CONSTRUCTION SILICONE

Insulating Glass, Facade,
Curtain Wall
Window & Door

MF898

Silicone Weatherproofing
Sealant

TYCOON GLOBAL

MF898

Silicone Weatherproofing Sealant

RTV, Neutral, One-Part Silicone Sealant

◆ DESCRIPTION / APPLICATIONS

MF898 Silicone Weatherproofing Sealant, a one-part, RTV neutral-cure, architectural grade sealant, is a specified, premium performance weather sealing product specifically designed for general glazing and weather sealing in curtain wall and building facades.

◆ 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 ±50% 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. stain resistance to non-porous materials such as aluminum, glass and stainless steel.

◆ TECHNICAL DATA - TYPICAL PROPERTIES

TEST ITEMS	TECHNICAL DATA	TEST RESULT	STANDARD
Uncured-Test Conditions: T: (23±2)℃, (50±5)% R.H.			
Rheological (Flow) Properties	Vertical displacement: sag≤4.8	Vertical displacement: 0 mm sag	ASTM C639
	Horizontal displacement: No deformation	Horizontal displacement: no deformation	
Extrudability, ml/min	≥10	52.2	ASTM C1183
Tack-free Time, h	≤3	2.5	ASTM C679
Curing Time, d	/	7~14	
Range of Application Temperature, ℃	/	5~40	/
After cured-Test Conditions: 28 days placed at T: (23±2)℃, (50±5)% R.H.			
Hardness, Shore A	15–50	40	ASTM C661
Movement capability %	±50	±50	ASTM C719
Range of Temperature Resistance, ℃	/	-60~180℃	/
Effects of Heat Aging	Shall lose ≤7% of its original weight or show no cracking and chalking	Weight loss: 2.2% No cracking	ASTM C1246
Staining and Color Change	The sealant shall not cause any visible stain on the top surface of a white cement mortar bases	There was no visible stain on the top surface of a white cement mortar bases	ASTM C510
Adhesion&Cohesion under Cyclic Movement	≤9 cm^2	No loss in bond	ASTM C719
Adhesion-in-Peel	The peel strength shall ≥22.2 (5lbf) and the sealant shall show≤25% bond loss	104.1N (Substrate:Glass) 70.5 (Substrate: Aluminium)Cohesive failure, no adhesion bond loss between sealant and surface	ASTM C794

Adhesion-in-Peel for Use G (Exposed to Ultraviolet Exposure through Glass)	The peel strength shall ⩾ 22.2 (5lbf) and the sealant shall show⩽25% bond loss	97.8N (Substrate:Glass) Cohesive failure, no adhesion bond loss between sealant and surface	ASTM C794
Effects of Accelerated Weathering	Shall not cracks after specified UV&cold temperature exposure and bend test	No cracks after UV exposureand bend tes	ASTM C793
Tensile Strength, Mpa	/	1.1	ASTM C1135

◆ APPLICABLE STANDARDS

- ASTM C 920 Type S, Grade NS, Class 50, G,A
- China Specification: GB/T 22083 G, F 50

◆ LIMITATIONS

MF898 should not be applied to:

- Not suitable for structural glazing applications.
- In designs where the silicone is encapsulated and without access to atmospheric moisture.
- 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.

◆ APPLICATION METHODS

Install backing material or joint filler, setting blocks, spacer shims and tapes. Mask areas adjacent to joints to ensure neat sealant lines. Primer is generally not required on non-porous surfaces, but maybe necessary for optimal sealant of certain porous surfaces. A test placement is always recommended. Apply MF889A Silicone Stone Weatherproofing Sealant in a continuous operation using a positive pressure. (The sealant can be applied using many types of air-operated guns and most types of bulk dispensing equipment). Before a skin forms, tool the sealant with light pressure to spread the sealant against backing material and joint surfaces. Remove masking tape as soon as the bead is tooled.

◆ 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. Clean by using a two-rag wipe technique - wet one rag with solvent and wipe the surface with it, the use the second rag to wipe the wet solvent from the surface before it evaporates.

• For cleaning, a solvent-dampened clean rag usually produces the desired result. Isopropyl Alcohol (IPA) is commonly used solvent.

• Cleaning of surface should be done within 1 to 2 hours of when the sealant is to be applied.

• The use of masking tape is recommended where appropriate to ensure a neat job and to protect adjoining surfaces from over-application of sealant.

• Extrude with manual and pneumatic sealant 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.

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 Date Sheet (TDS) for details. **Emergency Telephone Number:** +86 371 67982270

SHELF LIFE AND STRORAGE

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

SHELF LIFE AND STORAGE

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

COLOR

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

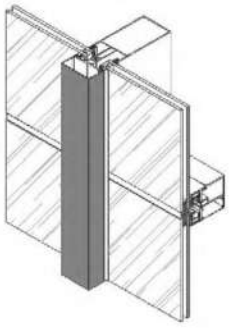
PACKAGING

Cartridge: 300 ml / 25 pcs/carton
Sausage: 592 ml / 20 pcs/carton

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.

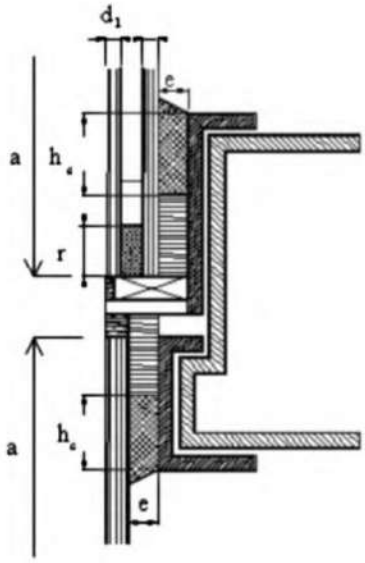
Calculating the joint bite Cs

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.

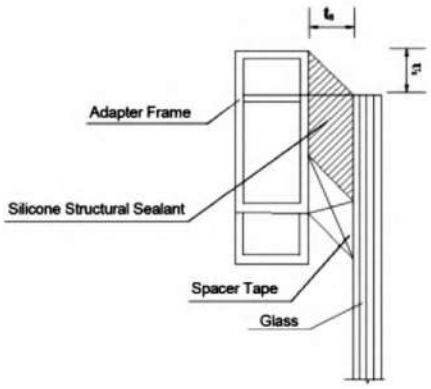


Calculating the joint thickness ts

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

$$us = \theta hg \quad ②$$

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