



# Insurers Guide to FORTIFIED

## Hurricane Designation

The goal of the IBHS FORTIFIED Home™ program is to strengthen a home against specific regional natural hazards using system-based resilience upgrades and a comprehensive verification process. For each natural hazard, the program provides multiple levels of resilience to achieve varying degrees of disaster resistance. Each of the lower-level resilience upgrade requirements must be completed before moving onto the next level, and each level builds in additional disaster protections.

## WHY FORTIFIED?

The FORTIFIED Home Hurricane Designation provides tangible evidence that a home is built and/or retrofitted according to requirements that bring critical elements and systems in the home up to, and sometimes beyond, those used in new hurricane-resistant construction. The FORTIFIED approach is incremental to keep costs manageable, while tackling the vulnerabilities that lead to damage in common, weaker storms such as a Category 1 hurricane. As the levels progress to include more extensive resilience upgrades, the hurricane resistance of the home increases to add protections against less frequent but more intense storms, such as a Category 2 or greater. This approach provides a common sense path toward making a home more resilient when a hurricane strikes.

# Designation Process

The designation process involves the applicant and accredited FORTIFIED Home Hurricane Evaluators, who verify that the resilience upgrades adhere to stringent program standards and ensure that the applicant gets what they are expecting when making this investment.

To be eligible for a FORTIFIED Home Hurricane Designation, a home must be a single-family detached home installed on a permanent foundation. New and existing homes may qualify.

**The following is a list of property types that are not eligible for a FORTIFIED Home Hurricane designation:**

- Townhomes
- Duplexes, triplexes, and quadplexes
- Multi-unit residential buildings
- Residential portions of mixed-use buildings
- Commercial buildings

**Depending on the level of resilience upgrades, a home can be awarded one of the following FORTIFIED Home Hurricane designations:**

- FORTIFIED Home: Bronze
- FORTIFIED Home: Silver
- FORTIFIED Home: Gold

FORTIFIED Home Bronze and Silver designations are generally most appropriate for older homes, which were built prior to the adoption and enforcement of modern engineering-based building codes that produce well connected structural systems designed to resist the forces produced by high winds. Meeting Bronze or Silver requirements will harden the building systems that are most frequently damaged or lead to water intrusion in hurricanes. However, homes that only achieve Bronze and Silver designation may still sustain substantial structural damage if they are subjected to the eyewall of a major hurricane.

**Gold designations, which require documentation of engineering design and the installation of a continuous load path, will be most easily achieved by two types of homes:**

1. Homes that are undergoing substantial renovations or being rebuilt after a disaster where access to structural connections and components comprising a continuous load path are more accessible.
2. Homes built after modern engineering-based building codes have been adopted and enforced in the area.

This information to the right is provided as a rough suggestion of when it is likely that existing homes may have been built with a well developed load path and to assist an applicant in deciding which type of designation they want to pursue. Some builders may have adopted better construction methods earlier than suggested here and some communities may have adopted the provisions or similar requirements earlier than suggested.

## Regional Information

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*If your home is located in the Southeast, where the Southern Building Code Congress International's (SBCCI) Standard Building Code was used and was built after 1990 or was built in any hurricane-prone region after 2002, there is a chance that it includes a reasonable continuous load path. Contacting the local building department will help determine if SSTD 10 or the IRC was being enforced at the time of the home's construction.*

*Coastal Texas residents should inquire about whether the home was built to meet the Texas Department of Insurance Hurricane Resistance Guidelines adopted after 1997.*

## Note on Building Codes

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*The first modern engineering-based guide for construction of hurricane-resistant homes was published by the Southern Building Code Congress International (SBCCI) in 1990 as SSTD 10-90. If a home was built before 1990, it is unlikely that it will have a well-executed, continuous load path that ties the structure together and anchors it to the foundation. This standard was first widely adopted along coastal areas in the mid 1990s and was revised in 1993, 1996 and 1999. The International Code Council's International Residential Code (IRC) and International Building Code (IBC) were published in 2000 and also directed builders in high wind coastal areas to use engineering-based design and construction.*

# Getting Started

To begin the process of attaining a FORTIFIED Home Hurricane Designation, an applicant must submit a brief online application. The free application can be found and submitted at [www.DisasterSafety.org/FORTIFIED](http://www.DisasterSafety.org/FORTIFIED).

Once the application is received, it will be processed and the home will be assigned a unique FORTIFIED ID number. The applicant can then move forward with selecting a certified FORTIFIED Home Evaluator. A FORTIFIED Home Hurricane Evaluation will involve collecting data about critical systems in the home, which building science research has identified as the highest sources of loss during hurricanes.

***In order of priority the areas are:***

## Bronze

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- The roof – roof structure and roof covering
- Attic ventilation systems
- Ridge
- Off ridge
- Gable end wall vents
- Soffits
- Gable end wall sheathing
- Gable end overhang construction

## SILVER

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- Window, entry door and garage door openings
- Gable-end framing
- Connection of auxiliary structures (carports, porches, etc.)

## GOLD

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- Continuous load path connections

Bronze and Silver inspections are non-destructive and will require approved evaluators to inspect a home both inside and outside. Gold inspections will comprise all of the evaluation elements in Bronze and Silver and the additional requirement of documenting a home's foundation, structural components above grade, and structural connections comprising the load path. To avoid invasive investigation techniques requiring the removal of finished materials, the continuous load path design will have to be certified by a structural engineer and the installation of the load path will need to be certified by the contractor.

The FORTIFIED Home Hurricane Evaluation is designed to collect enough information to provide an assessment of the overall condition of the home and to identify components and systems that are typically vulnerable to wind-related damage and water intrusion during a hurricane. Once the existing conditions have been recorded by the FORTIFIED evaluator, the data is analyzed and a customized Current Condition Report (CCR) is issued.

The CCR identifies upgrades required for achieving each level of designation as well as reporting what was observed during the evaluation.

# Current Condition Report (CCR)

The Current Condition Report (CCR) will identify which assemblies and systems meet program technical requirements and which will require retrofitting or replacement, in order for a home to be awarded each of the three levels of a FORTIFIED Home Hurricane Designation.

The CCR also includes recommended retrofits that are required for higher levels of designation, most of which are more easily accomplished when required lower level resilience upgrades are being completed. For example, in certain instances, such as wood-frame gable end walls that are not sheathed with wood planks or structural panels, the requirements for achieving a FORTIFIED Bronze Designation will contain recommendations for additional bracing upgrades. These upgrades are part of the FORTIFIED Silver Designation and will be easier to accomplish while this particular FORTIFIED Bronze upgrade is being carried out. These recommendations are intended to serve two purposes:

- Identify cost-effective ways for a home to achieve a higher level of designation.
- Identify when retrofits performed in order to achieve the Bronze designation could make it more difficult (and more costly) to achieve Silver or Gold Designations in the future.

The inspection also calls attention to the existence of certain conditions, which must be addressed before proceeding with a FORTIFIED Home Hurricane Designation or which would make a FORTIFIED Home Hurricane Designation potentially cost prohibitive to achieve. In addition to examining the methods and materials used to construct the property, the initial inspection also looks for possible evidence of damage from pests, lack of maintenance, and normal wear and tear. If the evaluation finds that a home has damage or rot, all damage must be repaired prior to proceeding with, or at least concurrent with, any retrofits performed to achieve a FORTIFIED Home Hurricane Designation.

If the inspection finds that the roof structure is unusual or poorly constructed, FORTIFIED Home likely will require that a registered structural engineer be brought in to conduct a more thorough evaluation and to design specific retrofit solutions for the roof.

The evaluation may determine that a home has critical weaknesses, which could be expensive to fix before it can be retrofitted using the prescriptive solutions outlined in the FORTIFIED Home Hurricane Standards. Examples of conditions that could indicate that it will be more costly to retrofit a home in order to qualify for a FORTIFIED Bronze or higher designations include:

- Roof sheathing that is less than 7/16-inch thick.
- Un-reinforced foundations.
- Significant damage to roof structural members.

If it is determined that a home needs significant work before it can be upgraded using the solutions outlined in the FORTIFIED Home Hurricane Standards, and the applicant still desires to pursue a designation, the additional solutions will have to be developed by a licensed professional structural engineer and accepted by the FORTIFIED Home Program or their designees.



Once the desired level of resilience is determined, the strengthening of the home can begin. Inspections may be required throughout the building/upgrading process to ensure compliance of resilience upgrades with IBHS FORTIFIED Home Hurricane Standards. Examples of upgrades requiring in-process inspections include nailing/re-nailing the roof sheathing in Option 2 (described in detail on the following pages) of the FORTIFIED Bronze Designation and bracing a wood-framed gable end, as required for FORTIFIED Silver Designations. These inspections are intended to ensure compliance and to allow for corrections to be made prior to the work being obscured from view, which occurs once the retrofit project is completed or finished materials are installed during construction of a new home.

Once all required resilience upgrades are verified, FORTIFIED Home will issue a designation certificate for the property. The FORTIFIED Home Designation Certificate provides tangible evidence that a home was built and /or retrofitted according to FORTIFIED Home Standards.

The upgrade process is incremental so that costs are more manageable, but it is based on a systematic comprehensive approach by first tackling the vulnerabilities that lead to damage in the more common weaker storm events (Bronze level). As the resilience enhancements progress to higher levels of designation, the home becomes more resistant to the less frequent but more intense hurricanes and hurricane effects. FORTIFIED Home believes that this approach provides a common sense path towards making eligible homes more resilient when a hurricane strikes.

# Designation Levels And Requirements

## FORTIFIED Home: Hurricane Bronze

**Two options are available for obtaining this designation. By having two methods for achieving significant improvement to the most vulnerable system in a home, the FORTIFIED Program gives the applicant:**

- the ability to manage their investment and apply it to achieve the maximum effect;
- options that can fit the applicant's schedule better by minimizing the time required to complete the necessary upgrades and/or retrofits, and minimizes the number of intermediate inspections required to verify compliance.

### Option One:

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Improving the existing roof. This method is not as effective as re-roofing (or installing a roof on a new home) because it does not ensure that a wind-resistant roof cover is in place. However, improving roof sheathing attachment (as described in detail below) and providing a barrier from the inside to help resist water intrusion can help reduce hurricane-related damage resulting from the loss of some roof covering. This option is considered appropriate when the home has a relatively new roof or has an expensive roof covering that has a long life expectancy under normal conditions. If the home qualifies for this option, then the designation will be FORTIFIED Home: Hurricane Bronze Existing Roof.

*Note: earlier designation certificates may also contain Bronze.*

### Option Two:

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Install new roof covering. This option takes advantage of the opportunity to attach the roof deck using mechanical fasteners in compliance with FORTIFIED Home Hurricane requirements and install a qualified system to seal the roof deck on the exterior surface. Sealing the roof deck with a qualified system reduces the chances of water intrusion if the roof cover is damaged. If the home qualifies for this option, the designation will be FORTIFIED Home: Hurricane Bronze New Roof.

*Note: earlier designation certificates may also contain Bronze.*

Both options include: (a) taking steps (if required) to strengthen the anchorage of any outlookers that are used to support a gable roof overhang; (b) strengthening roof sheathing fastening to the structure; and (c) actions aimed at reducing water intrusion into the attic space, which could lead to the saturation of insulation and cause ceilings to collapse. These mitigation measures are extremely important because failure of a gable end overhang, loss of roof sheathing or water intrusion may lead to the need to vacate your home for an extended period of time after a storm, lengthening the amount of disruption for the homeowner.



# FORTIFIED Home: Hurricane Bronze Existing Roof (formerly FORTIFIED Bronze)

## Required FORTIFIED Upgrades

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Roof covering condition must be evaluated. If roof covering is determined to have more than five years of usable life remaining, reroofing is not required. If roof covering has five years or less of remaining useful life, then roof cover must be replaced.

- Roof deck must be a minimum of 7/16 in. OSB or Plywood.
- Deck must be attached with 8d ring shank nails, spaced nominally at 6 in. on center along the edges and in the field; unless engineering analysis or local code requires more fasteners at the corners.
- If existing deck does not have the required fastener type and/or spacing, the typical retrofit when re-roofing would be to add an 8d ring shank fastener between existing fasteners.
- If existing roof covering is NOT being replaced, supplemental attachment can be achieved using a qualified two-part, closed-cell, polyurethane foam adhesive applied to both sides of each roof framing member at the deck from within the attic.
- If not re-roofing, sealing the roof deck can be done from within the attic using qualified closed-cell foam applied to all horizontal roof deck seams and along all roof framing members
- Gable walls must have minimum of 7/16 in. structural sheathing (OSB or Plywood).
- Gable overhangs must not be vented.
- Gable wall vents must be protected against water intrusion.
- Gable overhangs framed using outlooker framing must have adequate connection at gable wall and at roof framing members. Connection can be determined by a structural engineer, or by using IBHS' prescriptive connection detail (located in the FORTIFIED Home: Hurricane Standards at [http://disastersafety.org/wp-content/uploads/fortified-hurricane-standards\\_IBHS.pdf](http://disastersafety.org/wp-content/uploads/fortified-hurricane-standards_IBHS.pdf)).
- Box type soffit overhangs (eave) and gable overhangs with a depth of greater than 12 in. (measured from the back of fascia to exterior wall surface) and covered with aluminum or vinyl material, must have a center brace installed mid-span.
- Roof mounted vents, including, but not limited to ridge vents, off ridge vents, and turbines, must meet Florida Building Code TAS 100 (A).



# FORTIFIED Home: Hurricane Bronze New Roof (formerly FORTIFIED Bronze)

## Additional Required FORTIFIED Upgrades

- Roof deck must be sealed with a qualified system. There are three qualified methods for sealing from the top side (described below).
  1. Cover the entire roof deck with a full layer of self-adhering polymer modified bitumen membrane meeting ASTM D1970 requirements. It is recommended that the membrane be covered with 15# felt before shingles are applied to provide bond break, and to keep shingles from fusing with the self-adhering membrane.
  2. Apply a self-adhering polymer modified bitumen flashing tape, which is at least 4 in. wide, directly to the roof deck to seal the horizontal and vertical joints. Next, apply a code-compliant 30# ASTM D226, Type II underlayment over the self-adhering tape. This underlayment must be attached using annular ring or deformed shank roofing fasteners with minimum 1 in. diameter caps at 6 in. on center spacing along all laps and at 12 in. on center in the field, or a more stringent fastener schedule, if required by the manufacturer for high-wind installations. Horizontal laps shall be a minimum of 2 in. and end laps shall be a minimum of 6 in. Nails with plastic or metal caps are allowed in areas where the design wind speed is less than 140 mph. Metal caps are required for areas where the design wind speed is greater than or equal to 140 mph.
  3. Apply reinforced synthetic roof underlayment that has an ICC approval as an alternate to ASTM D226 Type II felt paper. The synthetic underlayment must have minimum tear strength of 20 lbs. per ASTM D1970 or ASTM D4533. This underlayment must be attached using annular ring or deformed shank roofing fasteners with minimum 1 in. diameter caps at 6 in. on center spacing along all laps and at 12 in. on center in the field, or a more stringent fastener schedule, if required by the manufacturer for high-wind installations. Metal caps are required for areas where the design wind speed is greater than or equal to 140 mph.
- A drip edge must be installed (at eaves and rakes) with 3 in. laps. Drip edge shall extend ½ in. below sheathing and extend back on the roof a minimum of 2 in. Drip edge at eaves shall be permitted to be installed either over or under the underlayment. Drip edge at gable rake shall be installed over the underlayment. The drip edge shall be mechanically fastened to the roof deck at a maximum of 4 in. on center.
- Shingle roof covering must be high-wind rated (Class F or higher) based on design wind speed. See chart below:

ASCE 7-05 Wind Speed ( $V_{asd}$ )	ASCE 7-05 Wind Speed ( $V_{ult}$ )	Shingle Wind Testing Standard/ Classification
100 MPH	129 MPH	ASTM D3161 (Class F) or ASTM D 7158 (Class G or H)
110 MPH	142 MPH	ASTM D3161 (Class F) or ASTM D 7158 (Class G or Class H)
120 MPH	155 MPH	ASTM D 7158 (Class G or Class H)
130 MPH	168 MPH	ASTM D 7158 (Class H)
140 MPH	180 MPH	
150 MPH	H	



- Concrete and clay tile systems and their attachment shall meet the requirements of the site design wind speed and exposure category.
- Metal panel roof systems and their attachment shall be installed in accordance with the manufacturer's installation instructions and shall provide uplift resistance equal to or greater than the design uplift pressure for the roof based on the site design wind speed and exposure category.

*Note: When used in Exposure D locations, shingles must pass both ASTM D3161 Class F and ASTM D7158 Class H testing standard.*

## Replacement Cost Comparison for FORTIFIED Bronze Roof Upgrades

While IBHS does not collect actual cost data from completed FORTIFIED projects, IBHS has used Xactimate®, a popular property claims estimating software used by insurers, loss adjusters, restoration and reconstruction contractors, and specialized service providers, to estimate the cost of upgrading a full roof replacement to a FORTIFIED roof during the re-roofing process in hurricane prone areas. As might be expected, the costs vary depending on the quality and condition of the roof deck prior to replacement and methods used to meet FORTIFIED requirements.

The sample estimates used the following assumptions:

1. The roof deck required re-nailing (due to insufficient fastener type, size and/or spacing).
2. The roof deck required sealing with a qualified system. For the estimates, the qualified method for sealing the roof deck modeled was installation of 4 in. modified bitumen tape over all vertical and horizontal seams and the installation of 30# felt over the entire deck.  
\*Note: Neither of these is a standard requirement in the current IRC.
3. Installation of TAS 100(A) compliant roof venting materials.

The total upgrade cost is approximately 50 cents per square foot. If the deck does not need to be re-nailed, the cost drops to 35 cents per square foot. So, the increase in expected replacement cost for a 1,400 square foot, asphalt shingle roof would be approximately \$700 when having to re-nail, and \$475 without re-nailing.





## FORTIFIED Home: Hurricane Silver

A prerequisite to the FORTIFIED Home Silver designation is completion of FORTIFIED Bronze upgrades (either Option 1 or Option 2). IBHS will track the option that was used because Option 2, which requires a high-wind rated roof cover, is expected to achieve better performance in hurricane conditions than Option 1, which does not require a new roof cover.

FORTIFIED Silver resilience upgrades provide prescriptive methods for protection of glazed openings, entry doors, and garage doors; bracing gable ends that are more than 4 ft. tall; and, improving the anchorage of attached structures.

### Required FORTIFIED Upgrades

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- All Bronze requirements must be satisfied.
- Gable end walls on gables greater than 48 in. tall must be braced.
- Porches and carports must have adequate connections for uplift pressures based on site design wind speed and exposure category.
- Connections must be provided from the roof framing to the beam/wall, from beam to column and column to structure below.
- Garage doors must be pressure rated for pressures associated with site design wind speed and exposure category.

*Exception: If garage door has glazing, door must be pressure rated and impact rated, or pressure rated and protected with a qualified impact-resistant system.*

- All window, exterior door and skylight openings must be protected with qualified opening protection systems.
- Qualified opening protection systems must have passed an ASTM E 1996 and E 1886 impact test for large missile D.



## FORTIFIED Home: Hurricane Gold

A prerequisite to FORTIFIED Gold Designation is completion of FORTIFIED Bronze upgrades (either Option 1 or Option 2) and FORTIFIED Silver improvements.

FORTIFIED Gold requires development of a continuous load path from roof to foundation; chimneys must be adequately anchored; and windows and entry doors, even those that are protected from wind-borne debris, must meet wind design pressure requirements for the location. Applicants may want to anticipate the requirements of FORTIFIED Gold before investing in opening protection devices that cover windows or doors which do not have adequate pressure ratings.

### Required FORTIFIED Upgrades

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- All Bronze and Silver requirements must be satisfied.
- Chimneys must be adequately connected to the roof structure to resist loads based on site design wind speed and exposure category.
- Windows, skylights and glass doors: Windows and glass doors must be rated for the design pressures appropriate for the exposure category, wind speed, window size, and window location on the building. See Appendix C of the FORTIFIED Home: Hurricane Standards at [http://disastersafety.org/wp-content/uploads/fortified-hurricane-standards\\_IBHS.pdf](http://disastersafety.org/wp-content/uploads/fortified-hurricane-standards_IBHS.pdf).
- A continuous load path must be designed and installed providing connection from roof to wall, wall to floor and floor to foundation.
- Walls must have minimum of 7/16 in. structural sheathing (OSB or Plywood).

***Notice: all of the above must be documented prior to being concealed by finished materials. Take photographs of the improvements while the home is under construction. A complete photo file should be presented to the fortified evaluator working on the project.***

In addition, compliance letters from a structural engineer will be required to satisfy the documentation requirements for outlooker framing, gable framing and bracing, porch/ carport connections, chimney connections and load path design. Copies of these letters can be obtained from IBHS or your FORTIFIED evaluator.



# Loss Cost Reductions for FORTIFIED Home Designated Properties

Recent hurricane experience has demonstrated that homes built to modern engineering-based building codes, which are adopted and enforced as written, fare considerably better than homes built before those standards were adopted. The expected benefits of strengthening existing homes to meet FORTIFIED Home: Hurricane Designation requirements have been estimated by reviewing published loss relativity study results prepared by Applied Research Associates for the Florida Office of Insurance Regulation and by a RMS study of Florida’s Windstorm Mitigation Credits that was prepared for the Florida Legislature.

The following lists of features for the various cases were chosen as the basis for the analysis using the ARA loss relativity results. A shorter, but similar, list of building properties was used to extract loss relativity estimates from the RMS study. The properties were carefully chosen to try and match the strengthening accomplished by the FORTIFIED Home: Hurricane upgrades.

The Florida Building Code (FBC) roof cover corresponds to one that meets the wind design speed rating for the location while the Non-FBC roof cover would represent a typical older un-rated roof cover. Roof Deck “A” has 6d nails installed at 6 in. spacing along roof rafters or trusses at the edges of the roof sheathing and 12 in. spacing along intermediate rafters or trusses. Roof Deck “B” has 8d nails at the same spacing while Roof Deck “C” has 8d nails at 6 in. spacing along all roof framing members.

Opening Protection “Hurricane” corresponds to opening protection that meets the requirements of ASTM E 1886 and ASTM E 1996. “SWR” stands for secondary water resistance which IBHS refers to as a sealed roof deck. Roof shape “other” means that the roof is not a hip roof. Roof Cover “non-tile” corresponds to a shingle roof cover.

**Table 1. Building Parameters Used in Loss Relativity Analysis of FORTIFIED Home: Hurricane Benefits**

	Roof Cover	Roof Deck	Roof to Wall	Opening Protect	Soffits	SWR	Roof Shape	Roof Cover	Number Stories
Existing Weak	Non-FBC	A	Toe Nail		Other	None	Other	Non-Tile	2
Existing	Non-FBC	B	Clip	None	Other	None	Other	Non-Tile	1
Bronze 1	Non-FBC	C	*	None	Wood	SWR	Other	Non-Tile	**
Bronze 2	FBC	C	*	None	Wood	SWR	Other	Non-Tile	**
Silver 1	Non-FBC	C	*	Hurricane	Wood	SWR	Other	Non-Tile	**
Silver 2	FBC	C	*	Hurricane	Wood	SWR	Other	Non-Tile	**
Gold 1	Non-FBC	C	Clip	Hurricane	Wood	SWR	Other	Non-Tile	**
Gold 2	FBC	C	Clip	Hurricane	Wood	SWR	Other	Non-Tile	**
FBC	FBC	C	Wrap	Hurricane	Wood	SWR	Other	Non-Tile	**
<p>* Chosen to match Existing Building Condition  ** Chosen to match the number of stories in the existing building</p>									

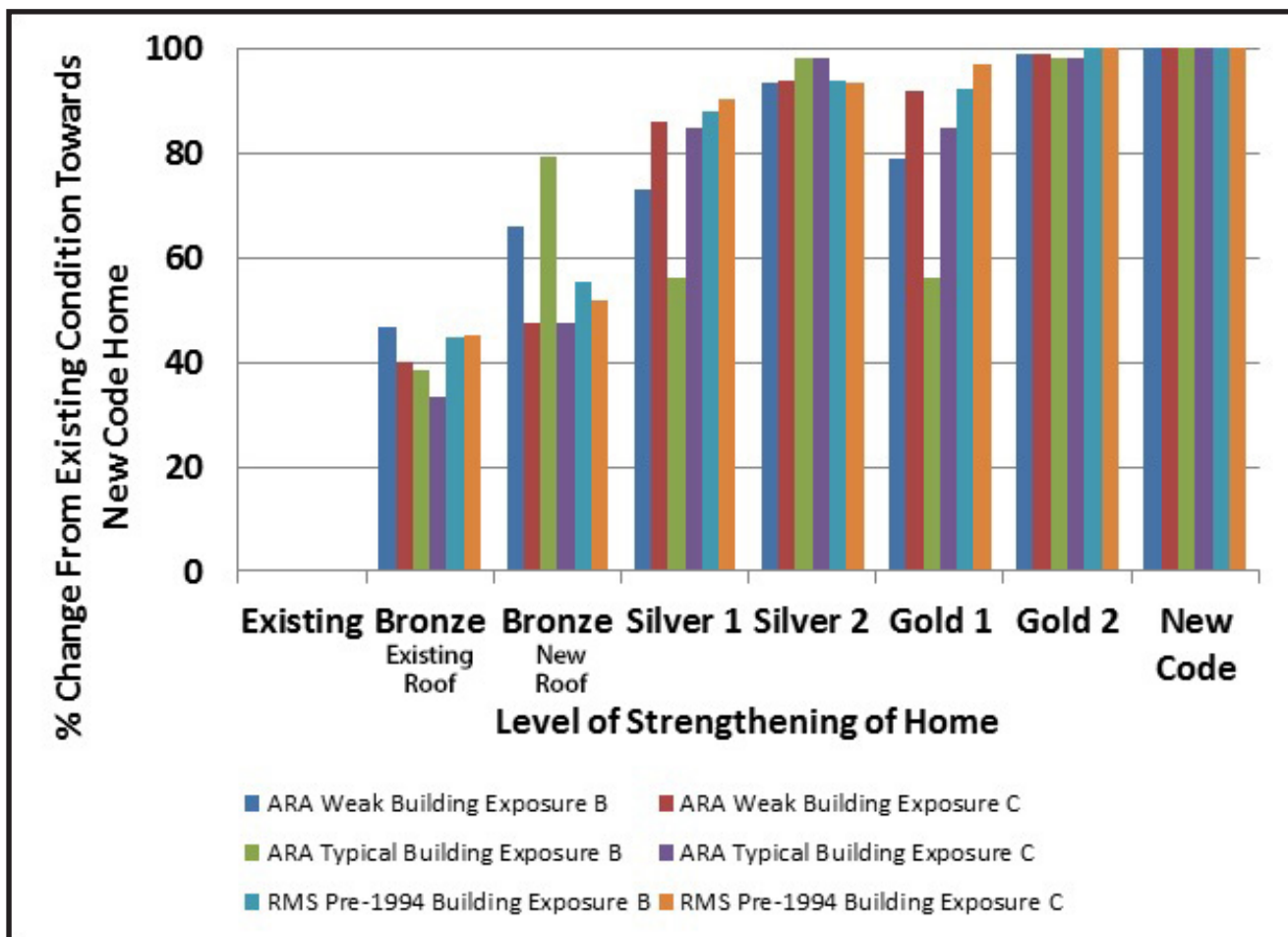
Results of the analysis have been normalized by the difference in loss estimates for existing construction as compared to new construction built to the Florida Building Code. The bars in Figure 2 below show the percentage of change from either the typical or weak building towards the reduced losses expected for a new home when each of the designation levels is achieved. These results are based on estimates of average annualized loss costs.

Consequently, it should be recognized that these types of loss relativity studies tend to highlight the benefits of mitigation against the more common less intense events. This is because the probabilities that a home will experience one of these lesser events is much greater than that of experiencing the eyewall of a major hurricane. Figure 2 shows that the loss mod-

els suggest that about 40 percent of the benefit of building a home to the new engineering based building codes is achieved by a Bronze with Existing Roof Designation. This is compared to retrofitting to achieve a Bronze with New Roof Designation, which yields between about 45 and as much as 79 percent of the benefit of building to the new engineering-based standards.

With the exception of the typical home where the roof is not replaced, attaining a Silver with Existing Roof Designation is expected to yield at least 70 percent of the benefit of building a home to a modern engineering based building code. The Silver with New Roof Designation is expected to achieve about 90 percent of the benefit.

**Figure 2. Expected Benefits of Strengthening Homes to Achieve Designation Levels as Percentage of the Reduction in Annual Average Loss Costs from Typical Older Homes and Weak Older Homes Compared to New Wind-Resistant Homes**



A natural question that arises from reviewing these kinds of results is why would anyone attempt to achieve a Gold Designation? The retrofits associated with achieving a Gold designation go well beyond the most common types of damage observed in the most common events. These enhancements greatly increase chances of the home surviving a much more severe

hurricane event. However, because these events are relatively rare over the typical assumed life span of a home, they do not contribute significantly to the estimates of the average annualized loss costs.





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