

Fused Glass/Metal Windows Improve Sight Glass, View Port & Flow Indicator Safety



The strongest, most secure glass elements available for sight glasses, view ports or visual flow indicators, Metaglas® mechanically prestressed windows provide a level of safety, and a useful service life, well beyond that provided by conventional or tempered glass.

FM approved, patented* Metaglas windows are formed by melting glass, typically borosilicate, into a precisely formed metal ring. As the glass cools, it solidifies and prevents the metal ring from contracting back to its theoretical size at normal temperatures. The result is a uniform, mechanically prestressed fusion of glass and metal that combines excellent optical characteristics with greatly enhanced physical characteristics. They are ideal for applications in which a glass lens or window is subjected to high pressure, vacuum, thermal conditions and mechanical forces.

Sight-glass discs or viewports typically fail because the glass cannot tolerate a particular combination of shock and the bending forces they encounter when operating under pressure. When undue stress is applied to conventional glass – both the stress introduced by system pressure and that inadvertently induced during installation – the force is concentrated along tensile stress lines. At some point the lines become cracks which can immediately compromise the barrier. Worse, a general pattern of cracking can occur suddenly, either spontaneously or as a result of a slight impact, compromising the physical integrity of the glass. So, when a conventional glass element fails, it can do so with absolutely no warning, suddenly developing a leak or shattering into fragments with explosive force.

Metaglas windows accept a much higher level of stress without damage because, being uniformly prestressed, they are more uniformly elastic. Cracks are absorbed by the homogeneous compression stress that is imposed across the full section of the glass. When further stressed to failure, by either extreme pressure or by impact, the reaction is a progressive pattern of spalling or slivering, usually on the external surface of the glass, and the barrier is uncompromised. Sudden, total failure, with leakage or explosive shattering of the glass, essentially never occurs.

Metaglas products are offered in various sizes and styles, including discs to fit visual flow indicators, sight ports, ANSI flanges and Tri-Clamp® fittings for sanitary applications. Custom designs are also available.

For additional information, contact L.J. Star Incorporated, P.O. Box 1116 Twinsburg, OH 44087 or visit our web site, ljstar.com. Phone: 330-405-3040. Fax: 330-405-3070. email view@ljstar.com.

*U.S. Patent # 4,961,628

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