

multiplied by the wall area of the building and 8 lb/ft² (0.38 kN/m²) multiplied by the roof area of the building projected onto a vertical plane normal to the assumed wind direction.

PART 2: ENCLOSED SIMPLE DIAPHRAGM LOW-RISE BUILDINGS

28.5 GENERAL REQUIREMENTS

The steps required for the determination of MWFRS wind loads on enclosed simple diaphragm buildings are shown in Table 28.5-1.

User Note: Part 2 of Chapter 28 is a simplified method to determine the wind pressure on the MWFRS of enclosed simple diaphragm *low-rise buildings* having a flat, gable or hip roof. The wind pressures are obtained directly from a table and applied on horizontal and vertical projected surfaces of the building. This method is a simplification of the Envelope Procedure contained in Part 1 of Chapter 28.

28.5.1 Wind Load Parameters Specified in Chapter 26

The following wind load parameters are specified in Chapter 26:

- Basic Wind Speed V (Section 26.5)
- Exposure category (Section 26.7)
- Topographic factor K_{zt} (Section 26.8)
- Enclosure classification (Section 26.10)

Table 28.5-1 Steps to Determine Wind Loads on MWFRS Simple Diaphragm Low-Rise Buildings

- Step 1:** Determine risk category of building or other structure, see Table 1.5-1
- Step 2:** Determine the basic wind speed, V , for applicable risk category, see Fig. 26.5-1A, B or C
- Step 3:** Determine wind load parameters:
- > Exposure category B, C or D, see Section 26.7
 - > Topographic factor, K_{zt} , see Section 26.8 and Fig. 26.8-1
- Step 4:** Enter figure to determine wind pressures for $h = 30$ ft (9.1 m), p_{s30} , see Fig. 28.6-1
- Step 5:** Enter figure to determine adjustment for building height and exposure, λ , see Fig. 28.6-1
- Step 6:** Determine adjusted wind pressures, p_s , see Eq. 28.6-1

28.6 WIND LOADS—MAIN WIND-FORCE RESISTING SYSTEM

28.6.1 Scope

A building whose design wind loads are determined in accordance with this section shall meet all the conditions of Section 28.6.2. If a building does not meet all of the conditions of Section 28.6.2, then its MWFRS wind loads shall be determined by Part 1 of this chapter, by the Directional Procedure of Chapter 27, or by the Wind Tunnel Procedure of Chapter 31.

28.6.2 Conditions

For the design of MWFRS the building shall comply with all of the following conditions:

1. The building is a simple diaphragm building as defined in Section 26.2.
2. The building is a low-rise building as defined in Section 26.2.
3. The building is enclosed as defined in Section 26.2 and conforms to the wind-borne debris provisions of Section 26.10.3.
4. The building is a regular-shaped building or structure as defined in Section 26.2.
5. The building is not classified as a flexible building as defined in Section 26.2.
6. The building does not have response characteristics making it subject to across wind loading, vortex shedding, instability due to galloping or flutter; and it does not have a site location for which channeling effects or buffeting in the wake of upwind obstructions warrant special consideration.
7. The building has an approximately symmetrical cross-section in each direction with either a flat roof or a gable or hip roof with $\theta \leq 45^\circ$.
8. The building is exempted from torsional load cases as indicated in Note 5 of Fig. 28.4-1, or the torsional load cases defined in Note 5 do not control the design of any of the MWFRS of the building.

28.6.3 Design Wind Loads

Simplified design wind pressures, p_s , for the MWFRS of low-rise simple diaphragm buildings represent the net pressures (sum of internal and external) to be applied to the horizontal and vertical projections of building surfaces as shown in Fig. 28.6-1. For the horizontal pressures (Zones A, B, C, D), p_s is the combination of the windward and

