



This information is designed to help you better understand the hurricane mitigation credits given on the OIR B1-1802 form for residential homes.



Paperless Inspectors is a third-party quality assurance inspection administration program. When accuracy is important, use pre-qualified inspection companies.

The Purpose of Mitigating Homes

After the hurricanes of 2004, legislation was established to help homeowners reduce their insurance premiums based on their home's ability to withstand a hurricane. The goal was to offer incentives to homeowners who invested in mitigation techniques, upgrades or retrofits to make their home stronger.

The Office of Insurance Regulation released the Uniform Mitigation Verification Inspection Form (OIR 1802) as a standardized report for cataloging mitigation features in order to be eligible for these monetary incentives or discounts for homeowners who incorporate the latest storm damage mitigation products and technologies in their homes.

Homeowners were required to hire qualified inspectors to professionally evaluate and identify the credits that home qualified for as well as what cost-effective upgrades homeowners could complete for additional credits to be applied.

Unfortunately, while the objective was admirable, it was not achieved. Many homeowners suffered at the hands of unscrupulous or untrained inspectors, resulting in homeowners living in homes possibly less fortified than their inspector led them to believe. This was exacerbated by inspection companies who guaranteed the fee of the inspection in savings or their money back.

Many homeowners received insurance premium reductions for hurricane protection that did not exist in part or at all.

The purpose of this information is to educate you on what each section of the hurricane mitigation report means and what your home should look like in order to benefit from the maximum credits available. More importantly, this document will show you what your report should look like to ensure accuracy and provide you with a level of safety assurance as a result of an accurate inspection.

HURRICANE MITIGATION

Residential buildings can be effectively classified according to their degree of wind vulnerability. That classification recognizes the fact that buildings with wind resistant features are expected to experience significant reductions in hurricane damage and loss.

The reduced risk and associated loss costs result from both basic house characteristics (roof shape, frame vs. masonry, etc.) as well as structural features of the building envelope (roof deck attachment, hurricane straps, etc.).

While the existing house characteristics are in place and cannot be easily modified, the key building envelope features can often be upgraded and strengthened to provide notable reductions in vulnerability.

By rating structures based on wind vulnerability and risk, significant financial incentives, in the form of



Without mitigation techniques applied, your home may not withstand a wind-storm as well as you think it will!

legislated reduced insurance premiums, credits and discounts, exist for homeowners who invest in hurricane mitigation retrofits.

The categories outlined in this document are inspected in order to determine the insurance credits based on each home's hurricane vulnerability. These categories are included on the OIR 1802 form.

Key Components of a Mitigation Inspection

- Year of Home
- Number of Stories
- Roof Covering
- Roof Deck Attachment
- Roof to Wall Connection
- Roof Shape
- Gable Bracing
- Secondary Water Resistance
- Opening Protection

Why year of home and number of stories is important

The year your home was constructed is important in determining which building code your home was built to comply with. The more current the building code, the more stringent the requirements for hurricane mitigation/protection it may have.

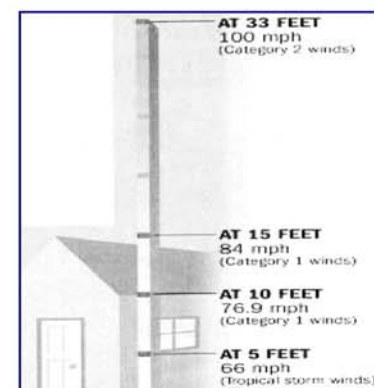
From an insurance perspective, the year of construction is determined by the date the building permit was issued and may not be the actual year built. This is often determined from the property appraiser's website and/or building permits.

The year of the home often is indicative of certain construction practices and is used to validate the answers given on the OIR 1802 form.

The number of stories affects the wind load applied to the home. The taller a structure, the higher wind speeds the home is exposed to.

For example, when the wind blows and a measurement is taken from 5 feet off the ground at 66mph, the speed at 10 feet is 76.9mph, 15 feet 84 mph and 33 feet it is 100mph.

As you can see, the taller the structure, the more risk to high winds the home is and the more consideration must be taken when underwriting a policy.



Roof Covering and Installation Date



If you believe you have a newer roof or the dates of installation are around 1995 or 2002, inspectors must verify the month installed typically by checking the permit application date.

The most important and frequently overlooked element that governs the losses experienced in hurricanes is the roof covering.

Roof covering installed to meet the 1994 SFBC or the 2001 FBC have been proven to withstand winds better than earlier roofs.

The main reason for the differences in performance is the type of shingle or tile used and the attachment of these components. The 1994 South Florida Building Code or SFBC went into effect for Miami-Dade and Broward counties in November of 1995. No other county was required to follow this code.

If your home has a roof covering installed in 1998 in Orange county, it most likely DOES NOT meet the 1994 SFBC unless the inspector documents code plus features which are very unlikely in counties outside Broward or Miami-Dade. The 2001 FBC went into effect in March of 2002 for the entire state.

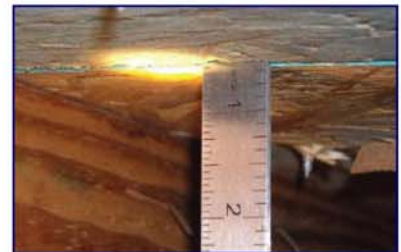
Homes in the remaining counties meet the requirements of the 2001 FBC if the roof is installed correctly and permitted properly.



A metal detector is used to determine the nail spacing along the trusses.



The inspector measures shiners to determine the nail size.



Finally, the sheathing thickness is measured. Once the inspector has these pieces of information, question 2 of the OIR 1802 can be answered.

Roof Deck Attachment

Along with the roof covering, how that roof deck is attached to the trusses/rafters plays an important role in its ability to withstand windstorms.

The inspector will look for the thickness of roof sheathing, the type of attachment (staple, nail or screw), the size of the nail, and the spacing of those nails. Depending upon the combina-

tion of the items listed, the strength of the roof deck attachment can be determined. When you receive your mitigation report, the inspector will show photographs of the sheathing thickness measured with a ruler or other measurement device.

The inspector should also provide photos of the attachment

type. Typically they will find a "shiner" and take a photo next to a measurement device showing the size of the nail. The inspector will also mark the truss showing the attachment spacing. If no photos are present showing these details, your report may be questioned as to its validity.



This photo shows clips as the roof to wall attachment.



This photo shows a single wrap as the roof to wall connection.

Roof to Wall Connection

A home's roof to wall connection is important because it helps establish the continuous load path from the roof through the walls and into the ground. The weaker the connection, the higher probability the roof will be pulled off during high winds.

Inspectors will take photographs of the roof to wall connections so there is no confusion as to the type.

Double wraps are very rare and reports submitted to carriers with double wraps checked will

likely trigger a QA review. Your inspector should take photographs of at least two consecutive trusses showing the attachment. (Often double wraps are installed only on every other truss.)

Single wraps are very common, but from a wind mitigation perspective, often installed incorrectly. In order to be considered single wrap for the roof to wall connection, the strap should be embedded into the top plate of the wall, should have at least three nails into the truss on one side and then

wrap over the top of the truss and be nailed to the other side with at least one nail. If that one nail is missing from the other side, it should be marked. Clips, though the photos may look like single wraps. (See photo Bottom Right for an example.)

Toe nailing is common on older homes and represents the weakest form of connection. Upgrade this attachment whenever possible to strengthen your home.

Roof Shape

Roof shape is one of the most common items incorrectly reported on the OIR 1802 form.

If you read the form carefully, the definition of a Hip roof is a Hip shaped roof with NO OTHER ROOF SHAPE greater than 50% of ANY major wall length.

If there is a gable over a garage and the garage sits on

its own wall, the ENTIRE ROOF is classified as Other.

If there is one gable greater than 50% of an elevation or wall length, the ENTIRE ROOF is classified as Other. If the roof is all Hip except for a flat portion over a porch that is structurally connected to the roof system, the ENTIRE ROOF is classified as Other.

“Other” requires that the roof be ANY OTHER SHAPE or combination of shapes other than Hip.



This home is classified as Other.



This home is classified as Hip if all four elevations look similar to this.



The diagram above shows multiple roof shapes.



This photo shows one form of bracing called horizontal or continuous gable bracing (white boards).



This is an example of 'Unbraced Gable End.'

Gable End Bracing

If the roof shape in question number 4 says Hip, then the answer to this question should always be Not Applicable, Unknown or Unidentified.

If the answer is “Other,” then any of the three boxes in this section may be checked.

In order to qualify a gable as braced, it must be braced to meet the 2001 FBC.

Bracing that does not meet this code would be marked, Gable End(s) are NOT braced.

If there are multiple gables and all but one are braced, the answer would show Gable End(s) are NOT braced as the form needs to represent the weakest that applies.

Your inspector must inspect all accessible gables in order to properly report the gable bracing. Assumptions that all gables are the same is not a practice that will be accepted by insurance carriers.

All gable bracing should be properly photographed and documented by your inspector. Retrofitted gable braces

should be clearly outlined so no confusion exists when your report is submitted to your insurance carrier.



Reinforced masonry gable end.

Wall Construction Type

Wall construction is important when assessing risk as certain wall structures are stronger and therefore have less risk than others.

The answer to Question 6 on the OIR 1802 form can be one or a combination of any of the choices as long as the total equals 100%.

For masonry walls, metal detectors are used to determine if the walls are properly

reinforced. Your inspector should check at least 3-5 locations for reinforcement.

If Reinforced Masonry is selected, you should see a photo of the metal detector showing the reinforcement as validation, as this is used to identify the locations of reinforcement.

Many older homes built within certain time periods are Unreinforced Masonry.

Poured concrete is very rare in single-family home residential construction.

Properly categorized wall type is essential. Insurance carriers are starting to check for this back up documentation in order to qualify your home for any insurance credits. Not having the proper documentation could result in a review or the denial of a credit to be issued.



This photo shows the inspector validating the reinforcement in the walls with his metal detector.



LEFT: A qualifying SWR for OIR 1802 purposes. Notice the seal is typically only along the joints.

RIGHT: A photo of foam insulation, which does NOT qualify as an SWR.



Secondary Water Resistance

SWR or No SWR? The million dollar question. To understand whether or not the home does or does not have an SWR, you must first understand the nuances associated with this question.

The 2001 Florida Building Code requires an SWR to be installed with any reroof or new roof. The difference is that the FBC definition of an SWR is NOT the definition

used by the Office of Insurance Regulation, so just because a roof meets the 2001 FBC, DOES NOT mean it has a qualifying SWR.

Many inspectors incorrectly complete this question because of this confusion. In order to qualify for an OIR SWR credit, you must have a self adhering modified bitumen roofing underlayment applied directly to the roof

sheathing or foam SWR sprayed from inside the attic (not spray foam insulation). If you live in Miami-Dade, your SWR must meet additional requirements.

Photographs of the application of said SWR or documentation from the roofer or homeowner are required to validate when the SWR is not visible.

Opening Protection

This is by FAR the question most often incorrectly answered by inspectors and the question that creates the most confusion with homeowners. You must read carefully the detailed descriptions on the OIR 1802 form in order to understand what protection rating is applicable for your home.

Most homeowners protect their window openings, but forget about their door openings, most often, the garage door opening.

In order to receive the HURRICANE rating, EVERY opening on the home, including garage door, skylights and gable vents, MUST be protected with impact-resistant products that have been tested and comply with the codes

outlined on the form.

Your inspector will rarely check "Basic" rating on the OIR 1802, but if checked, it is likely that your opening protection is older and installed prior to the Large Missile Impact testing protocol.

The "Not Rated" category on the OIR 1802 is most commonly checked when the garage door is unprotected, even if every glazed (glass) opening is protected with Hurricane rated products.

If your garage door has glazing (small openings), your inspector will consider the entire home as rated "None" for the opening protection on the OIR 1802.

homes in high velocity zones, have some protection already in place!

Examples of mitigation upgrades include providing additional protection for one or more openings, bracing gable ends or installing SWR's during re-roofing projects. In almost all cases, the cost of mitigation upgrades is less than the discount you may be eligible

"None" does not necessarily mean that no openings are protected. According to this form, it can also mean that one or more openings are not protected with approved products.

We often see homeowners protecting their homes with plywood panels. This IS a form of protection, but in order to qualify for an insurance discount, the panels must be installed with certain attachments and meet the 2004 FBC, which they rarely do.

Window film DOES NOT count as an approved form of protection and will always be marked None on the 1802 report unless additional forms of protection are present as well.

to receive when the savings is calculated over the validity period of the inspection report: FIVE YEARS!

The cost of upgrading your garage door may be \$500, but the Hurricane rating your home would then qualify for, MAY be as much as \$700-1000 per year!* (Figures are estimated and vary based on property location and insurance carrier.)



EVERY OPENING, including skylights and gable vents, must be protected in order to receive the Hurricane rating.



This home had every opening BUT this one protected. Because the glazing on this door is not protected with an impact resistant product, the ENTIRE home is classified as None.



If you have Hurricane protection on EVERY opening, the inspector will verify the product and photograph the approval stickers or documentation in order to qualify your discount.

Summary

When homeowners truly understand what mitigation upgrades need to be done to receive insurance premium discounts, many times these upgrades are conducted, just as the legislation was set up to do!

This is because the upgrades needed are often simple and/or cost-effective because many