For partially enclosed buildings containing a large unpartitioned space, the response time of the internal pressure is increased, and this increase reduces the ability of the internal pressure to respond to rapid changes in pressure at an opening. The gust factor applicable to the internal pressure is therefore reduced. Equation 26.11-1, which is based on Vickery and Bloxham (1992) and Irwin and Dunn (1994), is provided as a means of adjusting the gust factor for this effect on structures with large internal spaces, such as stadiums and arenas.

Because of the nature of hurricane winds and exposure to debris hazards (Minor and Behr 1993), glazing located below 60 ft (18.3 m) above the ground level of buildings sited in wind-borne debris regions has a widely varying and comparatively higher vulnerability to breakage from missiles, unless the glazing can withstand reasonable missile loads and subsequent wind loading, or the glazing is protected by suitable shutters. (See Section C26.10 for discussion of glazing above 60 ft [18.3 m].) When glazing is breached by missiles, development of higher internal pressure may result, which can overload the cladding or structure if the higher pressure was not accounted for in the design. Breaching of glazing can also result in a significant amount of water infiltration, which typically results in considerable damage to the building and its contents (Surry et al. 1977, Reinhold 1982, and Stubbs and Perry 1993).

The influence of compartmentalization on the distribution of increased internal pressure has not been researched. If the space behind breached glazing is separated from the remainder of the building by a sufficiently strong and reasonably airtight compartment, the increased internal pressure would likely be confined to that compartment. However, if the compartment is breached (e.g., by an open corridor door or by collapse of the compartment wall), the increased internal pressure will spread beyond the initial compartment quite rapidly. The next compartment may contain the higher pressure, or it too could be breached, thereby allowing the high internal pressure to continue to propagate. Because of the great amount of air leakage that often occurs at large hangar doors, designers of hangars should consider utilizing the internal pressure coefficients for partially enclosed buildings in Table 26.11-1.

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