Warm Edge Spacer Tube

Insulated Glass Manufacturing

Manufacturing Tips Vital to the Lifespan of High Performance Sealed Units

- Processing with Warm Edge Spacer
- Processing Argon-filled dual seal units

There is a general trend towards constructing insulated glass sealed units with higher specification components to achieve better Window Energy Ratings (WERs), which we all agree that better thermal efficiency should be a good thing. However, the concern is that while selected components can help to achieve a higher WER, there are several areas where the construction methods are vital to ensuring that the lifespan of the unit is not dramatically reduced.

The key general changes are:

- Aluminium spacer bar to warm edge spacer bar
- Single seal air-filled units to Argon-filled dual sealed units

Processing with Warm Edge Spacer (1 of 2)

If Aluminium and warm edge spacers are cut on the same machine, take care to remove filings so that they are not trapped within the sealed unit.

Where possible, it is recommended that warm edge spacer is cut on a separate saw, preferably with a covering (carpet or rubber matt) on the surface to reduce static caused by sliding the plastic over the metal surface.

Static must also be considered when filling warm edge spacer tubes with desiccant. If static is present, this can greatly reduce the amount of desiccant that actually filters into the spacer tube when filling.

Desiccant can cling to the top of the tube giving the operator the impression that the whole tube is full when in fact, it is only partially filled.

In addition, warm edge spacers have a smaller internal cavity than metal spacer bars so whilst manufacturers are advised to fill two sides of their Aluminium spacer frame with desiccant, it is advised that a minimum of three sides of warm edge spacer should be filled to achieve the same lifespan.

Fill 3-4 sides of spacer tube with desiccant. This will use no more desiccant than traditionally used, but should avoid issues caused by insufficient desiccant.

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Processing with Warm Edge Spacer (2 of 2)

If you under-fill with desiccant you will still have the same volume of water vapour passing through the edge seal as you would have with a metal spacer, but probably 50% less desiccant than you would have had before to adsorb this water vapour. It is imperitive to fill at least three sides of warm edge spacer in your spacer framework with a 3A desiccant.

If only two sides of desiccant are partially filled, the lifespan of the unit will be as much as halved. Then if sealant depths have been reduced to a minimum to achieve higher WERs, the life of the unit will be further reduced.

Beware of reduced sealant depth. Bear in mind that edge sealants are there to hold the whole unit together as well as prevent gas from escaping and keeping water vapour out. Therefore, protecting the desiccant will help to prolong the working life of the unit. The Moisture Vapour Transmission Rate (MVTR) quoted by sealant manufactures can be compared to see if your sealant is worse or better than others. Request the manufactures EN1279 part 4 information.

Processing Argon Filled Dual Seal Units (1 of 1)

Traditional air-filled sealed units with hot melt are often constructed with a secondary seal only. When manufacturing Argon gas filled units it is vital that they are dual sealed to ensure a minimal gas loss from the unit. This means that a primary seal is applied before a secondary sealant is applied. When looking at a complete sealed unit, the primary seal can be identified by a grey or black line around the perimeter of the glass edge. If the unit isn't primary sealed, the edge of the spacer bar will be visible.

The primary seal acts as an extra moisture barrier and is critical in preventing high gas loss percentages over the lifetime of the sealed unit. The current standard for the EN1279 Part 3 test is less than 1% gas loss. With single seal systems you can typically expect between 1.5% - 4% loss!

Many smaller IG manufactures do not have machines to apply the sealant or additional labour to apply the primary seal. To enable this sector of the market to conform, we have recently launched a Thermobar spacer tube with a pre-applied Butyl seal which means construction requires no additional labour apart from peeling off the backing tape.