

## CHOOSING BETWEEN POLYSULFIDE AND SILICONE SECONDARY SEALS

Syracuse Glass Company manufactures insulating glass using a “dual seal” process. The “primary seal”, polyisobutylene, is applied to the regular aluminum or thermally broken aluminum airspace, and that spacer is then positioned between the glass lites. The polyisobutylene is an excellent barrier to moisture vapor, argon gas, or water. But polyisobutylene, or “PIB”, alone lacks enough structural strength to keep the glass lites from shifting or coming apart during transportation and glazing, so it has to be supplemented by a “secondary seal” to provide structural integrity.

Our standard secondary seal is polysulfide. Polysulfide provides excellent structural integrity, and, like “PIB”, it serves as a barrier for moisture vapor, argon gas, and water. Therefore both the primary and secondary seal, two independent components applied by different equipment, would have to simultaneously fail for our insulating glass seal to fail. This redundancy is just one reason why Syracuse Glass has earned a reputation for producing high quality, long lasting insulating glass units since 1972. Polysulfide will degrade if exposed to UV rays from the sun, however, so it is not suitable for use in insulating glass in structural silicone glazing applications.

We also offer silicone as a secondary seal option. Silicone offers very strong adhesion to glass and aluminum, which provides structural integrity for even the largest and heaviest glass components. And silicone will not degrade if exposed to UV rays from the sun, so it is suitable for insulating glass in structural silicone glazing applications.

But silicone provides virtually no barrier to water vapor, water, or argon gas. For example, as a relative barrier for argon gas, if Polyisobutylene is rated at 1, Polysulfide is 4, and Silicon is 665! So silicone provides no redundancy in preventing passage of argon gas, water vapor or waters either in to or out of an insulating glass unit.

<b>In summary, here are our recommendations:</b>	
<b>POLYSULFIDE</b>	<ul style="list-style-type: none"> <li>- <b>Units for conventional glazing systems where the edge seals are covered at the exterior.</b></li> </ul>
<b>SILICONE</b>	<ul style="list-style-type: none"> <li>- <b>Units for structural silicone glazing applications where the edge seals are exposed at the exterior</b></li> <li>- <b>Offset units with exposed edge seals</b></li> </ul>