L_z = integral length scale of turbulence, in ft (m)
L_r = horizontal dimension of return corner for a solid freestanding wall or solid sign from Fig. 29.4-1, in ft (m)
ℓ = integral length scale factor from Table 26.9-1, ft (m)
N_1 = reduced frequency from Eq. 26.9-14
n_a = approximate lower bound natural frequency (Hz) from Section 26.9.2
n_1 = fundamental natural frequency, Hz
p = design pressure to be used in determination of wind loads for buildings, in lb/ft^2 (N/m^2)
P_L = wind pressure acting on leeward face in Fig. 27.4-8, in lb/ft^2 (N/m^2)
p_{net} = net design wind pressure from Eq. 30.5-1, in lb/ft^2 (N/m^2)
p_{net30} = net design wind pressure for Exposure B at h = 30 ft and I = 1.0 from Fig. 30.5-1, in lb/ft^2 (N/m^2)
p_p = combined net pressure on a parapet from Eq. 27.4-5, in lb/ft^2 (N/m^2)
p_s = net design wind pressure from Eq. 28.6-1, in lb/ft^2 (N/m^2)
p_{s30} = simplified design wind pressure for Exposure B at h = 30 ft and I = 1.0 from Fig. 28.6-1, in lb/ft^2 (N/m^2)
P_W = wind pressure acting on windward face in Fig. 27.4-8, in lb/ft^2 (N/m^2)
Q = background response factor from Eq. 26.9-8
q = velocity pressure, in lb/ft^2 (N/m^2)
q_h = velocity pressure evaluated at height $z = h$, in lb/ft^2 (N/m^2)
q_i = velocity pressure for internal pressure determination, in lb/ft^2 (N/m^2)
q_p = velocity pressure at top of parapet, in lb/ft^2 (N/m^2)
q_z = velocity pressure evaluated at height z above ground, in lb/ft^2 (N/m^2)
R = resonant response factor from Eq. 26.9-12
R_B, R_h, R_L = values from Eqs. 26.9-15
R_i = reduction factor from Eq. 26.11-1
R_n = value from Eq. 26.9-13
s = vertical dimension of the solid freestanding wall or solid sign from Fig. 29.4-1, in ft (m)
r = rise-to-span ratio for arched roofs
V = basic wind speed obtained from Fig. 26.5-1A through 26.5-1C, in mi/h (m/s). The basic wind speed corresponds to a 3-sec gust speed at 33 ft (10 m) above the ground in Exposure Category C
V_i = unpartitioned internal volume, ft^3 (m^3)
$\overline{V}_{\bar{z}}$ = mean hourly wind speed at height $\bar{z}$, ft/s (m/s)
W = width of building in Figs. 30.4-3 and 30.4-5A and 30.4-5B and width of span in Figs. 30.4-4 and 30.4-6, in ft (m)
x = distance upwind or downwind of crest in Fig. 26.8-1, in ft (m)
z = height above ground level, in ft (m)
$\bar{z}$ = equivalent height of structure, in ft (m)
z_g = nominal height of the atmospheric boundary layer used in this standard. Values appear in Table 26.9-1
z_{min} = exposure constant from Table 26.9-1
α = 3-sec gust-speed power law exponent from Table 26.9-1
$\hat{\alpha}$ = reciprocal of α from Table 26.9-1
$\bar{\alpha}$ = mean hourly wind-speed power law exponent in Eq. 26.9-16 from Table 26.9-1
β = damping ratio, percent critical for buildings or other structures
ϵ = ratio of solid area to gross area for solid freestanding wall, solid sign, open sign, face of a trussed tower, or lattice structure
λ = adjustment factor for building height and exposure from Figs. 28.6-1 and 30.5-1
$\bar{\varepsilon}$ = integral length scale power law exponent in Eq. 26.9-9 from Table 26.9-1
η = value used in Eq. 26.9-15 (see Section 26.9.4)
θ = angle of plane of roof from horizontal, in degrees
ν = height-to-width ratio for solid sign

26.4 GENERAL

26.4.1 Sign Convention

Positive pressure acts toward the surface and negative pressure acts away from the surface.

26.4.2 Critical Load Condition

Values of external and internal pressures shall be combined algebraically to determine the most critical load.

26.4.3 Wind Pressures Acting on Opposite Faces of Each Building Surface

In the calculation of design wind loads for the MWFRS and for components and cladding for