

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 #

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 30.4-2B, Note 7, p. 337)

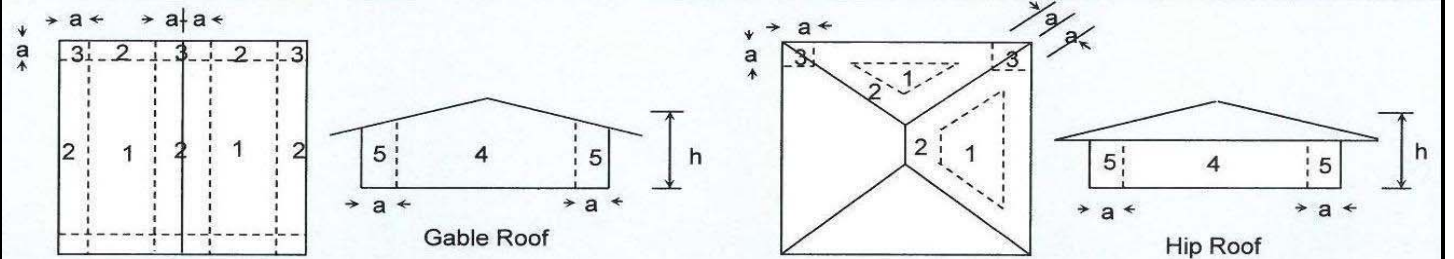
Effective Wind Area (ft ²)	Location	Mean Roof Height of 15 feet				Mean Roof Height of 20 feet				Mean Roof Height of 25 feet				Mean Roof Height of 30 feet			
		Zone				Zone				Zone				Zone			
		4		5		4		5		4		5		4		5	
		+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
10	Wall	37.8	-41.0	37.8	-50.6	40.2	-43.6	40.2	-53.8	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



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.

Design is based on the 3-second gust (wind velocity) for Risk Category II (general residential & commercial construction) per FBC 1620.2 Broward. These tables not for use with essential facilities or assembly occupancies.



601 City Center Way, Pembroke Pines, FL 33025 | Tel#954-435-6502 |
Fax#954-435-6749

Windows & Doors Permit

All retrofit window and door permits must have all items listed as part of the permit application.

- Completed permit application, notarized.
- Affidavit of Awareness of Homeowners Association
- One copy of Dade County or State of Florida product approvals for all components including:
 - Window
 - Door
 - Mullion
- All retrofit windows and doors must meet one of the following wind load requirements.
 - One copy of a site-specific plan signed and sealed by a Florida Professional Engineer or Architect, indicating the location of all openings and the design pressures.
 - One copy of a site-specific plan (not signed and sealed) indicating the location and one copy of a worst case design pressure chart signed and sealed by a Florida Professional Engineer or Architect.
 - One copies of a site-specific plan (not signed and sealed) indicating the location of the openings and the design pressures based on Broward County fenestration voluntary wind load chart. (See attached chart)

All retrofit doors and windows must meet the impact requirements.

- Windows and doors must be impact resistant, or
- A shutter permit with required product approval must accompany door and window permit, or
- Existing shutters must meet FBC or SFBC 1994 or later and be accompanied by an existing permit number.

Exception: Impact protection will not be required if less than 25% of the aggregate area of all glazed openings are being replaced.

Please note: On all submitted documents, the use of highlighters is prohibited. Identify pertinent information by circling items with a blue or black pen.



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Acceptable forms of payment include debit/credit card, check, or money order.
Please make all checks/money orders payable to CGA.



City of Pembroke Pines

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Window and Door Design Form

Opening No	Opening		Square Footage	Wind *Zone	Opening design pressure (Chart)		Design loads Product Approval		Product Approval #	Comments
	Width	Height			POS	NEG	POS	NEG		

1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

*Zone 5 is any opening within the corner distance from any corner.

*Corner distance is .4 x mean roof height or .10 x width, but not less than 3'

Please complete the information requested:

Year Built: _____
 Mean Roof Height: _____
 Building Width: _____
 Building Length: _____
 Sill Height: _____

Emergency Egress and Rescue Openings in sleeping rooms must meet the minimum requirements. On all submitted drawings or plans, indicate location of bedrooms. Each sleeping room must have at least one window or door with a minimum net clear opening width of 20" and a minimum net clear opening height of 24" with no less than 5.7 square feet.



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