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BROWARD COUNTY BOARD OF RULES AND APPEALS

FBC 6th Edition (2017) FORMAL INTERPRETATION (#5)

DATE: October 12, 2017
TO: All Building Officials
FROM: James DiPietro, Administrative Director 
SUBJECT: Retrofit of Windows, Doors, Garage Doors, Shutters and Skylights
FBC Existing Building, Alteration Level I

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—Established 1971—

At its meeting of October 12th, 2017 the Board approved an interpretation of Retrofit of Windows, Doors, Garage Doors, Shutters and Skylights, for detached one and two family dwellings, and multiple single family dwellings, (townhouses) with common roof height < 30 feet.

1. A Florida Professional Engineer or Architect may modify the buck or fasteners as specified in a Notice of Acceptance. Such modification must be documented with a signed and sealed letter or drawing.

2. To obtain the required design pressure for a specific opening at a specific site, an individual must utilize one of the following and submit documentation as indicated.

a) A site-specific plan (signed and sealed) by a Florida Professional Engineer or Architect, indicating the location of all retro openings and the required design pressures.

b) A site-specific plan (not sealed) indicating the location of all retro openings accompanied by a worst case design pressure chart (signed and sealed) prepared by a Florida P.E. or Architect.

c) A site-specific plan (not sealed) indicating the location of all openings and indicating the required design pressures based on the Broward County Fenestration Voluntary Wind Load Chart. (see attached chart).

3. Buildings with a (height) > 30 feet or more shall have a site-specific design (signed and sealed) by a Florida Professional Engineer or Architect, indicating the location of all retro openings and the required design pressures for each opening.

NOTE: Generic charts, graphs alone, etc. are not acceptable for buildings above 30 feet.

ORIGINAL DATE: September 12, 2012

RE-ISSUED: October 12, 2017

EFFECTIVE DATE: January 1, 2018

****PLEASE POST AT YOUR PERMIT COUNTER****

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Broward County Fenestration Voluntary Wind Load Chart*

Per ASCE 7-10 Method 1, Part 1 and FBC (2017) for Retrofitting in Accordance with Formal Interpretation #5

For Detached One-and Two family dwellings and Multiple Single-Family Dwellings (Townhouses) with Mean Roof Height ≤ 30 feet

Wind 170 mph (3-second gust) / Exposure C** / Kd = 0.85 / Kzt = 1.0 / Pressures are in PSF / Not for use in Coastal (Exposure 'D' areas)

* Using Allowable Stress Design methodology (P = 0.6w) / ** Exposure shall be determined according to ASCE 7-10 Section 26.7.3 (Exposure Categories)

| Effective Wind Area (ft ²) | Location: Gable or Hip Roof | Mean Roof Height of 15 feet | | | | | | Mean Roof Height of 20 feet | | | | | | Mean Roof Height of 25 feet | | | | | | Mean Roof Height of 30 feet | | | | | |
|--|--|-----------------------------|-------|------|-------|------|-------|-----------------------------|-------|------|-------|------|--------|-----------------------------|-------|------|-------|------|--------|-----------------------------|-------|------|-------|------|--------|
| | | Zone | | | | | | Zone | | | | | | Zone | | | | | | Zone | | | | | |
| | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | |
| | | + | - | + | - | + | - | + | - | + | - | + | - | + | - | + | - | + | - | + | - | + | - | + | - |
| 10 | Gable/Hip Roof θ ≤ 7° (0 to 1.5:12) | 16.0 | -37.8 | 16.0 | -63.4 | 16.0 | -95.4 | 16.3 | -40.2 | 16.3 | -67.4 | 16.3 | -101.4 | 17.1 | -42.1 | 17.1 | -70.6 | 17.1 | -106.3 | 17.8 | -43.7 | 17.8 | -73.4 | 17.8 | -110.4 |
| 20 | | 16.0 | -36.8 | 16.0 | -56.7 | 16.0 | -79.1 | 16.0 | -39.1 | 16.0 | -60.2 | 16.0 | -84.0 | 16.0 | -41.0 | 16.0 | -63.1 | 16.0 | -88.0 | 16.7 | -42.6 | 16.7 | -65.6 | 16.7 | -91.5 |
| 50 | | 16.0 | -35.6 | 16.0 | -47.7 | 16.0 | -57.4 | 16.0 | -37.8 | 16.0 | -50.7 | 16.0 | -61.0 | 16.0 | -39.6 | 16.0 | -53.2 | 16.0 | -63.9 | 16.0 | -41.1 | 16.0 | -55.2 | 16.0 | -66.4 |
| 100 | | 16.0 | -34.6 | 16.0 | -41.0 | 16.0 | -41.0 | 16.0 | -36.8 | 16.0 | -43.6 | 16.0 | -43.6 | 16.0 | -38.5 | 16.0 | -45.7 | 16.0 | -45.7 | 16.0 | -40.0 | 16.0 | -47.4 | 16.0 | -47.4 |
| 10 | Gable/Hip Roof*** 7° < θ ≤ 27° (1.5 to 6:12) | 21.8 | -34.6 | 21.8 | -60.2 | 21.8 | -89.0 | 23.1 | -36.8 | 23.1 | -64.0 | 23.1 | -94.6 | 24.3 | -38.5 | 24.3 | -67.1 | 24.3 | -99.2 | 25.2 | -40.0 | 25.2 | -69.7 | 25.2 | -103.0 |
| 20 | | 19.9 | -33.6 | 19.9 | -55.4 | 19.9 | -83.3 | 21.1 | -35.7 | 21.1 | -58.9 | 21.1 | -88.5 | 22.1 | -37.4 | 22.1 | -61.7 | 22.1 | -92.7 | 23.0 | -38.9 | 23.0 | -64.1 | 23.0 | -96.3 |
| 50 | | 17.3 | -32.4 | 17.3 | -49.0 | 17.3 | -75.6 | 18.4 | -34.4 | 18.4 | -52.1 | 18.4 | -80.3 | 19.3 | -36.0 | 19.3 | -54.6 | 19.3 | -84.2 | 20.0 | -37.4 | 20.0 | -56.7 | 20.0 | -87.5 |
| 100 | | 16.0 | -31.4 | 16.0 | -44.2 | 16.0 | -69.8 | 16.3 | -33.3 | 16.3 | -47.0 | 16.3 | -74.2 | 17.1 | -35.0 | 17.1 | -49.2 | 17.1 | -77.8 | 17.8 | -36.3 | 17.8 | -51.1 | 17.8 | -80.8 |
| 10 | Gable Roof 27° < θ ≤ 45° (6 to 12:12) | 34.6 | -37.8 | 34.6 | -44.2 | 34.6 | -44.2 | 36.8 | -40.2 | 36.8 | -47.0 | 36.8 | -47.0 | 38.5 | -42.1 | 38.5 | -49.2 | 38.5 | -49.2 | 40.0 | -43.7 | 40.0 | -51.1 | 40.0 | -51.1 |
| 20 | | 33.6 | -35.9 | 33.6 | -42.3 | 33.6 | -42.3 | 35.7 | -38.1 | 35.7 | -44.9 | 35.7 | -44.9 | 37.4 | -39.9 | 37.4 | -47.1 | 37.4 | -47.1 | 38.9 | -41.5 | 38.9 | -48.9 | 38.9 | -48.9 |
| 50 | | 32.4 | -33.3 | 32.4 | -39.7 | 32.4 | -39.7 | 34.4 | -35.4 | 34.4 | -42.2 | 34.4 | -42.2 | 36.0 | -37.1 | 36.0 | -44.2 | 36.0 | -44.2 | 37.4 | -38.6 | 37.4 | -46.0 | 37.4 | -46.0 |
| 100 | | 31.4 | -31.4 | 31.4 | -37.8 | 31.4 | -37.8 | 33.3 | -33.3 | 33.3 | -40.2 | 33.3 | -40.2 | 35.0 | -35.0 | 35.0 | -42.1 | 35.0 | -42.1 | 36.3 | -36.3 | 36.3 | -43.7 | 36.3 | -43.7 |

*** For Hip Roofs with angle > 7 degrees (1.5:12) and ≤ 25 degrees (5.5:12), Zone 3 shall be treated as Zone 2 (Figure 30.4-2 B, Note 7, p. 337)

| Effective Wind Area (ft ²) | Location | Mean Roof Height of 15 feet | | | | Mean Roof Height of 20 feet | | | | Mean Roof Height of 25 feet | | | | Mean Roof Height of 30 feet | | | |
|--|----------|-----------------------------|-------|------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|------|-------|
| | | Zone | | | | Zone | | | | Zone | | | | Zone | | | |
| | | 4 | | 5 | | 4 | | 5 | | 4 | | 5 | | 4 | | 5 | |
| | | + | - | + | - | + | - | + | - | + | - | + | - | + | - | + | - |
| 10 | Wall | 37.8 | -41.0 | 37.8 | -50.6 | 40.2 | -43.6 | 40.2 | -53.8 | 42.1 | -45.7 | 42.1 | -56.4 | 43.7 | -47.4 | 43.7 | -58.6 |
| 20 | | 36.1 | -39.3 | 36.1 | -47.2 | 38.3 | -41.7 | 38.3 | -50.1 | 40.2 | -43.8 | 40.2 | -52.6 | 41.8 | -45.5 | 41.8 | -54.6 |
| 50 | | 33.8 | -37.0 | 33.8 | -42.7 | 36.0 | -39.4 | 36.0 | -45.4 | 37.7 | -41.3 | 37.7 | -47.5 | 39.2 | -42.9 | 39.2 | -49.4 |
| 100 | | 32.1 | -35.3 | 32.1 | -39.3 | 34.1 | -37.5 | 34.1 | -41.7 | 35.8 | -39.4 | 35.8 | -43.8 | 37.2 | -40.9 | 37.2 | -45.5 |
| 500 | | 28.2 | -31.4 | 28.2 | -31.4 | 29.9 | -33.3 | 29.9 | -33.3 | 31.4 | -35.0 | 31.4 | -35.0 | 32.6 | -36.3 | 32.6 | -36.3 |

Garage Door Wind Loads
for a Building with 30-foot Mean Roof Height
Exposure C
Tables 1609.7(1) & (2), and Section 1609.3.1

| Effective Wind Area | | Roof Angle | Wind Load | |
|---------------------|--------|----------------|-----------|-------|
| Width | Height | | + | - |
| 8 | 8 | 0 - 10 degrees | 35.2 | -39.8 |
| 10 | 10 | | 34.1 | -38.2 |
| 14 | 14 | | 32.3 | -36.1 |
| 9 | 7 | > 10 degrees | 38.4 | -43.4 |
| 16 | 7 | | 36.8 | -41.0 |

For Effective Wind Areas between those given, values may be interpolated. Otherwise use the value associated with the lower Effective Wind Area.

End Zone (a) shall be the smaller of 10% of Least Hor. Dist. or 40% of Mean Roof Height ('h'), but not less than 4% of Least Hor. Dist. or 3 ft.

Identify the zone per the figure or information by others. Any questionable zone is to be considered the more critical zone.