



CONSTRUCTION SILICONE

Insulating Glass, Facade,
Curtain Wall
Window & Door



MF883

Silicone Sealant
for Insulating Glass

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Silicone Sealant for Insulating Glass

Insulating Glass, Structural Glazing, Facade, Curtain Wall System

◆ DESCRIPTION

MF883 is one component neutral cured RTV silicone structural sealant for secondary seal of insulating glass units.

◆ APPLICATIONS

MF883 is mainly applied to secondary seal of traditional insulating glass units, with butyl as its primary seal, also recommended to glazing micro insulating glass with free edge incorporated by specialty glass types like ultra-thin glass (solar glass or screen glass).

◆ FEATURES

- Form durable and elastic sealing layer on glass and spacer surface.
- Excellent adhesion to a wide range of substrates without primer.
- Neutral cured, no corrosion to substrates surface.
- Excellent temperature stability: -60°C to 180°C.
- Non-slump, solvent free, and no pollution to environment.

◆ TYPICAL PROPERTIES

STANDARD	TEST ITEMS	TECHNICAL DATA	TEST RESULT	
Test condition--before cure, T: (23±2)°C, R.H: (50±5) %				
GB 16776	Extrudability, s	≤10	1.9	
GB/T 13477.6	Sag, mm	≤3	0	
-	Application Time, min	-	20	
GB/T 13776.5	Tack free time, h	≤3	0.5	
-	Curing time, d	-	7-14	
-	Completely cured time, d	-	14-21	
-	Range of Application Temperature, °C	-	10-40	
Test condition--7days placed at T: (23±2)°C, R.H: (50±5) %				
GB/T 531.1	Hardness, Shore A	20-60	48	
GB/T 528	Elongation at Break, %	-	500	
	Tensile Strength, Mpa	-	2.31	
Test condition-- 21days placed at T: (23±2)°C, R.H: (50±5) %				
GB 16776	Tensile Adhesive Strength, Mpa	23°C	≥0.6	1.14
		After Water Immersion	≥0.45	1.10
		After Water-UV		1.02
		90°C		0.97
		-30°C		1.45
	Adhesion Failure Area, %	≤5	0	
	Elongation at Max Tensile(23°C), %	≥100	220	
	Heating Ageing	TGA, %	≤10	3.3
		Cracking	No	No
		Chalking	No	No

◆ APPLICATION METHODS

Surface-preparation:

The sealing joint and assembly parts must be clean, dry and free from all contamination and impurities, such as grease, dust, water logging, frost, dirties, remaining glues, assembly accessories and protective coatings.

Primer:

Adhesion test must be proceeded to confirm if primer is necessary or not. If necessary, the primer shall be applied to be a thin layer with a white cloth on the surface before applied sealant. Otherwise, apply sealant directly to clean surface of substrate.

Injection of Sealant:

Continuously extrude MF883 with a positive pressure sealant gun and fully fill it in the joints.

Tooling:

Before a skin forms, tool the sealant with light pressure to spread the sealant and make sure complete surface contact with glass and spacer.

◆ APPLICABLE STANDARDS

- GB 16776
- GB/T 29755

◆ SHELF LIFE AND STORAGE

12 months from the date of manufacture, store in a low moisture, dark place below 30°C in the original unopened packing.

◆ PACKAGE

Sausage: 500 ml

Drum: 200 L

◆ LIMITATIONS

The product is not applicable in the following conditions:

- Single seal or primary seal of insulating glass units.
- Immersion in the water.
- Any building materials exuding grease, plasticizer or solvents, vulcanized or semi-vulcanized rubber.
- Frosted or humid surface.
- The region where atmosphere vapor is closed and cut off (as sealant is moisture curing).
- Surfaces where paints are used (generally paints cannot be adhered on surface of silicone).
- contact with food or other affiliated category.

◆ ATTENTIONS

- In case of contact with eyes, rinse immediately with plenty of water.
- Avoid contacting with skins for a long time, and avoid contacting with children.
- Avoid contaminating foods, medicines or cosmetics.
- Do test on adhesive property of project materials before using and refer to MSDS.
- For more information on safety use and hazards, and for safety notice which is not mentioned, please refer to relevant specification of JGJ 102.



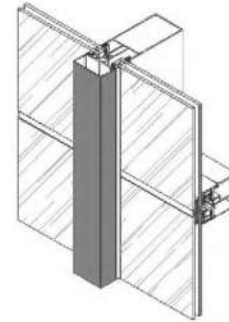
Joint Design--Correct Planning is Essential

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:

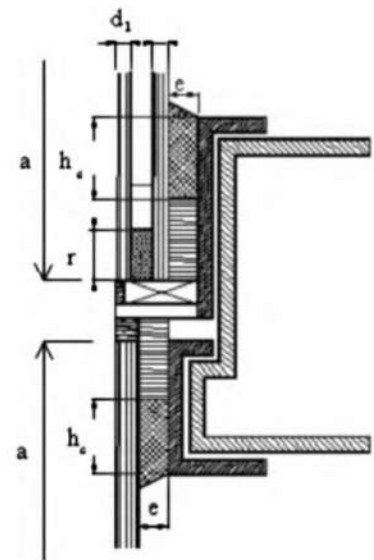
$$C_s = \frac{wa}{2000 f_1}$$

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, $0.2 \text{N}/\text{mm}^2$.

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

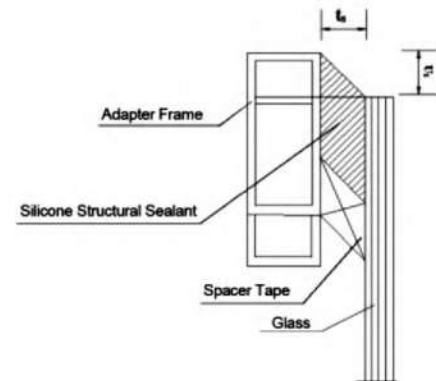
$$us = \theta hg \quad \textcircled{2}$$

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 $0.14 \text{kN}/\text{mm}^2$.



Silicone Structural Sealant Joint Thickness Drawing