Technical Data Sheet

DOWSIL™ 982 Silicone Insulating Glass Sealant

Uses / Applications

- DOWSIL™ 982 Silicone Insulating Glass Sealant is intended for use as a secondary sealant in dual-sealed insulating glass units (see Figure 1). A primary seal of polyisobutylene is required to prevent moisture vapor transmission into the airspace in the insulating glass unit. DOWSIL™ 982 Silicone Insulating Glass Sealant can bond the individual components of the insulating glass unit to form a weather-resistant unit capable of being certified for industry standards. Conformance can be confirmed by an independent test laboratory in accordance with industry standard.[1]
- DOWSIL™ 982 Silicone Insulating Glass Sealant can also be used as the secondary edge seal in insulating glass units that will be structurally glazed.

Sustainability Attribute:

Decarbia™
Advancing carbon neutrality with DOW

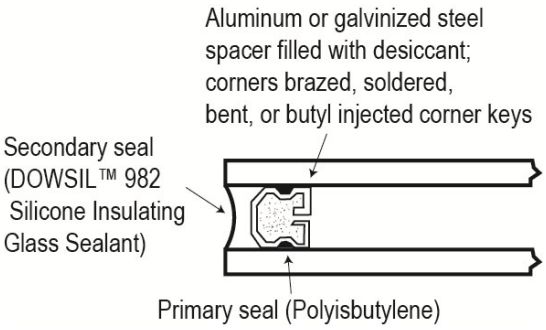

Figure 1: Dual-Seal Type

[1]Per ASTM E 2190, Specification for Insulating Glass Unit Performance and Evaluation. It is the responsibility of the insulating glass manufacturer to determine the suitability of this sealant in their proposed application.

Composition

- Two-part silicone sealant

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Benefits

- Cures to form a durable, high-modulus, weather tight seal
- Excellent unprimed adhesion to a wide range of coated glasses and aluminum and steel spacers
- Structural capability as secondary sealant for insulating glass units used in structural glazing[2]
- Non-slump formulation suitable for manual and automated glazing
- Fast curing
- Neutral cure
- Excellent temperature stability from -50°C to 150°C
- Outstanding resistance to ozone and UV radiation
- 12 month shelf life from date of manufacture
- Low shrinkage (< 5 percent)

[2]For IG units used in structural glazing applications, it is the responsibility of the insulating glass manufacturer to determine the amount of DOWSIL™ 982 Silicone Insulating Glass Sealant to be applied and the configuration in their application.

Typical Properties

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

Test	Property	Unit	Result
	As Supplied – DOWSIL™ 982 Silicone Insulating Glass Sealant Base		
	Color		White
	Physical Form		Paste
ASTM D 1475	Specific Gravity		1.36
ASTM C 1183	Extrusion Rate, 90 psi, 1/8”	g/min	280
	VOC Content[2]	g/l	< 4
	As Supplied – DOWSIL™ 982 Silicone Insulating Glass Sealant		
	Color		Black
	Physical Form		Paste
ASTM D 1475	Specific Gravity		1.07
	VOC Content[2]	g/l	< 150
	As Supplied – DOWSIL™ 982 Silicone Insulating Glass Sealant		
	Color		Gray
	Physical Form		Viscous liquid
ASTM D 1475	Specific Gravity		1.02
	VOC Content[2]	g/l	< 130
	As Catalyzed – Mixed at 12:1 Base to Curing Agent by Weight		
	Snap Time	min	30–50
ASTM D 2202	Flow/Sag (Slump)	mm (inches)	< 2.5 (< 0.1)

1. ASTM: American Society for Testing and Materials.
2. Based on South Coast Air Quality Management District of California maximum VOC is listed both inclusive and exclusive of water and exempt compounds.

Typical Properties (Cont.)

Test	Property	Unit	Result
	As Cured – 7 Days at Room Temperature		
ASTM C 661	Durometer Hardness	Shore A	42
ASTM C 794	Adhesion-in-peel, Cohesive Failure		
	Aluminum	%	100
	Glass	%	100
	Strength	N/m	5,200
		(ppi)	(30)
ASTM C 1135	Tensile Strength (at 10%)	Mpa	0.15
		psi	(22)
	Tensile Strength, Ultimate	Mpa	1.0
		psi	(150)
	Elongation, Ultimate	%	219

Description

DOWSIL™ 982 Silicone Insulating Glass 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 mixed at the proper base-to-curing agent ratio the material cures to a durable, high-modulus, weather-resistant silicone seal.

DOWSIL™ 982 Silicone Insulating Glass Sealant's unique weatherability enables it to retain design properties even after years of exposure. Tensile strength and adhesion1 do not change significantly with aging or exposure to weather; seals remain weatherproof.

[1]Some coating may require edge deletion for optimal long term system performance. Contact your glass supplier for recommendations.

How to Use

Insulating glass units intended for structural silicone glazing applications should contain secondary seal depths at determined by industry-accepted standards, such as the trapezoidal load distribution rule and load- sharing principles. Adhesion and compatibility should be evaluated before sealant use.

If requested, Dow may provide assistance in performing adhesion testing to coated glass1 and spacer surfaces before using DOWSIL™ 982 Silicone Insulating Glass Sealant in production quantities.

Surface Preparation

Before using this product, clean all metal, glass and plastic surfaces with solvent such as isopropanol and clean, oil-and lint-free cloths. Glass may also be cleaned in a suitable automatic washing machine.[2]

[2]Follow solvent manufacturer's recommended safe handling instruction and applicable federal, state and local laws.

How to Use (Cont.)

Mixing

To obtain ultimate physical properties, DOWSIL™ 982 Silicone Insulating Glass Sealant-Base and Curing agent should be thoroughly mixed using an airless mixing system. DOWSIL™ 982 Silicone Insulating Glass 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. DOWSIL™ 982 Silicone Insulating Glass Sealant is supplied as two separate components.

The cure rate may be adjusted by changing the base-to-curing agent mix ratio from 8:1 to 10:1 by volume; sealant physical properties are not significantly changed over range.

Changes in the ambient temperature and humidity, however, will affect the snap time. See Table 1 for ratio weight volumetric equivalents.

Table 1: Typical Weight Equivalents of Volumetric Mixing Ratios

	Equivalent Weight Ratio	
Volume Ratio	**Black Curing Agent**	**Gray Curing Agent**
8:1 to 10:1	10:1 to 13:1	10.5:1 to 13.5:1

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

Testing

Dow recommends several in-house quality control tests to ensure optimum sealant performance. These tests include:

- Butterfly test to ensure proper mix
- Snap time or cure test to ensure the sealant mix ratio is within the correct range
- Tab adhesion test to ensure proper sealant adhesion to production surfaces

These tests should be performed every time lots of base or curing agent are changed, or every time the production line is started. Dow can supply the procedures for the tests recommended.

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SGBP 4535

Tooling

The joints should be tooled immediately after sealant application to ensure complete substrate contact, which is a requirement for optimum adhesion.

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 DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Usable Life and Storage

DOWSIL™ 982 Silicone Insulating Glass 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™ 982 Silicone Insulating Glass Sealant Curing Agent and DOWSIL™ 982 Silicone Insulating Glass Sealant Base are packaged separately.

DOWSIL™ 982 Silicone Insulating Glass Sealant base is available in 250 kg (net weight) straight-sided drum.

DOWSIL™ 982 Silicone Insulating Glass Sealant curing agent is available in pails, 19 kg (net weight) for black or 18 kg (net weight) for gray.

Lot matching of DOWSIL™ 982 Silicone Insulating Glass Sealant catalyst and base is NOT required.

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, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user’s responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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