

Subject: Wind Resistance of Exposed Mechanical Equipment or Appliances

This Technical Advisory is established to provide clarification on the intent of Florida Statute Chapter 553.844(4) as it applies to the proper application of current edition of the Florida Building Code.

FS553.844(4) (2016) states:

“Notwithstanding the provisions of this section, exposed mechanical equipment or appliances fastened to a roof or installed on the ground in compliance with the code using rated stands, platforms, curbs, slabs, walls, or other means are deemed to comply with the wind resistance requirements of the 2007 Florida Building Code, as amended. Further support or enclosure of such mechanical equipment or appliances is not required by a state or local official having authority to enforce the Florida Building Code.”

This exemption seems confusing at first, particularly in that it was last amended during the 2016 Legislative Session as required in HB535 – 2016 and seems to reference a building code that is at least two cycles out of date.

However, looking backwards in the Florida Statutes shows that in 2013 the language was slightly different:

“Notwithstanding the provisions of this section, exposed mechanical equipment or appliances fastened to a roof or installed on the ground in compliance with the code using rated stands, platforms, curbs, slabs, or other means are deemed to comply with the wind resistance requirements of the 2007 Florida Building Code, as amended. Further support or enclosure of such mechanical equipment or appliances is not required by a state or local official having authority to enforce the Florida Building Code. This subsection expires on the effective date of the 2013 Florida Building Code.”

Note that the last sentence of the exemption had an expiration date concurrent with the effective date of the 2013 Florida Building Code. Technically, since the proposed 2013 Florida Building Code was renamed to the “5th Edition (2014)” this exemption did not expire.

Further research reflects that these provisions first appeared in the 2010 Statutes:

“Notwithstanding the provisions of this section, exposed mechanical equipment or appliances fastened to a roof or installed on the ground in compliance with the code using rated stands, platforms, curbs, slabs, or other means are deemed to comply with the wind resistance requirements of the 2007 Florida Building Code, as amended. Further support or enclosure of such mechanical equipment or appliances is not required by a state or local official having authority to enforce the Florida Building Code. This subsection expires on the effective date of the 2010 Florida Building Code.”

After comparing all of these versions it is clear that the most recent action of the Legislature in HB 535 2016 was to sunset any expiration of the exemption. However, that still leaves confusion as to why the 2007 Florida Building Code is being cited as the wind standard. Additional historical background shows that the 2007 Florida Building Code included wind design in accordance with

ASCE-7 (2005), but the 2010 Florida Building Code was updated to incorporate wind designs in accordance with ASCE-7 (2010). With limited exception, this standard change effectively reduced the design pressures slightly on all buildings within Palm Beach County. This is confirmed by comparing the tables shown below. V3S in the 2007 table equates to V_{asd} in the 2014 table. As a result, equipment deemed to comply with the 2007 Florida Building Code would also comply with the 2010 and 2014 editions.

From the 2007 FBC:

STRUCTURAL DESIGN

**TABLE 1609.3.1
EQUIVALENT BASIC WIND SPEEDS^{a,b,c}**

V _{3S}	85	90	100	105	110	120	125	130	140	145	150	160	170
V _{fm}	71	76	85	90	95	104	109	114	123	128	133	142	152

For SI: 1 mile per hour = 0.44 m/s.

- a. Linear interpolation is permitted.
- b. V_{3S} is the 3-second gust wind speed (mph).
- c. V_{fm} is the fastest mile wind speed (mph).

From the 2014 FBC:

TABLE 1609.3.1 WIND SPEED CONVERSIONS^{a, b, c}

V _{ult}	100	110	120	130	140	150	160	170	180	190	200
V _{asd}	78	85	93	101	108	116	124	132	139	147	155

For SI: 1 mile per hour = 0.44 m/s.

- a. Linear interpolation is permitted.
- b. V_{asd} = nominal design wind speed applicable to methods specified in Exceptions 1 through 5 of Section 1609.1.1.
- c. V_{ult} = ultimate design wind speeds determined from Figures 1609A, 1609B, or 1609C.

On September 9, 2016 the Broward Board of Rules and Appeals issued a Formal Interpretation (#16) indicating that *“Mechanical equipment or appliances themselves, are not required to demonstrate compliance with the wind load requirements of the Florida Building Code...”* This interpretation confirms that the exception is intended to apply to all exposed mechanical equipment and appliances permitted under the current Florida Building Code.

Accordingly, it is the determination of the Building Code Advisory Board of Palm Beach County that all exposed mechanical equipment fastened to a roof or installed on the ground using rated stands, platforms, curbs, slabs, walls or other means are deemed fully compliant with the requirements of the latest edition of the Florida Building Code. It should be noted that the equipment must be adequately anchored to the rated stand, slab, or other approved means so as to resist the wind loads required by the latest Florida Building Code.

This exemption applies specifically to sections FBCM 301.15, FBC 453.25.4.5.1, FBC 1609.1.1, and FBCFG 301.10 which are attached for reference purposes. Copies of the 2016, 2015, and 2010 Florida Statutes sections referenced herein are also attached.

For Building Code Advisory Board


 Roger Held, Chair

The Building Code Advisory Board of Palm Beach County was created by a Special Act of the Florida Legislature, at the request of the building code enforcement and construction industries. The purpose of the Board is to advise the Board of County Commissioners and local governments concerning the adoption of building codes and their enforcement throughout the County. The Act also granted Palm Beach County special powers concerning building codes, in the interest of the public's health, safety and general welfare.
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