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TECHNICAL SALES BULLETIN 001

GLAZING RECOMMENDATION FOR DOUBLE GLAZED UNITS (SIGU's)

Sealed Insulating Glass Units (SIG units) have shown a marked proliferation in the external glazing of both commercial and residential projects. This is primarily due to the massive energy cost increases recently passed on to the consumers, as well as the growing social awareness relating to the dangers associated with "global warming".

Although PG's SIG units are comparable to the best available worldwide, and carry a 10 year warranty against failure of the hermetic seal, it is imperative that certain glazing procedures and recommendations are adopted :-

MASS:

An SIG unit comprising 2 off 6mm lites has a mass of approximately 33kg/m2. A typical unit measuring say 2440 x 1220mm will have a mass of almost 100kg, therefore the framing materials must be sufficiently rigid to accommodate this mass, whilst also complying with the frame deflection limitations specified in SANS 613.

CLEARANCE & REBATE DEPTH:

Adequate glazing clearances of not less than 4mm all round should be maintained, including front and back glass faces.
The rebate depth should not be less than 20mm, with a corresponding depth of glazing bead in the case of conventionally glazed units.

SETTING BLOCKS:

Each unit should rest on setting blocks of sufficient width to support the entire inner as well as 75% of the thickness of the outer lite. In this manner, the weather seal in flush-glazed systems may be continued past the front of the setting block.
Setting blocks should measure minimum 100mm long x minimum 4mm thick, and have a 50– 80 durometer Shore A hardness, positioned at quarter points along the bottom edge of the unit. Although pre-cured silicone is the best material for setting blocks in flush-glazed systems, any other material compatible with the weather seal and satisfying the above-mentioned hardness criteria will be acceptable.
The primary function of the setting block is to evenly distribute the unit mass, thus reducing the stress in the bottom edges, as well as reducing distorted reflections in reflective glass units. In opening sections, these setting blocks should also be placed on vertical and top edges, as detailed in SANS 10137.

WEEP-HOLES:

SIG unit glazing systems require weep-holes or drainage in order to remove rain water or condensation that could accumulate in the voids around the bond breaker.
We recommend 3 off 6mm diameter weep-holes per sill, draining externally.

CAPILLARY or BREATHER TUBES:

Because PG's SIGU's are manufactured at various coastal and inland facilities, and installed at vastly differing altitudes, SIGU's should be fitted with a pressure-equalising "breather tube" wherever the place of final installation has an altitude difference of more than 300 metres from the altitude at place of manufacture.
This breather tube will ensure that the ambient atmospheric pressure is equal to the pressure within the dehydrated airspace of the SIG unit.
The breather tube must be crimped just prior to final installation, with the unit vertical and free-standing, thus sealing the unit. It must point downwards on a vertical jamb, even once crimped, therefore it is crucial that the correct height and width dimensions are stipulated on the order. It is also advisable to seal the breather tube into the secondary seal of the SIG unit with a compatible sealant to prevent the protruding tube from being damaged during installation.

EDGE COVER:

In conventionally glazed systems, the rebate depth shall not be less than 20mm, so as to accommodate the edge cover due to the dual-seal, along with edge clearances.
In flush-glazed(structural) systems, it is imperative that the project design windloads and maximum unit widths are known, so as to calculate the required Silicone Contact Depth(SCD). This will obviously affect the amount of total edge cover, and must be allowed for at design stage.

MATERIAL COMPATABILITY:

Irrespective of the glazing system employed, all materials used in the system should receive an assurance of compatability from the respective manufacturers. This includes primers and surface finishes.
An example of material incompatability is when silicone comes into contact with polyurethane, the urethane disintegrates within a few months. Apart from negating our warranty, the glass lites could separate, and create a safety hazard.

THERMAL STRESS:

A thermal stress evaluation must be conducted on all SIG units having one or more heat-absorbing or coated glasses included in its composition.

GAS-FILLING:

In order to improve the insulation (U-value) of the unit, SIG units can be ordered with Argon gas in the void, instead of dehydrated air.
Obviously, these units cannot incorporate a breather tube, therefore some additional visual distortion is inherent to gas-filled units.
Please do not hesitate to contact the undersigned should you be unsure of anything mentioned above.

Yours sincerely,

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