

MWFRS Wind Load Calculations
ASCE 7-10 Chapter 28 Wind Loads on Buildings; Envelope Procedure
Simple Diaphragm

Project: Slidell Veterans Park Restrooms

Table 28.5-1 Enclosed Simple Diaphragm Low-Rise Buildings

- | | |
|--|--------------------------------|
| 1. Risk Category Table 1.5-1 | Cat I |
| 2. Basic Wind Speed, by website at council.org | 132 mph |
| 3. Wind load parameters | |
| a. Surface Roughness, Section 26.7.2: | Roughness C |
| b. Exposure Category, Section 26.7.3: | Exposure C |
| c. Topographic Factor, Section 26.8.2: | $K_{zt} = 1$ |
| 4. Wind Pressures Fig 28.6-1 | Load Case 1 for roof slope 25° |

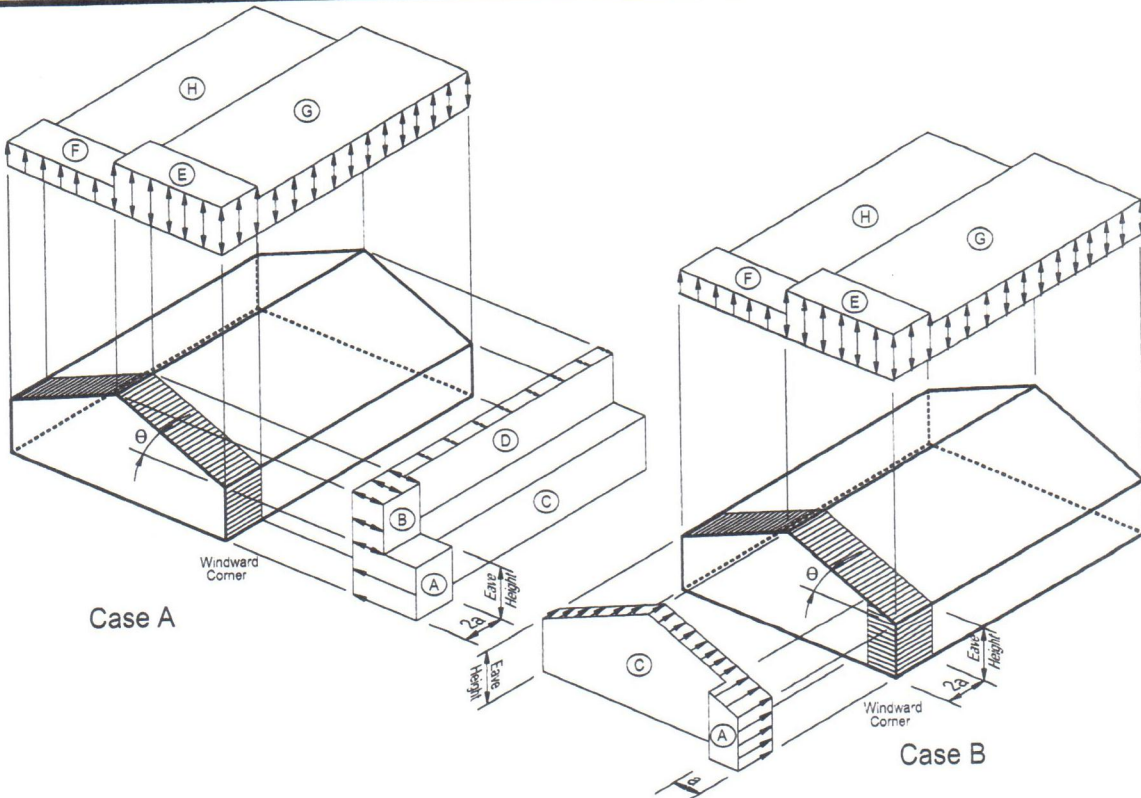
Interpolating Wind Speeds												
Basic Wind Speed	Roof Angle	Load Case	Horizontal Pressures, P_{s30} (psf)				Vertical Pressures, P_{s30} (psf)				Overhangs	
			A	B	C	D	E	F	G	H	Eoh	Goh
130 mph	25°	1	33.6	5.4	24.3	5.5	-14.9	-20.4	-10.8	-16.4	-27.8	-23.7
140 mph	25°	1	39.0	6.3	28.2	6.4	-17.3	-23.6	-12.5	-19.0	-32.3	-27.5
132 mph	25°	1	34.7	5.6	25.1	5.7	-15.4	-21.0	-11.1	-16.9	-28.7	-24.5

- | | |
|---|---|
| 5. Building mean height (h) = <15 ft | λ for Exposure B = 1.21 |
| 6. Adjusted wind pressure P_s = Equation 28.6-1 | $P_s = \lambda K_{zt} P_{s30} = 1.21 * 1 * P_{s30}$ |

Adjusted Wind Pressure P_s												
Basic Wind Speed	Roof Angle	Load Case	Horizontal Pressures, P_s (psf)				Vertical Pressures, P_s (psf)				Overhangs	
			A	B	C	D	E	F	G	H	Eoh	Goh
132 mph	25°	1	42.0	6.8	30.3	6.9	-18.6	-25.5	-13.5	-20.5	-34.7	-29.6

7. D1.1 One and Two Story Building with $h \leq 30$ ft are exempt from torsional load cases.

Main Wind Force Resisting System – Method 2		$h \leq 60$ ft.
Figure 28.6-1	Design Wind Pressures	Walls & Roofs
Enclosed Buildings		



Notes:

- Pressures shown are applied to the horizontal and vertical projections, for exposure B, at $h=30$ ft (9.1m). Adjust to other exposures and heights with adjustment factor λ .
- The load patterns shown shall be applied to each corner of the building in turn as the reference corner. (See Figure 28.4-1)
- For Case B use $\theta = 0^\circ$.
- Load cases 1 and 2 must be checked for $25^\circ < \theta \leq 45^\circ$. Load case 2 at 25° is provided only for interpolation between 25° and 30° .
- Plus and minus signs signify pressures acting toward and away from the projected surfaces, respectively.
- For roof slopes other than those shown, linear interpolation is permitted.
- The total horizontal load shall not be less than that determined by assuming $p_s = 0$ in zones B & D.
- Where zone E or G falls on a roof overhang on the windward side of the building, use E_{OH} and G_{OH} for the pressure on the horizontal projection of the overhang. Overhangs on the leeward and side edges shall have the basic zone pressure applied.
- Notation:
 - a: 10 percent of least horizontal dimension or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).
 - h: Mean roof height, in feet (meters), except that eave height shall be used for roof angles $< 10^\circ$.
 - θ : Angle of plane of roof from horizontal, in degrees.



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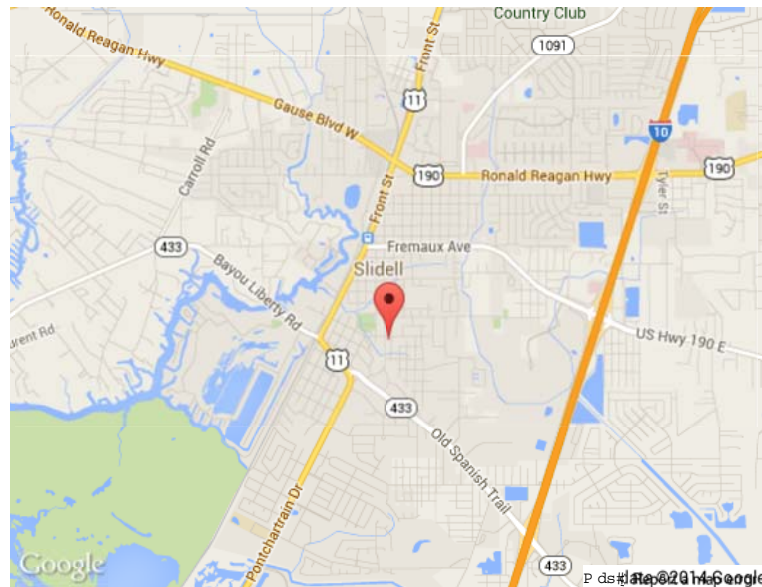
Search Results

Latitude: 30.2680
Longitude: -89.7800

**ASCE 7-10 Wind Speeds
(3-sec peak gust MPH*):**

Risk Category I: 132
Risk Category II: 142
Risk Category III-IV: 153
MRI 10 Year:** 79
MRI 25 Year:** 94
MRI 50 Year:** 105
MRI 100 Year:** 115

ASCE 7-05: 123
ASCE 7-93: 98



*MPH(Miles per hour)
**MRI Mean Recurrence Interval (years)

Users should consult with local building officials to determine if there are community-specific wind speed requirements that govern.



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