

Technical Data Sheet

AS-299

Structural Glazing Sealant

Physical Properties

Base:

Silicone polymer

Appearance:

Non-sagging paste
(Before curing)

Elastic rubber
(After cured)

Colours:

Matte black
Matte grey

Tack-free / Skin-form time:

≤3 hours

Application temperature:

-20 °C to 50 °C

Service temperature:

-40°C to 150 °C

Storage:

Storage Store in dry and cool place with temperature below +25°C

Shelf life:

12 months (Cartridge & Sausage)

Packaging:

Content	Quantity/ carton
300 mL cartridge	24
600 g sausage	20

Description

A one-component, neutral-cure, high-performance, structural glazing sealant specially formulated for structural and non-structural glazing applications. It offers superior adhesion to a wide variety of building materials. In a properly designed structural glazed joint, the sealant is strong enough to support glass and other panel materials under high wind load. It has excellent resistance to weathering, UV radiation, vibration, moisture, ozone, temperature extremes, airborne pollutants, etc.

Features

- ♦ Structural and non-structural glazing
- ♦ Excellent adhesion to most building components
- ♦ ±50% movement capability (as weatherseal)
- ♦ Excellent UV and weathering resistance

Applications

- ♦ Designed for curtain wall structural glazing applications. Also suited for weatherproof seal on most common building materials such as aluminium, galvanised and zinc-coated steel, painted surfaces, glass, brick, and concrete.

Technical Data

Slump	Vertical position, mm	: ≤3
Slump	Horizontal position, mm	: No deformation
Shore A hardness		: 20 – 60
Tensile modulus/MPa	Standard condition	: ≥0.70
Elastic recovery	90°C	: ≥0.50
	-30°C	: ≥0.50
Heat aging	Water immersion	: ≥0.50
	Water – after UV exposure	: ≥0.50
Heat aging	Loss on weight after heat	: ≤5 %
	Cracking	: None
	Chalking	: None

Approvals/ Specifications

AS-299 meets the requirements of the following specifications:

- ♦ ASTM C920, Type S, Grade NS, Class 50, Use NT, G & A
- ♦ ASTM C1184 for structural silicone sealant
- ♦ Low VOC - USEPA Test method 24 under SCAQMD Rule 1168

Application Direction (Structural Glazing)

1. Apply sealant carefully into the structural sealant joint. While extruding the sealant, push the sealant into the structural sealant joint to ensure the sealant would fill up joint.
2. Apply sealant in a continuous bead. Visually inspect that the sealant has filled up the joint without any air pockets in the structural sealant bead.
3. Tool the sealant before its skin-form time. While tooling, push the sealant bead into the structural sealant joint to press the structural sealant against the substrates. This will make sure the structural sealant has a good contact with the substrate while eliminating any air pockets.
4. Do NOT use any solvent or soap water to wet the tooling scraper.

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Application Direction (Weatherseal)

Cartridges:

1. Cut the cartridge tip carefully.
2. Cut the nozzle into an appropriate diameter at an angle of approximately 45° to 60°.
3. Use a caulking gun and extrude the sealant with a single bead.
4. Tool the sealant bead with a clean and dry tool within the working time for a smooth finishing.

Sausages:

1. Cut the tip of the sausage carefully and slip it into the caulking gun.
2. Cut the nozzle into an appropriate diameter at an angle of approximately 45° to 60°.
3. Place the nozzle into the caulking gun and screw tight.
4. Extrude the sealant with a single bead.
5. Tool the sealant bead with a clean and dry tool within the working time for a smooth finishing.

Caution

- DO NOT paste excess sealant onto the protective film of aluminium composite panel (ACP).

Clean Up

- ♦ Wet sealants can be cleaned up with acetone or mineral spirits.
- ♦ Cured sealants can only be removed mechanically.

Joint Design

Structural sealant bite and glueline thickness calculation:

- The structural sealant bite is the contact area between the glass panel and the frame.
- The minimum sealant bite should not be below 6 mm.
- The structural bite for wind load is calculated as follows:

$$Bite (mm) = \frac{SL (mm) \times WL (kPa)}{2 \times SD (140 kPa)}$$

SL: short side of the glass panel

WL: designed wind load

SD: sealant design strength

- The glueline thickness allows the structural sealant to accommodate differential thermal movement. The minimum glueline thickness should not be below 6 mm.
- The ratio between bite-to-thickness should be 1:1 and 3:1.
- The thermal movement of the panel and the frame can be calculated using the length and the coefficient of thermal expansion (CTE) of the material.

$$Thermal\ movement = length(mm) \times max\ temperature\ difference\ (^{\circ}C) \times CTE\ (\frac{mm}{mm.^{\circ}C})$$

Coverage

Width	Depth	Coverage (300 ml) *
6 mm	6 mm	7.58 meter
10 mm	10 mm	2.73 meter
20 mm	10 mm	1.36 meter
25 mm	12 mm	0.91 meter

* The coverage figures shown above are approximate linear meter run based on 10% wastage assumption. Actual coverage may vary.

Calculation formula:

$$X / [(Y \times Z) \times 1.1] = Coverage$$

X = volume of cartridge (or sausage) in ml,

Y = joint width in cm, Z = joint depth in cm,

1.1 = 10% wastage assumption,

Coverage = linear meter run in cm per cartridge

Limitation

Not recommended for following applications:

- As Structural Glazing Sealant without prior review by qualified application engineer.
- On building materials that might bleed oils, plasticizers or solvents such as impregnated wood, oil-based caulks, green or partially vulcanized rubber gaskets or tapes, bitumen impregnated boards, felts or sheets.
- In totally confined spaces.
- On frost-laden or wet surfaces.
- For continuous immersion in water or below-grade applications.
- To surfaces in direct contact with food or other food grade applications.



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Caution

Avoid contact with eyes, skin and mouth. Use in well ventilated area. In case of contact with eyes, flush with water immediately for 15 minutes. If irritation persists, seek medical attention. Keep out of reach of children.

Disclaimer

Every endeavour has been made to ensure that the information given herein is true and reliable but it is given only for the guidance of our customers. The company cannot accept any responsibility for the loss or damage that may result from the use of the information, due to the possibility of variations of processing or working conditions and of workmanship outside our control. Users are advised to confirm suitability of this product by their own tests.

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