

Edgetech ready with new Triseal™ structural silicone system

Structural glazing contractors should take note. Edgetech IG of Cambridge, Ohio, manufacturer of flexible-foam Super Spacer®, the world's leading warm-edge, insulating-glass, spacer system, is introducing a new, silicone-sealed, tri-seal approach to its insulating-glass, assembly options.

Called Triseal, it's a product with particularly good promise for meeting the highly-demanding, thermal performance and durability needs of this visibly-frameless, "all-glass" architecture.

When compared to conventional, metal spacered, glass-walls, Triseal structural glazing dramatically reduces fenestration heat loss – and allows for a corresponding reduction in HVAC system size and operating cost, plus the possible elimination of entire building perimeter-heating systems.

As far back as 1990, the energy question had drawn Edgetech's attention to the absolutely pivotal role metal spacers play in the energy pathway of structural glazing units.

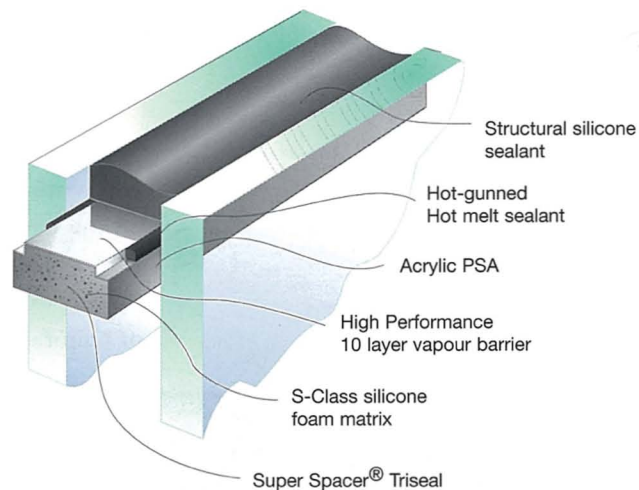
Much more so than in residential or even many commercial curtain wall applications, a structural glazing unit's metal spacer is the only road out of town, so to speak, for energy loss.

Subsequent computer simulations were quick to do the warm-edge mathematics – an overall decrease in glass wall heat loss of up to 25%, plus a dramatic 50% frame zone U-value reduction and a recognition of just how important this area is even in large-area windows.

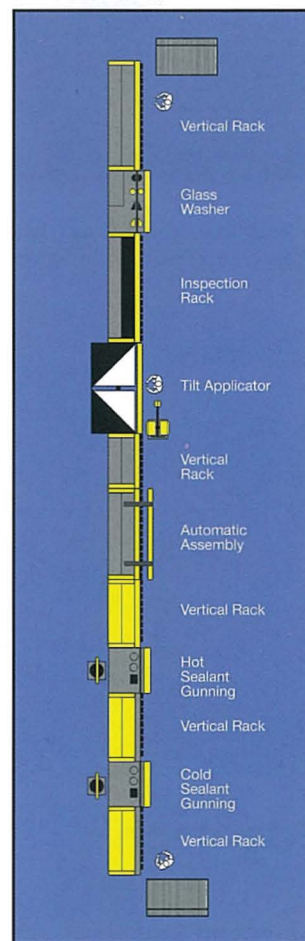
Edgetech's interest was certainly peaked by these numbers, as it was two years later, when after 15,000 hours of continuous water spray, UV radiation and 140 °F heat soaking tests, the silicone, Triseal Super Spacer approach made its final technical statement.

Five times longer than conventional metal spacer systems – and certainly good enough to have "Exciting new product" written all over it. Since then, further wind-resistance testing and a small field trial in Vancouver have provided a further, solid thumbs-up on the long term durability and worth of this product.

But Triseal's product development phase and full commercial introduction still had hurdles to get over. The two most important were undertaking further design refinements and then testing them – plus the creation of automated sealant application equipment for both the



Triseal™ Perspective Detail



Triseal™ Vertical Production Line

gas/moisture, butyl primary-seal and the silicone structural sealant that immediately follows it.

“When you deal with structural glazing systems, you don’t go very quickly,” comments Edgetech Engineering Director, Gerhard Reichert. “You do field testing and also other laboratory testing to make sure everything’s okay, and this is an on-going process.”

Triseal is the newest member of Edgetech’s growing line of products — one with a somewhat different configuration from traditional Super Spacer.

While retaining its internal, pre-applied, acrylic adhesive, structural seal, it has a T-shape design with notched-out corners the entire length of both glass-edges — so that extra amounts of gas/moisture sealant can be focused on these critical points.

From there, at least a 1/4 inch thick layer of high-performance, structural, silicone sealant is applied — putting a third seal to work to ensure 40-50 years or more, of what for this glazing type must be, completely trouble-free, structural-holding performance.

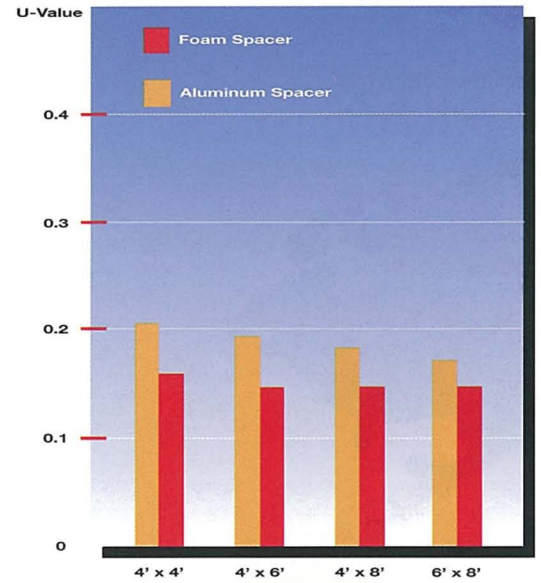
As mentioned, Triseal’s development curve also included automating the use of its two factory-applied sealants. This occurred first in 1997, with Edgetech’s commissioning of a hot-melt-butyl gunning-robot from Spadix Technology of Middlesex, N.J. Then again in 1999, this same equipment was modified to also handle the silicone outer-seal.

The result, which will be on display at the upcoming NGA show, March 15-17 in Las Vegas, is a continuous, dual-stage piece of gunning equipment, each stage equipped with two nozzle-heads — the first set for applying butyl primary moisture seal, the second for laying down silicone.

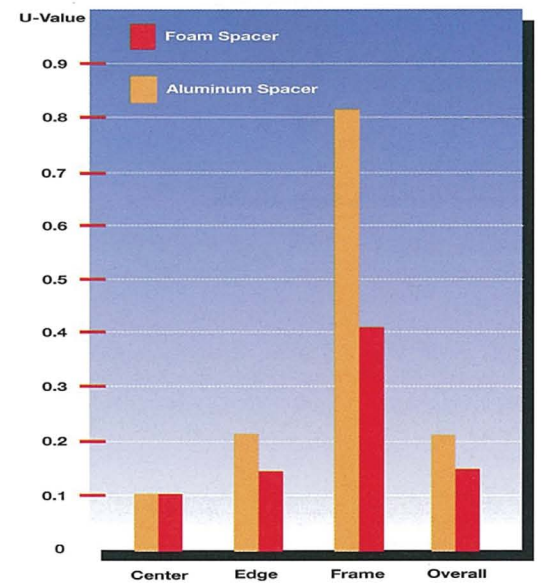
Structural glazing contractors can feel very assured about IG units built in this fashion and on this type of equipment.

Not only are they designed to be the most robust on the market, but their engineered resistance to inert-gas leakage is quite unsurpassed. They are the only gas/moisture barrier sealant system in today’s market, that is applied hot, a clear improvement, when it comes to maximizing glass wet-out and bonding.

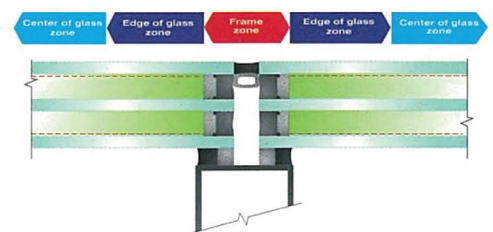
Such bonding performance is paramount with structural glazing, a fenestration product that is exposed to the elements its entire operational life. Triseal’s introduction by Edgetech now extends that life with the added advantage of long term energy savings.



Structural Glazing: Impact of Unit Size



Structural Glazing: U-Value Performance



U-Value Fenestration Zones