Inquiry: As an alternative to para. 2-2.11.5, is it possible to use clear plastic viewport retaining covers in lieu of metallic retaining rings?

Reply: It is the opinion of the Committee that for O-ring-sealed flat disk and conical frustum standard-geometry PVHO windows in applications where reverse pressure on the viewport window is not possible and the design pressure is less than 135 psig, clear viewport retaining covers may be used provided the following provisions are met:

(a) The thickness of the clear viewport retaining cover shall not be less than 0.25 in. (6 mm) or 0.025$D_w$ whichever is greater.

(b) Where retaining screws are used to secure the clear viewport retaining cover, the clearance holes between the retaining screws and cover shall be large enough to compensate for thermal expansion and contraction of the cover material. Flat washers should be used between the screw head and clear viewport retaining cover.

(c) Provision shall be made for equalizing the pressure between the clear viewport retaining cover and viewport window [e.g., a small $\frac{1}{16}$-in. (1.6-mm) diameter hole located in the cover inside the O-ring seal diameter].

(d) Acrylic plastic (per ASTM D4802-02 or equivalent) and clear polycarbonate plastic (per ASTM C1349-04 or equivalent) are acceptable materials for clear viewport retaining covers.

(e) The requirements of paras. 2-2.11.3, 2-2.11.4, 2-2.11.6, and 2-2.11.7 of ASME PVHO-1–2007 apply to clear viewport retaining covers.

(f) Figure 10-1 depicts acceptable configurations for clear viewport retaining covers.
Fig. 10-1  Acceptable Configurations for Clear Viewport Retaining Covers

(a) Flat Disk Viewport Cross Section

(b) Conical Frustum Viewport Cross Section