

# Use of 7628 Glass in Lead Free & CAF Applications

## FR408, IS415, FR408HR, I-Speed® Materials

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When using 7628 glass cloth, the user should be aware of limitations in its application. Although Isola has offered 7628 laminate and prepreg constructions for a long time, experience and engineering testing have taught us that 7628 glass style is not well suited for certain applications. The use of 7628 glass raises concerns with applications requiring lead-free assembly and high levels of CAF resistance.

With these materials, we know that 7628 is known to have reduced capability for CAF applications when the hole wall to hole wall spacing or plane to hole wall spacing is less than 0.9 mm (35 mils). This means that 1.0 mm grids (or less) for small hole sizes and connector grids under 2.0 mm grids are considered higher risk. Generally speaking for any resin system, 7628 glass is more difficult to fully 'wet out' in the treating process at the intersections of the glass weave. This is due to the thickness of the glass, the twist of the yarn and the density of the weave structure. These intersections will have very little resin between the yarn fibers and can result in poor resin to glass bond. Low or inadequate resin content at the intersections and at the surface of the dielectric space, adjacent to copper inner layers and at the surface of laminate are precursors to measling, crazing, and delamination.

Isola continues to offer many of our products with 7628 glass. However, Isola recommends that our customers carefully evaluate the need to use 7628 glass cloth for lead free compatible or CAF resistant applications, with this material family. Customers who choose to use 7628 glass in laminate and prepreg products are strongly encouraged to fully validate the material performance and consistency.