



TBP Converting, Inc.
Dowsil 983 PDS



Technical Data Sheet

DOWSIL™ 983 Structural Glazing Sealant

DOWSIL™ 983 Structural Glazing Sealant is a two-part, neutral-cure, RTV silicone sealant.

Features & Benefits

- Approved for structural and weatherseal applications¹
- Meets ASTM C719 Class 25 (G, A, O)
- Meets ASTM C1184 Structural Glazing Specification
- Low VOC formula (less than 18 g/L when mixed properly)

¹All 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.

Composition

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

Applications

- DOWSIL™ 983 Structural Glazing Sealant is designed for specialized use where dual structural and weatherseal applications are desired for factory glazing and curtainwall production. Once cured, this structural sealant forms a durable, flexible, watertight bond that can be warranted for 20 years and used in $\pm 25\%$ movement weatherseal applications. It has excellent unprimed adhesion to glass, alodine, and anodized aluminum², although DOWSIL™ Primer-C OS is recommended for fast and consistent adhesion, especially to Kynar and other high-performance substrates approved for architectural structural glazing applications.

²Certain sealing materials used in the anodizing process may increase the potential for use for primer to gain adhesion within a 24 hour period

Typical Properties

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

Test ¹	Property	Unit	Result
As Supplied - DOWSIL™ 983 Structural Glazing Sealant Base			
	Color		White
	Physical Form		Paste
ASTM D1475	Specific Gravity		1.36
As Supplied - DOWSIL™ 983 Structural Glazing Sealant, Curing Catalyst			
	Color		Black Gray
	Physical Form		Paste Paste
ASTM D1475	Specific Gravity		1.055 1.00

1. ASTM: American Society for Testing and Materials.

Typical Properties (Cont.)

Test	Property	Unit	Result
As Catalyzed - Mixed at 9:1 Base to Catalyst by Volume			
	Working Time	minutes	10–25
	Unit Handling Time, 24°C (75°F), minimum ²	Hours ³	4–24
	VOC Content, mixed black or gray ^{4,5}	g/L	< 18
ASTM D 2202	Flow/Sag (slump)	inches(mm)	< 0.2 (< 5)
As Cured - 1 Day at Room Temperature (77°F and 50% RH)			
ASTM C 661	Durometer Hardness, Shore A	points	30–40
As Cured - 7 Days at Room Temperature (77°F and 50% RH)			
ASTM C 661	Durometer Hardness, Shore A	points	35–45
ASTM D 412	Tensile Strength, Ultimate	psi (MPa)	300 (2.0)
ASTM C 1135	Tensile Strength at 25%	psi (MPa)	50 (0.35)
ASTM C 1135	Tensile Strength, Ultimate	psi (MPa)	160 (1.1)
ASTM C 1135	Elongation, Ultimate	%	120
Specifications			
ASTM C 719	Movement Capability	%	±25
ASTM C 1184	Structural Silicone Sealant Specification		Passes

2. Adhesion must be confirmed prior to shipping to job site.
3. Timeframe depends on how units are moved and verified for performance by deglazing for adhesion and fill.
4. Based on South Coast Air Quality Management District of California. Maximum VOC is listed both inclusive and exclusive of water and exempt compounds.
5. Depending on mixing ratio.

Description

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 available in black or gray. Once catalyzed, the material cures to a high-modulus, flexible silicone rubber that is flexible for use in structural and/or weatherseal applications.

DOWSIL™ 983 Structural Glazing Sealant features:

- Unprimed adhesion to most common construction materials
- A physical property profile that is more than sufficient for structural adhesive and weatherseal applications
- A noncorrosive by-product
- 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.

Development.

Complete design and installation guidelines are contained in the Americas Technical Manual, available from Dow, and must be followed for warrantable applications when using this product.



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 of the environment 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.

<p>Handling Precautions</p>	<p>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 CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.</p>
<p>Usable Life and Storage</p>	<p>DOWSIL™ 983 Structural Glazing Sealant should be stored in airtight, closed containers. When stored at or below 79°F (26°C) for gray and 86°F (30°C) for black, 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.</p>
<p>Packaging Information</p>	<p>DOWSIL™ 983 Structural Glazing Sealant curing agent and DOWSIL™ 983 Structural Glazing Sealant Base are packaged separately.</p> <p>DOWSIL™ 983 Structural Glazing Sealant Base is available in 48.5 gal (183.8 L) lined, straight-sided drums or fiber packs.</p> <p>DOWSIL™ 983 Structural Glazing Sealant curing agent is available in 39.6 lb (18 kg) pails for black, 37.5 lb (17 kg) pails for gray.</p>
<p>Limitations</p>	<p>DOWSIL™ 983 Structural Glazing Sealant should not be applied:</p> <ul style="list-style-type: none"> • To building materials that bleed oils, plasticizers, or solvents – materials such as impregnated wood, oil-based caulks, green or partially vulcanized rubber gaskets and tapes • Where painting of sealant is required • To surfaces in direct contact with food • In below-grade or continuous-immersion applications • In horizontal joints where abrasion and physical abuse are likely to be encountered <p>Because of a potential for incompatibility, DOWSIL™ 983 Structural Glazing Sealant should not come in contact with, or be exposed to, sealants that liberate acetic acid.</p> <p>This product is neither tested nor represented as suitable for medical or pharmaceutical uses.</p>
<p>Health and Environmental Information</p>	<p>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.</p> <p>For further information, please see our website, consumer.dow.com or consult your local Dow representative.</p>

Table 1: Typical Weight Equivalents of Volumetric¹ Mixing Ratios

Volume Ratio	Equivalent Weight Ratio (Black Curing Agent)	Equivalent Weight Ratio (Gray Curing Agent)
8:1 to 10:1	10.3:1 to 13:1	11:1 to 13.5:1

1. Standard volumetric pump ratios are normally set at 9:1; check with pump manufacturer.