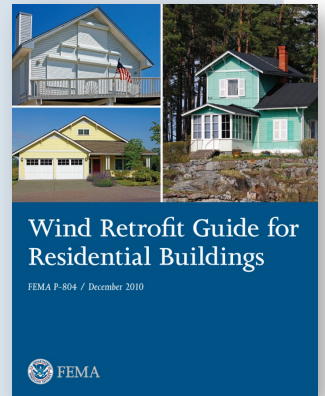


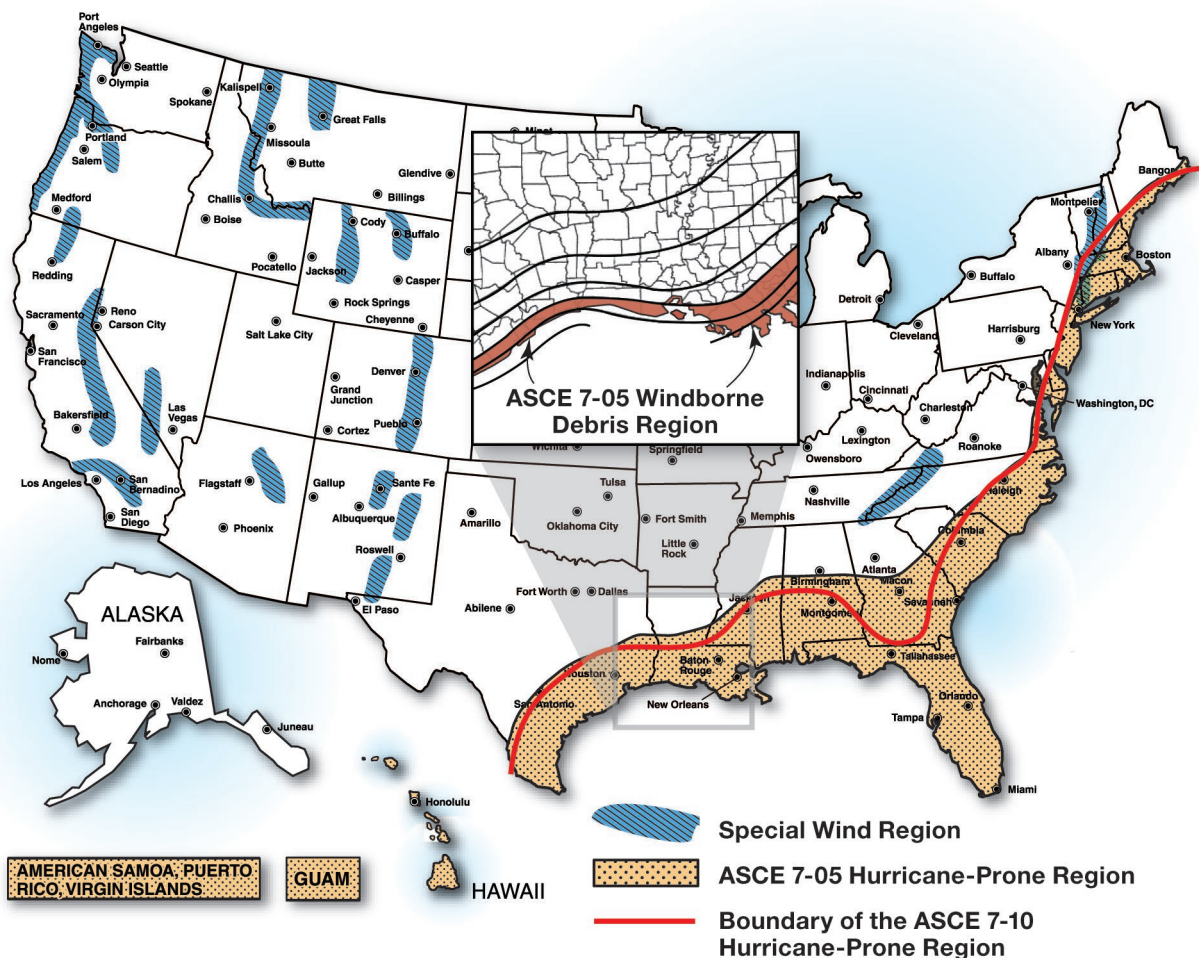


### Key Topics:

- Identifying the risks and desired level of protection (*Chapter 2*)
  - Wind hazards in the hurricane-prone region
- Evaluating existing homes (*Ch. 3*)
  - Building codes
  - Costs and benefits (cost effectiveness)
  - Permitting and inspections
- Technical design and construction methods (*Ch. 4*)
  - Developing a continuous load path
  - Protect openings (e.g., windows, doors, skylights) with covers
  - Reinforce or replace garage doors
  - Brace gable end roof framing
  - Roof covering replacements
  - Securing the roof deck
  - Additional mitigation measures (e.g., coverings, tree fall, exterior equipment)
- Wind retrofit programs (*Ch. 5*)



### Hurricane Prone Regions



## Description

This publication provides guidance on how to improve the wind resistance of existing residential buildings in Mississippi and across the Gulf Coast. Although this Guide was developed to support initiatives in the Gulf Coast region, the content of this document should serve as guidance on retrofitting existing buildings for improved performance during high-wind events in all coastal regions; it is applicable to one- and two-family dwellings, but not to manufactured housing. Although this guidance is primarily intended to be applied in the hurricane prone region of the United States, it may also be applied to other regions. Retrofitting a home is most effective when building components are strengthened in groups, or packages, to achieve a more complete improvement to the performance of the building. This guide proposes three “Mitigation Packages” retrofits: Basic, Intermediate, and Advanced (see diagram to the right). Components of each mitigation package are presented in the guide. The improvements of each package build on the retrofits of the previous package to provide increasing levels of wind hazard resistance. The Insurance Institute for Business and Home Safety (IBHS) FORTIFIED for Existing Homes™ Program was developed in conjunction with this Guide, and as a result, the framework for these two programs is similar.

### Roof to House Poor Connection



Both guides were developed based on FEMA's MAT observations and guidance documents, as well as modern engineering codes and standards.

## Target Audience

Homeowners, contractors, evaluators, local government officials, design professionals (architects and engineers). Evaluators may include building science professionals such as registered architects and engineers, building officials, and evaluators that are certified through State or locally recognized wind retrofit programs.

### Basic Mitigation Package Retrofits

- |   |    |  |
|---|----|--|
| <b>Option 1:</b><br>Improvements<br>with roof covering<br>replacement | OR | <b>Option 2:</b><br>Improvements<br>without roof covering<br>replacement |
|---|----|--|

#### Additional Required Retrofits

- Strengthening vents and soffits
- Strengthening overhangs at gable end walls
- Protecting openings per the Intermediate Package, if located in the windborne debris region

### Intermediate Mitigation Package Retrofits

- Includes the Basic package retrofits plus:
- Protecting windows and entry doors from windborne debris
- Protecting garage doors from wind pressure and garage door glazing from windborne debris
- Bracing gable end walls
- Strengthening connections of attached structures

### Advanced Mitigation Package Retrofits

- Includes the Basic and Intermediate package retrofits plus:
- Developing a continuous load path
- Protecting windows, entry doors, and garage doors from windborne debris and wind pressure

For more information, see the FEMA Building Science Frequently Asked Questions website at <http://www.fema.gov/frequently-asked-questions-building-science>.

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