CONSTRUCTION SILICONE

Insulating Glass, Facade,
Curtain Wall
Window & Door

MF882

Two Component Silicone
Sealant for Insulting Glass

TYCOON GLOBAL

MF882

Two Component Silicone Sealant for Insulating Glass

Secondary Sealant for the Manufacturing of Insulating Glass

♦ APPLICATIONS

TG-SEALANT MF882 is a two- component neutral cured silicone sealant specifically developed for the manufacturing of insulating glass units used for window and door, vehicles and refrigeration, also can be used for edge frame curtain wall system.

♦ FEATURES

- Excellent adhesion to a wide range of substrates including coated, enamelled and reflective glasses, anodised and polyester paint coated aluminium and stainless steel.
- Excellent temperature stability : - 60 °C to 180 °C.
- High level of mechanical properties.
- High elasticity and high modulus.
- Resistant to ozone.

♦ TYPICAL PROPERTIES

TEST ITEMS		MEASURED VALUE
Base (Com A)	Appearance	White / Grey Ropy Paste
	Density	1.45 ± 0.05 g/cm3
	Viscosity	150,000 mPa.S
Catalyst (Com B)	Appearance	Black / White Ropy Paste
	Density	1.03 g/cm^3
	Viscosity	8 0,000 mPa.S
Mixture By weight (A:B = 12:1)	Appearance	Black / White / Grey
	Viscosity	360,000 mPa.S
	Application Time (23°C, 50%)	30-50 mins
	Tack-free Time (23 °C, 50%)	30-60 mins
Sag	Placed Vertical (50°C)	0
	Placed Horizontal	No deformation
Hardness	Shore A- 4h	22
	Shore A- 24h	40
	Shore A -14 days	46
After 14 days at a temperature of 23°C and 50%RH.		
Elastic Recovery		94%
Adhesion Property at Definite Elongation		No Damage
Tensile Adhesion Strength	23°C	0.92 MPa
	After Aging in Hot Air	1.10 MPa
	300 hr After Water-UV	0.82 MPa
	-20°C	1.28 MPa
	60°C	0.85 MPa
	After Water-UV Immersion	0.79 MPa
	Adhesive Failure Area	0%
	Elongation Under Maximum Tensile Strength at 23°C	93%
	TGA	3.6%
Moisture Vapour Transmission Rate (MVTR)		12.3 [gr/m^2.24hrs.2mm] - EN1279/4
Gas Permeation Rate (Ar)		360 x 10^{-3} [gr/m^2.hrs] - EN1279/4

MIXING AND DISPENSING INSTRUCTIONS

TG-SEALANT MF882 has to be mixed homogeneously and air-bubble free in the correct ratio.TG-SEALANT MF882 should be mixed in a ratio of 12:1 base to curing agent by weight , or equivalent 8.0:1 by volume for optimal properties . At this mix ratio, the sealant typically exhibits a working time of 30-50 minutes and allows units to be handled within 3 hours . Slight variations in mixing ratio can be tolerated, but these should not exceed 11:1 to 14:1 by weight to ensure minimum properties are obtained . To obtain the ultimate physical properties from TG-SEALANT MF882, it is recommended that the base and curing agent are thoroughly mixed using an airless mixing system found on most existing commercially available two-part silicone dispensing machines . Neither hand mixing nor the use of hand- held power mixers are satisfactory due to their incorporation of air into the material during mixing that would result in altered physical properties of the cured sealant.Most commercially available metering and mixing equipments are suitable .

Part A is stable in air, Part B is moisture-sensitive, must only be exposed briefly to air.

APPLICABLE STANDARDS

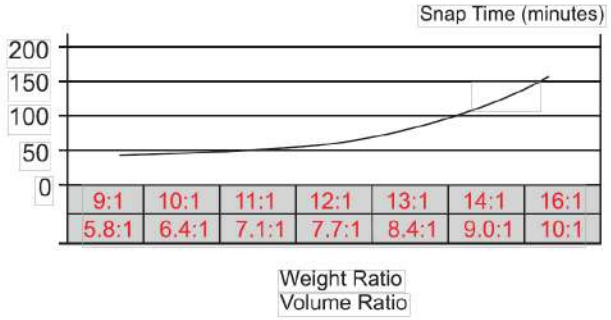
- EU Specification: EN1279- part 2, 4, 6
- China Specification: GB/T 29755, JC/T 471.
- IGCC-IGMA Approved.

CURING

When mixing MF882 A base + MF882 B catalyst at approximately a 12:1 weight ratio, the material will become tack-free at about 50 minutes under ambient conditions of 23°C, 50% R.H. Under these conditions approximately 70% of strength should develop within 24 h o u r s . Development of full properties requires full evaporation of cure by-products and will normally be achieved within 7 days. Full properties will take additional time in colder climates .

Weight Ratio / Volume Ratio for MF882 A Base with MF882 B Catalyst:

Weight Ratio	Volume Ratio
9:1	5.8:1
10:1	6.4:1
11:1	7.1:1
12:1	7.7:1
13:1	8.4:1
14:1	9.0:1
16:1	10:1



LIMITATIONS

TG-SEALANT MF882 is not recommended for use in single seal insulating glass units, food contact applications, underwater or in other applications where the product will be in continuous contact with water .
TG-SEALANT MF 882 should not be applied or used as the structural adhesive between insulating glass units or curtain wall in structural glazing applications.

SURFACE PREPARATION

GLASS / SPACER - To achieve good adhesion , surfaces must be clean, dry and free from oil, grease and dust. Advice on specific applications and surface pre-treatment methods is available from the Technical Service Department of TG-SEALANT .

♦ FIRST AID INFORMATION

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical att ention . **Skin Contact:** Remove contaminated clothing and shoes. Immediately flush skin with large amounts of w a t e r . Wash contaminated clothing and clean shoes before reus e. **Inhalation:** Remove person to fresh air. If signs/symptoms deve lo p, get medical a tt ent i on . **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 Date Sheet(TDS) for details. **Emergency Telephone Number:** +86 371 67982270

♦ SHELF LIFE AND STORAGE

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

♦ PACKAGING

Com A 265kg/drum	Com A 25kg/pail
Com B 19 kg/pail	Com B 300ml/cartridge x 7 pcs.

Fig. 1 TG-SEALANT MF882 Thermogravimetric Analysis Curve.

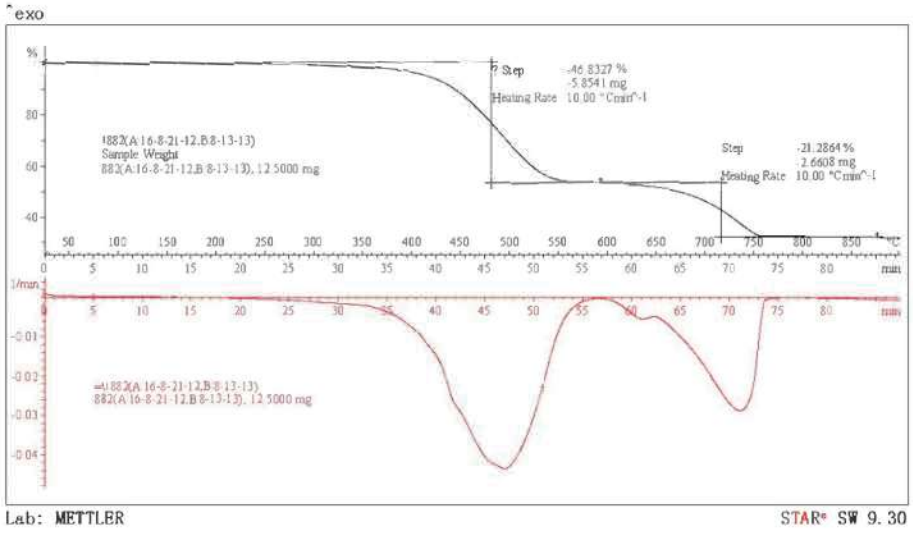
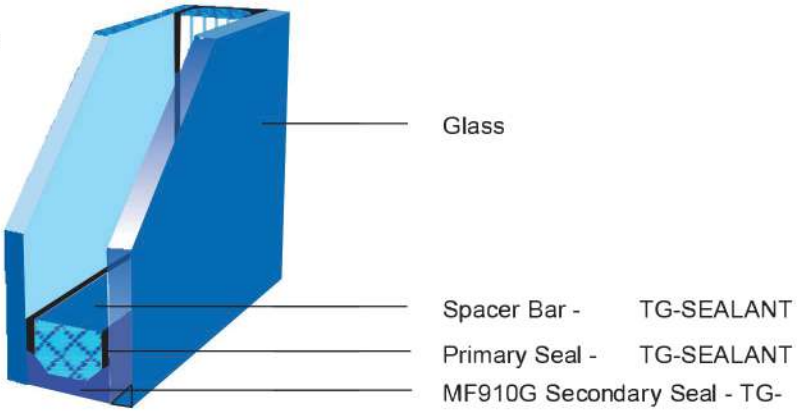


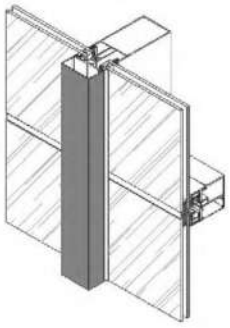
Fig. 2 Typical Section of Symmetric Insulating Glass Unit



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.

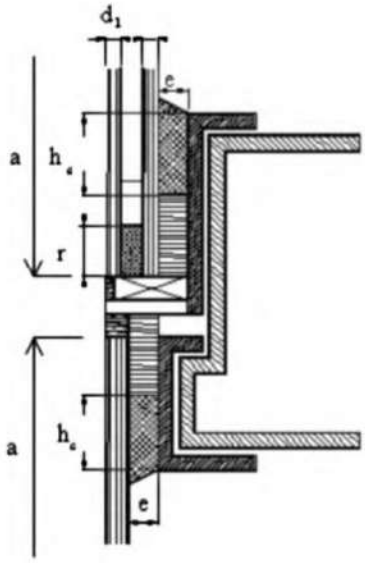
Calculating the joint bite Cs

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.

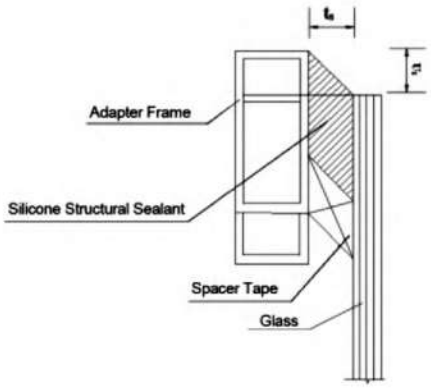


Calculating the joint thickness ts

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

$$us = \theta hg \quad ②$$

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