

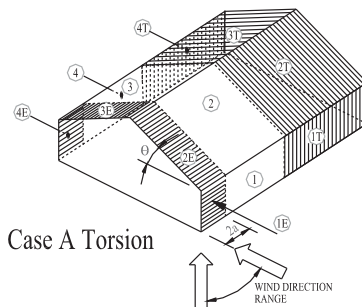
| Main Wind Force Resisting System – Part 1 | | | | | | | | h ≤ 60 ft. | | | |
|---|--|--|--|--|--|--|--|------------------------|--|--|--|
| Figure 28.4-1 (cont.) | | | | External Pressure Coefficients (GC _{pf}) | | | | Low-rise Walls & Roofs | | | |
| Enclosed, Partially Enclosed Buildings | | | | | | | | | | | |

| Roof Angle θ (degrees) | LOAD CASE A | | | | | | | |
|------------------------|------------------|-------|-------|-------|------|-------|-------|-------|
| | Building Surface | | | | | | | |
| | 1 | 2 | 3 | 4 | 1E | 2E | 3E | 4E |
| 0-5 | 0.40 | -0.69 | -0.37 | -0.29 | 0.61 | -1.07 | -0.53 | -0.43 |
| 20 | 0.53 | -0.69 | -0.48 | -0.43 | 0.80 | -1.07 | -0.69 | -0.64 |
| 30-45 | 0.56 | 0.21 | -0.43 | -0.37 | 0.69 | 0.27 | -0.53 | -0.48 |
| 90 | 0.56 | 0.56 | -0.37 | -0.37 | 0.69 | 0.69 | -0.48 | -0.48 |

| Roof Angle θ (degrees) | LOAD CASE B | | | | | | | | | | | |
|------------------------|------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|
| | Building Surface | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 1E | 2E | 3E | 4E | 5E | 6E |
| 0-90 | -0.45 | -0.69 | -0.37 | -0.45 | 0.40 | -0.29 | -0.48 | -1.07 | -0.53 | -0.48 | 0.61 | -0.43 |

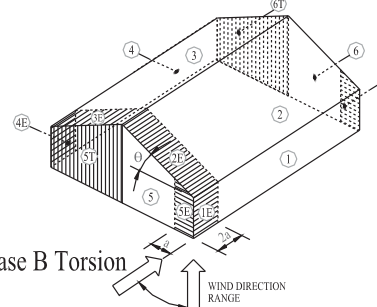
Notes:

1. Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
2. For values of θ other than those shown, linear interpolation is permitted.
3. The building must be designed for all wind directions using the 8 loading patterns shown. The load patterns are applied to each building corner in turn as the Windward Corner.
4. Combinations of external and internal pressures (see Table 26.11-1) shall be evaluated as required to obtain the most severe loadings.
5. For the torsional load cases shown below, the pressures in zones designated with a “T” (1T, 2T, 3T, 4T, 5T, 6T) shall be 25% of the full design wind pressures (zones 1, 2, 3, 4, 5, 6).
Exception: One story buildings with h less than or equal to 30 ft (9.1m), buildings two stories or less framed with light frame construction, and buildings two stories or less designed with flexible diaphragms need not be designed for the torsional load cases.
Torsional loading shall apply to all eight basic load patterns using the figures below applied at each Windward Corner.
6. For purposes of designing a building’s MWFRS, the total horizontal shear shall not be less than that determined by neglecting the wind forces on the roof.
Exception: This provision does not apply to buildings using moment frames for the MWFRS.
7. For flat roofs, use θ = 0° and locate the zone 2/3 and zone 2E/3E boundary at the mid-width of the building.
8. The roof pressure coefficient (GC_{pf}), when negative in Zone 2 and 2E, shall be applied in Zone 2/2E for a distance from the edge of roof equal to 0.5 times the horizontal dimension of the building parallel to the direction of the MWFRS being designed or 2.5 times the eave height at the windward wall, whichever is less; the remainder of Zone 2/2E extending to the ridge line shall use the pressure coefficient (GC_{pf}) for Zone 3/3E.
9. Notation:
a: 10 percent of least horizontal dimension or 0.4h, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).
h: Mean roof height, in feet (meters), except that eave height shall be used for θ ≤ 10°.
θ: Angle of plane of roof from horizontal, in degrees.



Case A Torsion

Transverse Direction



Case B Torsion

Longitudinal Direction

Torsional Load Cases