

BLDD PERMIT PLANS  
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**FEMA**

*NATIONAL FLOOD INSURANCE PROGRAM*

**ELEVATION CERTIFICATE**

**AND**

**INSTRUCTIONS**

**2019 EDITION**

**RECEIVED**

JUN 18 2020

TOWN OF LONGBOAT KEY  
Planning, Zoning & Building

U.S. DEPARTMENT OF HOMELAND SECURITY  
Federal Emergency Management Agency  
National Flood Insurance Program**ELEVATION CERTIFICATE AND INSTRUCTIONS****Paperwork Reduction Act Notice**

Public reporting burden for this data collection is estimated to average 3.75 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting this form. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street SW, Washington, DC 20742, Paperwork Reduction Project (1660-0008). **NOTE: Do not send your completed form to this address.**

**Privacy Act Statement**

**Authority:** Title 44 CFR § 61.7 and 61.8.

**Principal Purpose(s):** This information is being collected for the primary purpose of estimating the risk premium rates necessary to provide flood insurance for new or substantially improved structures in designated Special Flood Hazard Areas.

**Routine Use(s):** The information on this form may be disclosed as generally permitted under 5 U.S.C. § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA-003 – National Flood Insurance Program Files System or Records Notice 73 Fed. Reg. 77747 (December 19, 2008); DHS/FEMA/NFIP/LOMA-1 – National Flood Insurance Program (NFIP) Letter of Map Amendment (LOMA) System of Records Notice 71 Fed. Reg. 7990 (February 15, 2006); and upon written request, written consent, by agreement, or as required by law.

**Disclosure:** The disclosure of information on this form is voluntary; however, failure to provide the information requested may result in the inability to obtain flood insurance through the National Flood Insurance Program or the applicant may be subject to higher premium rates for flood insurance. Information will only be released as permitted by law.

**Purpose of the Elevation Certificate**

The Elevation Certificate is an important administrative tool of the National Flood Insurance Program (NFIP). It is to be used to provide elevation information necessary to ensure compliance with community floodplain management ordinances, to determine the proper insurance premium rate, and to support a request for a Letter of Map Amendment (LOMA) or Letter of Map Revision based on fill (LOMR-F).

The Elevation Certificate is required in order to properly rate Post-FIRM buildings, which are buildings constructed after publication of the Flood Insurance Rate Map (FIRM), located in flood insurance Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, and AR/AO. The Elevation Certificate is not required for Pre-FIRM buildings unless the building is being rated under the optional Post-FIRM flood insurance rules.

As part of the agreement for making flood insurance available in a community, the NFIP requires the community to adopt floodplain management regulations that specify minimum requirements for reducing flood losses. One such requirement is for the community to obtain the elevation of the lowest floor (including basement) of all new and substantially improved buildings, and maintain a record of such information. The Elevation Certificate provides a way for a community to document compliance with the community's floodplain management ordinance.

Use of this certificate does not provide a waiver of the flood insurance purchase requirement. Only a LOMA or LOMR-F from the Federal Emergency Management Agency (FEMA) can amend the FIRM and remove the Federal mandate for a lending institution to require the purchase of flood insurance. However, the lending institution has the option of requiring flood insurance even if a LOMA/LOMR-F has been issued by FEMA. The Elevation Certificate may be used to support a LOMA or LOMR-F request. Lowest floor and lowest adjacent grade elevations certified by a surveyor or engineer will be required if the certificate is used to support a LOMA or LOMR-F request. A LOMA or LOMR-F request must be submitted with either a completed FEMA MT-EZ or MT-1 package, whichever is appropriate.

This certificate is used only to certify building elevations. A separate certificate is required for floodproofing. Under the NFIP, non-residential buildings can be floodproofed up to or above the Base Flood Elevation (BFE). A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE. Floodproofing of residential buildings is not permitted under the NFIP unless FEMA has granted the community an exception for residential floodproofed basements. The community must adopt standards for design and construction of floodproofed basements before FEMA will grant a basement exception. For both floodproofed non-residential buildings and residential floodproofed basements in communities that have been granted an exception by FEMA, a floodproofing certificate is required.

Additional guidance can be found in FEMA Publication 467-1, Floodplain Management Bulletin: Elevation Certificate, available on FEMA's website at <https://www.fema.gov/media-library/assets/documents/3539?id=1727>.

# ELEVATION CERTIFICATE

**Important:** Follow the instructions on pages 1-9.

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 GULFSIDE DEVELOPMENT, LLC				Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 2837 GULF OF MEXICO DR				Company NAIC Number:	
City LONGBOAT KEY		State Florida		ZIP Code 34228	
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) LOT 24 & N 1/2 LOT 25 BLK B LESS NELY 10 FT FOR ROW COQUINA BEACH PI#0005160003					
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) <u>RESIDENTS</u>					
A5. Latitude/Longitude: Lat. <u>27.368419</u> Long. <u>-82.6277867</u> Horizontal Datum: <input type="checkbox"/> NAD 1927 <input checked="" 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>6</u>					
A8. For a building with a crawlspace or enclosure(s):					
a) Square footage of crawlspace or enclosure(s) <u>271.00</u> sq ft					
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade <u>2</u>					
c) Total net area of flood openings in A8.b <u>102.00</u> sq in					
d) Engineered flood openings? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
A9. For a building with an attached garage:					
a) Square footage of attached garage <u>814.00</u> sq ft					
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade <u>6</u>					
c) Total net area of flood openings in A9.b <u>306</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 CITY OF LONGBOAT KEY-125126			B2. County Name MANATEE		B3. State Florida
B4. Map/Panel Number 12115C 0107	B5. Suffix F	B6. FIRM Index Date 11-04-2016	B7. FIRM Panel Effective/ Revised Date 11-04-2016	B8. Flood Zone(s) VE	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth) 12 FEET
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 type="checkbox"/> NGVD 1929 <input checked="" 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					



# ELEVATION CERTIFICATE

<b>IMPORTANT: In these spaces, copy the corresponding information from Section A.</b>			<b>FOR INSURANCE COMPANY USE</b>
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 2837 GULF OF MEXICO DR			Policy Number:
City LONGBOAT KEY	State Florida	ZIP Code 34228	Company NAIC Number

**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 \_\_\_\_\_ N/A  feet  meters  above or  below the HAG.
  - b) Top of bottom floor (including basement, crawlspace, or enclosure) is \_\_\_\_\_ N/A  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 (elevation C2.b in the diagrams) of the building is \_\_\_\_\_ N/A  feet  meters  above or  below the HAG.
- E3. Attached garage (top of slab) is \_\_\_\_\_ N/A  feet  meters  above or  below the HAG.
- E4. Top of platform of machinery and/or equipment servicing the building is \_\_\_\_\_ N/A  feet  meters  above or  below the HAG.
- E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance?  Yes  No  Unknown. The local official must certify this information in Section G.

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

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

Property Owner or Owner's Authorized Representative's Name

Address City State ZIP Code

Signature Date Telephone

Comments

Check here if attachments.



**BUILDING PHOTOGRAPHS**

OMB No. 1660-0008  
Expiration Date: November 30, 2022

**ELEVATION CERTIFICATE**

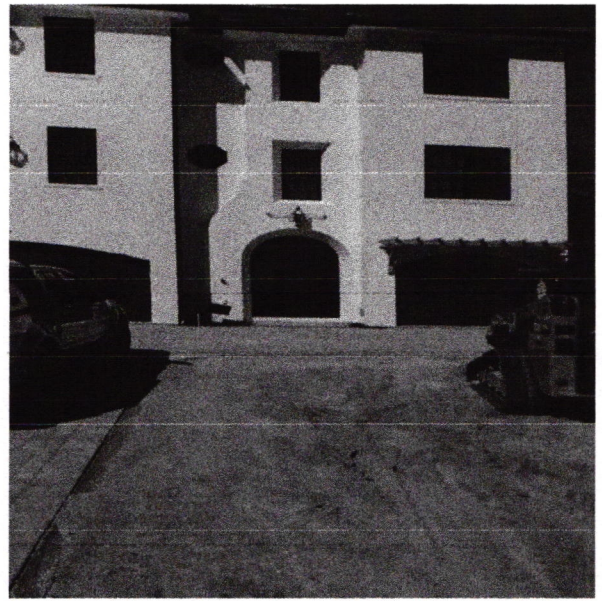
See Instructions for Item A6.

<b>IMPORTANT: In these spaces, copy the corresponding information from Section A.</b>			<b>FOR INSURANCE COMPANY USE</b>
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 2837 GULF OF MEXICO DR			Policy Number:
City LONGBOAT KEY	State Florida	ZIP Code 34228	Company NAIC Number

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



FRONT



FRONT

Photo One

Photo One Caption 05-20-2020

Clear Photo One



SIDE



REAR

Photo Two

Photo Two Caption 05-20-2020

Clear Photo Two

**BUILDING PHOTOGRAPHS**

OMB No. 1660-0008  
Expiration Date: November 30, 2022

**ELEVATION CERTIFICATE**

Continuation Page

<b>IMPORTANT: In these spaces, copy the corresponding information from Section A.</b>			<b>FOR INSURANCE COMPANY USE</b>
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 2837 GULF OF MEXICO DR			Policy Number:
City LONGBOAT KEY	State Florida	ZIP Code 34228	Company NAIC Number

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



SIDE



REAR

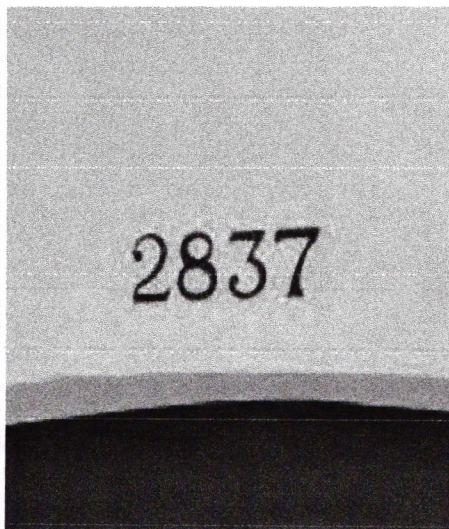
Photo Three

Photo Three Caption 05-20-2020

Clear Photo Three



A/C / SIDE



ADDRESS



SMART VENT

Photo Four

Photo Four Caption 05-20-2020

Clear Photo Four



**Note:** The V Zone design certificate is not a substitute for the NFIP Elevation Certificate (see Fact Sheet No. 1.4, *Lowest Floor Elevation*), which is required to certify as-built elevations needed for flood insurance rating.

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### V ZONE DESIGN CERTIFICATE

Name GULFSIDE DEVELOPMENT, LLC Policy Number (Insurance Co. Use) \_\_\_\_\_  
Building Address of Other Description 2837 GULF OF MEXICO DR  
Permit No. \_\_\_\_\_ City LONGBOAT KEY State fl Zip Code 34228

#### SECTION I: Flood Insurance Rate Map (FIRM) Information

Community No. 125126 Panel No. 0107 Suffix FIRM Date F FIRM Zone(s) VE

#### SECTION II: Elevation Information Used for Design

**[NOTE: This section documents the elevations/depths used or specified in the design – it does not document surveyed elevations and is not equivalent to the as-built elevations required to be submitted during or after construction.]**

- 1. FIRM Base Flood Elevation (BFE) ..... 12 feet\*
  - 2. Community's Design Flood Elevation (DFE)..... 19.2 feet\*
  - 3. Elevation of the Bottom of Lowest Horizontal Structure Member ..... 19.2 feet\*
  - 4. Elevation of Lowest Adjacent Grade ..... 7.9 feet\*
  - 5. Depth of Anticipated Scour/Erosion used for Foundation Design..... 4 feet
  - 6. Embedment Depth of Pilings of Foundation Below Lowest Adjacent Grade ..... -17 feet
- \* Indicate elevation datum used in 1-4:  NGVD29  NAVD88  Other \_\_\_\_\_

#### SECTION III: V Zone Design Certification Statement

I certify that: (1) I have developed or reviewed the structural design, plans, and specifications for construction of the above-referenced building and (2) that the design and methods of construction specified to be used are in accordance with accepted standards of practice\*\* for meeting the following provisions:

- The bottom of the lowest horizontal structural member of the lowest floor (excluding piles and columns) is elevated to or above the BFE.
- The pile and column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of the wind and water loads acting simultaneously on all building components. Water loading values used are those associated with the base flood\*\*\*. Wind loading values used are those required by the applicable State or local building code. The potential for scour and erosion at the foundation has been anticipated for conditions associated with the base flood, including wave action.

#### SECTION IV: Breakaway Wall Design Certification Statement

**[NOTE. This section must be certified by a registered engineer or architect when breakaway walls are designed to have a resistance of more than 20 psf (0.96 kN/m2) determined using allowable stress design]**

I certify that: (1) I have developed or reviewed the structural design, plans, and specifications for construction of breakaway walls to be constructed under the above-referenced building and (2) that the design and methods of construction specified to be used are in accordance with accepted standards of practice\*\* for meeting the following provisions:

- Breakaway wall collapse shall result from a water load less than that which would occur during the base flood\*\*\*.
- The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (see Section III).

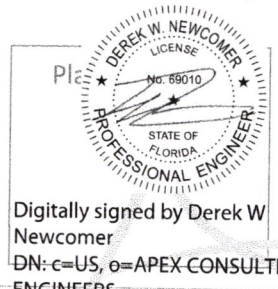
#### SECTION V: Certification and Seal

This certification is to be signed and sealed by a registered professional engineer or architect authorized by law to certify structural designs. I certify the V Zone Design Certification Statement (Section III) and IV the Breakaway Wall Design Certification Statement (Section IV, check if applicable).

Certifier's Name Derek Newcomer, PE License Number FL 69010  
Title Owner Company Name Ape Consulting Engineers  
Address 4315 53rd Ave East  
City Bradenton State FL Zip Code 34203  
Signature \_\_\_\_\_ Date 6/5/20 Telephone 941-365-1900

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TOWN OF LONGBOAT KEY  
Planning, Zoning & Building



Digitally signed by Derek W Newcomer  
DN: c=US, o=APEX-CONSULTING ENGINEERS,  
ou=A01410C0000016FECC0651C0  
000D155, cn=Derek W Newcomer  
Date: 2020.06.05 13:18:47 -04'00'

**Note:** The V Zone design certificate is not a substitute for the NFIP Elevation Certificate (see Fact Sheet No. 1.4, *Lowest Floor Elevation*), which is required to certify as-built elevations needed for flood insurance rating.

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### V ZONE DESIGN CERTIFICATE

Name GULFSIDE DEVELOPMENT, LLC Policy Number (Insurance Co. Use) \_\_\_\_\_  
Building Address of Other Description 2837 GULF OF MEXICO DR  
Permit No. PC18-0269 City LONGBOAT KEY State fl Zip Code 34228

#### SECTION I: Flood Insurance Rate Map (FIRM) Information

Community No. 125126 Panel No. 0107 Suffix FIRM Date F FIRM Zone(s) VE

#### SECTION II: Elevation Information Used for Design

**[NOTE: This section documents the elevations/depths used or specified in the design – it does not document surveyed elevations and is not equivalent to the as-built elevations required to be submitted during or after construction.]**

- 1. FIRM Base Flood Elevation (BFE) ..... 12 feet\*
- 2. Community's Design Flood Elevation (DFE) ..... 19.2 feet\*
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- 6. Embedment Depth of Pilings of Foundation Below Lowest Adjacent Grade ..... -17 feet

\* Indicate elevation datum used in 1-4:  NGVD29  NAVD88  Other \_\_\_\_\_

#### SECTION III: V Zone Design Certification Statement

I certify that: (1) I have developed or reviewed the structural design, plans, and specifications for construction of the above-referenced building and (2) that the design and methods of construction specified to be used are in accordance with accepted standards of practice\*\* for meeting the following provisions:

- The bottom of the lowest horizontal structural member of the lowest floor (excluding piles and columns) is elevated to or above the BFE.
- The pile and column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of the wind and water loads acting simultaneously on all building components. Water loading values used are those associated with the base flood\*\*\*. Wind loading values used are those required by the applicable State or local building code. The potential for scour and erosion at the foundation has been anticipated for conditions associated with the base flood, including wave action.

#### SECTION IV: Breakaway Wall Design Certification Statement

**[NOTE. This section must be certified by a registered engineer or architect when breakaway walls are designed to have a resistance of more than 20 psf (0.96 kN/m2) determined using allowable stress design]**

I certify that: (1) I have developed or reviewed the structural design, plans, and specifications for construction of breakaway walls to be constructed under the above-referenced building and (2) that the design and methods of construction specified to be used are in accordance with accepted standards of practice\*\* for meeting the following provisions:

- Breakaway wall collapse shall result from a water load less than that which would occur during the base flood\*\*\*.
- The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (see Section III).

#### SECTION V: Certification and Seal

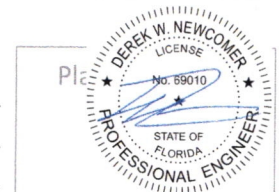
This certification is to be signed and sealed by a registered professional engineer or architect authorized by law to certify structural designs. I certify the V Zone Design Certification Statement (Section III) and IV the Breakaway Wall Design Certification Statement (Section IV, check if applicable).

Certifier's Name Derek Newcomer, PE License Number FL 69010  
Title Owner \_\_\_\_\_ Company Name Ape Consulting Engineers  
Address 4315 53rd Ave East  
City Bradenton State FL Zip Code 34203  
Signature \_\_\_\_\_ Date 6/5/20 Telephone 941-365-1900

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Planning, Zoning & Building



Digitally signed by Derek W Newcomer  
DN: c=US, o=APEX CONSULTING ENGINEERS,  
ou=A01410C0000016FECC0651C000D155, cn=Derek W Newcomer  
Date: 2020.06.05 13:18:47 -04'00'



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June 17, 2020

Town of Longboat Key Building Department  
Attn: Patti  
Permit # PB18-0269  
2837 Gulf of Mexico Dr.

1. Final EC indicates '8' flood vents with  $(271 + 814 = 1085 \text{ sq ft})$  however, New Plan Sheet S1.2 show "7" flood vents but notates "9" vents provided (including) intermediate walls and that 6 vents are required for 1043 sq ft. New Sheet 'A4' shows '8' flood vents.
  - intermediate wall flood vent added & clouded on sheet S1.2 to reflect as-built condition.
  - S1.2 Notes corrected to reflect '8' flood vents provided including intermediate walls.
  - S1.2 Notes corrected to 1,085 sq ft of total enclosed area.
2. Elevation of the Bottom of Lowest Horizontal Structure Member:  
Final EC line C2c indicates "19.3" however, the V Zone Design Certificate line #3 indicates, '19.2'.
  - Final EC line C2c corrected to 19.2' to match V Zone Certificate line #3 of 19.2'
3. Elevation of Lowest Adjacent Grade:  
Final EC line C2f indicates '5.2' however, V Zone Design Certificate line #4 indicates '7.9'
  - Final EC line C2f corrected to 7.9' to match V Zone Certificate #4 of 7.9'

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# ICC-ES Report

# ESR-3168

ICC-ES | (800) 423-6587 | (562) 699-0543 | www.icc-es.org

Reissued 02/2017

This report is subject to renewal 02/2019.

**DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES**

**SECTION: 06 50 00—STRUCTURAL PLASTICS**

**SECTION: 06 53 00—PLASTIC DECKING**

REPORT HOLDER:

**TREX COMPANY, INC.**

**160 EXETER DRIVE  
WINCHESTER, VIRGINIA 22602**

EVALUATION SUBJECT:

**TREX® ENHANCE®, TRANSCEND®, AND SELECT® DECKING**

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*"2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence"*



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**TOWN OF LONGBOAT KEY  
Planning, Zoning & Building**

# ICC-ES Evaluation Report

**ESR-3168**

Reissued February 2017

This report is subject to renewal February 2019.

[www.icc-es.org](http://www.icc-es.org) | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

**DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES**

**Section: 06 50 00—Structural Plastics**

**Section: 06 53 00—Plastic Decking**

**REPORT HOLDER:**

**TREX COMPANY, INC.**  
160 EXETER DRIVE  
WINCHESTER, VIRGINIA 22602  
(540) 542-6300  
[www.trex.com](http://www.trex.com)

**EVALUATION SUBJECT:**

**TREX® ENHANCE®, TRANSCEND®, AND SELECT® DECKING**

**1.0 EVALUATION SCOPE**

**1.1 Compliance with the following codes:**

- 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2015, 2012 and 2009 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)<sup>†</sup>

<sup>†</sup>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:**

- Structural
- Durability
- Surface-burning characteristics

**1.2 Evaluation to the following green code(s) and/or standards:**

- 2013 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2012 and ICC 700-2008)

**Attributes verified:**

See Section 3.1

**2.0 USES**

Trex® composite Enhance®, Transcend®, and Select® Decking are for use as deck boards (Figure 1) for exterior balconies, porches, decks, stair treads and other exterior walking surfaces of Type V-B (IBC) construction, and in structures constructed in accordance with the IRC. Trex® Enhance®, Transcend® and Select® Fascia Boards

(Figure 2) is for use as nonstructural trim components for exterior balconies, porches and decks of Type V-B (IBC) construction, and in structures constructed in accordance with the IRC.

**3.0 DESCRIPTION**

**3.1 General:**

Trex® composite decking is a wood thermoplastic composite lumber (WTCL) deck board and fascia, with an integrated shell that covers the boards on the top surface and sides. The underside of the boards and fascia is not covered by the integrated shell. The integrated shell consists of a proprietary surface formulation that produces a natural, wood-like grain pattern finish. The deck board and fascia are made from approximately 50 percent wood fiber and 50 percent polyethylene by weight, and are alternatives to preservative-treated or naturally durable lumber. Trex® composite decking is manufactured by a continuous extrusion process and is available in varies colors, sizes, and textures per each product as described in Sections 3.1.1, 3.1.2, and 3.1.3. The Trex® Hideaway® hidden fastening system (Figure 3) is described in Section 3.1.4.

The attributes of the Trex® composite decking have been verified as conforming to the provisions of (i) CALGreen Section A5.406.1.2 for reduced maintenance; (ii) ICC 700-2012 Section 602.1.6 and 11.602.1.6 for termite-resistance materials and Section 601.7, 11.601.7, and 12.1(A).601.7 for site-applied finishing materials; and (iii) ICC 700-2008 Section 6.2.8 for termite-resistant materials and Section 601.7 for site-applied finishing materials. Note that decisions on compliance for those areas rest with the user of this report. The user is advised upon meeting specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance. See Section 3.2 for limitations on termite-resistance use.

**3.1.1 Trex® Enhance Composite Decking:** Enhance® decking is available in 3 colors: Beach Dune, Clamshell, and Saddle. Trex® Enhance composite decking has square-edge and grooved-edge profiles. The square-edge deck boards are 1-inch-thick-by-5½-inch-wide nominal (25 mm by 140 mm) and the grooved-edge deck boards are 1-inch-thick-by-5½-inch-wide nominal (25 mm by 140 mm). Trex® composite fascia boards are ¾-inch-thick-by-7¼-inch-wide (17 mm by 184 mm) and ¾-inch-thick-by-11¼-inch-wide (17 mm by 288 mm) profiles.

**3.1.2 Trex® Transcend® Composite Decking:** Transcend® composite decking is available in ten colors:

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Gravel Path, Fire Pit, Vintage Lantern, Tree House, Rope Swing, Spiced Rum, Lava Rock, Island Mist, Havana Gold, and Tikli Torch. Transcend® composite decking has square-edge and grooved-edge profiles. The square-edge deck boards are 1-inch-thick-by-5½-inch-wide nominal (25 mm by 140 mm) or 1⅝-inch-thick-by-5½-inch-wide nominal (33 mm by 140 mm) and the grooved-edge deck boards are 1-inch-thick-by-5½-inch-wide nominal (25 mm by 140 mm). Trex® Transcend® composite fascia boards are ¾-inch-thick-by-7-¼-inch-wide (17 mm by 184 mm) and ¾-inch-thick-by-11¼-inch-wide (17 mm by 288 mm) profiles.

**3.1.3 Trex® Select® Composite Decking:** Select® composite decking is available in 5 colors: Madeira, Pebble Grey, Winchester Grey, Woodland Brown, and Saddle. The Select composite decking has square-edge and grooved-edge profiles. The square-edge deck boards are 1⅝-inch-thick-by-5½-inch-wide nominal (20 mm by 140 mm) or 1⅝-inch-thick-by-5½-inch-wide nominal (33 mm by 140 mm). Grooved-edge deck boards are 1⅝-inch-thick-by-5½-inch nominal (25 mm by 140 mm). The Select® composite fascia are ¾-inch-thick-by-7¼-inch wide (17 mm by 184 mm) and ¾-inch-thick-by-11¼-inch wide (17 mm by 288 mm) profiles.

**3.1.4 Trex® Hideaway® Hidden Fastening System:** The hidden fastener system is designed specifically for Trex® composite deck boards having grooved-edges and consists of a stainless steel clip or a plastic universal clip and No. 8 by 2-inch-long (51 mm) stainless steel flathead screw.

### 3.2 Durability:

When subjected to weathering, insect attack and other decaying elements, the deck board and fascia material are equivalent in durability to preservative-treated or naturally durable lumber. Accordingly, the material is permitted to be used as an alternative to preservative-treated or naturally durable lumber on exterior decks, porches, balconies and stair treads, as applicable. The deck board and fascia have been evaluated for use in ambient air temperatures between -20°F (-29°C) and 125°F (52°C).

### 3.3 Surface-burning Characteristics:

When tested in accordance with ASTM E84, Trex® composite boards have a flame-spread index no greater than 200.

## 4.0 DESIGN AND INSTALLATION

### 4.1 Design: Allowable Stresses:

Table 1 lists allowable stress values only for the Trex® Transcend® decking recognized in this report. These values must not be adjusted.

### 4.2 Installation:

**4.2.1 Deck Boards:** The deck boards maybe installed perpendicular or at an angle to the supporting construction, Table 2 lists the maximum spacing for deck boards installed perpendicular or at an angle to the supporting construction. The deck boards must be spaced at edges and ends in accordance with the manufacturer's published installation instructions.

**4.2.2 Deck Boards Used as Stair Treads:** The deck boards, when used as stair treads, are sufficient to resist the code-prescribed concentrated load of 300 lbf (1.33 kN) when installed at a maximum center-to-center spacing as indicated in Table 3.

**4.2.3 Deck Board Fasteners:** Trex® "grooved-edge" boards, when installed perpendicular to the supporting construction with the Trex® Hideaway® Stainless Steel or Universal Hidden Fastener Systems with No. 8 by 2-inch (51 mm) stainless steel flathead screws, have an uplift

rating of 100 psf (4788 Pa) up to a maximum span of 16 inches (406 mm) when installed at each support. Trex® "square-edge" solid boards (no edge groove) are installed with two No. 8 or No. 10 by 2½-inch (63.5 mm) wood screws at ends to each support, at least 1 inch (25.4 mm) from the board end and sides. The allowable fastener head pull-through capacity for the screws is 237 lbf (1054 N) per fastener. Multiple joists or blocking must be used to provide adequate surface for fastener embedment at board ends.

## 5.0 CONDITIONS OF USE

The Trex® composite deck boards 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 Trex® composite decking is limited to exterior use as deck boards for balconies, porches, decks and stair treads of Type V-B (IBC) construction and structures constructed in accordance with the IRC.
  - 5.2 The Trex® composite fascia is limited to exterior use as trim for balconies, porches and decks of Type V-B (IBC) construction and structures constructed in accordance with the IRC.
  - 5.3 Installation must comply with this report, the manufacturer's published instructions and the applicable code. When the manufacturer's published installation instructions differ from this report, this report governs.
  - 5.4 The use of the Trex® composite decking and fascia as a component of a fire-resistance-rated assembly is outside the scope of this report.
  - 5.5 The compatibility of the fasteners with the supporting construction, including chemically treated wood, is outside the scope of this report.
  - 5.6 The deck boards must be directly fastened to supporting construction. Where required by the code official, engineering calculations and construction documents consistent with this report must be submitted for approval. The calculations must verify that the supporting construction complies with the applicable building code requirements and is adequate to resist the loads imparted upon it from the products and systems discussed in this report. The documents must contain details of the attachment to the supporting structure consistent with the requirements of this report. The documents must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
  - 5.7 The Trex® composite decking board and fascia are produced in Winchester, Virginia, and Fernley, Nevada, under a quality control program with inspections by ICC-ES.
- ## 6.0 EVIDENCE SUBMITTED
- 6.1 Data in accordance with applicable portions of the ICC-ES Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (AC174), dated January 2012 (editorially revised December 2014).
  - 6.2 Test data in accordance with ASTM D7031 for bending, compressive stress parallel to longitudinal direction ( $F_c$ ), compressive stress perpendicular to longitudinal direction ( $F_{c\perp}$ ) and shear stress ( $F_v$ ).

## 7.0 IDENTIFICATION

The deck board and fascia board described in this report must be identified by a label on the packaging bearing the Trex Company, Inc., name and address, the product name and the evaluation report number (ESR-3168).

**TABLE 1—ALLOWABLE DESIGN STRESS VALUES ONLY FOR TREX® TRANSCEND® SOLID AND GROOVED-EDGE DECKING**

PROPERTY	ALLOWABLE DESIGN VALUE (psi)
Flexural stress ( $F_b$ ) <sup>1</sup>	500
Modulus of Elasticity ( $E$ ) <sup>1</sup>	200,000
Compressive stress parallel to longitudinal direction ( $F_c$ ) <sup>2</sup>	540
Compressive stress perpendicular to longitudinal direction ( $F_{c\perp}$ ) <sup>2</sup>	540
Shear stress ( $F_v$ ) <sup>2</sup>	360

For SI: 1 psi = 6.9 kPa.

<sup>1</sup>Values are based on testing for flatwise bending.

<sup>2</sup>Values are based on testing to ASTM D7031.

**TABLE 2—DECK BOARD SPAN RATING**

DECK BOARD	ANGLE WITH RESPECT TO JOIST (degrees)	MAXIMUM SPAN <sup>1</sup> (inches)	ALLOWABLE CAPACITY <sup>2</sup> (lb/ft <sup>2</sup> )
Enhance® 1-by-5.5 Solid	30	8	100
Enhance® 1-by-5.5 Solid	45	12	100
Enhance® 1-by-5.5 Solid	60	14	100
Enhance® 1-by-5.5 Solid	90	16	100
Enhance® 1-by-5.5 Grooved-edge	30	8	100
Enhance® 1-by-5.5 Grooved-edge	45	12	100
Enhance® 1-by-5.5 Grooved-edge	60	14	100
Enhance® 1-by-5.5 Grooved-edge	90	16	100
Transcend® 1-by-5.5 Solid	30	8	100
Transcend® 1-by-5.5 Solid	45	12	100
Transcend® 1-by-5.5 Solid	60	16	100
Transcend® 1-by-5.5 Solid	90	24	100
Transcend® 1-by-5.5 Grooved-edge	30	8	100
Transcend® 1-by-5.5 Grooved-edge	45	12	100
Transcend® 1-by-5.5 Grooved-edge	60	14	100
Transcend® 1-by-5.5 Grooved-edge	90	16	100
Transcend® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	30	8	100
Transcend® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	45	12	100
Transcend® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	60	16	100
Transcend® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	90	24	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Solid	30	8	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Solid	45	12	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Solid	60	14	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Solid	90	16	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Grooved-edge	30	8	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Grooved-edge	45	12	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Grooved-edge	60	14	100
Select® 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Grooved-edge	90	16	100
Select® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	30	8	100
Select® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	45	12	100
Select® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	60	14	100
Select® 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	90	16	100

For SI: 1 inch = 25.4 mm; 1 lb/ft<sup>2</sup> = 47.9 Pa.

<sup>1</sup>Maximum span is measured center-to-center of the supporting construction.

<sup>2</sup>Maximum allowable capacity is adjusted for durability. No further increases are permitted.

TABLE 3—MAXIMUM STAIR TREAD SPANS<sup>2</sup>

DECK BOARD	MAXIMUM SPAN (inches) <sup>1</sup>
Enhance 1-by-5.5 Solid	12
Enhance 1-by-5.5 Grooved-edge	12
Transcend <sup>®</sup> 1-by-5.5 Solid	12
Transcend <sup>®</sup> 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	12
Transcend <sup>®</sup> 1-by-5.5 Grooved-edge	12
Select <sup>®</sup> 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Solid	9
Select <sup>®</sup> 1 <sup>5</sup> / <sub>16</sub> -by-5.5 Grooved-edge	9
Select <sup>®</sup> 1 <sup>3</sup> / <sub>8</sub> -by-5.5 Solid	12

For SI: 1 inch = 25.4 mm; 1 lb/ft<sup>2</sup> = 47.9 Pa.

<sup>1</sup>Maximum span is measured center-to-center of the supporting construction.

<sup>2</sup>Based on a minimum two-span installation.

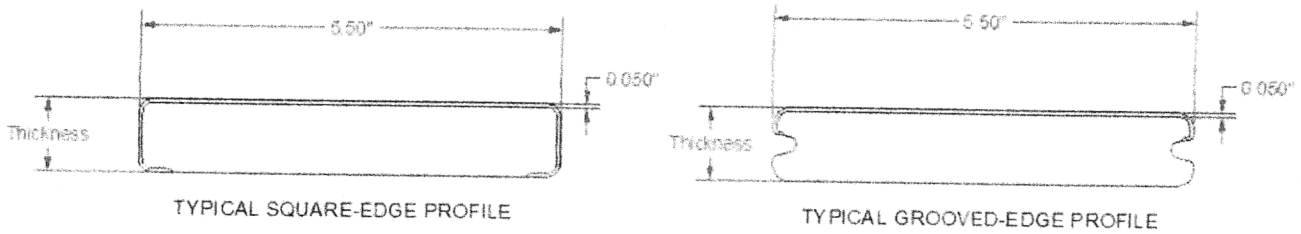


FIGURE 1—TYPICAL TREX<sup>®</sup> DECK BOARD PROFILES

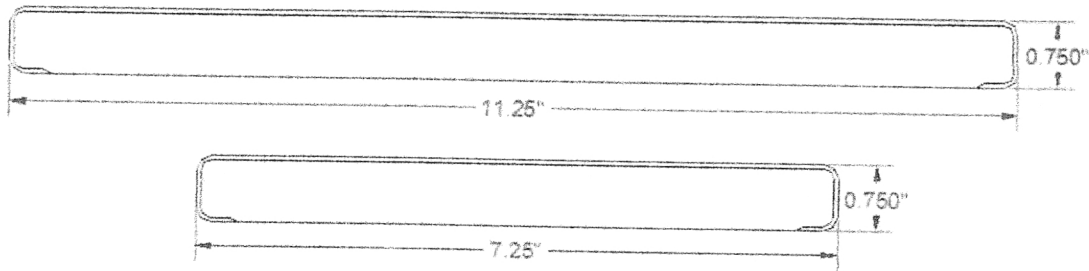


FIGURE 2—TREX<sup>®</sup> FASCIA PROFILES

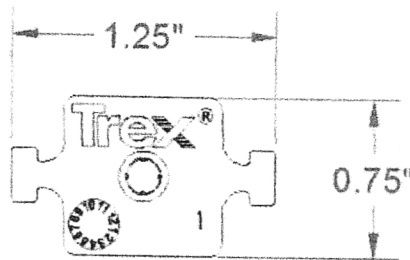


FIGURE 3—HIDDEN FASTENER PROFILE

For SI: 1 inch = 25.4 mm.