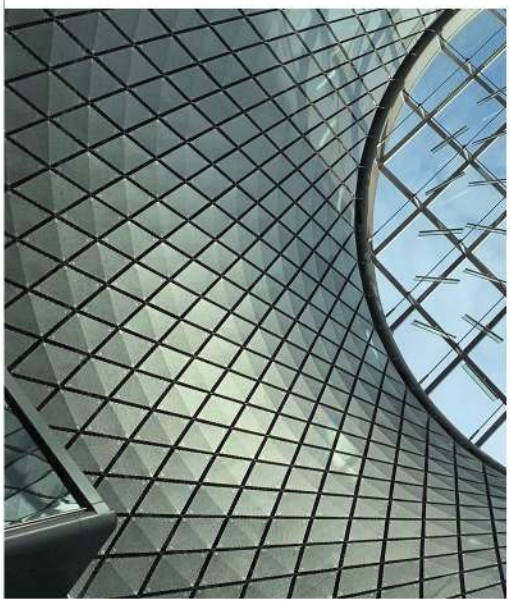
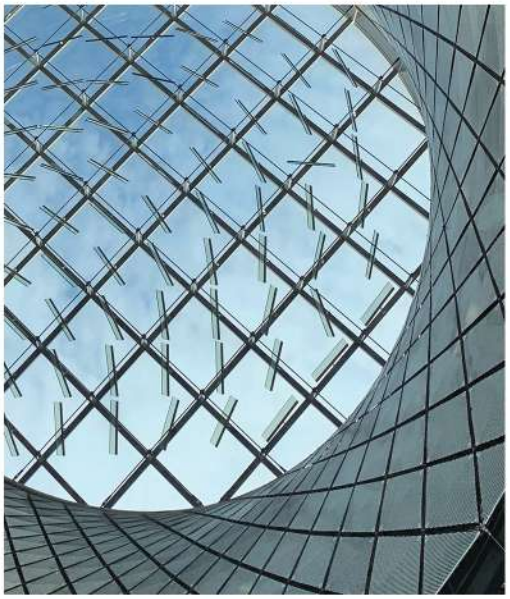
CONSTRUCTION SILICONE

Insulating Glass, Facade,
Curtain Wall
Window & Door





MF889A

Silicone Stone
Weatherproofing Sealant

TYCOON GLOBAL

MF889A

Silicone Stone Weatherproofing Sealant

◆ DESCRIPTION/APPLICATIONS

MF8 89A Silicone Stone Weatherproofing Sealant, a one-part, RTV, neutral-cure, architectural grade sealant, is designed specifically for the assembly of stone and the weatherproofing of stone, glass and most other construction substrates without primer. It easily extrudes in any weather and cure at ambient temperature by reaction with moisture in the air to form a durable, flexible silicone rubber seal.

◆ TYPICAL PERFORMANCE

- No corrosion and pollution to porous building materials such as granite and marble.
- Suitable for use on extension/compression movement capability of up to ± 25% of the original joint size.
- Excellent adhesion to most building material without primer, such as stone, glass, metal, tiles and anodized aluminium.
- Excellent weather sealing and temperature stability: -60℃ to 180℃.
- High elasticity and high modulus.
- Resistant to ozone.

◆ TECHNICAL DATA-TYPICAL PROPERTIES

TEST ITEMS		TECHNICAL DATA	TEST RESULT	STANDARD
Test Conditions: T (23 ±2)°C, (50 ± 5)% R.H.				
Sag, mm		≤3	0	GB/T 13477.6
Extrusion Property, s		≤10	1.9	GB/T 16776
Application Time, min		-	20	-
Tack-free Time, h		≤3	2.5	GB/T 13477.5
Curing Time, d		-	7-14	-
Range of Application Temperature, ℃		-	5-40	-
Test Conditions: 28d placed at T (23 ±2)°C, (50 ± 5)% R.H.				
Hardness, Shore A		20-60	51	GB/T 531.1
Range of Temperature Resistance, ℃		-	-60-180	-
Movement Capability, %		25	25	GB/T 23261
Stain Property, mm	Stain Depth	≤2	0	
	Stain Width	≤2	0	
Modulus at 100% Elongation, Mpa		-	0.7	GB/T 13477.8
Elongation at Break, %			190	
Tensile Strength, Mpa			1.00	

APPLICABLE STANDARDS

- GB/T 23261 1 SR 25HM
- ASTM C 920 Type S, Grade NS, Class 25
- ASTM C1248

LIMITATIONS

MF889A should not be applied to: Not suitable for structural glazing application. In design where the silicone is encapsulated and without access to atmosphere moisture. Do not use when application surface temperature below 4℃ or exceed 50℃.
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.

COLOR

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

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.

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.

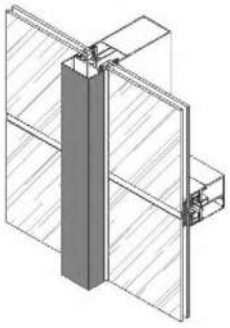
PACKAGE

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

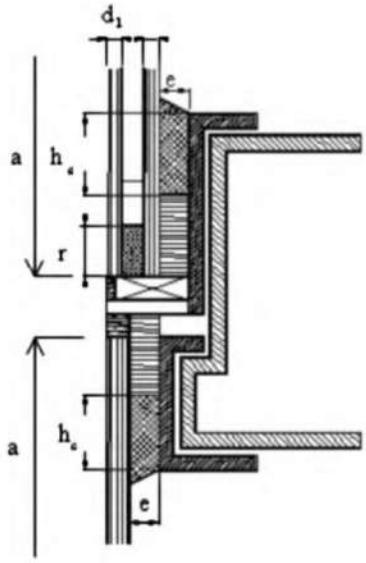
Calculating the joint bite Cs

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.

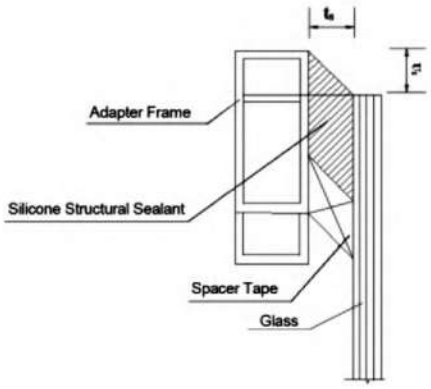


Calculating the joint thickness ts

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

$$us = \theta hg \quad ②$$

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