

In part one of this article, published in the summer 2011 issue, we announced that changes to wind-load design pressure calculations are coming to the Florida Building Code (FBC) for 2012. Based on the civil engineers' standard ASCE 7-10, these changes include three new wind-speed maps, new calculation procedures, and an expansion of wind-borne debris (impact) regions. Now that the new FBC is in print and additional information is available, here are the latest updates.

Changes Coming to Wind-Load Doors



By Mark Westerfield, Clopay

While these changes to wind-load provisions in the building codes will start in Florida, the rest of the country will adopt these new wind-load standards over the course of the next few years. Exactly when the new wind-load provisions are to be adopted is determined by the building department that has jurisdiction over building codes.

Florida Implementation Date: March 15, 2012

Because of the way the Florida Building Commission tracks editions of the FBC, the new code is designated as the 2010 Florida Building Code, even though the current implementation date is March 15, 2012.

The 2010 Florida Building Code—and its companion 2010 Florida Residential Code—can be ordered at www.iccsafe.org/store. Click on “State and Local Codes” to get to the Florida page. The online versions of the FBC are available for viewing at www.floridabuilding.org.

At this time, only Miami-Dade and Broward counties have interpreted the new state maps for their locations. These two counties will still be known as the High Velocity Hurricane Zone, or HVHZ in the code.

For Risk Category II (residential and most commercial applications) Miami-Dade has determined that their new wind speed will be 175 mph, Exposure C. For the same risk category, Broward County will be 170 mph, Exposure C. For Risk categories III and IV (critical and essential facilities; i.e., hospitals, fire stations, power plants), Miami-Dade is using 186 mph and Broward, 180 mph, Exposure C.

For maps of other Florida counties, monitor www.floridabuilding.org (under “Publications”). Be aware that local jurisdictions may interpret the wind-speed maps differently.

The 2010 FBC also includes a garage door wind-load chart in the code (Table 1609.7(1)). Note that this table requires you to convert the “Ultimate Wind Speed” to “Allowable Stress Design” wind speed.

Industry Communications and Wind-Load Guides

DASMA, working with AAMA (American Architectural Manufacturers Association), WDMA (Window & Door Manufacturers Association), and FMA (Fenestration Manufacturers Association), has recently published a Technical Bulletin about these wind-load changes. The bulletin will inform engineers, architects, and building officials of the coming changes and how these changes affect the wind-load design pressures for building openings, which include garage doors. This bulletin also features a comparison wind-load chart for garage doors that includes an example of the wind-load design pressure difference between the old and new FBC for Miami-Dade.

Note that the wind-load design pressures drop about 13 percent from the old code to the new code for the same application in the Miami-Dade example shown in the bulletin. This amount of change is more than most locations will experience with the new code, but it does point out that wind-load design pressures will, in most cases, stay about the same or drop by a small amount.

New DASMA Wind-Load Guide

Along with the joint DASMA/AAMA/WDMA/FMA Technical Bulletin, DASMA has finalized Technical Data Sheet 155t, a garage door wind-load guide for the

GARAGE DOOR WIND LOAD GUIDE

Based on the 2010 Florida Building Code
Exposure B, 150-200 mph, Ultimate Design Wind Speed

Mean Roof Height	Door Size	Ultimate Design Wind Speed (V_{ult}) (from maps in Figures 1609 A, B, and C in the 2010 Florida Building Code)							
		150 mph	160 mph	170 mph	180 mph	186 mph	190 mph	200 mph	
Less than 30'	9' x 7'	21.3	24.3	27.6	30.6	32.7	34.2	38.0	
		-24.1	-27.5	-31.2	-34.6	-37.0	-38.6	-43.0	
	16' x 7'	20.4	23.3	26.4	29.3	31.3	32.7	36.4	
		-22.7	-26.0	-29.4	-32.6	-34.9	-36.5	-40.6	
		116 mph	124 mph	132 mph	139 mph	144 mph	147 mph	155 mph	
		Equivalent Nominal Design Wind Speed (from 2007 Florida Building Code)							

Design pressures are in Pounds per Square Foot (PSF)
Source: DASMA TDS 155t, p. 4

2010 Florida Building Code. This 14-page document has several wind-load design pressure charts that include:

- Wind speeds from 100 mph to 200 mph, in 10-mph increments
- Added 175-mph and 186-mph wind speeds for Miami-Dade
- Exposures B, C, and D
- Conversion of wind speed from old “nominal wind speed” to new “ultimate wind speed” (see chart on page 46)
- Testing references and assumptions used for tabulation of the results
- Wind-load design pressures computed for typical residential and commercial door sizes

DASMA has also completed work on a wind-load calculator based on ASCE 7-10 for the new 2010 Florida Building Code. This wind-load calculator generates the “Positive Design Pressure” and “Negative Design Pressure” based on user inputs for wind speed, exposure level, building information, and door information. This easy-to-use spreadsheet can be copied, and the results can be printed for reference.

The joint Technical Bulletin, the DASMA wind-load guide, and the wind-load calculator can all be found at www.dasma.com.

DASMA, working with AAMA, WDMA, and FMA, has recently published a Technical Bulletin about these wind-load changes.

Additional Florida Wind-Load News

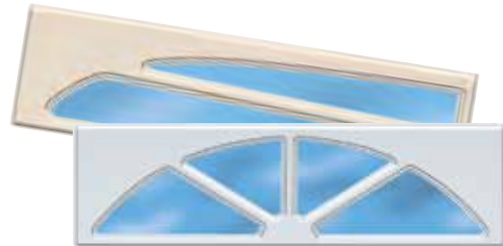
- Florida product approvals will need to be updated to list the new FBC edition on the Florida website. This must occur before March 15, 2012, for building permits issued after that date. Note that Miami-Dade NOAs (Notice of Acceptance) do not automatically expire with the new FBC.
- Florida is currently working on a uniform wind-storm mitigation verification form. Florida intends to have this form completed in early 2012 for use by the entire state. This form would be used by insurance companies to check compliance with the FBC and even insurance discounts for buildings verified to be beyond the building code.

The early drafts of this mitigation form include several roofing categories as well as exterior opening protection, in which garage doors are listed along with entry doors, windows, and skylights. A qualified home inspector will need to complete the form, and credits will be given for garage doors that meet or exceed the code, especially with regard to impact-resistant garage doors and impact-resistant glazing.

More changes are coming. We will continue to keep abreast of the changes affecting wind-load garage doors in Florida. As March 15 approaches, look for additional information as it becomes available. ■

Mark Westerfeld is director of product development and engineering at Clopay. He has 20 years of experience in testing and engineering garage door systems, holds a B.S. degree in engineering and an M.B.A., and is licensed as a Professional Engineer (P.E.) in four states.

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