CONSTRUCTION SEALANTS

Insulating Glass

MF910S

Butyl Thermoplastic
Spacer for IG

TYCOON GLOBAL

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DESCRIPTION

TG-SEALANT MF910S is the ultimate warm edge spacer for the manufacturing of insulating glass units, polyisobutylene(PIB) as the base, consisting of a thermoplastic elastomer formulated with the inclusion of desiccant for drying the air space. Free of solvent, non-fogging and without sulfuration. It can keep its plasticity and sealing properties in wide temperature range and will not become harden and crack. It also has excellent resistance to air aging and perfect adhesion property to glass and rigidity. Meanwhile, it will compose an excellent anti-humidity system with elastic sealant due to its low moisture vapor transmission property.

APPLICATION FIELD

TG-SEALANT MF910S is used for the manufacturing of warm edge insulating glass units with varying shapes and air space widths. The recommended secondary sealant for use is TG-SEALANT Two component MF840 Polysulfide Sealant.

BASIC USE

The application surfaces must be clean, dry and free of dust and grease.Contact with any solvent, oil, or plasticizer containing glazing materials should be avoided. TG-SEALANT MF910S can be applied by extruder special for thermoplastic spacer. Its concrete condition can be achieved by adjusting temperature and pressure. The preferred range of temperature is 100°C~140°C and operating environment temperature should be 18 °C or above. It is recommended that glazing material Compatibility & Adhesion Test is necessary before use.

TECHNICAL DATA - TYPICAL PROPERTIES

TEST ITEMS	TEST RESULTS	TEST STANDARD
Test Items	**Typical Values**	**Test Standard**
Color	Black	
Base	Synthetic Rubber(PIB), 100% solid.	
Specific Gravity	1.25 g/m³	GB/T 1033.1
Shear Strength (0.5mm)	0.36 MPa	Q/ZZY 033
Penetration (1/10mm, 25°C)	25	GB/T 4509
Properties	Low moisture vapor transmission rate (MVTR), low gas permeability, low thermal conductivity.	
Moisture Vapour Transmission Rate(MVTR)	0.17 [gr/m². 24hrs. 2mm]	EN1279 - 4
Gas Permeation Rate(Ar)	1.80×10^{-3} [gr/m². hrs]	EN1279 - 4
Service Temperature	-40°C to 80°C	
Application Temperature	120°C to 140°C	

APPLICABLE STANDARDS

EU Specification: EN1279 - part 4

SHELF LIFE AND STORAGE

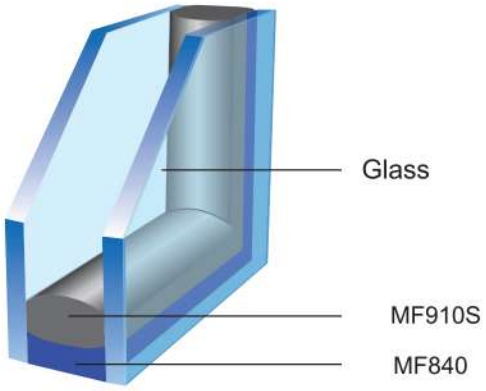
12 months stored in cool, dry and ventilated places below 30℃ in the original unopened packing.

PACKAGING

Steel drum: 220 kg/drum (Φ 571.5mm)

TRANSPORTATION

Non-dangerous, can be transported by train, ship, automobile and plane.

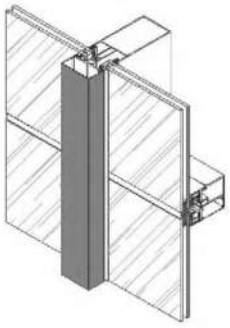


MF910SG Thermoplastic Spacer has excellent adhesion and compability with Polysulfide Sealant.

Joint Design--Correct Planning is Essential

In structural glazing, the adhesive joints should be planned and arranged according to optical requirements, but they should also take into consideration changes in the adjacent parts under the effects of temperature and the movement capability of the silicone sealant. The joint design thus combines shape with functionality.

Important



Seven criteria must be observed:
1.The joint seal must be able to freely accommodate tensile and compressive movements between the joint edges. Three-sided adhesion of the sealant must be avoided, because it inevitably results in damage to the joint.
2.The ratio of joint bite Cs to joint thickness ts should be at least 1:1 and at most 3:1.
3.The minimum joint bite is always 6mm, irrespective of the calculated value.
4.The joint thickness ts should be at least 6mm.
5.Always round the result up, never down.
6.The structural joints must not be subjected to external loads as a result of forces such as settlements, shrinkage, creep or permanent stress caused by gaskets etc.

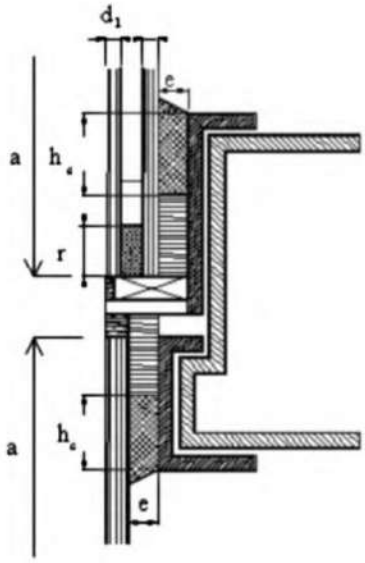
Calculating the joint bite Cs

Joint bite Cs as a function of the wind load in supported constructions:

$$Cs = \frac{wa}{2000\,f1}$$

Cs– minimum bite of the adhesive joint(mm)
a-- length of the short edge of the glass pane or of the element(mm); with irregularly dimensioned glass element: longest of the short glass panes [1)]
w-- maximum wind load to be received (kN/mm^2).
f1-- maximum adhesive stress for supported construction, 0.2N/mm^2.

[1)] If the sides of the glass panes are of varying length, then the length of the longest side is used for the calculation.

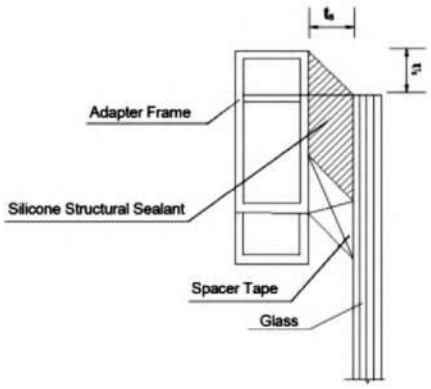


Calculating the joint thickness ts

$$ts \geq \frac{us}{\sqrt{\delta(2+\delta)}} \quad ①$$

$$us = \theta hg \quad ②$$

ts-- minimum thickness of the adhesive joint (mm). us-- relative displacement in length of glass panel to adapter frame(mm), relative displacement yield from support construction lateral displacement can be calculated according to formula ②, take into account displacement from temperature difference if necessary.
θ -- elastic layer displacement angle limit value (rad) of support construction subject to wind load standard value.
hg -- glazing height = vertical dimension a or b.
-- adhesive deformation tolerance, elongation subject to tensile stress of 0.14kN/mm^2.



Silicone Structural Sealant Joint Thickness Drawing