

Design Standards for Wind Resistance - For protection against hurricane winds, the code adopts the national model building code engineering standard (American Society of Civil Engineers Standard 7 or "ASCE 7").¹ This standard provides that buildings constructed in regions that are expected to experience hurricane winds of less than 120 mph must be designed to withstand external wind pressures identified for their location. Buildings constructed in regions that are expected to experience hurricane winds of 120 mph or greater must not only be able to withstand external wind pressures but also internal pressures that may result inside a building when a window or door is broken or a hole is created in its walls or roof by large debris. Areas within one mile of the coast that experience at least 110 mph winds are also required to meet the 120 mph standards for external and internal pressures.

The code requires that new homes throughout the state be designed to resist external wind speeds that the ASCE 7 standard predicts these homes will experience sometime within a 50 to 100-year time period. In November of 1999, the Commission agreed with the developers of ASCE 7 and applied additional requirements regarding protection of window and doors in what is called the "wind-borne debris region" to ensure that buildings inside this region will also be able to withstand internal wind pressure caused by the penetration of flying debris. This region includes areas expected to experience winds of 120 mph or greater as well as areas within one mile of the coast that experience at least 110 mph winds.

The ASCE 7 standard considers both wind speeds that can be developed by hurricanes and factors such as terrain and shielding by other buildings which affect the strength of those winds when they impact buildings. Exposure A is characteristic of large cities with large expanses of tall buildings. Exposure B is characteristic of suburban areas with large expanses of short and medium height buildings and wooded areas. Exposure C is characteristic of areas of exposed expanses of open terrain or open water. Section 553.71, F.S., defines "exposure category C" to mean, except in the high velocity hurricane zone, that area which lies within 1,500 feet of the coastal construction control line, or within 1,500 feet of the mean high tide line, whichever is less. On barrier islands, exposure category C is applicable in the coastal building zone set forth in s. 161.55(5), F.S.

Wind-Borne Debris Protection - Subsection (3) of s. 109 of ch. 2000-141, L.O.F., directs the Commission to adopt for areas of the state not within the high velocity hurricane zone (Broward and Miami-Dade counties), pursuant to s. 553.73, F.S., the wind protection requirements of the ASCE, Standard 7, 1998 edition, as modified by the commission in its February 15, 2000, adoption of the Florida Building Code.² However, the Legislature stipulated that from the eastern

¹ At the time of adoption of the 2001 Building Code, the relevant ASCE 7 standard was the 1998 Edition. Pursuant to CS/CS/CS/SB 442 (ch. 2005-147, L.O.F.), the Commission was authorized to amend the 2004 Building Code to reference the 2002 Edition of ASCE 7.

² Subsection (3), section 109, Ch. 2000-141, L.O.F., states: *For areas of the state not within the high velocity hurricane zone, the commission shall adopt, pursuant to s. 553.73, Florida Statutes, the wind protection requirements of the American Society of Civil Engineers, Standard 7, 1998 edition as implemented by the International Building Code, 2000 edition, and as modified by the commission in its February 15, 2000, adoption of the Florida Building Code for rule adoption by reference in Rule 9B-3.047, Florida Administrative Code. However, from the eastern border of Franklin County to the Florida-Alabama line, only land within 1 mile of the coast shall be subject to the windborne-debris requirements adopted by the commission. The exact location of wind speed lines shall be established by local ordinance, using recognized physical landmarks such as major roads, canals, rivers, and lake shores, wherever possible. Buildings constructed in the windborne debris region must*

border of Franklin County to the Florida-Alabama line, only land within 1 mile of the coast is subject to the 120 mph windborne-debris requirements adopted by the Commission. This subsection (often referred to as the “Panhandle exception”) provides for the exact location of wind speed lines to be established by ordinance using specified physical landmarks, and provides that buildings constructed within the windborne debris region must be either designed for internal pressures resulting from a broken window or door or a hole in the walls or roof, or be designed with protected openings (i.e., use of shutters or impact resistant glass). The subsection further provides that except in the high velocity hurricane zone, local governments may not prohibit the option of designing buildings to resist internal pressures.

Commission Recommendations - In January of 2005, the Commission issued a report entitled, *The Florida Building Code Commission Report to the 2005 Legislature*. This report contained a number of recommendations to improve the effectiveness of the code. The report included the following specific recommendations relating to wind protection provisions:

- Eliminate the edition designation and referenced amendments of the ASCE Standard 7 currently in section 109, ch. 2000-141, L.O.F., and allow updated editions of the standard to be adopted through updates to the code.
- Eliminate the designation of the wind-borne debris region for the Panhandle region of Florida from ch. 2000-141, L.O.F., and allow the wind-borne debris region for that area to be determined by the code.
- Eliminate the definition of the wind exposure class C from s. 553.73, F.S., and allow the definition of ASCE 7, as adopted by the code, to be used.
- Authorize the Commission to make determinations related to designing for internal pressures.

Changes Enacted During the 2005 Session – During the 2005 Regular Session, the Legislature addressed several issues relating to wind-design standards. CS/CS/CS/CS/SB 442 (ch. 2005-147, L.O.F.) directed the Commission to update the code with the most recent and relevant design standards for wind resistance of buildings issued by the ASCE, notwithstanding subsection (3) of section 109, ch. 2000-141, L.O.F. However, the bill specified that this provision was intended to *explicitly supersede only the first sentence of that law* (see footnote 2). As a result, the bill effectively exempted the Panhandle region from the requirement that the Commission utilize the most current edition of the wind protection requirements contained in ASCE 7.

The bill also instructed the Commission and local building officials to evaluate the damage from Hurricane Ivan and make recommendations to the Legislature for changes to the code as it relates to the region from the eastern border of Franklin County to the Florida-Alabama line. Finally, the bill required the Commission to evaluate the definition of “exposure category C” as currently defined in s. 553.71(10), F.S., and make recommendations for a new definition that more accurately depicts the Florida-specific conditions prior to the 2006 Legislative Session.

be either designed for internal pressures that may result inside a building when a window or door is broken or a hole is created in its walls or roof by large debris, or be designed with protected openings. Except in the high velocity hurricane zone, local governments may not prohibit the option of designing buildings to resist internal pressures.

Post-Session Commission Deliberations – Pursuant to the requirements of CS/CS/CS/CS/SB 442, the Commission convened several workshops to solicit input from local building officials and other stakeholders in the Panhandle region of the state. Much of the discussion centered on the extent to which property damage resulted from hurricane-related storm surges versus wind-borne debris. Similarly, considerable discussion focused on the impact of revised windborne debris protection requirements on the costs of housing in the region. At the conclusion of the initial workshop, there was consensus for the strategy of conducting a study on the treed environment effects and historical wind data affects, prior to making recommendations to the Legislature regarding the existing definition and whether to recommend changes.³

At the second workshop, the Commission representatives voted unanimously to contract with a consultant to conduct an engineering-based risk assessment of hurricane windborne debris protection options for the Panhandle in order to analyze the risks, costs, and benefits of windborne debris protection for the region. The research would focus on factors unique to the Panhandle region including treed areas inland of the coast, and consider historical wind data affects. The requested funding authorization was approved, and the preliminary research results were presented to the Commission in their March 2006 meeting.

Currently, the wind-borne debris model is being updated, but the preliminary data suggests that there is a significant reduction in windspeeds beneath the trees. The presentation of the final report is set for the Commission's May meeting and will include data on risk, cost, loss reduction benefits, and damage frequency with and without opening protection (e.g., shutters for windows) for model houses at various locations in the panhandle. Following the final report and workshop, the Commission will use the study results and stakeholder input, to make its recommendations to the 2006 Legislature as required by law.⁴

Building Code Education and Outreach Council – s. 553.841, F.S. establishes the Building Code Education and Outreach Council. This council was created to coordinate, develop, and maintain education and outreach to ensure administration and enforcement of the Florida Building Code.

The members of the council consist of one representative from: the Florida Building Code Administrators and Inspectors Board, the Construction Industry Licensing Board, the Electrical Contractors' Licensing Board, and the Florida Board of Professional Engineers. In addition, two members are representatives from the Board of Architecture and Interior Design and three members are representatives from Florida Building Commission.

The Council meets semiannually in Tallahassee, Florida. The Building Code Education and Outreach Council shall: consider and determine any policies or procedures needed to administer ss. 489.109(3), F.S., and 489.509(3), F.S., administer the provisions of s. 553.841, F.S., determine the areas of priority for which funds should be expended for education and outreach, review all proposed subjects for advanced courses concerning the Florida Building Code, and

³ *Report to the Florida Building Commission, Florida Panhandle Windborne Debris Region Workshop I, September 14, 2005.*

⁴ *Report to the Florida Building Commission, Florida Panhandle Windborne Debris Region Workshop II, February 16, 2006.*

recommend to the Commission any related subjects that should be approved for advanced courses.

Each Biennium, upon receipt of funds by the Department of Community Affairs from the Construction Industry Licensing Board and the Electrical Contractors' Licensing Board provided under ss. 489.109(3), F.S., and 489.509(3), F.S., the Council is required to determine the amount of funds available for education and outreach projects from the proceeds of contractors licensing fees and identify, solicit, and accept funds from other sources for education and outreach projects. The Commission shall consider and approve or reject the recommendations made by the council for subjects for education and outreach concerning the Florida Building Code. Any rejection of the recommendations must be made with specificity and must be communicated to the Council.

III. Effect of Proposed Changes:

This CS authorizes the Florida Building Commission to amend the wind design standards contained in the Florida Building Code subject to the amendatory requirements contained in s. 553.73, F.S. In addition, the CS specifically authorizes the Commission to identify within the code those areas of the state from the eastern border of Franklin County to the Florida-Alabama line (the Panhandle region) that are subject to the windborne debris requirements of the code. The Commission's initial designation of windlines for this region must address the results of the Florida Panhandle Windborne Debris Region study and is only subject to the rule adoption procedures contained in ch. 120, F.S. The CS stipulates that new windborne debris requirements for the Panhandle region may not take effect for six months following completion of rule-making or May 31, 2007, whichever is sooner. This authorization expressly supersedes the limitations contained in section 109 of ch. 2000-141, L.O.F.

The CS would allow the Commission to eliminate or revise the existing "Panhandle exception" (limiting wind-borne debris requirements to within 1 mile of the coast) and amend the wind design standards applicable to the Panhandle region to incorporate the current edition of the national model building code engineering standard (American Society of Civil Engineers Standard 7, 2002 Edition). This would subject new construction in the Panhandle region to the same windborne debris requirements (enhanced door and window protection) applicable to other areas of the state. The CS also authorizes the Commission to utilize expedited rule-making procedures (ch. 120, F.S., rather than s. 553.73, F.S.) in implementing this provision.

This CS provides that the Building Code Education and Outreach Council recommends to the Commission any policies and procedures needed to administer ss. 489.109(3), F.S., and 489.509(3), F.S., and authorizes the Commission to direct the expenditure of funds derived from fees in those sections for building code education.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. Other Constitutional Issues:**V. Economic Impact and Fiscal Note:****A. Tax/Fee Issues:**

None.

B. Private Sector Impact:

The impact of the CS on homebuilders, and, ultimately, home buyers is indeterminate. To the extent the CS results in increased construction costs associated with enhanced window and door protection, homebuilders and homebuyers could be adversely impacted. However, these costs could be offset by benefits, primarily in the form of reduced hurricane-related property damage.

C. Government Sector Impact:

None.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Summary of Amendments:

None.

This Senate staff analysis does not reflect the intent or official position of the bill's introducer or the Florida Senate.
