

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

Project: Textron Stone Road Addition

Table 28.5-1 Enclosed Simple Diaphragm Low-Rise Buildings

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Risk Category Table 1.5-1 2. Basic Wind Speed, by website at council.org 3. Wind load parameters <ol style="list-style-type: none"> a. Surface Roughness, Section 26.7.2: b. Exposure Category, Section 26.7.3: c. Topographic Factor, Section 26.8.2: 4. Wind Pressures Fig 28.6-1 | <p>Cat II
141 mph</p> <p>Roughness B
Exposure B
$K_{zt} = 1$
Load Case 1 for roof slope 30°</p> |
|---|--|

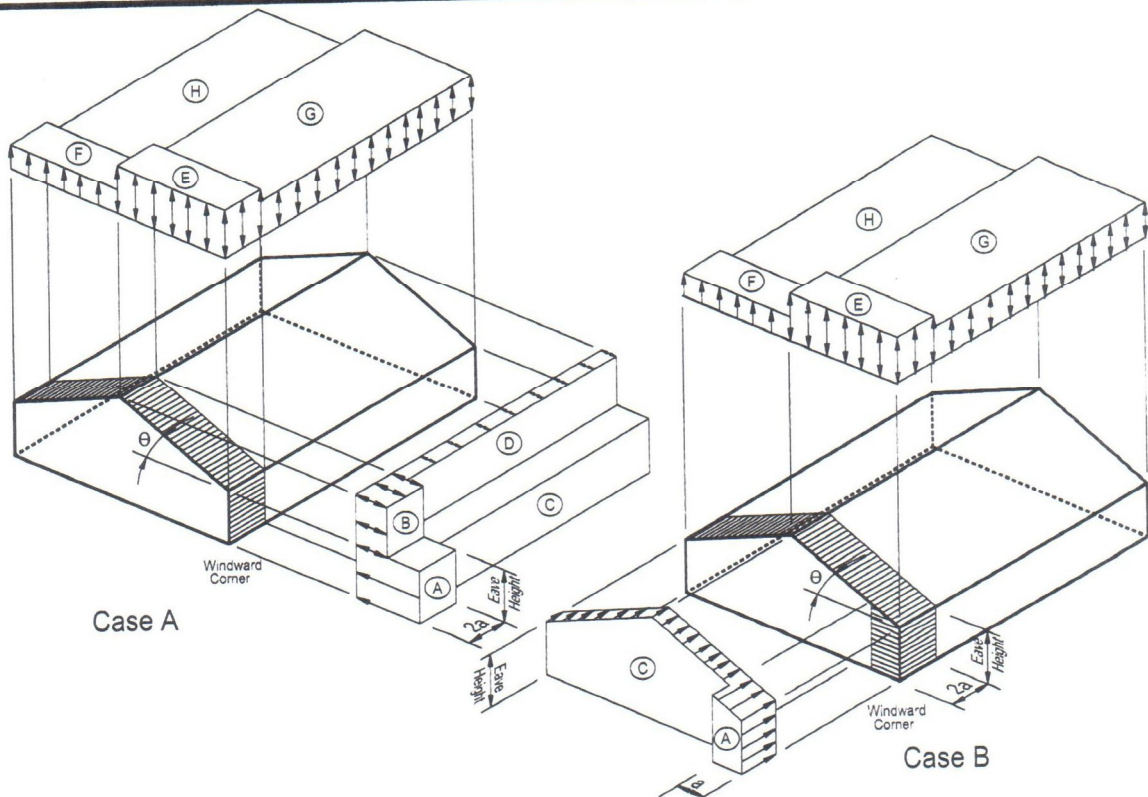
Interpolating Wind Speeds												
Basic Wind Speed	Roof Angle	Load Case	Horizontal Pressures, P_{s30} (psf)				Vertical Pressures, P_{s30} (psf)				Overhangs	
			A	B	C	D	E	F	G	H	Eoh	Goh
140 mph	10°	1	35.1	-14.5	23.3	-8.5	-37.3	-22.8	-26.0	-17.5	-52.3	-40.9
150 mph	10°	1	40.2	-16.7	26.8	-9.7	-42.9	-26.2	-29.8	-20.1	-60.0	-47.0
141 mph	10°	1	35.6	-14.7	23.7	-8.6	-37.9	-23.1	-26.4	-17.8	-53.1	-41.5

- | | |
|---|--|
| 5. Building mean height (h) = <15 ft | λ for Exposure B = 1.0 |
| 6. Adjusted wind pressure P_s = Equation 28.6-1 | $P_s = \lambda K_{zt} P_{s30} = 1.0 * 1 * P_{s30}$ |

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
141 mph	10°	1	35.6	-14.7	23.7	-8.6	-37.9	-23.1	-26.4	-17.8	-53.1	-41.5

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.

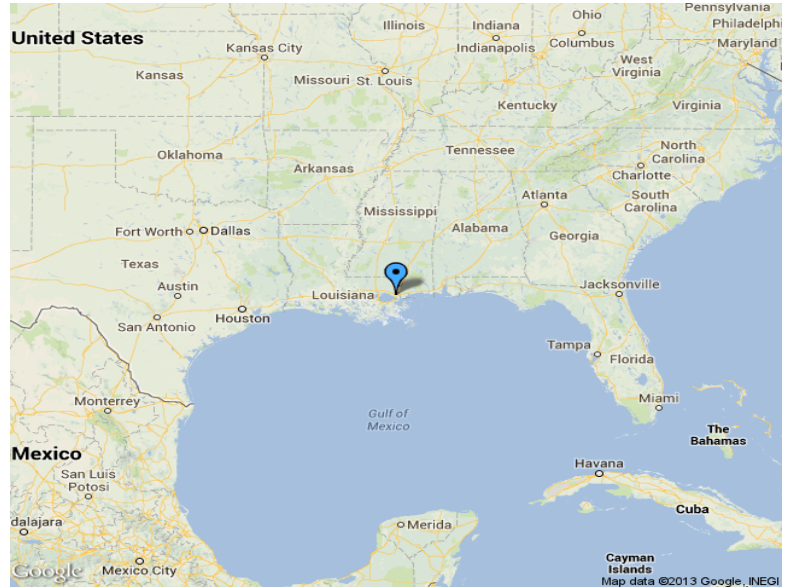
Search Results

Latitude: 30.3002
Longitude: -89.7819

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

Risk Category I: 131
Risk Category II: 141
Risk Category III-IV: 153
MRI 10 Year:** 79
MRI 25 Year:** 93
MRI 50 Year:** 104
MRI 100 Year:** 115

ASCE 7-05: 122
ASCE 7-93: 97



*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.

WIND SPEED WEB SITE DISCLAIMER:

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