



CONSTRUCTION SILICONE

Insulating Glass, Facade,
Curtain Wall
Window & Door



MF890

Silicone Sealant

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RTV, Neutral, One-Part Silicone Sealant

◆ DESCRIPTION / APPLICATIONS

MF890 Silicone Sealant is a one-part, RTV neutral-cure, architectural grade sealant. It easily extrudes in any weather and cures at ambient temperature by reaction with moisture in the air to form a durable, flexible silicone rubber seal. SILANDE MF890 may also be used to seal for housing window and door, freight container, car glass, metal cladding, ducting and interior sealing in building and housing, also designed for use in sealing for general glazing and showroom glazing and weatherproofing applications.

◆ TYPICAL PERFORMANCE

- Excellent adhesion to a wide range of substrates including coated glass, galvanized steel, masonry, anodized and polyester paint coated aluminium and stainless steel, and other porous and non-porous substrates.
- Ideal for expansion, connection, perimeter and other movement joints.
- Suitable for use on extension/compression movement capability of up to $\pm 25\%$ of the original joint width.
- Excellent temperature stability: -60°C to 180°C .
- High level of mechanical properties.
- High elasticity and high modulus.
- Resistant to ozone.

◆ TECHNICAL DATA - TYPICAL PROPERTIES

TEST ITEMS	TECHNICAL DATA	TEST RESULT	STANDARD
Test Conditions: T (23\pm2)$^{\circ}$C, (50\pm5)% R.H.			
Density, g/cm ³	—	1.49	GB/T 13477.2
Extrusion Property, ml/min	≥ 80	285	GB/T 13477.3
Sag, mm	≤ 3	0	GB/T 13477.6
Tack-free Time, h	≤ 3	2.5	GB/T 13477.5
Curing Time, d	—	7 ~ 14	—
Range of Application Temperature, $^{\circ}$ C	—	5 ~ 40	—
Test Conditions: 28d placed at T (23\pm2)$^{\circ}$C, (50\pm5)% R.H.			
Hardness, Shore A	20 ~ 60	53	GB/T 531.1
Elastic Recovery, %	≥ 80	90	GB/T 13477.17
Range of Temperature Resistance, $^{\circ}$ C	—	-60 ~ 180	—
Weight Loss Rate, %	≤ 10	3.1	GB/T 13477.19
Modulus at 100% Elongation, MPa	—	0.8	GB/T 13477.8
Elongation at Break, %	—	135	—
Tensile Strength, Mpa	—	1.2	—

◆ APPLICABLE STANDARDS

- ASTM C920, Type S, Grade NS, Class 25
- China Specification: GB/T 14683 G,F 25HM

◆ LIMITATIONS

- MF890 is not suitable for structural glazing use.
- MF890 should not be applied to: DO NOT USE when application surface temperatures below 4°C or exceed 50°C,. Surface which will be painted, as painting over rubber is not recommended. Do not use water for tooling and do not apply to wet or damp surface. On surfaces that are continuously immersed in water.

◆ PREPARATION INSTRUCTION

- For good adhesion, a clean, dry and grease free surface is necessary. All contaminants, impurities, or other adhesion inhibitor (such as moisture/frost, oils, old sealant, soaps and other surface treatment, etc.) must be removed from the surfaces to which the sealant is intended to adhere.
- For cleaning, a solvent-dampened clean rag usually produces the desired result. Isopropyl Alcohol (IPA) is a commonly used solvent and had proven useful for most substrates.
- The use of masking tape is recommended where appropriate to ensure a neat job and to protect adjoining surfaces from over-application of sealant. Masking tape should be removed immediately after tooling the sealant and before the sealant begins to skin over (tooling time).
- Extrude with manual and pneumatic sealant gun, cut tip to desired bead size, puncture seal in nozzle and remove metal seal on end of cartridge before placing cartridge in caulking gun. Make bond before the product skins. Adhesive sealant must be used within 30 mins after inner seal is punctured. Good ventilation is necessary in the process of installation and curing. To ensure the best adhesive properties, do a test on adhesion before using in batches and peeling adhesion tests at regular intervals are also required while carrying out installation.

◆ APPLICATION METHODS

MF890 may not adhere or maintain long term adhesion to substrates if the surface is not prepared and cleaned properly before sealant application. Using proper materials and following prescribed surface preparation and cleaning procedures is vital for sealant adhesion. TG-Sealant MF890 is easily dispensed directly from cartridges and foil sausage using standard caulking guns or air operated guns. Mixing, heating and refrigeration are not required.

◆ 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.

◆ 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.

◆ **COLORS**

Black / Grey / White / Clear
Custom colors may be ordered to match
virtually any substrate.



◆ **PACKAGING**

Cartridge: 300 ml / 25 pcs/carton

Sausage: 592 ml / 20 pcs/carton



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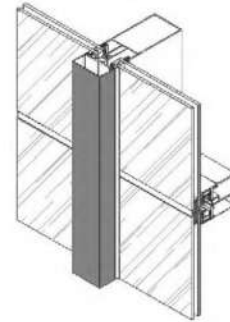
Joint Design--Correct Planning is Essential

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:

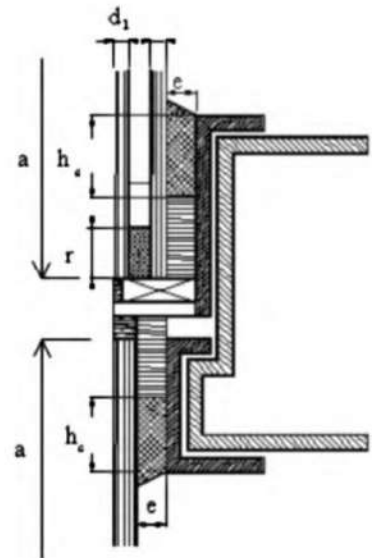
$$C_s = \frac{wa}{2000 f_1}$$

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

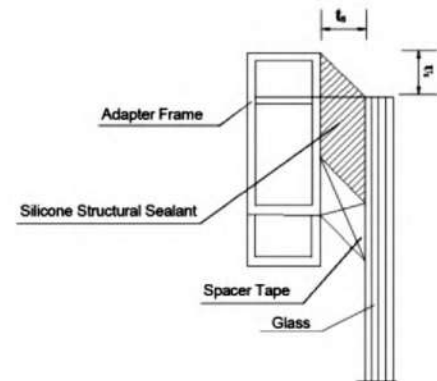
$$us = \theta hg \quad \textcircled{2}$$

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