

	VITAL TECHNICAL SDN. BHD.	 
	Technical Data Sheet	
	VT-299 Structural Glazing Sealant	

Issuance date: 12/07/2023

Revision date: 11/08/2023

Revision No.: 23-01

VT-299 Structural Glazing Sealant

100% Neutral Silicone Sealant

BASE

Silicone polymer

PHYSICAL STATE

Non-sagging paste
(Before cure)
Elastic rubber
(After cure)

STANDARD COLOURS

(B10) Matte Black
(G10) Matte Grey

**TACK-FREE /
SKIN-FORM TIME**
≤3 hours

PACKAGING

300 mL/cartridge
(24 cartridges/carton)
600 mL/sausage
(20 sausages/carton)

SHELF LIFE

Use within 12 months from date of production.

STORAGE

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

APPLICATION TEMPERATURE
-20 °C – 50 °C

SERVICE TEMPERATURE
-40 °C – 150 °C

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.

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

FEATURES	<ul style="list-style-type: none"> ▪ Structural and non-structural glazing ▪ Excellent adhesion to most building components 	<ul style="list-style-type: none"> ▪ ±50% movement capability (as weatherseal) ▪ Excellent UV and weathering resistance
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APPLICABLE TESTS / STANDARDS	VT-299 meets the requirements of:
	<ul style="list-style-type: none"> ▪ ASTM C920, Type S, Grade NS, Class 50, Use NT, G & A ▪ ASTM C1184 for structural silicone sealant ▪ Low-VOC - USEPA Method 24 under SCAQMD Rule 1168 & USEPA Method 310

APPLICATION	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.
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APPLICATION DIRECTION (STRUCTURAL GLAZING)	<ol style="list-style-type: none"> 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)	<p>Cartridges:</p> <ol style="list-style-type: none"> 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.
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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).



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Structural Glazing Sealant

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

COVERAGE (WEATHERSEAL)	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 (or sausage)

** Coverage for structural glazing application, kindly refer to the technical manual.

- LIMITATIONS**
- 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.

HAZARD AND PRECAUTIONARY STATEMENT

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.

LEGAL NOTES

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.

LIMITED WARRANTY INFORMATION

Vital Technical provides material warranty for a duration of 10 years if the product is used within its shelf life and in compliance with industrial standard application procedures. Vital Technical disclaims liability for any consequential or incidental loss or damages caused by incorrect usage. The material warranty only covers the replacement of the product without the other costs incurred, if the failure is proven to be directly related to the product within the warranty period. Material warranty will only be available once customer submits all the necessary documents and information, and an official material warranty letter is issued by Vital Technical. Any claim of warranty shall be made directly to Vital Technical in writing. Vital Technical shall hold no responsibility until site inspection by representatives of Vital Technical to confirm the alleged failure has been carried out.