

Hurricane Retrofit Guide



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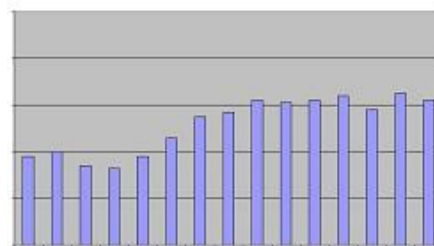
Evaluating the Condition of Your Shingle Roof

Age: Sooner or later, all roofing needs to be replaced. If shingles are old and worn, patching or limited repairs won't help when a hurricane strikes. If you know how long it has been since your shingles were replaced, that is a good starting point. While many of the better products come with limited warranties for 25, 30 years or more, the hot sunny Florida climate conspires to shorten that life span. Ultraviolet rays break down the asphalt used to bind the stone granules to the top surface and heat bakes the shingles also causing the components to break down and the shingles to become brittle and lose strength. The standard 3-tab shingles used in the past were typically rated for only 15 years. In addition, most if not all of the older warranties were voided for hurricanes.

Caution About Warranties: Warranties are largely developed for marketing purposes and roof cover warranties are frequently of limited value. Most of the manufacturer's warranties are limited to errors and defects in the product and shift the responsibility for the warranty on the installed product, if there is one, to the installer.

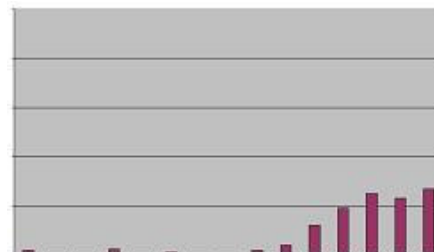
Studies of hurricane damage have shown that when wind gusts exceed about 120 mph, between 3 and 5 out of 10 shingle roofs suffered enough damage to require re-roofing, regardless of the age of the roof. As shingle roofs get to be more than about 10 years old, the failure rates in areas that likely experienced only 75 to 95 mph gusts ran at a rate of 1 to 2 out of 10, while the failure rates dropped to about 1 in 20 or less for roofs that were less than 5 years old.

Consequently, if your roof is more than 10 years old and particularly if it shows some of the signs of aging outlined below, you are likely to suffer significant shingle damage if a strong hurricane strikes your community.



Failure Rate during 120 MPH Winds by Age of Roof

(click image for larger version)



Hope for the Future? When it comes to installing a new shingle roof, there are several signs that suggest that future performance can be better than past experience. First, there are new products available on the market with significantly higher wind ratings than in the past. Second, it has been clearly demonstrated that lighter colored shingles do not get as hot as darker shingles so they should hold their strength longer. Unfortunately, the higher rated products are so new that we don't have experience to show how well they will hold up over the long haul and there has not been any systematic study of the influence of shingle color and age on hurricane performance.

Failure Rate during 95 MPH Winds by Age of Roof

(click image for larger version)

As you read through the information on roofs, some of the terms used may not be familiar to you. You can click on [Roofing Concepts and Terms](#) to access a list of definitions that may be helpful.



If you don't have a license to climb a ladder or your spouse or friends have told you that you have no business on a ladder, you can try binoculars or skip to [Get an Expert Opinion](#). There are reasons why roofers have extremely high workers compensation rates (see [Ladder Safety Tips](#)).

Inspect the shingles: Print out and use the [Checklist for Shingle Roof Evaluation](#).

From the top of your roof: Look for cracks, broken tabs, buckling curling or blistering of the tabs, and tabs with most of the surface granules worn off. These sign of aging are indicators that you are likely to lose shingles during a hurricane. If your shingles are in good shape, they should lie flat and the lower edges should be well adhered to the top surface of the shingle below. Shingles should be inspected at least yearly for signs of aging and weakness. If your shingles are cracked, have broken tabs, you can see shiny fiberglass fabric (weave), the tabs are bowed or cupped, or granules are worn off, then your shingles are likely in need of replacement because they will probably not stay on the roof in high winds.



Curled Shingle Tab

(click image for larger version)



Partially Lifted Shingle Tab

(click image for larger version)



Loose Shingle Tab

(click image for larger version)



Cracked Shingle Tab

(click image for larger version)



Broken Shingle Tab

(click image for larger version)



Buckled Shingle Tab

(click image for larger version)

Carefully lift up on a number of tabs: Using your thumbs or fingers, pressed against the bottom edge of the shingle, slowly but firmly lift up on the edge of the shingle to test how well it is attached to the top of the shingle below. Note that the target bond strength for wind resistant shingle tabs is between 12 and 17 pounds, so don't over do it. If the seal is already broken and the tab is not adhered to the shingle below or if it lifts easily, it is time to plan on re-roofing. If the shingle tab does separate from the top of the shingle below, be careful not to lift the edge of the shingle too far, old shingles tend to get brittle and the tabs may break off. If a tab does break off, you can buy some time (for aesthetic purposes) by gluing it back in place using roofing cement. If your shingles are still somewhat flexible and in reasonable shape, you may be able to buy some time before re-roofing by re-sealing the edges of the tabs to the top of the shingle below.



Video: Lifting tabs

(click image to view video)

From inside your attic: On a sunny day, go up to your attic and use a flashlight to inspect for stains caused by leaks. Look at the roof sheathing, rafters or trusses, and drywall. Look especially carefully around chimneys (including triangular diverters mounted above the chimney to divert water away from the chimney - crickets), and wherever the roof changes shape of slope. Also look for evidence of water on the walls and in the insulation around gable end vents. These signs that water probably entered during a thunderstorm is a good hint that water will enter during a hurricane.

Inside your house: look for cracked paint, discolored gypsum board, and peeling wallpaper as signs of damaged roof areas. However, be aware that another cause of stains on a ceiling can come from air conditioning ducts that sweat, i.e. drops of water from condensation that forms on the ducts in a hot humid attic.

Also Check Anchorage of Ridge Vents, Off-Ridge Vents, and Turbines:

From the top of the roof: Check off-ridge vents to see if they are loose, check for fasteners anchoring turbines to the round duct that sticks up through the roof. Check to make sure that the round duct is secure. Check around all pipes that stick up through the roof. The flashing around the pipe should be sealed to the pipe with no gaps or cracks.

From inside your attic: Determine the spacing and size (length - do they go all the way through the roof deck?) of nails or screws used to hold down ridge vents, off-ridge attic vents, turbines, and any kitchen or bathroom vents that protrude through the roof. Many times roofers use the same length nails to hold down these things as they do to hold down the shingles. Most likely a longer nail was actually required for adequate anchorage of these items. If longer nails were used and they stick far enough through the roof deck, you can improve the anchorage by clinching (bending over) the nails from inside your attic.



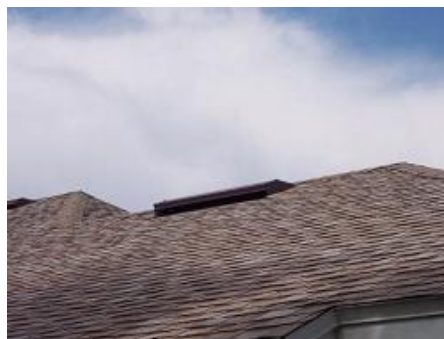
Ridge Vent on Shingle Roof

(click image for larger version)



Ridge Vent Connection to Roof with Nails Working Their Way Out

(click image for larger version)



Off-Ridge Vent on Shingle Roof

(click image for larger version)



Roof Ventilation Turbine

(click image for larger version)

Get an Expert Opinion: If you are not able to make the inspection yourself,

get a reputable roofer or home inspector to evaluate your roof. (Check with neighbors and friends for referrals and check with the Better Business Bureau).

[Checklist for Shingle Roof Evaluation](#)

[What can I do about my shingle roof?](#)

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