



Technical Data Sheet

DOWSIL™ 983 Structural Glazing Sealant

FEATURES & BENEFITS

- Approved for structural applications¹
- Meets ASTM C1184 Standard Specification for Structural Silicone Sealant
- Meets ASTM C719 Class 25 Higher movement capability $\pm 25\%$
- Improved Productivity
- Low VOC formula

COMPOSITION

- Two-part, neutral-cure, RTV silicone sealant

APPLICATIONS

- DOWSIL™ 983 Structural Glazing Sealant is designed for factory glazing and curtain wall production. It is suitable for use where dual structural and weatherseal applications are desired, with up to $\pm 25\%$ movement capability in a well-designed weatherseal. Once cured, this structural sealant forms a durable, flexible and watertight bond. It has excellent unprimed adhesion to most glass, chromated and anodized aluminum and many painted aluminum surfaces. DOWSIL™ Primer-C may be required for fast and consistent adhesion to polyester powder coat and fluorocarbon coatings and other high performance coated substrates approved for architectural structural glazing applications.

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications.

Test	Property	Unit	Result
As Supplied - DOWSIL 983 Structural Glazing Sealant Base			
	Color		White
	Physical Form		Paste
ASTM D1475	Specific Gravity		1.36
ASTM C1183	Extrusion Rate, 90 psi, 1/8"	g/min	300
	Orifice VOC Content ¹	g/l	< 4
As Supplied - DOWSIL 983 Structural Glazing Sealant Curing Agent Black			
	Color		Black
	Physical Form		Paste
ASTM D1475	Specific Gravity		1.07
	VOC Content ¹	g/l	< 150
As Supplied - DOWSIL 983 Structural Glazing Sealant Curing Agent Gray			
	Color		Dark gray
	Physical Form		Viscous liquid
ASTM D1475	Specific Gravity		1.02
	VOC Content ¹	g/l	< 130

¹ All structural applications MUST be reviewed by the technical staff. If their recommendations are followed, Dow will issue a structural adhesive warranty for a specific job.

¹Based on South Coast Air Quality Management District of California. Maximum VOC is listed both inclusive and exclusive of water and exempt compounds.

DESCRIPTION

Mixed DOWSIL 983 Structural Glazing Sealant is a two-part silicone formulation. As supplied, the base is a smooth, white paste and the curing agent is a dark gray paste. Once catalyzed, the material cures to a high-modulus, flexible silicone rubber that is suitable for use in structural and weatherseal applications.

DOWSIL 983 Structural Glazing Sealant features excellent adhesion to most common construction materials, a physical property profile that is more than sufficient for structural adhesive and weatherseal applications, a non-corrosive by-product, and excellent weatherability, durability and recovery after repeated extension and compression up to 25%.

DOWSIL 983 Structural Glazing Sealant is compatible with reflective glass, laminated glass and most insulating glass. It can be used in deep narrow joints to obtain a full and complete cure.

HOW TO USE

When DOWSIL 983 Structural Glazing Sealant is used in structural applications, the structural joint design **MUST** be reviewed by a technical service specialist.

Complete design and installation guidelines are contained in the Technical Manual, and must be followed for warranty applications when using this product.

TYPICAL PROPERTIES (CONTINUED)

Test	Property	Unit	Result
As Catalyzed - Mixed at 9:1 Base to Curing Agent by Volume (9:1 Volume = 12:1 Weight)			
	Snap Time	minutes	20–60
	Unit Handling Time, at 24°C (75°F), minimum ²	hours ³	4–24 ³
	VOC Content ^{1,4}	g/l	< 20
ASTM D2202	Flow/Sag (Slump)	mm (inches)	< 2.5 (< 0.1)
As Cured - 7 Days at 25°C (77°F) and 50% Relative Humidity			
ASTM C661	Durometer Hardness, Shore A	points	35–45
ASTM D412	Tensile Strength (Ultimate)	MPa (psi)	2.0 (300)
ASTM D412	Elongation (Ultimate)	%	400
ASTM D624	Tear Strength, Die B	N/m (ppi)	7,000 (40)
ASTM C794	Adhesion-in –Peel, Peel Strength	N/m (ppi)	5,600 (32)
ASTM C719	Movement Capability	%	±25
As Cured – 21 Days at 25°C (77°F) and 50% Relative Humidity			
ASTM C1135	Tensile Strength (at 10%)	Mpa (psi)	0.2 (30)
ASTM C1135	Tensile Strength (Ultimate)	Mpa (psi)	1.1 (160)
ASTM D1135	Elongation (Ultimate)	%	200
Specifications			
ASTM C1184	Structural Glazing Spec		Passes

¹Based on South Coast Air Quality Management District of California. Maximum VOC is listed both inclusive and exclusive of water and exempt compounds.

²Adhesion must be confirmed prior to shipping to job site.

³Timeframe depends on how units are moved and verified for performance by deglazing for adhesion and fill.

⁴Depending on mixing ratio

UNRESTRICTED – May be shared with anyone

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DOWSIL™ 983 Structural Glazing Sealant

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METHOD OF APPLICATION

DOWSIL 983 Structural Glazing Sealant Curing Agent must be thoroughly mixed into the base using an airless mixing system. DOWSIL 983 Structural Glazing Sealant is compatible with existing commercial, two-part silicone dispensing equipment. Neither hand mixing nor mechanical mixing is satisfactory due to incorporation of air, resulting in altered physical properties.

Lot matching of DOWSIL™ 983 Structural Glazing Sealant Curing Agent and Base is NOT required.

DOWSIL 983 Structural Glazing Sealant Curing Agent should be lightly stirred if any separation is seen prior to use. Because of its reactivity with atmospheric moisture, curing agent should not be exposed to air for prolonged periods.

DOWSIL 983 Structural Glazing Sealant is supplied as two separate components. As a custom feature, the cure rate may be adjusted by changing the base-to-curing-agent ratio from 8:1 to 10:1 by volume. Sealant physical properties are not significantly changed over this range. Changes in the temperature and humidity and material temperatures in the package will affect snap time and cure properties. Colder temperatures will slow cure and adhesion development. To obtain optimum adhesion, joints should be tooled immediately after sealant application to ensure complete substrate contact.

Questions about the use of DOWSIL 983 Structural Glazing Sealant can be answered by calling your local application sales engineer. Our laboratory personnel and technical service staff are also available for assistance.



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HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

USABLE LIFE AND STORAGE

DOWSIL 983 Structural Glazing Sealant should be stored in airtight, closed containers. When stored at or below 30°C (86°F) -base, 27°C (80°F) -curing agent, both the base and curing agent have a shelf life of 12 months from date of manufacture. Refer to product packaging for "Use By" date.

PACKAGING INFORMATION

DOWSIL 983™ Structural Glazing Sealant Curing Agent and DOWSIL™ 983 Structural Glazing Sealant Base are packaged separately.

DOWSIL 983 Structural Glazing Sealant Base is available in 250 kg (net weight) straight-sided drum.

DOWSIL 983 Structural Glazing Sealant Curing Agent is available in 19 kg (net weight) pail for black or 18 kg (net weight) for gray.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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Table 1: Typical Weight Equivalents of Volumetric Mixing Ratios

	Equivalent Weight Ratio	
<u>Volume Ratio</u>	<u>Black Curing Agent</u>	<u>Gray Curing Agent</u>
8:1 to 10:1	10:1 to 13:1	10.7:1 to 13.3:1

Standard pump ratios are normally set at 9:1 by volume, check with pump manufacturer.

