



CONSTRUCTION SEALANTS

Insulating Glass



MF840

Two Component Polysulfide
Sealant for Insulating Glass

MF840

Two Component Polysulfide Sealant for Insulating Glass

Secondary Sealant for the Manufacturing of Insulating Glass

◆ APPLICATION FIELD

- Secondary sealant for the manufacturing of insulating glass.
- Two component, room temperature cured polysulfide sealant.
- Excellent adhesion to most building materials such as glass, aluminum alloy, and galvanized- steel, stainless steel etc.
- Solvent free, primers are not required.
- High strength and elasticity.

◆ APPLICABLE STANDARDS

- EU Specification: EN1279- part 2, 3, 4
- China Specification: GB/T 29755
- IGCC-IGMA Approved.

◆ TECHNICAL DATA - TYPICAL PROPERTIES

COLOR		Component A (base)	White
		Component B (catalyst)	Black
		Mixture (A+B) :	Black
MIXING RATIO		10:1 (by weight)	
POT LIFE (23 °C)		20 min. Pot life is influenced by room conditions.	
HARDING TIME		2-3 hrs, depending from pot life.	
DENSITY	Com A [23 °C]	approx. 1.80	[g/cm ³]
	Com B [23 °C]	approx. 1.55	[g/cm ³]
VISCOSITY	Com A [23 °C]	490 Pa.s	
	Com B [23 °C]	120 Pa.s	
FINAL HARDNESS(Shore A)		35-45 [Shore A]	
MOISTURE VAPOUR TRANSMISSION (MVTR)		11 gr/m ² .24hrs.2mm	EN 1279/4
GAS PERMEATION(Ar)		6.63 x 10 ⁻³ [gr/m ² .hrs]	EN 1279/4
TENSILE ADHESION STRENGTH		approx. 0.70 [MPa]	
VOLATILE CONTENT(A+B)		< 1.0 %	
FOGGING		Without visual fogging	
Test Condition: As cured after 14 days at Temperature 23 °C and 50% R.H.			

MIXING AND DISPENSING INSTRUCTIONS

TG-SEALANT MF840 has to be mixed homogeneously and air-bubble free in the correct ratio .

TG-SEALANT MF840 should be mixed in a ratio of 10:1 base to curing agent by weight , or equivalent 8.6:1 by volume for optimal properties . At this mix ratio, the sealant typically exhibits a working time of 20-30 mins and allows units to be handled within 6-8 hours . Slight variations in mixing ratio can be tolerated , but these should not exceed 100:6 to 100:12 by weight to ensure minimum properties are obtained.

Mixing Ratio by Weight	100:6	100:8	100:10	100:12
Mixing Ratio by Volume	4.3:1	10.7:1	8.6:1	7.1:1

CURING

When mixing TG-SEALANT MF840 A base+ TG-SEALANT MF840 B catalyst at approximately a 10:1 weight ratio , the material will become tack-free at about 25-35 mins under ambient conditions of at 23°C, 50% R.H. After 3 days IGU can be transport to project, Development of full properties requires full evaporation of cure by-products and will normally be achieved within 5 days (can be start for installation) . Full properties will take additional time in colder climates.

It is important when selecting components for a project that adhesion and compatibility tests are carried out, and found to be successful, before the project starts.

SHELF LIFE AND STORAGE

12 months from the date of production below 30°C.

PACKAGING

Com A 190L/drum	Com A 30 kg/pail	Com A 4 kg/pail
Com B 19L/pail	Com B 3.6 kg/pail	Com B 0.48 g/bag

FIRST AID INFORMATION

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention . **Skin Contact:** Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water . Wash contaminated clothing and clean shoes before reuse. **Inhalation:** Remove person to fresh air . If signs/symptoms develop , get medical attention. **If swallowed:** Do not induce vomiting unless instructed to do so by medical personnel. Give person two glasses of water . Never give anything by mouth to an unconscious person. **Keep out of reach children.** Refer to Material Safety Data Sheet (MSDS) and Technical Data Sheet (TDS) for details .



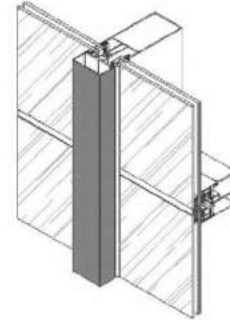
Joint Design--Correct Planning is Essential

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 C_s to joint thickness t_s 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 t_s 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 C_s

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

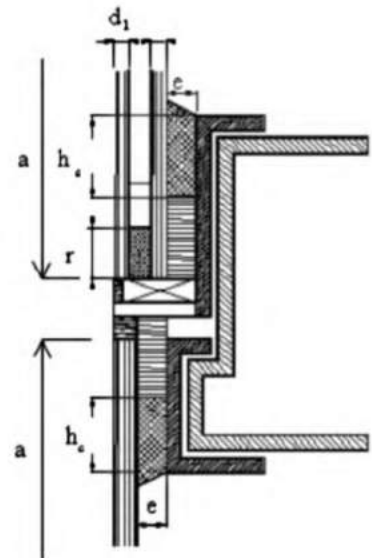
$$C_s = \frac{wa}{2000 f_1}$$

C_s -- 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).

f_1 -- 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 t_s

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

t_s -- 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

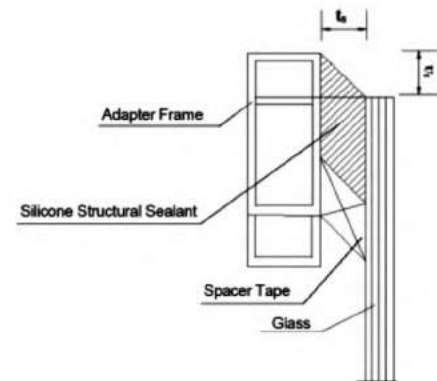
$$us = \theta hg \quad \textcircled{2}$$

to formula $\textcircled{2}$, 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