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Mr. Dudley;

You have asked me to provide an opinion on the application of the Florida Building Code – Energy Conservation volume and Florida Statute 553 Part V as they apply to replacement fenestration products in existing residential structures. While some may feel a conflict exists in the application of the rules for fenestration installations, I believe the issue is clear and the rules are definitive.

While previous interpretations of this issue based on earlier editions of the Code may have referred to a Florida-specific definition of “renovation” and code sections and tables that further caused confusion, those sections have been largely eliminated from the code in the Fifth Edition, and I believe the latest update to the Code is consistent with the statutory language. Statute supersedes code, and, as such, requires the application of the Florida Building Code – Energy Conservation volume to apply to replacement fenestrations.

It is my opinion, replacement of fenestrations in residential structures requires compliance with the Florida Building Code – Energy Conservation volume. In order to understand this requirement, we must start at the beginning. Florida Statute 553, Part V, Section 553.905 which states:

553.903 Applicability.—This part applies to all new and renovated buildings in the state, except exempted buildings, for which building permits are obtained after March 15, 1979, **and to the installation or replacement of building systems and components** with new products for which thermal efficiency standards are set by the Florida Building Code-Energy Conservation. The

provisions of this part shall constitute a statewide uniform code. {Emphasis added}

Based on this, we must refer to the Florida Building Code (FBC) in order to identify and comply with the rules governing the installation. Under the Florida Building Code, we cannot automatically go to the FBC – Energy Conservation volume for an existing building. This is because, the FBC – Administration section states in section 101.2

101.2 Scope: Exception 2 – Existing buildings undergoing repair, alterations, or additions or change of occupancy shall comply with Chapter 34 of this code.

When referring to Chapter 34 of the FBC, section 3401.1 tells us that alterations and repairs to an existing structure shall comply with the provisions of the Florida building Code, Existing Building volume. This means we need to refer to that volume prior to applying any other section of the Florida Building Code. In order to apply the existing building volume, we must determine the level of work being done. Based on the level of the work as defined in the existing buildings volume, specific rules governing will apply. Various sections of that volume will apply, depending on the classification of the work. Within all chapters regarding alterations, the code has sections 707.1, 811.1 and 908.1, all specifically requiring compliance with the Florida Building Code – Energy Conservation volume.

This requirement then takes us to the Florida Building Code – Energy Conservation volume and section R101.4.7 which requires fenestrations to meet the requirements of the Energy Conservation volume of the Florida Building Code.

In summary, the intent of the legislation and the code are very similar, provide Floridians with a functioning and energy efficient residence. As the two documents are written by people having a different approach to wording, they may appear to be in conflict when they are actually stating the same or similar requirements.

It is my opinion that both of the documents require the same conclusion: replacement fenestrations must meet the requirements of the current edition of the Florida Building Code – Energy Conservation volume. This conclusion is reached based on a review of the documentation that follows. We are attempting to provide Florida residents with an energy efficient structure for their benefit along with the benefit to society of reducing energy consumption overall.

The intent of Florida Statute 553 Part V as stated in the legislation is as follows:

553.901 Purpose of thermal efficiency code.—The Department of Business and Professional Regulation shall prepare a thermal efficiency code to provide for a statewide uniform standard for energy efficiency in the thermal design and operation of all buildings statewide, consistent with energy conservation goals, and to best provide for public safety, health, and general welfare. The Florida Building Commission shall adopt the Florida Building Code—Energy Conservation, and shall modify, revise, update, and maintain the code to implement the provisions of this thermal efficiency code and amendments thereto, in accordance with the procedures of chapter 120. The department shall, at least triennially, determine the most cost-effective energy-saving equipment and techniques

available and report its determinations to the commission, which shall **update the code to incorporate such equipment and techniques**. The proposed changes shall be made available for public review and comment no later than 6 months before code implementation. The term "cost-effective," as used in this part, means cost-effective to the consumer.
{Emphasis added}

In order to determine which equipment and techniques are being referred to and are necessary for the proper application, we go to Florida Statute 553.903. This section provides the responsibility of determining the needs and updating those needs for energy conservation to the Florida Building Commission. The Florida Building Commission has reviewed the equipment, techniques and other information, including public comment, then adopted those requirements into the Florida Building Code in accordance with Florida Statute 120, providing the public and the practitioners of the Code the ability to provide input and testimony regarding the requirements.

The statutory language provides direction and purpose of application for energy conservation:

553.903 Applicability.—This part applies to all new and renovated buildings in the state, except exempted buildings, for which building permits are obtained after March 15, 1979, and to the installation or replacement of building systems and components with new products for which thermal efficiency standards are set by the Florida Building Code-Energy Conservation. The provisions of this part shall constitute a statewide uniform code.

The key word in this section, as it applies to existing buildings is the use of the word "and" where it refers to installation or replacement of building systems and components. The sentence goes on to refer specifically to those items which have thermal efficiency standards set for them. Based on the requirements contained within the Florida Building Code, it is clear this would include fenestrations, such as windows. This information is further clarified in the statutory language Section 553.902:

553.902 Definitions.—As used in this part, the term:

(3) "Exterior envelope physical characteristics" means the physical nature of those elements of a building which enclose conditioned spaces through which energy may be transferred to or from the exterior.

(6) "Renovated building" means a residential or nonresidential building undergoing alteration that varies or changes insulation, HVAC systems, water heating systems, or exterior envelope conditions, if the estimated cost of renovation exceeds 30 percent of the assessed value of the structure.

While the definition of renovated building would seem very unlikely to apply to a replacement fenestration project alone, due to the 30% cost requirement, it does not mean that replacement fenestration is completely exempt from the minimum requirements of the code. This is due to the statutory language which clearly states that all equipment and components for which the Commission has set specific thermal efficiency requirements need to comply. Whereas the fenestration is a part of the exterior thermal envelope of the structure, it is clearly considered a component of the overall assembly which may contain wood, concrete, brick, block, steel, fiberglass, and/or other items, all of which are

components of the thermal envelope. Other sections of the Code as shown below help to provide information that further clarifies both the intent and application of the Energy Conservation volume.

Excerpts from the Florida Building Code, Energy Conservation volume, 5th Edition:

R101.4.7 Building systems and components.

Thermal efficiency standards are set for the following building systems and components where new products are installed or replaced in existing buildings, and for which a permit must be obtained. New products shall meet the minimum efficiencies allowed by this code for the following systems and components:

Heating, ventilating or air conditioning systems
Service water or pool heating systems.
Lighting systems
Replacement fenestration.

R101.3 Intent.

This code shall regulate the design and construction of buildings for the effective use and conservation of energy over the useful life of each building. This code is intended to provide flexibility to permit the use of innovative approaches and techniques to achieve this objective. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

R101.4 Applicability.

Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

R101.4.1 Existing buildings.

Except as specified in this chapter, this code shall not be used to require the removal, alteration or abandonment of, nor prevent the continued use and maintenance of, an existing building or building system lawfully in existence at the time of adoption of this code.

R101.4.3 Additions, alterations, renovations or repairs.

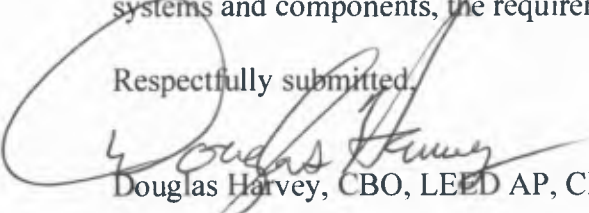
Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code. Additions, alterations, renovations or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

Exception: The following need not comply provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Glass only replacements in an existing sash and frame.

Section R101.4.7 specifies thermal efficiency requirements for replacement fenestration in existing buildings. The fact that certain repairs or alterations to windows are exempted in R101.4.3 is further evidence that the clear intent of the Florida Building Code is to regulate replacement fenestration – not only in major renovations, but generally in all replacement projects. While the Commission has not set thermal efficiency requirements for all replacement systems and components, the requirements for replacement fenestration are clear.

Respectfully submitted,


Douglas Harvey, CBO, LEED AP, CFM