

MWFRS Wind Load Calculations

ASCE 7-10 Chapter 29 Wind Loads on Other Structures and Building Appurtenances - MWFRS

Design Wind Loads -- Solid Freestanding Walls and Solid Signs

Project: LA Federal Credit Union Norco, LA

Sign Height z = 20 feet
 Sign Width B = 18.1 feet
 Sign Height S = 7.2 feet

1. Risk Category Table 1.5-1	Cat I
2. Basic Wind Speed, by wesite at council.org	128 mph
3. Wind load parameters	
a. Surface Roughness, Section 26.7.2:	Roughness C
b. Wind directionality Factor, Sec 26.6	$K_d = 0.85$
c. Exposure Category, Section 26.7.3:	Exposure C
d. Topographic Factor, Section 26.8.2:	$K_{zt} = 1$
e. Gust Effect, Section 26.9	Rigid G = 0.85
f. Terrain Exposure Constants, Tbl 26.9-1	$\alpha = 9.5$ z_g (ft) = 900
g. Enclosure classification, Sec 26.10	Enclosed
h. Velocity Pressure Coefficient, Tbl 29.3-1	$K_h = 0.90$ $K_z = 2.01(z/z_g)^{(2/\alpha)}$
	$K_z = 0.9$
f. Velocity Pressure, Section 29.3.2	$q_z = 0.00256 K_z K_{zt} K_d V^2$ (lb/ft^2)
	$q_z = 32.15$
h. Net Force Coefficient, Fig 29.4-1	$s/z = 0.36$ $B/s = 0.905$
	$C_f = 1.80$
4. Design Wind Force, Section 29.4.1	$F = q_h G C_f A_s$ (lb)
	$F = 6411$ lbs or 49.2 lb/ft^2

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Supplied data
 Calculated