MWFRS Wind Load Calculations

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

Project: First Baptist Church 4141 PONTCHARTRAIN DR, SLIDELL LA

Table 28.5-1 Enclosed Simple Diaphragm Low-Rise Buildings

1. Risk Category Table 1.5-1 — Cat I
2. Basic Wind Speed, by wesite at council.org — 142 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 25º

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
142 mph	25º	1	33.6	5.4	24.3	5.5	-14.9	-20.4	-10.8	-16.4	-27.8	-23.7
142 mph	25º	1	39.0	6.3	28.2	6.4	-17.3	-23.6	-12.5	-19.0	-32.3	-27.5
142 mph	25º	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 Ps												
Basic Wind Speed	Roof Angle	Load Case	Horizontal Pressures, Ps (psf)				Vertical Pressures, Ps (psf)				Overhangs	
			A	B	C	D	E	F	G	H	Eoh	Goh
142 mph	25º	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 ≤ 30 ft are exempt from torsional load cases.

This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Hazards by Location

Search Information

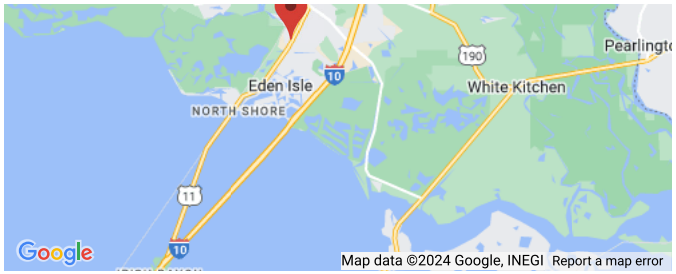
Address: 4141 Pontchartrain Dr, Slidell, LA 70458, USA

Coordinates: 30.2480916, -89.7937427

Elevation: 5 ft

Timestamp: 2024-08-12T14:28:19.864Z

Hazard Type: Wind



ASCE 7-16

MRI 10-Year	80 mph
MRI 25-Year	93 mph
MRI 50-Year	105 mph
MRI 100-Year	116 mph
Risk Category I	⚠ 132 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

Risk Category II	⚠ 142 mph

You are in a wind-borne debris region.

Risk Category III	⚠ 152 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

Risk Category IV	⚠ 159 mph

You are in a wind-borne debris region.

ASCE 7-10

MRI 10-Year	79 mph
MRI 25-Year	94 mph
MRI 50-Year	105 mph
MRI 100-Year	116 mph
Risk Category I	⚠ 132 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

Risk Category II	⚠ 142 mph

You are in a wind-borne debris region.

Risk Category III-IV	⚠ 152 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

ASCE 7-05

ASCE 7-05 Wind Speed	⚠ 123 mph

You are in a wind-borne debris region.

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.