experience wind pressures approximately equal to the external pressures on the wall to which they are attached. The dimension requirements for signs supported by frameworks, where there is a small gap between the sign and the wall, are based on the collective judgment of the committee.

Figures 29.5-1, 29.5-2 and 29.5-3. With the exception of Fig. 29.5-3, the pressure and force coefficient values in these tables are unchanged from ANSI A58.1-1972. The coefficients specified in these tables are based on wind-tunnel tests conducted under conditions of uniform flow and low turbulence, and their validity in turbulent boundary-layer flows has yet to be completely established. Additional pressure coefficients for conditions not specified herein may be found in two references (SIA 1956 and ASCE 1961).

With regard to Fig. 29.5-3, the force coefficients are a refinement of the coefficients specified in ANSI A58.1-1982 and in ASCE 7-93. The force coefficients specified are offered as a simplified procedure that may be used for trussed towers and are consistent with force coefficients given in ANSI/EIA/TIA-222-E-1991, *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures,* and force coefficients recommended by Working Group No. 4 (*Recommendations for Guyed Masts*), International Association for Shell and Spatial Structures (1981).

It is not the intent of this standard to exclude the use of other recognized literature for the design of special structures, such as transmission and telecommunications towers. Recommendations for wind loads on tower guys are not provided as in previous editions of the standard. Recognized literature should be referenced for the design of these special structures as is noted in Section 29.1.3. For the design of flagpoles, see ANSI/NAAMM FP1001-97, 4th Ed., *Guide Specifications for Design of Metal Flagpoles*.

C29.6 ROOFTOP STRUCTURES AND EQUIPMENT FOR BUILDINGS WITH $h \leq 60$ ft

ASCE 7-10 requires the use of Fig. 29.5-1 for the determination of the wind force on small structures and equipment located on a rooftop. Because of the small size of the structures in comparison to the building, it is expected that the wind force will be higher than predicted by Eq. 29.6-1 due to higher correlation of pressures across the structure surface, higher turbulence on the building roof, and accelerated wind speed on the roof.

A limited amount of research is available to provide better guidance for the increased force (Hosoya et al. 2001 and Kopp and Traczuk 2008). Based on this research, the force of Eq. 29.6-1 should be increased for units with areas that are relatively small with respect to that of the buildings they are on. Because GC_r is expected to approach 1.0 as A_f or A_r approaches that of the building (Bh or BL), a linear interpolation is included as a way to avoid a step function in load if the designer wants to treat other sizes. The research in Hosoya et al (2001) only treated one value of A_f ($0.04Bh$). The research in Kopp and Traczuk (2008) treated values of $A_f = 0.02Bh$ and $0.03Bh$, and values of $A_r = 0.0067BL$.

In both cases the research also showed high uplifts on the top of rooftop. Hence uplift load should also be considered by the designer and is addressed in Section 29.6.

C29.7 PARAPETS

Prior to the 2002 edition of the standard, no provisions for the design of parapets had been included due to the lack of direct research. In the 2002 edition of this standard, a rational method was added based on the committee's collective experience, intuition, and judgment. In the 2005 edition, the parapet provisions were updated as a result of research performed at the University of Western Ontario (Mans et al. 2000, 2001) and at Concordia University (Stathopoulos et al. 2002a, 2002b).

Wind pressures on a parapet are a combination of wall and roof pressures, depending on the location of the parapet and the direction of the wind (Fig. C29.7-1). A windward parapet will experience the positive wall pressure on its front surface (exterior side of the building) and the negative roof edge zone pressure on its back surface (roof side). This behavior is based on the concept that the zone of suction caused by the wind stream separation at the roof eave moves up to the top of the parapet when one is present. Thus the same suction that acts on the roof edge will also act on the back of the parapet.

The leeward parapet will experience a positive wall pressure on its back surface (roof side) and a negative wall pressure on its front surface (exterior side of the building). There should be no reduction in the positive wall pressure to the leeward parapet due to shielding by the windward parapet because, typically, they are too far apart to experience this effect. Because all parapets would be designed for all wind directions, each parapet would in turn be the windward and leeward parapet and, therefore, must be designed for both sets of pressures.