FORTIFIED for Existing Homes®

HURRICANE RESISTANCE GOLD DESIGNATION

The Insurance Institute for Business & Home Safety's FORTIFIED for Existing Homes™ hurricane program, aimed at improving a property's hurricane resistance, can help coastal builders create stronger, safer homes that are more resilient against powerful tropical weather systems.

This checklist is designed to assist project managers in identifying and tracking the installation of required upgrades needed to qualify for a FORTIFIED Hurricane Resistance Gold Designation.

COMPONENT/SYSTEM	BRONZE	SILVER	GOLD
ROOF • Roof deck is sealed • Roof deck attachment meets program standards • Roof covering condition meets standards	✔	✔	✔
ATTIC VENTILATION • Roof mounted vents are high wind rated • Soffit vents will resist water intrusion • Gable overhangs and vents properly constructed • Gable end vents are protected against water intrusion	✔	✔	✔
GABLES OVER 4' TALL - EXTERIOR (if applicable) • Must have structural sheathing	✔	✔	✔
OPENINGS • Impact protected with an approved system		✔	✔
ATTACHED STRUCTURES - PORCHES/CARPORTS • Roof to beam strapped to resist uplift • Beam to column strapped to resist uplift • Column to structure strapped to resist uplift		✔	✔
GABLES OVER 4' TALL- BRACING (if applicable) • Braced to withstand high wind pressures		✔	✔
CHIMNEYS (if applicable) • Properly attached to structure			✔
OPENINGS • Have adequate design pressure ratings			✔
CONTINUOUS LOAD PATH • Roof to wall connection • Wall to floor connection • Floor to foundation			✔

FIND THESE ADDITIONAL FORTIFIED PROGRAM RESOURCES AT DISASTERSAFETY.ORG/FORTIFIED:

- FORTIFIED for Existing Homes® application
- Frequently Asked Questions
- FORTIFIED for Existing Homes® Hurricane Resistance Engineering Guide
- About the FORTIFIED Evaluators Process
- Directory of Certified FORTIFIED Evaluators

The FORTIFIED for Existing Homes™ Gold designation process involves four simple steps:

STEP 1. APPLY

A property owner or builder completes an application for the home. Find the application at www.disastersafety.org/feh_ho_application. An application can be submitted only after construction has begun and a property has an address assigned by the local municipality.

STEP 2. SCHEDULE REQUIRED IN-PROCESS COMPLIANCE AUDITS

When the application is received and processed, the applicant will be directed to a list of IBHS Certified FORTIFIED Evaluators in their area. The next step is to select an evaluator and schedule the necessary compliance audits of the house. Audit fees are set by the evaluator not by IBHS. The applicant has the option to interview any evaluator listed, discuss their fees, and negotiate accordingly. All FORTIFIED Evaluators are certified by IBHS after completing a comprehensive training program, passing an exam and meeting IBHS' rigorous professional requirements.

STEP 3. FORTIFIED COMPLIANCE AUDITS PERFORMED

The applicant will work with the evaluator to have the necessary FORTIFIED compliance audits completed. The evaluator will collect the necessary documentation, including photographs of the completed FORTIFIED upgrades. Information will then be sent to IBHS for analysis and approval.

STEP 4. GET DESIGNATED

The house will be eligible for a FORTIFIED for Existing Homes™ Designation upon issuance of a Certificate of Occupancy or Occupancy Permit by the local building authority, provided that the proper steps have been followed. Using this checklist will help ensure that these steps are properly completed and that the necessary documentation of all FORTIFIED requirements is available for review by IBHS. After confirmation of compliance, IBHS will issue a FORTIFIED for Existing Homes™ Hurricane Resistance Gold Designation.

FORTIFIED for Existing Homes™ Gold Designation Compliance Checklist

Photograph required: all photographs must clearly show the fortified upgrade installed
Product documentation required
Contractor affidavit: must identify product(s) used and must reference property address
Invoice/delivery documents: must reference property address
Item complete

ROOF CONSTRUCTION

(refer to pages 8 & 9 of FORTIFIED for Existing Homes™ Designation Engineering Guide)

	☑	📷	✎
Roof sheathing panels (plywood or OSB) are a minimum of 7/16" thick *Sheathing thickness must meet local building code requirements, which may require a thicker roof sheathing. IBHS recommends a minimum 19/32", 40/20 span rated sheathing in hurricane-prone areas.			optional
Roof sheathing panels **must not** be attached with staples		N/A	N/A
Roof sheathing panels are attached with minimum **8d ring shank nails** spaced at a **maximum of 6 o.c.** along panel edges and in the field of the panel			
or			
Roof deck is sawn lumber or wood board decking (see page 8 for fastener type requirements)			optional
Roof framing members are maximum 24" o.c.			optional

PREVENTING WATER INTRUSION SEALING THE ROOF DECK

	☑	📷	✎	📄	$ PAID
Roof deck must be sealed using one of the following:*					
Reinforced synthetic underlayment installed w/ button cap nails, horizontal and vertical laps are sealed/taped			&	or	
Self adhering polymer modified bitumen tape at least 4" wide applied to all vertical and horizontal roof sheathing seams with 30# Type II underlayment applied over tape			or	N/A	
A full layer of self-adhering polymer modified bitumen membrane ("peel & stick") is applied to the entire roof deck			or	N/A	
or					
A **closed-cell** 2-part spray applied polyurethane foam is applied to the underside of the roof sheathing panels at the joints between panels and along all intersections roof sheathing and roof framing members			& or	or	

ROOF COVERING

Select one type:						
Asphalt Shingles	Meets requirements provided in Table 5 on page 16 of the Engineering Guide		&	or	or	
	All shingles and starters at intersections, eaves, valleys a gable end shingles are set in 8"-wide strip of flashing cement		&	or	or	
Concrete or clay tiles	Installation meets requirements on page 16 of the Engineering Guide		&	or	or	
Metal roofing panels	Installation meets requirements on page 17 of the Engineering Guide		&	or	or	
Other roof covering materials	Installation meets requirements on page 17 of the Engineering Guide		&	or	or	
NOTE: Detailed material requirements and installation requirements by roof covering type are found on pages 12 – 15 of Engineering Guide.*						

ATTIC VENTILATION SYSTEM - ROOF AND WALL VENTS

Attic is sealed, no ventilation at overhangs or on roof of any kind (if checked, skip to Gables-Exterior)				N/A	N/A	N/A
If attic is not sealed:						
ROOF MOUNTED VENTS (indicate # of each vent type found on the roof)						
Number of ridge-vents						
Number of off-ridge vents						
Number of turbines						
All roof mounted vents meet requirements of TAS 100(A)				or	or	
All roof mounted vents are installed per manufacturer's high wind installation requirements				or	or	

ATTIC VENTILATION SYSTEM - GABLE END WALL VENTS

(if not applicable, skip this section)					
House has gable end vents			N/A	N/A	
Number of gable vents					
Gable end vents are shuttered (with permanent anchors installed) to prevent water intrusion per the details on page 24 of the Engineering Guide					

ATTIC VENTILATION SYSTEM - SOFFITS AND OVERHANGS

Soffits and overhangs are <= 12" deep (measured from face of wall to the outside edge of the soffit)		&	or	or	
Soffits and overhangs greater than 12", and covered with aluminium or vinyl material have additional support in accordance with details on pages 21 – 22 in Engineering Guide		&	or	or	
Soffit and Overhangs are covered with rigid material (for example, wood panels or fiber cement)		&	or	or	

GABLES OVER 4' TALL - EXTERIOR

(if not applicable, skip this section)	✓	📷
Gable end walls are sheathed with a minimum of 7/16"- plywood or OSB, attached with 8d nails at 6 o.c. along panel edges and in the field of the panel		
or		
Gable end walls are sheathed with sawn lumber or wood board siding, nominally 1" thick		
* In order to qualify for future Silver designation, adequate gable bracing is required. Bracing can most cost effectively be done while home is under construction.		

GABLES WITH OVERHANG AND OUTLOOKERS

(if gable overhang is ladder framed, skip this section)	✓	📷	✎
Outlookers are a minimum 2 x 4 framing at 24" o.c.			N/A
Outlookers and/or roof framing members are not notched			N/A
Outlooker overhang does not exceed 26"			N/A
Gable end wall is sheathed with 7/16" plywood or OSB or 1" thick sawn lumber or board siding			N/A
Outlooker details comply with standards in Engineering Guide on pages 17 & 18			

OPENINGS - WINDOWS, ENTRY DOORS AND SKYLIGHTS

All windows, entry doors and skylights are pressure rated and tested to at least one of the following standards: *for projects under construction projects a window and door schedule Identifying DP for each fixture used on the project*	✓	📷	✎	📄	$ PAID
AAMA/WDMA/CSA 101/I.S.2/A440				or	
ASTM E330 (tested to 1.5 times design pressure)					
TAS 202					
All windows, entry doors and skylights are impact rated and tested to at least one of the following standards:*					
ASTM E 1996 and ASTM E 1886					
AAMA 506				or	
TAS 201and TAS 203				or	
or					
All window, entry door and skylight openings are protected with opening protection products meeting at least one of the following standards:					
ASTM E 1996 and ASTM E 1886				or	
TAS 201and TAS 203				or	

Documentation that each window, entry door and skylight meets the testing standards above or is protected by a system that meets required impact standards will be required in order to qualify for designation.

*For homes built in areas where the design wind speed is LESS than 120 mph, plywood shutters with a minimum thickness of 7/16"- and no larger than 8' may qualify. Specific requirements apply. Refer to FORTIFIED for Existing Homes Hurricane Resistance Engineering Guide for a complete list of requirements.

OPENINGS - GARAGE DOOR(S) WITHOUT WINDOWS

Garage doors without windows are pressure rated for the design wind speed and exposure category for the site *refer to DP requirements found in Appendix E of the FORTIFIED for Existing Homes™ Gold Designation Engineering Guide*					or
or					
Are protected by an opening protection system that meets at least one of the following:					
ASTM E 1996 and ASTM E 1886					
TAS 201 and 203					
Documentation that each garage door meets the design pressure requirements above or is protected by a system that meets the impact standards listed will be required in order to qualify for designation.					

OPENINGS - GARAGE DOOR(S) WITH WINDOWS

Garage doors with windows are impact rated and certified to meet one of the following standards					
ASTM E 1996 and ASTM E 1886					
TAS 201and TAS 203					or
ANSI/DASMA 115					or
or					
Garage doors with windows are protected by an opening protection system that meets at least one of the following:					
ASTM E 1996 and ASTM E 1886					or
TAS 201and TAS 203					or
Documentation that each garage door meets the impact requirements above or is protected by a system that meets the impact standards listed will be required in order to qualify for designation.					

ATTACHED STRUCTURES - CARPORTS AND COVERED PORCHES

Metal connectors are present between the roof framing members and supporting horizontal beams in accordance with the engineered plans					
Metal connectors are present at the top of each beam to column connection in accordance with the engineered plans					
Metal connectors are present at each column to foundation connection in accordance with the engineered plans					
Professional Engineer has completed the "Engineering Compliance Letter for Continuous Load Path." This is required on all projects.					
An affidavit from licensed structural engineer confirming that installation of connectors is in accordance with engineered plans is attached					
Typically these connections are not visible after a home is complete. It is imperative that these connections are documented prior to concealment.					

GABLES OVER 4' TALL – BRACING

To ensure that gable end walls are adequately braced to meet FORTIFIED standards there are a minimum of two steps:

1) Engineering documentation requirements must be satisfied. The Engineering Compliance Letter for Gable End Bracing, properly completed and signed by a professional engineer indicating compliance with all requirements, satisfies the engineering documentation requirements for gable end bracing.

2) Contractor documentation requirements must also be satisfied. See below for contractor documentation requirements.

CONTRACTOR DOCUMENTATION REQUIREMENTS FOR GABLE END BRACING

			
Gable end walls are wood and are balloon framed (in accordance with the engineered plans)			
or			
Gable end walls are constructed using reinforced masonry or reinforced concrete and are continuous to the underside of the roof deck (in accordance with the engineered plans)			
or			
Gables are framed using either a wood truss or rafter system (in accordance with the engineered plans)			
If gables are framed, using either a wood truss or rafter system, complete the following 5 items:			
Top of gable is braced (in accordance with the engineered plans)			
Bottom of gable is braced (in accordance with the engineered plans)			
If wood trusses are used, vertical webs are braced (in accordance with the engineered plans)			
Bottom of gable end is connected to the top of the wall below (in accordance with the engineered plans)			
Engineering Compliance Letter for Gable End Bracing has been completed by a professional engineer		N/A	N/A

Note: Gable ends with a triangular section greater than 16' tall and gable ends adjacent to vaulted or cathedral ceilings require special engineering analysis and are not considered for designation under FEH.

Note: The Engineering Compliance Letter for Gable End Bracing must be submitted along with Contractor Documentation Requirements provided above indicating verification of gable end bracing installation. If documentation is not adequate and complete, retrofitting the gable end in accordance with Appendix A of the Engineering Guide will be required to comply with FEH gable end requirements.

Gable end walls over 4' tall are extremely vulnerable to failure during high wind events. Unless balloon framed or constructed of reinforced concrete or reinforced masonry continuous to the roof deck, gables require additional bracing and connections along the top between the roof deck/outlookers and the top of the gable roof framing and at the bottom where the gable sits on top of the wall.

CHIMNEYS

(for chimneys that penetrate the roof and extend less than 5' above the roof)

					
Each corner of the chimney structure is strapped to a roof support member below					
The chimney framing is sheathed with a minimum 7/16" structural panel on all four exterior sides					
The base of the chimney framing is continuously supported 2"x4" blocking attached to roof framing members w/joist hangers					

CONTINUOUS LOAD PATH

To ensure that an adequate continuous load path from the roof to the foundation of the home meets FORTIFIED standards, there are two steps:

1) Engineering documentation requirements must be satisfied. The Engineering Compliance Letter for Continuous Load Path, properly completed and signed by a Professional Engineer indicating compliance with all requirements, satisfies the engineering documentation requirements for continuous load path.

2) Contractor documentation requirements must also be satisfied. See below for contractor documentation requirements.

CONTRACTOR DOCUMENTATION REQUIREMENTS FOR CONTINUOUS LOAD PATH

ROOF					
Wood roof trusses:					
Roof trusses are connected to bearing walls with uplift anchors (in accordance with the engineered plans)					
Conventionally framed wood roofs:					
Roof framing members are connected to all interior or exterior bearing walls/ beams with uplift anchors (in accordance with engineered plans)					
Collar ties or metal ridge straps are properly attached to each rafter (in accordance with engineered plans)					
Roof framing members are sized and spaced in accordance with the engineered plans and are spaced no more than 24" o.c.					
All headers and beams are connected (in accordance with engineered plans)					
WALLS					
Exterior walls are sheathed with at least 7/16" structural sheathing or equivalent					
First floor wall is anchored to the foundation (in accordance with engineered plans)					
On multi-story homes:					
Bearing walls above are positively anchored for uplift to bearing walls below (in accordance with engineered plans)					
For houses on pilings:					
First floor walls are anchored to beams spanning between pilings (in accordance with engineered plans)					
Beams spanning between pilings are anchored to pilings (in accordance with engineered plans)					
Pilings installed (in accordance with engineered plans)					
Other:					
Engineering Compliance Letter for Continuous Load Path completed by Professional Engineer					

Note: The Engineering Compliance Letter for Continuous Load Path must be submitted along with contractor documentation requirements indicating verification of continuous load path installation.

Typically these connections are not visible after a home is complete. It is imperative that these connections are documented prior to concealment.

OTHER IMPORTANT FORTIFIED INFORMATION:

This checklist is only a summary and omits detailed information related to compliance and verification. Further information about the prescriptive methods and performance standards herein and how they are verified for designation purposes can be found in the FORTIFIED for Existing Homes™ Hurricane Engineering Guide (available for download at www.disastersafety.org). Any questions related to compliance should be directed to your chosen FORTIFIED evaluator.

Many of the systems and components that will require improvement during the construction process are typically concealed by finished materials (ie. roof underlayment is covered by roof covering). Documentation of FORTIFIED improvements will be required prior to upgrades being concealed to verify that the work done meets FORTIFIED standards. Using this checklist and the compiled documentation, the builder/contractor can provide a detailed package of information critical for the designation process. Working with a certified FORTIFIED Evaluator, the applicant can request that the home receive a FORTIFIED for Existing Homes™ Hurricane Gold Designation. A certified evaluator will be required to audit the property for compliance and submit documentation to IBHS for review and designation.

The Insurance Institute for Business & Home Safety provides local evaluator training and certification to ensure that designation is consistent, accurate, and technically rigorous throughout the country.

FORTIFIED building programs also include marketing and advocacy guidance for member companies and local FORTIFIED service providers to communicate the benefits and the importance of keeping homes FORTIFIED.

PHONE **(813) 286-3400**
DISASTERSAFETY.ORG
FORTIFIED@IBHS.ORG
FAX **(813) 286-9960**

The Insurance Institute for Business & Home Safety (IBHS) mission is to conduct objective, scientific research to identify and promote effective actions that strengthen homes, businesses, and communities against natural disasters and other causes of loss. Please visit our web site at www.DisasterSafety.org.

Insurance Institute for Business & Home Safety
4775 East Fowler Ave.
Tampa, FL 33617
(813) 286-3400
DisasterSafety.org