence of reliable data, the rates of rise and fall have been assumed with 5 feet/hour;
- The (maximum) difference between the exterior and interior floodwater levels has been assumed with 1 foot during base flood conditions;
- A factor of safety of 5 has been assumed, which is consistent with design practices related to protection of life and property;
- The net area of openings (A_o) as provided by the manufacturer.

*)	Model	H x W [in]	A_o [in ²]	A_e [ft ²]
<input type="checkbox"/>	816CS	8 x 16	106	205
<input type="checkbox"/>	1220CS	12 x 20	237	500
<input type="checkbox"/>	1232CS	12 x 32	306	645
<input type="checkbox"/>	1616CS	16 x 16	184	395
<input type="checkbox"/>	1624CS	16 x 24	312	670
<input type="checkbox"/>	1632CS	16 x 32	408	835
<input type="checkbox"/>	2032CS	20 x 32	630	1240
<input type="checkbox"/>	2424CS	24 x 24	570	1230
<input type="checkbox"/>	2436CS	24 x 36	852	1765


Table 1 Maximum total enclosed area (A_e) that can be served by each individual model based on the given net area of engineered openings (A_o)

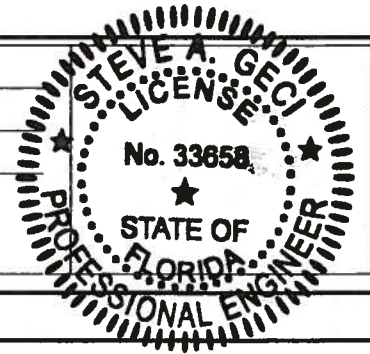
Installation Requirements and Limitations

This certification will be voided if the following installation requirements and limitations are not enforced:

- There shall be a minimum of two openings on different sides of each enclosed area;
- The bottom of each required opening shall be no more than 1ft above the adjacent ground level;
- No temporary (e.g. during cold weather) or permanent solid cover may be placed into or over the flood vent that would block the automatic entry or exit of floodwaters at any time;
- Where analysis indicates rates of rise and fall greater than 5 ft/hr, the total enclosed area as given in Table 1 shall be reduced accordingly to account for the higher rates of rise and fall.

Certifying Design Professional

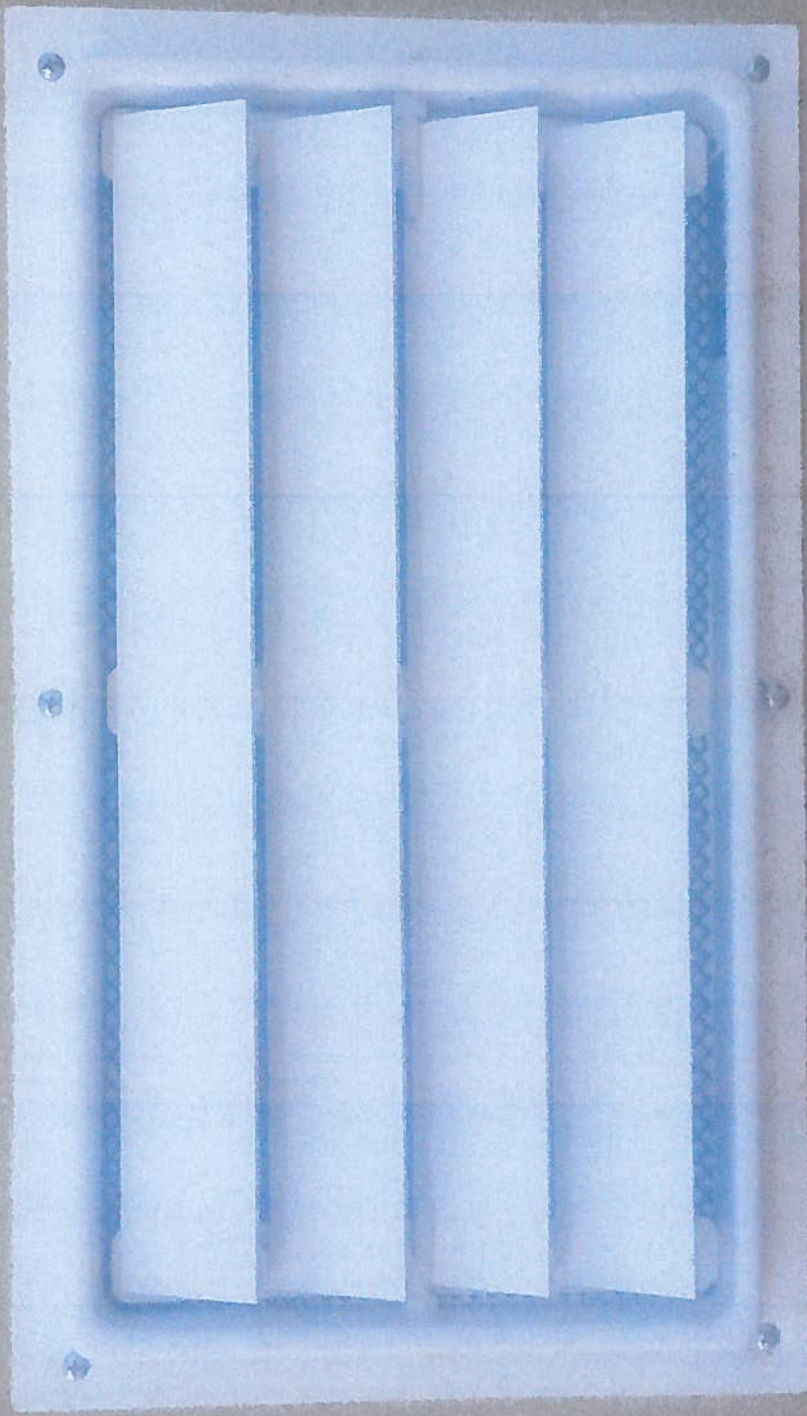
Name, Title	Steve A. Geci, President, Geci & Associates Engineers, Inc.
Address	2950 N 12 th Avenue, Pensacola, FL 32503
License	Florida Professional Engineer, License No. 33658
Signature	 10/30/12



Identification of the Building and Installed Flood Vents (By Others)

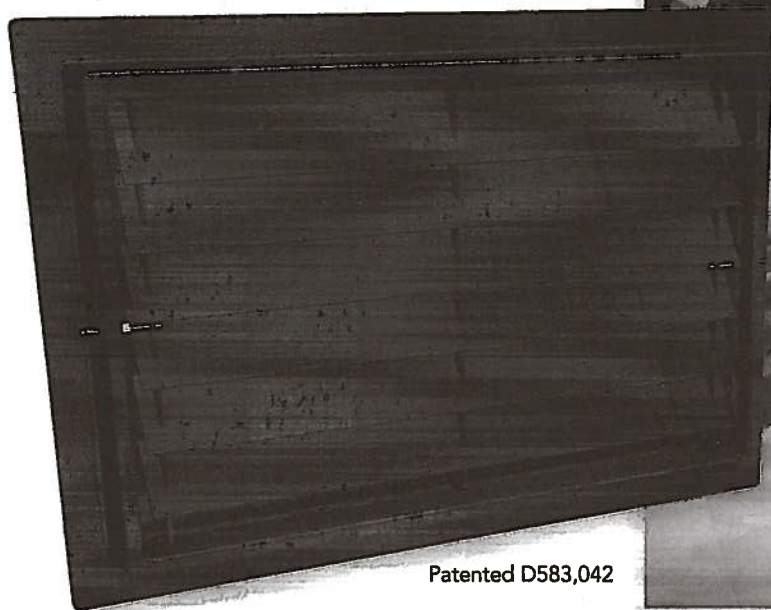
The flood vent models marked in Table 1*) are being installed at the following building:

Building Address

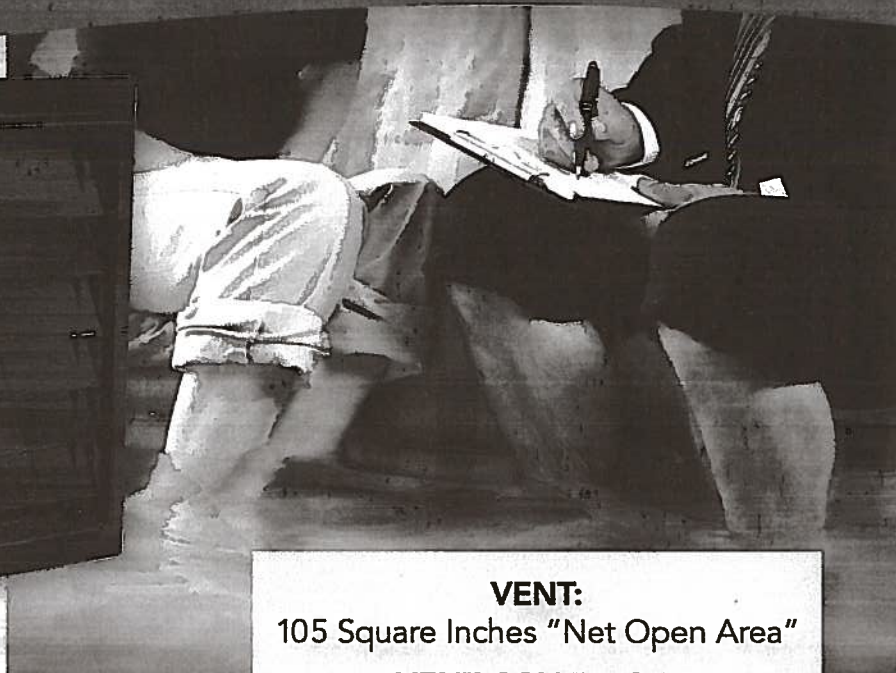


FEMA COMPLIANT FLOOD VENT

8" X 16" ENGINEERED FLOOD VENT



Patented D583,042



VENT:

105 Square Inches "Net Open Area"

VENT COVERAGE:

205 Square Feet "Enclosed Area"

FEMA: TECHNICAL BULLETIN – AUGUST 2008 (Page 24) Non-Engineered Openings

Engineered Openings

Openings that are designed and certified by a registered design professional as meeting the performance required by the regulations are called "engineered openings."

This section describes certification and documentation requirements for engineered openings and the specific design requirements.

Engineered openings with individual certification

For architectural or other reasons, building designers or owners may prefer to use unique or individually designed openings or devices. In these cases, a registered design professional must submit a certification. As a general rule, States require a designer to be licensed to practice in the State in which building is located.

The original certification of the engineered openings must include the design professional's name, title, address, signature, type of license, license number, the State in which

the license was issued, and the signature and applied seal of the certifying registered design professional.

The certification shall identify the building in which the engineered openings will be installed. The language of the certification shall address the following:

- A statement certifying that the openings are designed to automatically equalize hydrostatic flood loads on exterior walls by allowing the automatic entry and exit of floodwaters in accordance with the Engineered openings, design requirements on page 26,
- Description of the range of flood characteristics tested or computed for which the certification is valid, such as rates of rise and fall of floodwaters, and
- Description of the installation requirements or limitations that, if not followed, will void the certification.

