

RETROFIT Improvements

Secure Deck Posts at Beams & Piers

Making
Homes
Safer in
Disasters

Retrofit Opportunity

- Existing decks can be reinforced at any time. Inspection and repair (as needed) should be a regular and on-going maintenance activity.

Purpose

- To prevent deck failure

Benefits

- Ensures safety of occupants
- Ensures structural integrity of deck and house

Hazards

Wind



Rain



Flood



Seismic



Fire



Snow



Summary

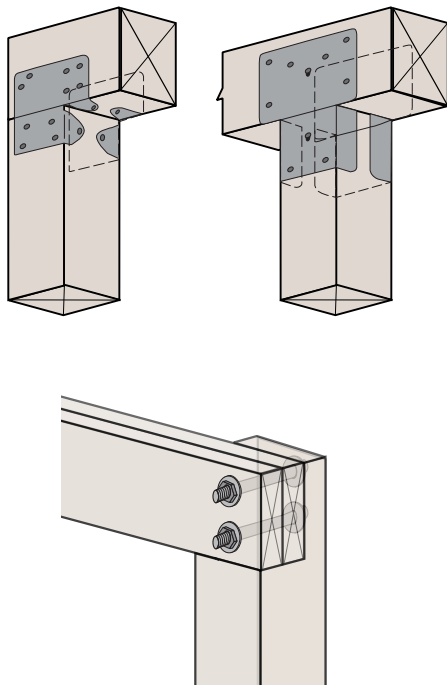
In many homes elevated decks are not properly secured to the ground to resist high wind or earthquake loads — or even the load of a large group of people moving or dancing. To improve a deck's resistance to lateral loading, deck posts and beams should be secured with metal connectors. Posts should also be secured to foundation piers and the piers should be properly reinforced and ground coupled.

Decks are easily accessible from the exterior for inspection and repair. Several publications, listed in the Resources section, can assist a homeowner with what to look for and how to correct weak connections using hardware that is readily available. The retrofit hardware for beam and post connections for a 10' x 12' self-supported deck might consist of 4 pair of post-beam connectors and 8 (2 each side) post-pier hold downs secured to the pier with expansion bolts and epoxy. Costs for each are generally under \$20 and vary with load capacity and galvanized coating hardware. For homeowners who prefer to let the experts handle maintenance and repairs, consult a licensed contractor about this and other safety retrofits that are practical for your home.

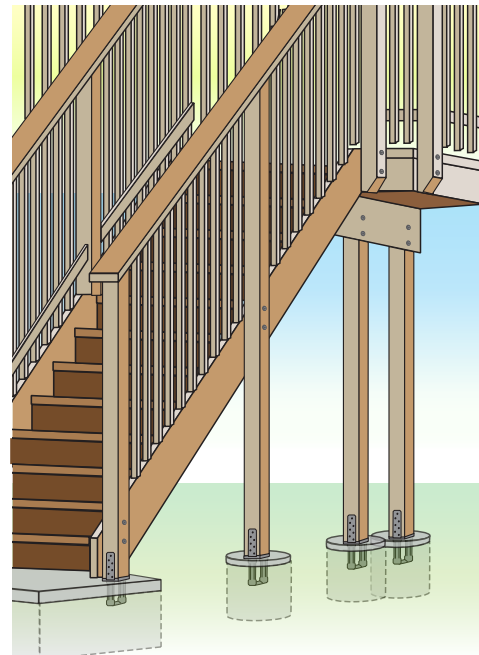
Illustrations

Retrofit

Beam-to-Post Connections



Post-to-Pier Connections



Potential Damage



Photo: www.fema.gov

Key Steps

- Inspect column and post connections.
- Inspect deck for loose fasteners and boards.
- Replace rusted (or install missing connections) following on the Guides listed in the Resources section.
- Confirm fasteners are appropriate for decking material (i.e., approved for use with pressure treated lumber, composite decking, etc.).
- Follow up with inspection of all other deck and handrail connections.
- Your contractor may have additional ideas on how to improve the safety of your home.
- For more details about this retrofit improvement, please refer to the list of Resources in the section below.

Resources

American Wood Council, *Prescriptive Residential Wood Deck Construction Guide*
<http://www.awc.org/Publications/DCA/DCA6/DCA6-09.pdf>

FEMA, *Homebuilders' Guide to Earthquake-Resistant Design and Construction*
<http://www.fema.gov/library/viewRecord.do?id=2103>

Florida Division of Emergency Disaster, *Porch Post/Column Uplift Worksheet*
http://www.floridadisaster.org/hrg/content/porches/column_uplift_worksheet.asp

Florida Division of Emergency Disaster, *Porches & Attached Structures*
http://www.floridadisaster.org/hrg/content/porches/porches_index.asp

Insurance Institute for Business & Home Safety, *Fortified for Existing Homes™: Engineering Guide*
http://www.disastersafety.org/content/data/file/IBHS_FOR-engineering-guide.pdf

International Association of Certified Home Inspectors, *Inspecting a Deck, Illustrated*
<http://www.nachi.org/deck-inspections.htm>

Simpson Strong Tie®, *Deck Framing Connection Guide*
<http://www.strongtie.com/ftp/fliers/F-DECKCODE09.pdf>

