

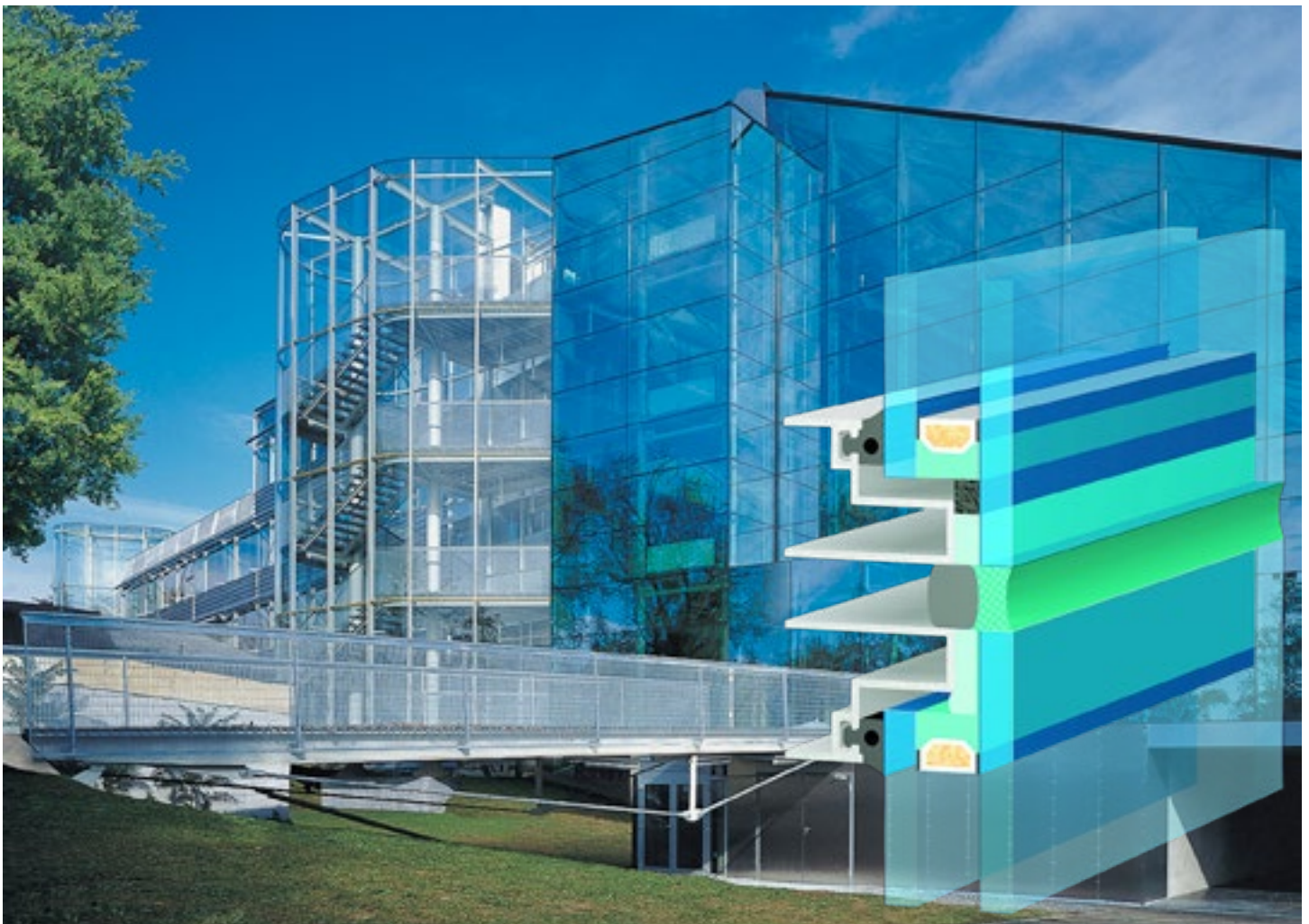


High Performance Building

Consumer Solutions

DOWSIL™ 3362 Insulating Glass Sealant and Argon Filled Insulation Glass

DOWSIL™



The global trend on Energy saving combined with today's modern architecture design are driven stringent requirements for Insulating Glass Unit (IGU) on durability and thermal performances, increasing the usage of gas filled IGU, warm edge technologies and Silicone 2nd sealant.

While one of the key characteristics of organic based sealants is their low gas permeability, (which allows them higher workmanship tolerance) their lower glass adhesion durability limits their use in applications that requires higher durability, UV exposure and/or extreme weathering resistance. Silicone sealants, on the other hand, excel in the resistance of their glass adhesion to sunlight, making them the material of choice for structural and commercial glazing as well as demanding roof glazing applications. With over 20 years of experience with silicone sealants globally, the excellent performance and service-life of silicone dual-sealed IGUs have been demonstrated.

Recent developments on the IGU system have demonstrated that argon-filled, silicone dual-sealed IGU manufactured with DOWSIL™ 3362 Insulating Glass Sealant can be manufactured to reliably pass the DIN 1286-2 and/or EN 1279-3 requirements. More than 20 commercial IGU systems using gas and silicone have been successfully put on the market in the last five years using sealants from Dow.

Consequently, silicone dual-sealed IGUs can now be produced that not only excel in their durability and longevity, but also reliably meet the stringent requirements for gas retention as defined in the Industry Standards. Due to the inherent gas permeability of silicone, special design and workmanship considerations needs to be taken to ensure that the insulating glass unit system as a whole is gas tight. Those considerations are the expertise and therefore primary responsibility of the IGU manufacturers.

Some of the design considerations involve the reduction of the area available for gas transmission, or the increase of its path length. Others specifies bent spacer-frame corners, integrated gas-filling process, semi-automatic PIB application equipment and in-line (heated) PIB primary seal presses. It has also been demonstrated that IGU edge-seal systems, which have the ability to accommodate movement within the spacer itself like e.g. TPS spacer or foamed based spacers place less stress on the primary seal and thus ensure lower gas loss rates under accelerated and actual service-life conditions. Systems that minimize differential thermal movement like stainless steel spacer have also been proven to perform significantly better in terms of gas loss rates. Last but not least, the tensile stress behavior (Young's modulus) of secondary sealants must be considered as well as their elastic recovery values. Special grade of silicone sealants like DOWSIL™ 3362 HD Insulating Glass Sealant have been developed for IG application's

with ultra high modulus and elastic recovery profile at all temperature and demonstrated a positive impact on gas tightness as well as the other parameters listed above.

Workmanship plays an important role in determining the success of gas filling, much as it does in ensuring success of manufacturing a normal air-filled insulating glass unit. We can mention the need for having the glass lites and spacers properly cleaned to ensure that the primary and secondary sealants attain satisfactory adhesion, the spacer alignment and respect of the nominal seal dimensions and of course a uniform and consistent application of the primary seal without voids or skips. The secondary seal must also be free of voids or skips. Any inconsistencies may allow undue stressing or failure of the PIB seal, the primary barrier to gas leakage. Two-part sealants must be properly mixed and used at the proper mix ratio.

Dow supplies silicone for use as 2nd seal in IG units and warrants the performances on these silicones in IG unit for what adhesion and physical properties are concerned. Our products specified for IG applications are compliant with the relevant standards for what the 2nd sealant is concerned. (EN1279 part 4, CEKAL,...) The responsibility for the initial qualification (incl. CE marking) and for the factory production control of a silicone IG system filled with gas belongs to the IG manufacturers according to the relevant standards. (respectively EN1279/3 and EN1279/6,...)

Dow's technical department can assist you in the design, evaluation and component selection of the IG system, considering the special requirements linked to the gas permeability. A discussion with all parties involved is critical to ensure that the overall IG system is performing well and the IG manufacturing process is set-up to provide reliable and consistent gas tight requirements. Recently, Dow is proposing an additional version within its DOWSIL™ 3362 Insulating Glass sealant system. The new DOWSIL™ 3362 HD Insulating Glass sealant base grade provides an even higher Young's modulus for the IG edge seal that will further minimize the primary seal and spacer movement under pressure load and therefore increase the IG unit gas tightness. DOWSIL™ 3362 HD Insulating Glass Sealant should be considered in IG systems whenever fulfillment of EN1279/3 and long service life are required.

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Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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Form No. 62-1470-01 A