



Technical Bulletin – IGo11

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TOPIC: Dual Seal Technical Policy	Reissue Date : 06-29-10 Previous Update: (05-09)
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Background:

This policy/bulletin covers the design and fabrication requirements to manufacture IG units using Truseal Flexible Spacers in a dual seal configuration. The addition of any compatible barrier with the function of keeping water away from the primary IG seal will enhance the performance of the IG unit. The specific recommendations for dual seal construction will be detailed below. **It must be noted that applying a dual seal over Truseal Flexible spacers should not be considered a substitute for good glazing practices.** Dual sealing is strongly recommended to enhance other performance/handling attributes in situations such as distant shipping of IG units (where the transportation and/or installation conditions are not fully controlled), severe use environments (like pool enclosures or transportation units), and locations where potential service costs are very high.

Structural glazing is a separate dual seal category, where specific engineering design criteria must be applied. Contact your Truseal Representative for further assistance in this application.

Truseal can evaluate compatibility and adhesion durability, for each specific application. It is suggested that appropriate laboratory testing be conducted by both Truseal and each secondary sealant manufacturer. By necessity this testing must be repetitive, as the formulation of these secondary sealants may change frequently.

Construction Methods

Preface: Clean, dry glass is an absolute requirement for any IG sealant system. No system’s performance can be predicted if this is not assured.

The applied Truseal Flexible Spacer should be inset 2.5mm to 5mm/.098” to 0.200” (min. of 3mm/.118” for Microseal DS or Edgetherm FS), from the edge of glass. After compression to the specified overall thickness, this will leave a nominal “clean glass area” inset of 2.0mm to 4.5 mm (0.079” to 0.177”) for the secondary seal application. Glass cutting and Flexible Spacer application tolerances must be carefully managed to maintain the specified secondary seal depth.

The Flexible Spacer primary seal application must be maintained perpendicular to the glass, and remain so after applying the second lite and compression to the desired OAT. *It is strongly recommended that the Truseal Application PRO Tool be used to optimize the placement of the Flexible Spacer to the required inset.*

Due to the nature of the Flexible Spacer application process, the outer edge of the product may be closer to the edge of glass as it approaches the corners. Care must be taken to ensure that the inset



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is not affected, such that a *minimum of 2mm (0.079")* of the secondary sealant is maintained at each corner.

Special attention is required at the final corner seal. The “tail” from the last application to the 4th side should be cut short, so as to remain within the inset desired. During the corner closing operation, Flexible Spacer may be smeared across the inside glass surface, in the area intended to be dual-sealed. Any unintended smear into the inset area needs to be removed before dual sealing can commence. The excess can be removed by scraping with a clean razor blade in toward the final corner seal, thus ensuring complete, properly adhered, perimeter seal of the chosen secondary sealant. *IG Quality Alert: For the secondary seal to remain 100% effective, no traces of sealant mastic should remain on the glass surfaces, in the “clean” inset area at the perimeter.*

During application of the secondary seal, care must be taken to avoid any distortion, tilting, over compression, or contamination of the Flexible Spacer primary seal. The secondary seal must be applied with no voids. Curing of the secondary seal should be done according to the requirements set out by the manufacturer of that seal. Properly cured, dual-seal IG units should be glazed with the final corner seal at the top of the window.

Dual Sealing with Silicone

Special consideration must be given when using silicone as a secondary sealant. Silicone has a low adhesion to butyl materials such as Edgetherm FS, which may reduce the effectiveness of the dual seal. For this reason, Truseal has introduced ***Microseal DS*** (**Dual **Seil****) for use with a secondary silicone sealant. The backside of Microseal DS has an exposed metal shim, which provides excellent adhesion to silicone. This product has been specifically designed for this application, and **MICROSEAL DS MUST BE USED WHEN DUAL-SEALING WITH SILICONE. *The use of Edgetherm FS, Duralite and Duraseal™ as spacers for full perimeter dual sealing with silicone is NOT recommended.*** The one exception is in cases where only an intermittent secondary seal of silicone is applied (see “clipping” later in this bulletin). Please contact your Truseal Representative for more information.

Materials:

Selection of the secondary sealant material depends upon several factors; actual flexible spacer chosen, cost, equipment needs, cure time, performance etc. These criteria should be evaluated frequently for the best recommendation. Two factors of important technical concern are compatibility and adhesion. The dual seal material must not adversely affect the performance of Truseal sealant/spacer system. It also must adhere well to clear glass and any approved glass coating for the expected unit service life. Following are lists of approved secondary sealants, by spacer type. Sealants listed below which are in *italics*, are approved only for a complete, full perimeter dual seal and should not be used for “clipping,” which may be used with silicone and is described later in this bulletin.



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For use with *Duraseal, Duralite and Edgetherm FS*: Approved Secondary Sealants:

<i>Bostik 3190 (polyurethane)</i>	<i>Fenzi Thiover (polysulfide)</i>	<i>Terosan Terostat 998 R (polysulfide)</i>
<i>Bostik 5197G hot melt</i>	<i>Fuller 5140 & 5500 (hot melts)</i>	Truseal EdgeTherm 3000 (hot melt)
<i>Bostik 9190 (curable hot-melt)</i>	<i>Fuller 5153 (curable hot melt)</i>	
<i>C R Laurence 877 SS Sealant</i>		
<i>Delchem D-2000</i>		

For use with *Microseal DS*: Approved Secondary Sealants:

<i>Bostik 3190 (polyurethane)</i>	<i>Fuller 5140 & 5500 (hot melts)</i>	<i>Premier 150 & 450</i>
<i>Bostik 9190 (curable hot-melt)</i>	<i>Fuller 5153 (curable hot melt)</i>	<i>Teroson Terostat 998 R (S) polysulfide</i>
<i>C R Laurence 877 SS Sealant</i>	<i>GE Silglaze II SCS 2800 (silicone)</i>	<i>Truseal Edgeterm 3000HM, plus GS1 & GS3 (silicones)</i>
<i>Delchem D-2000</i>	<i>Novaflex SB (silicone)</i>	<i>Tremco Spectrem II (silicone)</i>
<i>Dow Corning 1199</i>	<i>Pecora 896 (silicone)</i>	
<i>Fenzi Thiover (polysulfide)</i>		

For use with *Decoseal* - Approved Support Sealants:

<i>Bostik 3190 (polyurethane)</i>	<i>GE Silglaze II SCS 2800 (silicone)</i>	<i>Teroson Terostat 998 R (polysulfide)</i>
<i>C R Laurence 877 SS Sealant</i>	<i>Premier 150 & 450</i>	Truseal GS1, GS2
<i>Fenzi Thiover (polysulfide)</i>		

The following sealants have been tested and deemed INCOMPATIBLE for use as a dual seal:

Sealants Deemed Incompatible for use w/Truseal Flexible Spacers

Guertin 2-part urethane
ADCO GD116
Somaca 88R silicone
All heavily solvated products and latex products



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Procedures Involving Partial Secondary Seals and Clips

Some customers may wish to apply a partial secondary seal to improve the handling properties of the IG unit. Where handling and transportation of units more than 30 ft² is of concern, a series of clips can be applied in the following manner:

- A continuous strip of secondary sealant starting and ending six inches from each corner, plus
- Six-inch strips of secondary silicone sealant nominally spaced (one for every 3 ft. of perimeter dimension) on each straight side as shown in Figure 1, below is additionally recommended. This construction requires a post-compression inset of 0.15” to 3/16” in depth.

If there are any questions or concerns regarding this bulletin, please contact your local Truseal Technologies representative.

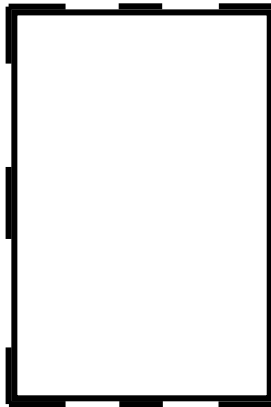


Figure 1