

When is Engineering Required? Door and Window Replacement

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This question has less to do with what component is being replaced than it does with why it's being replaced and the overall scope of the project.

If the door or window is being replaced as a part of a repair project, the building code allows you to replace these units in kind unless there is substantial structural damage. In the case of a repair regardless of whether windows and/or doors were planned for replacement, if the building has sustained substantial structural damage you are required to comply with section 407.3.2 of the 2004 Florida Existing Building Code.



407.3.2.1 Engineering evaluation and analysis

An engineering evaluation and analysis that establishes the structural adequacy of the damaged building shall be prepared by a Florida-registered engineer or architect and submitted to the building official. The evaluation and analysis may assume that all undamaged structural elements and systems have their original strength and stiffness.

407.3.2.1.1 Extent of repair

After the building is repaired the evaluation and analysis shall demonstrate that the building, once repaired, complies with the wind provisions of the Florida Building Code, Building.

If the structure is being altered and doors and/or windows are being changed, the code requires that any unit installed have Florida Product Approval. No requirement is given for upgrading the opening or bucks, but the window and door units, themselves, must meet the requirements of the codes applicable to windows or doors being installed in new construction. This means that the windows will need to attach to the substrate using tapcons or screws. One exception is allowed for egress windows, not a structural issue, but a five percent reduction in the clear opening dimensions is allowed. This might save a structural modification from being required. Per the 2004 Florida Existing Building Code:

505.1 General

Means of egress for buildings undergoing alteration shall comply with the requirements of Section 501.1 and the scoping provisions of Chapter 1 where applicable.

Exception: *Door and window dimensions. In residential dwellings and dwelling units, a maximum of 5 percent reduction in the clear opening dimensions of replacement doors and windows shall be allowed.*

If the door or window replacement requires alteration of the structure to accommodate the new unit then engineering will be required.

The answer to the original question is that if you are only changing out windows and doors the code will not require you to perform a structural evaluation of the building or upgrade the structural system. However, it makes very little sense to install an impact resistant window or door unit in a wall that will be gone with the wind.

If you have questions about this issue, we're here to help. Contact Gary Pailthorp at gpailthorp@brackenengineering.com.

Industry Update: FAS3 [Florida Association of Sinkhole Stabilization Specialists]

Recently, the Underpinning Subcommittee of FAS3 published its UP-08 *Minimum Guidelines for the Design and Use of Underpins When Performing Foundation Stabilization and/or Supplementation*. This standard was unanimously approved by the members of the Association, and is currently available to download for free from its website at www.fas3.org.

FAS3 is an association of engineers, geologists, and contractors concerned with the planning, design and construction of subsurface grouting and foundation stabilization. The association was initially formed in 2006, and began with 8 founding members consisting of engineers, geologists, and contractors. To date the association has grown to include approximately 20 companies representing engineers, geologists, contractors, and manufacturers.



The Association was formed to set standards for conduct, workmanship, and business practices for those involved in the profession. These standards are developed by establishing a consensus among reputable engineers, geologists, and contractors, and establishing a guideline or standard for the performance of work. The Association is made up of various subcommittees that have been tasked with establishing standards and guidelines for the performance of work within the sinkhole industry.