

MF889

Silicone Weatherproofing Sealant

Neutral, One Component Silicone Sealant

◆ DESCRIPTION

SILANDEMF889 is one component, room temperature, neutral cured silicone weatherproofing sealant, specifically designed for general glazing and weathersealing in curtain wall and building facades, and non-staining to aluminum composite panel. It easily extrudes in any weather and cures at ambient temperature by reaction with moisture in the air forming adurable, flexible silicone rubber seal.

◆ 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 $\pm 35\%$ of the original joint width.
- Excellent temperature stability: -50°C to 180°C .
- High level of mechanical properties.
- Good resistance to weather aging.

◆ TECHNICAL DATA - TYPICAL PROPERTIES

TEST ITEMS			TEST RESULT ⁽¹⁾	STANDARD
Test Conditions: T (23±2) °C, RH(50±5) %				
Flow, Sag or Slump			0	ASTM C639
Extrudability, ml/min			103	ASTM C1183
Tack-free Time, min			40	ASTM C679
Curing Time, d			7~14	-
Adhesion Time, d			14~21	-
Range of Application Temperature, °C			5~40	-
Test Conditions: 21 days placed at T (23±2) °C, RH(50±5) %				
Hardness, Shore A			46	ASTM C661
Movement capability %			±35	ASTM C719
Range of Temperature Resistance, °C			-50~180	
Effects of Heat Aging, %			3 no cracking or chalking	ASTM C1246
Staining and Color Change			No visible stain or color change	ASTM C510
Adhesion and Cohesion Under Cyclic Movement			No loss in bond	ASTM C719
Adhesion-in-Peel, lbf	Mortar unprimed	Pre-immersion	27	ASTM C794
		Post-immersion	14	
	Glass unprimed	Pre-immersion	19	
		Post-immersion	17	
	Anodized Aluminum unprimed	Pre-immersion	29	
		Post-immersion	14	
Adhesion-in-Peel exposed to UV through glass, lbf			17	ASTM C794/ ASTM C1442
Effect of Accelerated Weathering			No cracks after UV exposure and bend test	ASTM C793
Tensile Strength, Mpa			0.7	ASTM C1135
VOC content, g/L			39	ASTM C679

(1) Typical value, actual value may vary.

◆ APPLICABLE STANDARDS

- ASTM C920, Type S, Grade NS, Class 35, NT, G, A
- Other Specifications: ISO 11600 F, G 25HM

◆ LIMITATIONS

SILANDE MF889 should not be applied to:

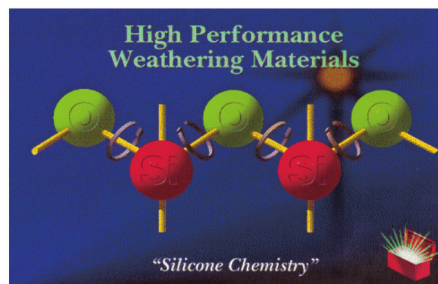
- Not suitable for structural glazing applications.
- In designs where the silicone is encapsulated and without access to atmospheric moisture.
- Do not use when application surface temperatures below 4°C or exceed 50°C.
- Surface which will be painted, as painting over rubber is not recommended.
- Do 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 materials or joint fillers, 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 MF889 Silicone 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 (typically within 15 minutes), tool the sealant with light pressure to spread the sealant against backing material and the 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, then use the second rag to wipe the wet solvent from the surface before it evaporates. In all cases where used, solvent should be wiped dry with a clean, white cloth or other lint-free wiping materials.
- For cleaning, a solvent-dampened clean rag usually produces the desired result. Isopropyl Alcohol (IPA) is commonly used solvent and has proven useful for most substrates.
- 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. 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.



◆ 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. **Emergency Telephone Number:** +86 371 67982270

◆ 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.

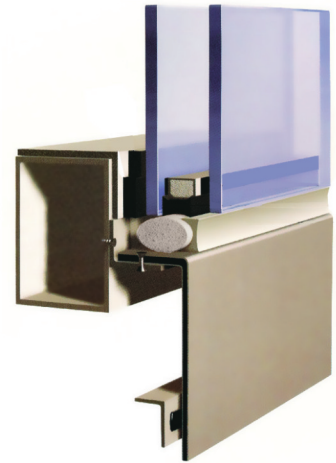
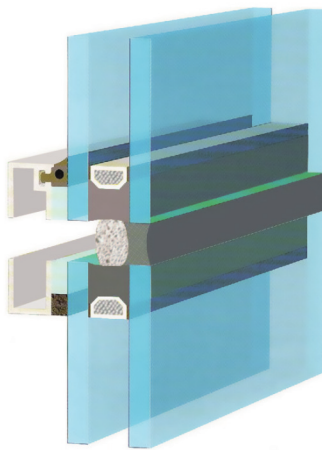
◆ PACKAGING

Cartridge: 300 ml / 25 pcs/carton

Sausage: 592 ml / 20 pcs/carton

◆ COLORS

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



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:

$$C_s = \frac{w a}{2000 f_1}$$

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/mm²).

f_1 -- maximum adhesive stress for supported construction, 0.2N/mm².

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

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

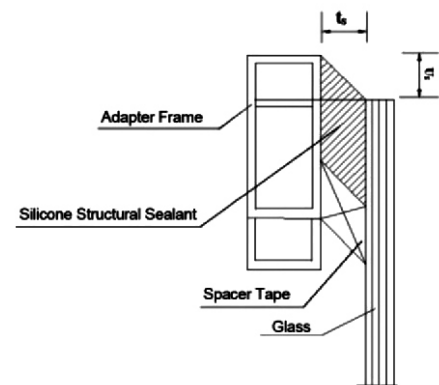
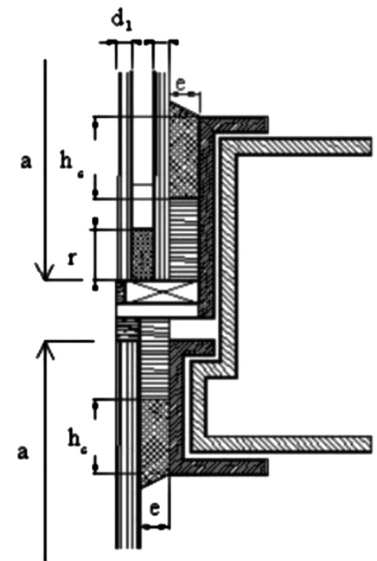
t_s -- minimum thickness of the adhesive joint (mm). us -- relative displacement in length of glass panel to adapter frame (mm), relative displacement yield from support construction lateral displacement can be calculated according

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 0.14kN/mm².



Silicone Structural Sealant Joint Thickness Drawing