1. GENERAL

1.1. NOTATION

A = Surface area
b = Width of a structure in the across-wind direction
B^2 = Correlation factor that accounts for the lack of correlation of wind pressures
C_d = Dynamic amplification factor
$C_e(z)$ = Height-dependent surface friction coefficients
C_p = Surface pressure coefficient
$C_{p,1}$ = Surface pressure coefficient for 1.0 m^2 area
$C_{p,10}$ = Surface pressure coefficient for 10.0 m^2 area
$C_q(z)$ = Height-dependent wind pressure coefficient
C_s = Load correlation coefficient
C_t = Topography coefficient
D = Diameter of circular cross-section of a building
d = Width of the structure in the along-wind direction
F = Total wind loads on a building
f = Frequency in *Hz*
$f_L(z,f)$ = Nondimensional normalized frequency
f_o = First natural frequency of a building in *Hz*.
h = Height of the building.
h_0 = Average height of surrounding buildings
h_y = Ficticous increase in ground level to account for surrounding structures
$I_w(z)$ = Height-dependent turbulance intensity
$L(z)$ = Height-dependent turbulance length
$Q(z)$ = Total wind load in a sbuilding at height z
q_b = Basic wind pressure
$q_p(z)$ = Wind pressure for unit area at height z
R^2 = Resonance factor that accounts for dynamic amplification of response
$R_b(\eta_b)$ = Aerodynamic admittance function in horizontal direction
$R_h(\eta_h)$ = Aerodynamic admittance function in vertical direction
$S_L(z,f)$ = Power spectral density function of turbulance
S_t = Strouhal number
V_b = Basic wind speed
$V(z,t)$ = Total wind speed
$|V(z,t)|_{max}$= Maximum total wind sped at height z
V_{cr} = Critical wind speed for vortex shedding
$V_m(z)$ = Height-dependent average wind velocity
$w(z,t)$) = Dynamic component of wind velocity – turbulance.
$\overline{w}_{max}$ = Maximum turbulance velocity
z_o = Surface friction coefficient
z_{min} = Minimum height in which surface friction is constant
z_r = Reference height
δ = Logarithmic decrement corresponding to the first vibration mode
ξ_o = Damping coefficient corresponding to the first vibration mode
ρ = Mass density of air (ρ = 12.5 N/m^3)
σ_w = Standard deviation of turbulance