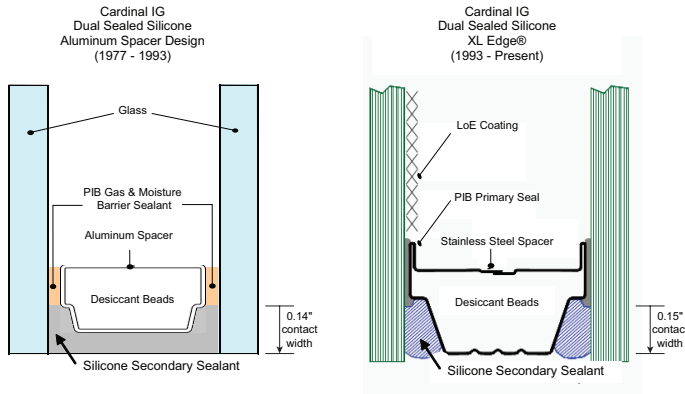


Aluminum and SS XL Edge® Spacers



Cardinal introduced its Warm Edge Technology in 1993, which utilizes 201 stainless steel, and a dual seal construction of Polyisobutylene and Silicone. The

stainless steel spacer is a key component for the moisture and gas barrier characteristics of the edge seal. The use of stainless steel provides the necessary resistance to corrosion from moisture and chemicals, and therefore, does not require sealant on the backside of the spacer. The removal of the sealant on the backside of the spacer improves the thermal performance of the edge, without compromising the durability of the IG unit.

The dual seal XL Edge® design is the most durable IG unit available today. Cardinal has conducted extensive testing on the XL Edge® design, and estimates a projected rate of failure well below 0.5% over a 20 year period. In contrast to organic sealants (polysulfide, hot melt butyl, and polyurethane), silicone is an inorganic sealant with superior resistance to moisture, temperature, and ultraviolet radiation. The use of polyisobutylene (PIB) as the primary seal provides low moisture and argon permeation. The below table presents a comparison of different sealant/spacer types and the respective results from Cardinal Accelerated testing and warranty history.

| Sealant & Spacer Type | Longevity in Accelerated Tests | Field Failure Rate @ 10 Year Warranty History | Field Failure Rate @ 20 Year Warranty History |
|----------------------------------|--------------------------------|---|---|
| Organic sealant single seal | 7 weeks | 4% | NA |
| Organic sealant dual seal | 15 weeks | 2% | 8% |
| Aluminum Spacer w/PIB & Silicone | 40 weeks | 0.4% | 1.1% |
| XL Edge® | 80 + weeks | 0.1% | 0.2% |

Fig. IG22-1

Cardinal XL Edge® IG units with a skim coating covering the back of the spacer are available at an additional charge for specialty applications (commercial high rise structural glazing and etc.). Cardinal offers a 20 year warranty against seal failure on all XL-Edge IG units.

The information in this Technical Service Bulletin is subject to the disclaimers and other limitations appearing in the DISCLAIMER that accompanies this Bulletin and at www.cardinalcorp.com.

©Copyright 2008 Cardinal IG Company