30.10 ROOF OVERHANGS

The design wind pressure for roof overhangs of enclosed and partially enclosed buildings of all heights, except enclosed buildings with h ≤ 160 ft (48.8 m) for which the provisions of Part 4 are used, shall be determined from the following equation:

$$p = q_h[(GC_p) - (GC_{pi})] \text{ (lb/ft}^2\text{) (N/m}^2\text{)} \quad (30.10\text{-}1)$$

where

q_h = velocity pressure from Section 30.3.2 evaluated at mean roof height h using exposure defined in Section 26.7.3

(GC_p) = external pressure coefficients for overhangs given in Figs. 30.4-2A to 30.4-2C (flat roofs, gable roofs, and hip roofs), including contributions from top and bottom surfaces of overhang. The external pressure coefficient for the covering on the underside of the roof overhang is the same as the external pressure coefficient on the adjacent wall surface, adjusted for effective wind area, determined from Figure 30.4-1 or Figure 30.6-1 as applicable

(GC_{pi}) = internal pressure coefficient given in Table 26.11-1

The steps required for the determination of wind loads on components and cladding of roof overhangs are shown in Table 30.10-1.

Table 30.10-1 Steps to Determine C&C Wind Loads Roof Overhangs

Step 1: Determine risk category of building, see Table 1.5-1

Step 2: Determine the basic wind speed, V, for applicable risk category, see Figure 26.5-1A, B or C

Step 3: Determine wind load parameters:
- Wind directionality factor, K_d, see Section 26.6 and Table 26.6-1
- Exposure category B, C or D, see Section 26.7
- Topographic factor, K_{zt}, see Section 26.8 and Fig. 26.8-1
- Enclosure classification, see Section 26.10
- Internal pressure coefficient, (GC_{pi}), see Section 26.11 and Table 26.11-1

Step 4: Determine velocity pressure exposure coefficient, K_h, see Table 30.3-1

Step 5: Determine velocity pressure, q_h, at mean roof height h using Eq. 30.3-1

Step 6: Determine external pressure coefficient, (GC_p), using Figs. 30.4-2A through C for flat, gabled and hip roofs.

Step 7: Calculate wind pressure, p, using Eq. 30.10-1. Refer to Figure 30.10-1