Wind pressures always calculated using the Flexible Gust Factor

V: Wind Speed = 120.0 mph
f: Natural Frequency = 1.940 Hz

Zg: Alt above Sea Level = 0.000 ft
Exp: Exposure Category = C

Cat: Structural Category = III

D: Structure Depth = 4.033 ft
b: Structure Width = 4.033 ft

B: Damping Coeff. (beta) = 0.011
Zmin: Const from Table 6-2 = 15.000

Atri: Const from Table 6-2 = 0.105
Btri: Const from Table 6-2 = 1.000

Amean: Const from Table 6-2 = 0.154
Bmean: Const from Table 6-2 = 0.650

C: Const from Table 6-2 = 0.200
Epsilon: Const from Table 6-2 = 0.200

Rho = Air Density = 0.0765 lb/ft^3

Dm = Average Diameter = 3.000 ft

Cf = Shape factor of Cylinder = 0.700

ma = Average mass of top 1/3 of stack = 95.54 lb/ft

Ba = Aerodynamic Damping (Eqn 5-1): (Cf*Rho*Dm*Vzmean) / (4*PI*ma*f) = 0.0087

Zmean = 0.6 * H = 60.000

Izm = c * (33 / Zmean) ^ (1 / 6) = 0.181

Lzmean = 1 * (Zmean / 33) ^ eps = 563.505

Q = Sqrt(1/(1+0.63*((b+h)/Lzmean)^.63)) = 0.906

Kz = Terrain factor = 1.000

Zg = Elevation above Sea Level = 0 ft

Ke = Ground Elevation Factor: Ke = e^(-0.0000362*Zg) = 1.000

Per ASCE 7, since f > 1 Hz the structure is considered to be rigid.

Gust factor (Flexible or Dynamically sensitive Structure):

User has elected to always use the flexible gust factor to be conservative

V0 = Wind Velocity converted to ft/s = 145.5 ft/s

VZmean = Bmean * (Zmean/33)^Amean * V0 = 125.4 ft/s

N1 = f * Lzmean / VZmean = 8.715 Hz

Rh = (1 / nh) - (1 / (2 * nb^2)) * (1 - Exp(-2*nh)) = 0.131

nb = 4.6 * f / VZmean = 0.287

Rb = (1 / nb) - (1 / (2 * nb^2)) * (1 - Exp(-2*nb)) = 0.833

Rd = 15.4 * f / VZmean = 0.961

R = Sqrt((1 / Beta) * Rh * Rb * Rd) = 0.539

G = .925 + (1 + 1.7*Izm*(3.4^2 + Q^2 + Rd^2)^.5) * (1 + 0.001*Izm) = 0.991

qz = 0.00256 * Kz * Kd * Ke * V^2 = 36.86 psf

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Kz</th>
<th>Qz</th>
<th>Pressure</th>
</tr>
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<tbody>
<tr>
<td>ft</td>
<td>psf</td>
<td>psf</td>
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<td>31.29</td>
<td>31.00</td>
</tr>
</tbody>
</table>

1. Pressure = Qz * G
2. Kz = 2.01 * (Elevation / Zg)^2/(2*Alpha) [If Elevation > 15 ft (4.572 m)]
3. Kz = 2.01 * (15 / Zg)^2/(2*Alpha) [If Elevation <= 15 ft (4.572 m)]