



Floodplain Use Permit- Case History

RECORD: P23FC00054

Building/Floodplain Use Permit

Case Name:SFR

Issue: Custom single family residence (BWOP) with engineered scour walls.

1/24/2023 Application Intake - Submitted: Application successfully submitted

Case Reviewer:Rodrigo Morales

1/24/2023 Review - Note: Refer to 20-463 RFC. Require EI cert(s)

Case Reviewer:Rodrigo Morales

1/26/2023 Review - Note: Homeowner called this morning, spoke with IC regarding a previous Drainage Report conducted on the property. Report is associated with P20FC00463. Check with AS regarding the viability of this report at the time of review.

Case Reviewer:Ben Scholl

2/1/2023 Review - Note: Finished floor elevation of storage area is ambiguous on site plan. Called Stephen Raible & left a message, need to know if the existing FFE will be retained or if the storage area will have its floor raised.

Case Reviewer:Ben Scholl

2/6/2023 Review - Note: Have spoken with Stephen Raible twice, once this morning and once approximately last week.

Confirmed the following plan details:

Regarding sheet A7a, East Elevation: finished floor of storage room is existing FFE, is proposed to remain unchanged.

Regarding sheet A2, Foundation Plan: A CMU stem wall has already been constructed w/out permit in the central area (where the house is proposed).

Case Reviewer:Ben Scholl

2/14/2023 Review - Note: Stephen Raible called on 02/13/2023 and left me a message requesting a permit status update.

Case Reviewer:Ben Scholl



2/14/2023 Review - Note: Stephen Raible called today and left a message requesting a permit status update.

Case Reviewer:Ben Scholl

2/14/2023 Review - Note: Called Stephen Raible & spoke with him & wife Susan over the phone. Topics covered:

1) The engineering analysis from 2020, "Scour Wall Design @ 9450 W. Sky Blue Drive" (submitted by Southwest Consulting Engineering and sealed by Steven Corrales), must be revisited by Andy to determine if it has any use toward the present project.

2) According to Mr. Raible, the roofs of the new single-family residence will be supported by existing columns. The southern/longer extent of roof appears to already be constructed. At present it is unclear when the columns date from, however they appear to pre-date mapping. As such, the columns will need to be included in the engineering study which designs sufficient flood & erosion protection for the proposed SFR.

Case Reviewer:Ben Scholl

2/15/2023 Review - Note: Spoke with Andy regarding the viability of scour walls designed in previous engineering analysis (20-463). Andy indicated the scour wall design will likely be sufficient to protect the proposed SFR, but an as-built will be required.

Case Reviewer:Ben Scholl

2/15/2023 Review - Note: Andy pointed out that since the existing structures have been abandoned for >12 consecutive months, they will need to be brought into conformance. For the eastern existing structure, called out as "storage room" on the plan set, this will mean either elevating the floor to the RFE or flood-venting. FR is currently deliberating whether we will consider the eastern structure as storage or regulate it as a habitable space. Physical folder is with FR. I heard Ms. Brand (Mr. Raible's wife) refer to the "storage room" as a "sun room" while on the phone with Mr. Raible and herself, such that the true intended use of the eastern structure is ambiguous.

Case Reviewer:Ben Scholl

2/15/2023 Review - Note: Water heater is shown on plan set as being enclosed in its own closet, attached to the proposed SFR. Water heater must be elevated to the RFE, see plan set annotations.

Case Reviewer:Ben Scholl

2/15/2023 Review - Note: Called applicant and spoke with Mr. Raible, let him know that I spoke with Andy and my supervisor. Told him that permit is with my supervisor for deliberation. Mr. Raible asked for a timeline as to when FR would have more information and I told him by the end of this week.

Case Reviewer:Ben Scholl



2/24/2023 Review - Note: Per AS, the design for scour walls provided by Steven Corrales (found in 20-463) is still valid and may be used as a method of erosion protection for the proposed SFR.

Case Reviewer: Ben Scholl

2/24/2023 Review - Note: Called applicant on 02/23/2023, spoke with Stephen Raible and his wife Susan Brand. Informed them that the District is considering the scour wall design provided by Steven Corrales in 20-463 to be an acceptable means of erosion protecting the proposed SFR. Explained the need to bring the eastern structure (denoted as "existing storage room" on the plan set) into conformance due to 12-month period of abandonment. "Existing storage room" can be brought into conformance in one of the following ways:

1) Elevate the floor to the RFE (18").

2) Convert the "existing storage room" into an OSS via removing the eastern wall. Should this be done, per AS the scour walls designed by Steven Corrales in 20-463 would still be an acceptable means of erosion protecting the proposed SFR. Should conversion to an OSS be pursued, applicant may need the plans sealed by a structural engineer to satisfy DSD requirements.

3) Provide an engineering analysis, subject to District review and approval, showing the "existing storage room" is not impacted by floodplain.

Currently drafting RFC including options above.

Case Reviewer: Ben Scholl

2/24/2023 Review - Note: Stephen Raible and Susan Brand (wife) called 02/24/2023, wanted to inform me that DSD was unwilling to answer questions regarding their permit, since the permit is still with our office. I had recommended they check with DSD regarding requirements that would be imposed by DSD should we complete our floodplain review.

Mr. Raible and Ms. Brand want clarification as to what counts as discontinuance of nonconforming use. Andy and I have spoken briefly about this; need to check with Francisco, possibly Michael & Brian to confirm we consider the eastern structure to have had its use discontinued for 12 consecutive months.

Case Reviewer: Ben Scholl

3/8/2023 Review - Note: Stephen Raible called requesting permit status update. I told him I was working on his plan set and would have the RFC letter to him by the end of this week. He mentioned having researched the opening covers available to prevent rodents from entering floodvented areas; he was wondering about square footage requirements considering Smartvents-type coverings appear to have a different requirement than the normal 1 sq. in.-to-1 sq. ft. ratio. I expressed that I was aware that the square footage calculation differs when Smartvents-type coverings are used, but that I would need to verify the appropriate calculations to be used should he pursue approved flood coverings.

Case Reviewer: Ben Scholl



3/8/2023 Review - Note: RFC up for supervisor review. Issues to be addressed:

- 1) Deficient site plan
- 2) MOE ambiguities--must reference to HANG at most upstream portion of "Existing Storage Room"
- 3) Must show engineering as prepared in pre-existing report, approved by AS on 07/21/2020.
- 4) "Existing Storage Room," as well as water heater room, must be floodvented.
- 5) Unpermitted travel trailer.
- 6) Must elevate service equipment.

Please see comments on plan set, located in working documents folder.

Case Reviewer:Ben Scholl

3/9/2023 Review - Note: Draft RFC ok per ADS.

Case Reviewer:Francisco Ramirez

3/15/2023 Review - Note: Stephen Raible called requesting permit status update. I told him I had submitted my RFC to supervisor, that the RFC was approved, and that I would send it by the end of today.

Case Reviewer:Ben Scholl

3/16/2023 Review - Note: Contact information for applicant's drafter:

Daniel Valenzuela
valenzueladan@gmail.com

Case Reviewer:Ben Scholl

3/16/2023 Review - Note: Called applicant, asked if they would care for Charles Corrales to be included in the RFC email. Applicant expressed that they are planning on working with Charles to complete the as-built certification that is required for scour wall construction. As such, OK to copy Charles on the RFC email. Note: to our knowledge, Charles does not have an engineer's seal of his own, but rather works with engineers who may have the ability to provide the required seal.

Case Reviewer:Ben Scholl

3/16/2023 Review - Request for Corrections: RFC emailed to applicant with the following attachments: Annotated plan set, approved drainage report. See efile for correspondence. Copied drafter (Daniel Valenzuela) & contact for completion of as-built (Charles Corrales).

Case Reviewer:Ben Scholl



3/21/2023 Application Intake - Note: Stephen Raible called this AM with questions:

- 1) Mr. Raible asked about required documentation; I explained the procedure for el-certs, as-builts (to the best of my ability), and covs.
- 2) Mr. Raible asked about elevation requirements for the pedestal on SW side of proposed SFR site, currently houses a meter & connection for R.V. (see plan set page E1), but subsequently Mr. Raible determined it was elevated ~27 in. above existing ground, which I suggested means it is likely sufficiently elevated (i.e., min. 18" above HANG), and therefore should not constitute a problem. However, pedestal, meter, and R.V. connection still need to be shown on plan set and specified min. 18" above HANG.
- 3) Mr. Raible asked about floodventing requirements, specifically if the ratings associated with proprietary flood opening covers (e.g., Smartvents, FloodFlaps) were acceptable to the district. I informed Mr. Raible that we accept the ratings, but that any flood opening covers used need to be FEMA approved and that flood opening cover specification sheets must be appended to the plan set. I sent Mr. Raible and Mr. Valenzuela (drafter) a copy of TECH-022 via email, see efile for correspondence.

Case Reviewer:Ben Scholl

3/28/2023 Application Intake - Note: Stephen Raible called, asked how to rectify FFE ambiguity. I informed him FFE must be specified minimum 18" above HANG as measured at the upstream side. Mr. Raible asked about elevation certificate; I clarified that RFE = 18" from HANG at the upstream side & informed him all service equipment would need to be elevated at or above this level. Discussed flood vents & how their bottoms must be <12 in above adjacent natural grade, as measured at the location of the opening. Mr. Raible is considering hiring a surveyor to shoot the FFE of the BWOP foundation, to ensure it is sufficiently elevated prior to constructing the house.

Case Reviewer:Ben Scholl

4/18/2023 Application Intake - Note: Stephen Raible called with questions from Daniel Valenzuela (drafter). Topics covered:

- 1) Use treated lumber for wood framings (flood-resistant material).
- 2) Indicate flood-venting on site plan.
- 3) Show profile view of flood vents on detail sheet.
- 4) Area requirements for flood vents.
- 5) Scour wall details:
 - a. If offset cutoff wall option is pursued, fresh PE seal needed on drainage report. Cutoff wall footers must be specified minimum 24" below natural grade per scour wall design.
- 6) Service equipment does not need to be shown as erosion protected; service equipment DOES need to be elevated minimum 18" above HANG.

Case Reviewer:Ben Scholl



4/19/2023 Application Intake - Note: Stephen Raible called with questions regarding his pending resubmittal. Topics covered:

- 1) Flood venting requirements
 - a. Opening cover ratings
- 2) Louvre obstructive area calculations
- 3) Flood-resistant materials for water heater platform
- 4) Cutoff wall options
 - a. SR to check with Charles Corrales re. which option is best to pursue.

Case Reviewer: Ben Scholl

5/9/2023 Application Intake - Resubmit: Plan set resubmittal received from applicant via email.

Case Reviewer: Ben Scholl

5/17/2023 Review - Note: Minor plan set revisions needed, called applicant and received the OK to annotate the plan set on my end & proceed with the review.

Case Reviewer: Ben Scholl

5/17/2023 Review - Note: Applicant still needs to send photos documenting travel trailer is road-ready; agreed to accomplish this via final inspection hold for return of photos.

Case Reviewer: Ben Scholl

5/17/2023 Review - Note: Slab has already been poured w/o permit, so only preparing P2F el cert.

Case Reviewer: Ben Scholl

5/17/2023 Review - Note: Requested as-built from AS; as-built needed prior to submitting permit for supervisor review & approval.

Case Reviewer: Ben Scholl

5/18/2023 Review - Note: As-built drafted by AS, located in efile.

Case Reviewer: Ben Scholl

5/18/2023 Review - Note: FPUP up for final supervisor review & approval.

Case Reviewer: Ben Scholl

5/25/2023 Review - Note: Per FR, P2S el cert still required to make sure slab is elevated high enough prior to construction. Drafting presently.

Case Reviewer: Ben Scholl



5/25/2023 Review - Note: FC0300 (P2S) condition added to the BP.

Case Reviewer:Ben Scholl

5/25/2023 Review - Note: P2S el cert prepared; sending permit back up for final supervisor review & approval.

Case Reviewer:Ben Scholl

5/30/2023 Review - Approved: D1FC1 uploaded to DSD.

Case Reviewer:Francisco Ramirez

6/5/2023 Issuance - Note: FPUP approval package emailed to applicant.

Case Reviewer:Ben Scholl

6/8/2023 Issuance - Issued - Documents Required: Applicant returned signed FPUP via email on 06/05/2023.

Case Reviewer:Ben Scholl

6/9/2023 Inspection - Note: FPUP issued-NF on 06/08/2023; Accela complete, front counter log updated, folder & efile organized, physical folder with admin.

Case Reviewer:Ben Scholl

12/18/2023 Inspection - Note: Applicant called asking if there was some particular requirement for flood opening heights as they pertain to the eastern storage area attached to the SFR. I didn't recall any unusual requirement & explained default rules for flood openings (elevate no higher than 12" from N.G., only those portions of flood vent below RFE are to be considered effective, take N.G. measurements local to each flood opening). cursory inspection of case history did not yield any additional requirements re. flood openings. Updated P2S & P2F el certs w/ new form, sent them via email to applicant; included access, general, and specific covs, and as-built.

Case Reviewer:Ben Scholl

1/2/2024 Inspection - Note: Stephen Raible called asking if we had received the P2S el cert and I let him know we had not yet

Case Reviewer:Melissa Fisher

1/2/2024 Inspection - Note: Stephen Raible called asking if I had received photos of TRT, I let him know I had received photos & would release hold for their return by the end of the day.

Case Reviewer:Ben Scholl



1/3/2024 Inspection - Documents Received: 01/03/2024 BQS--Received photos via email on 12/19/2023 which demonstrate the travel trailer is road-ready. See efile for photos. Still need P2S & P2F el certs; as-built; and general, specific, and access covenants.

Case Reviewer:Ben Scholl

1/12/2024 Inspection - Documents Received: 01/12/2024 - P2S elcert approved. FFE is 1.1 ft above BFE. PJC

Case Reviewer:Philip Calabrese

4/16/2024 Inspection - Note: Re-review required due to latest plan set approved by DSD not bearing flood control approval stamp.

Case Reviewer:Ben Scholl

4/17/2024 Inspection - Revisions: "P23BP00580 D2" pulled from DSD review folder & up for RFCD review.

Case Reviewer:Ben Scholl

4/17/2024 Review - Note: Reviewed latest plan set from DSD & found no corrections needed from Flood Control. Reviewed w/ FR & OK to approve FPUP & re-issue. Checking w/ DSD re. appropriate code to use for upload to BP.

Case Reviewer:Ben Scholl

4/18/2024 Review - Approved: FPUP re-approved, D2FC2 uploaded to BP.

Case Reviewer:Ben Scholl

4/18/2024 Issuance - Note: Re-approval package emailed to applicant.

Case Reviewer:Ben Scholl

4/19/2024 Issuance - Issued - Documents Required: Signed permit received over the counter on 4/19/2024

Case Reviewer:Andy Seiger

6/3/2024 Inspection - Documents Approved: No Comments

Case Reviewer:Valerie Gonzales

6/3/2024 Close Out - Complete: No Comments

Case Reviewer:Valerie Gonzales



1/7/2026 Inspection - Note: Applicant called asking if elevation needs to be shot for flood vents on P2F el cert. I told him no elevation needs to be shot, however flood vents need to be located within 1.0 ft of adjacent grade. Followed up with email including additional information on completion & return of the P2F el cert, see efile for correspondence.

Case Reviewer:Ben Scholl

2/2/2026 Inspection - Note: Applicant Stephen Raible called for status update on the P2F el cert. I told him we hadn't received the el cert yet & gave him IC's email. Stephen said he would follow up with Charles Corrales (unclear from conversation if Charles is working on the el cert).

Case Reviewer:Ben Scholl

2/25/2026 Inspection - Note: Charles Corrales emailed final el-cert which required recalculations for flood vents. I emailed him instructions on how to calculate flood vent square footage w/ engineered flood vents. I have not received an updated el-cert.

Case Reviewer:Irene Castillo

3/9/2026 Inspection - Documents Approved: No Comments

Case Reviewer:Valerie Gonzales

3/9/2026 Close Out - Complete: No Comments

Case Reviewer:Valerie Gonzales

FPUP #

DSD #

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 1-11

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: _____		Policy Number: _____
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: _____		Company NAIC Number: _____
City: _____ State: <u>Arizona</u> ZIP Code: _____		
A3. Property Description (e.g., Lot and Block Numbers or Legal Description) and/or Tax Parcel Number: Taxcode: _____ Township _____ Range _____ Section _____		
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): _____		
A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983 <input type="checkbox"/> 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). <i>Pima County Regional Flood Control District requires four (4) photographs</i>		
A7. Building Diagram Number: _____		
A8. For a building with a crawlspace or enclosure(s):		
a) Square footage of crawlspace or enclosure(s): _____ sq. ft.		
b) Is there at least one permanent flood opening on two different sides of each enclosed area? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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: _____ Engineered flood openings: _____		
d) Total net open area of non-engineered flood openings in A8.c: _____ sq. in.		
e) Total rated area of engineered flood openings in A8.c (attach documentation – see Instructions): _____ sq. ft.		
f) Sum of A8.d and A8.e rated area (if applicable – see Instructions): _____ sq. ft.		
A9. For a building with an attached garage:		
a) Square footage of attached garage: _____ sq. ft.		
b) Is there at least one permanent flood opening on two different sides of the attached garage? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
c) Enter number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: Non-engineered flood openings: _____ Engineered flood openings: _____		
d) Total net open area of non-engineered flood openings in A9.c: _____ sq. in.		
e) Total rated area of engineered flood openings in A9.c (attach documentation – see Instructions): _____ sq. ft.		
f) Sum of A9.d and A9.e rated area (if applicable – see Instructions): _____ sq. ft.		
SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION		
B1.a. NFIP Community Name: <u>Pima County</u>		B1.b. NFIP Community Identification Number: <u>040073</u>
B2. County Name: <u>Pima County</u>	B3. State: <u>Arizona</u>	B4. Map/Panel No.: <u>04019C</u>
B5. Suffix: _____		
B6. FIRM Index Date: <u>09/28/2012</u>	B7. FIRM Panel Effective/Revised Date: _____	
B8. Flood Zone(s): _____ B9. Base Flood Elevation(s) (BFE) (Zone AO, use Base Flood Depth): _____		
B10. Indicate the source of the BFE data or Base Flood Depth entered in Item B9: <input type="checkbox"/> FIS <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other: _____		
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____ Highest Adjacent Natural Grade (=100.0 ft)		
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: <u>N/A</u> <input type="checkbox"/> CBRS <input type="checkbox"/> OPA		
B13. Is the building located seaward of the Limit of Moderate Wave Action (LiMWA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 1-11

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

City: _____ State: Arizona ZIP Code: _____

FOR INSURANCE COMPANY USE

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: _____ Vertical Datum: _____

PCRFCD Note: When HANG is used as Datum, fill out "Vertical Datum" as "LOCAL"

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

NGVD 1929 NAVD 1988 Other: _____

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): _____ feet meters

b) Top of the next higher floor (see Instructions): _____ feet meters

c) Bottom of the lowest horizontal structural member (see Instructions): _____ feet meters

d) Attached garage (top of slab): _____ 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): _____ feet meters

f) Lowest Adjacent Grade (LAG) next to building: Natural Finished _____ feet meters

PCRFCD Note : Indicate lowest adjacent natural grade (LANG) in Section D.

g) Highest Adjacent Grade (HAG) next to building: Natural Finished _____ feet meters

PCRFCD Note : Indicate highest adjacent natural grade (HANG) in Section D.

h) Finished LAG at lowest elevation of attached deck or stairs, including structural support: _____ 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: _____ License Number: _____

Title: _____

Company Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Signature: _____ Date: _____

Telephone: _____ Ext.: _____ Email: _____



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):

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 1-11

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

City: _____ State: Arizona ZIP Code: _____

FOR INSURANCE COMPANY USE

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 1-11

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

FOR INSURANCE COMPANY USE

City: _____ State: Arizona ZIP Code: _____

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 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.*

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 1-11

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

FOR INSURANCE COMPANY USE

City: _____ State: Arizona ZIP Code: _____

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 5–8.** 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 higher floor (i.e., the floor above basement, crawlspace, or enclosure floor) is: _____ feet meters above the LAG

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 1-11
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.:

City: _____ State: Arizona ZIP Code: _____

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.

Insert Photo Here

Photo One

Photo One Caption: _____

Insert Photo Here

Photo Two

Photo Two Caption: _____

ELEVATION CERTIFICATE
IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 1-11
BUILDING PHOTOGRAPHS

Continuation Page

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

City: _____ State: Arizona ZIP Code: _____

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.

Insert Photo Here

Photo Three

Photo Three Caption:

Insert Photo Here

Photo Four

Photo Four Caption:


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SMART VENT INSULATED FLOOD VENT 1540-520

Price: \$229.99

SKU:	1540-520 SS
Flood Coverage:	200 sq. ft.
Air Ventilation:	16"W x 8"H x 3"D
Vent Size:	16"W x 8"H x 3"D
Rough Opening:	16.25"W x 8.25"H

[Write review](#)

Options:

Color: Ship to:
 1

The Insulated Smart Vent Flood Vent series is an engineered, foundation flood vent designed for use in conditioned spaces where flood protection is required, but natural air ventilation is not desired. Smart Vent flood vents allow for bi-directional water flow that relieves hydrostatic pressure and help protect your foundation from flood damage.

For situations where a sealed crawlspace is being utilized in a floodplain, flood protection is still required.

Call (800) 507-0865 for additional availability and pricing information on Custom Powder Coat Paint Options.

Visit smartvent.com/register to complete product registration.

Share:

[Features](#) [Resources](#) [Customer Questions \(2\)](#)

Key Features

- 316L Marine Grade Stainless Steel
- ICC-ES Certified | ESR-2074
- Florida Building Product Approved
- FEMA Accepted
- 15 Year Extended Warranty
- Made in the U.S.A.

Applications

- Crawlspaces
- Enclosures where natural air ventilation is desired

Standard Finish

- Stainless Steel



Most Widely Accepted and Trusted

ICC-ES Evaluation Report

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ESR-2074

Reissued 02/2023

This report is subject to renewal 02/2025.

DIVISION: 08 00 00—OPENINGS

SECTION: 08 95 43—VENTS/FOUNDATION FLOOD VENTS

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

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
FLOOD VENT SEALING KIT #1540-526**



“2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence”



ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.





ICC-ES Evaluation Report

ESR-2074

Reissued February 2023

This report is subject to renewal February 2025.

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

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

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
FLOOD VENT SEALING KIT #1540-526**

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)
- 2021 and 2018 *International Energy Conservation Code*® (IECC)
- 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 2.7.2.2 and Section 2.7.3 of ASCE/SEI 24-14 [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, 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 mm²) 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 mm²) of net free area to supply natural ventilation. Other FVs described in this report do not offer natural ventilation.

3.4 Flood Vent Sealing Kit:

The Flood Vent Sealing Kit Model #1540-526 is used with SmartVENT® Model #1540-520. It is a Homasote 440 Sound Barrier® (ESR-1374) insert with 21 – 2-inch-by-2-inch (51 mm x 51 mm) squares cut in it. See Figure 4.

4.0 DESIGN AND INSTALLATION

4.1 SmartVENT® and FloodVENT®:

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. Installation clips allow mounting in masonry and concrete walls of any thickness. In order to comply with the engineered opening design principle noted in Section 2.7.2.2 and 2.7.3 of ASCE/SEI 24-14 [Section 2.6.2.2 of ASCE/SEI 24-05 (2012, 2009, 2006 IBC and IRC)], the Smart Vent® FVs must be installed as follows:

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

- 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 m²) 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 m²) 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 grade or floor and finished exterior grade immediately under each opening.

4.2 Flood Vent Sealing Kit

The Flood Vent Sealing Kit Model 1540-526 is used in conjunction with FloodVENT® Model #1540-520. When installed and tested in accordance with ASTM E283, the FV and Flood Vent Sealing Kit assembly have an air leakage rate of less than 0.2 cubic feet per minute per lineal foot (18.56 l/min per lineal meter) at a pressure differential of 1 pound per square foot (50 Pa) based on 12.58 lineal feet (3.8 lineal meters) contained by the Flood Vent Sealing Kit.

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

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364), dated August 2015 (editorially revised February 2021).
- 6.2 Test report on air infiltration in accordance with ASTM E283.

7.0 IDENTIFICATION

- 7.1 The Smart VENT® models and the Flood Vent Sealing Kit described 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).
- 7.2 The report holder's contact information is the following:

SMART VENT PRODUCTS, INC.
19 MANTUA ROAD
MOUNT ROYAL, NEW JERSEY 08061
(877) 441-8368
www.smartvent.com
info@smartvent.com

TABLE 1—MODEL SIZES

MODEL NAME	MODEL NUMBER	MODEL SIZE (in.)	COVERAGE (sq. ft.)
FloodVENT®	1540-520	15 ³ / ₄ " X 7 ³ / ₄ "	200
SmartVENT®	1540-510	15 ³ / ₄ " X 7 ³ / ₄ "	200
FloodVENT® Overhead Door	1540-524	15 ³ / ₄ " X 7 ³ / ₄ "	200
SmartVENT® Overhead Door	1540-514	15 ³ / ₄ " X 7 ³ / ₄ "	200
Wood Wall FloodVENT®	1540-570	14" X 8 ³ / ₄ "	200
Wood Wall FloodVENT® Overhead Door	1540-574	14" X 8 ³ / ₄ "	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 = m²

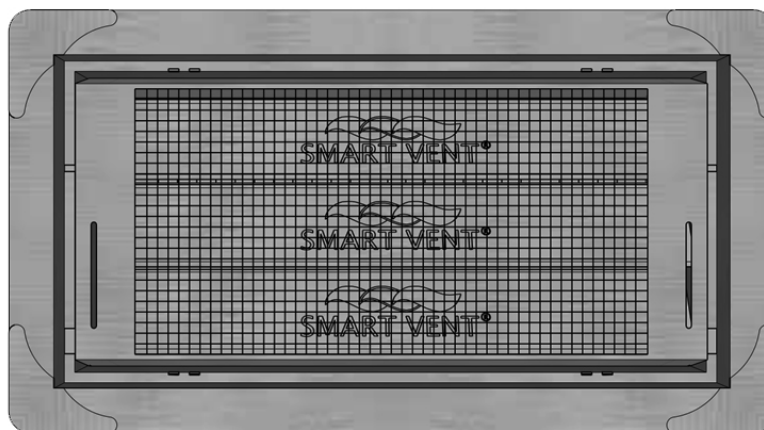


FIGURE 1—SMART VENT: MODEL 1540-510

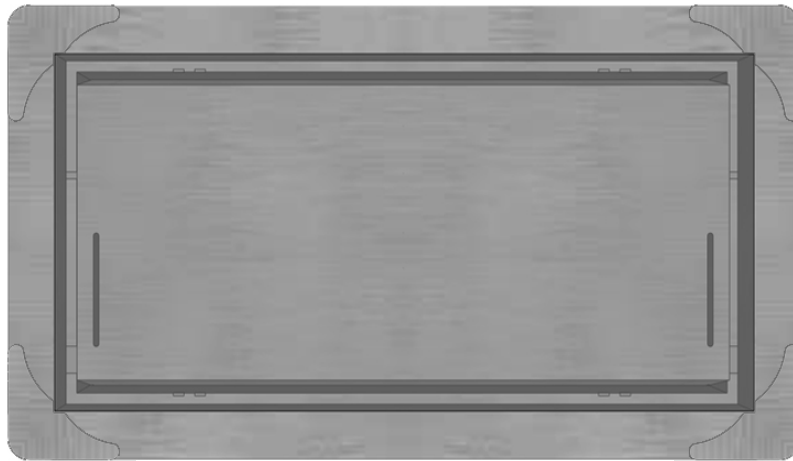


FIGURE 2—SMART VENT MODEL 1540-520



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

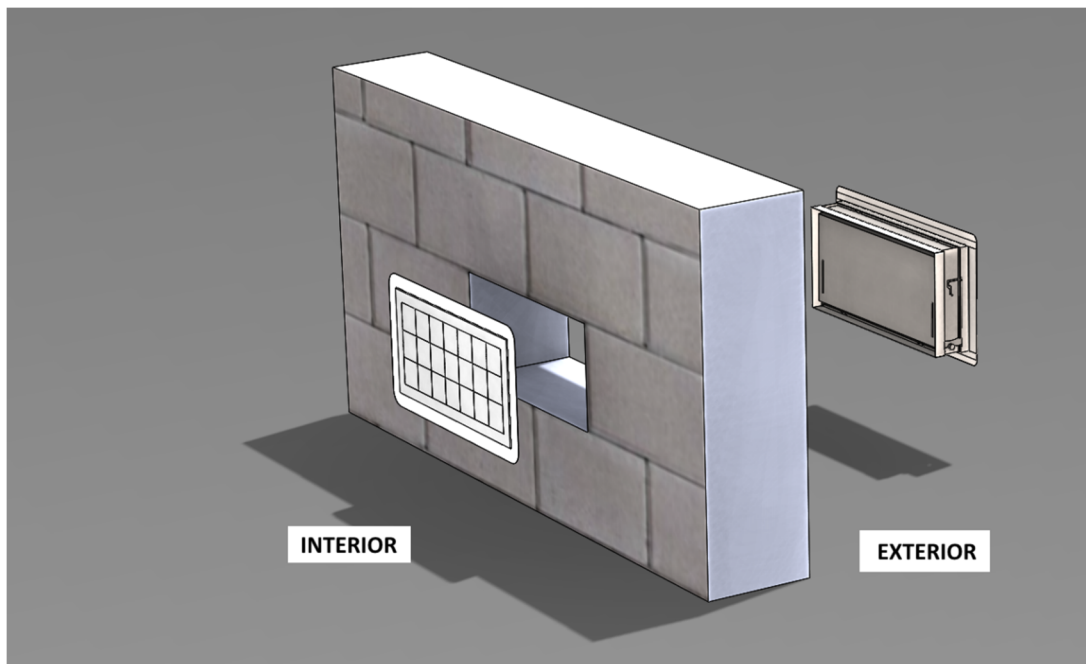


FIGURE 4—FLOOD VENT SEALING KIT

DIVISION: 08 00 00—OPENINGS

Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

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
FLOOD VENT SEALING KIT #1540-526

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Smart Vent® Automatic Foundation Flood Vents, described in ICC-ES evaluation report ESR-2074, have also been evaluated for compliance with codes noted below.

Applicable code editions:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health 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.

- 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with 2019 CBC Chapter 12, provided the design and installation are in accordance with the 2018 *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 Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with the 2019 CRC, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report.

This supplement expires concurrently with the evaluation report, reissued February 2023.

DIVISION: 08 00 00—OPENINGS

Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

SMART VENT PRODUCTS, INC.

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FLOOD VENT SEALING KIT #1540-526

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Smart Vent® Automatic Foundation Flood Vents, described in ICC-ES evaluation report ESR-2074, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Smart Vent® Automatic Foundation Flood Vents, described in Sections 2.0 through 7.0 of the evaluation report ESR-2074, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design requirements are determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-2074 for 2018 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the Smart Vent® Automatic Foundation Flood Vents 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).

This supplement expires concurrently with the evaluation report, reissued February 2023.