

Insulated Glass Unit Installation Products

Area Affected: Insulated glass units (IGU's) used in both the architectural and marine industries.

Dates effected: Installations to be performed.

Summary: Installers of insulated glass units should be aware of the types of adhesives/sealants that they are using when mounting an IGU into an architectural or marine structure. Incompatibility between the secondary sealant (used in the construction of the IGU) and the installation sealant could lead to eventual failure in the IGU system.

Description: Installers of insulated glass units should consider the compatibility between sealants used in the construction of insulated glass and the sealants used to install the IGU. Incompatibility between sealant products poses the risk of chemical migration issues and/or mechanical failure at the point of attachment in the window unit. Adhesive/sealant products containing plasticizers should be avoided as plasticizers have been known to cause degradation of laminated glass interlayers.

Chemistry: Glazing products used for the installation should match the chemistry of the product used as the secondary sealant in the IGU. Using products of different chemical backbones to that of the secondary seal increases the risk of chemical incompatibility between the adhesive/sealant products. Components such as plasticizers given off by the curing of one type of sealant may cause chemical breakdown of sealants comprised of different chemistries.

Mechanical: In general, when bonding to a cured adhesive/sealant, using the same exact adhesive or sealant as the cured material will give you the most optimal outcome with creating an adhesive bond. Mechanical issues can arise if the glazing material and cured material are dissimilar, more so if the two products are of different chemistries. For example, attempting to bond to an IGU where cured silicone based product is used as a secondary seal, typical Urethane or MS Polymer based products will not form an adhesive bond to the cured silicone, resulting in an under-supported window and a higher risk of other types of failure such as leakage. The most optimal solution in this example would be to glaze the IGU using a structural silicone product.

Installation Recommendations: The IGU installer should be aware of the adhesive/sealant used for the secondary seal in the IGU. If possible, the same adhesive/sealant used for the secondary seal should be used for direct glazing of the IGU. At the very least, a glazing adhesive comprised of the same chemistry of the secondary sealant should be used.

Never use a filler product to reduce the amount of adhesive used for the bond line or tip out process. Using gap fillers such as StarBoard, Polystyrene, PTFE or Urethane based adhesive/sealant products cause the sealant bond width to be undersized, thus not providing enough strength to perform to its intended quality. Products such as these also pose a risk of leaching plasticizers which degrade the surrounding adhesive or sealant. Plasticizers also create a threat to breaking down the interlayer of laminated glass, leading to interlayer discoloration and ultimately delamination.

Going Forward: When installing an insulated glass unit, assuring that the glazing product is compatible (both chemically and mechanically) to both the secondary sealant and the laminated glass interlayer is paramount for the reasons listed above. If there is any confusion as to the type of adhesive used in the construction of ProCurve Glass Insulated Glass Units or the type of glazing material that should be used for the installation, please contact us before moving forward with the installation.