

Silicone Sealants

Dow Corning® 982 Silicone Insulating Glass Sealant

FEATURES

- Cures to form a durable, long-lasting, high-modulus, flexible, weathertight bond
- Structural capability¹
- Excellent unprimed adhesion to glass and metal substrates, such as galvanized steel and aluminum
- Consistently nonslump, permitting automated glazing
- 12 month shelf life from date of manufacture
- Noncorrosive byproducts
- Low shrinkage (<5 percent)

COMPOSITION

- Two-part silicone sealant

Two-part silicone sealant for use as a secondary sealant in insulating glass units

APPLICATIONS

*Dow Corning® 982 Silicone Insulating Glass sealant is intended for use as a secondary sealant in a dual-sealed insulating glass unit (see Figure 1). A primary seal, typically being a polyisobutylene mastic, is required to prevent moisture vapor from transmitting into the airspace of the insulating glass unit. *Dow Corning 982 Silicone Insulating Glass Sealant can bond the individual components, forming a weather-resistant unit capable of being certified to a CBA rating by an independent test laboratory in accordance with industry standards.*²*

Dow Corning 982 Silicone Insulating Glass Sealant can also be used as a secondary edge seal in an insulating glass unit that will be structurally glazed. However, if an insulating glass manufacturer elects to use this sealant in this application, it is the manufacturer’s responsibility to determine the suitability for the use contemplated. Dow Corning will have no responsibility in that connection.

TYPICAL PROPERTIES

Specification Writers: Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

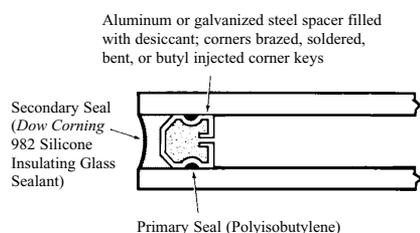
Method	Test	Unit	Result
As Supplied – Base			
	Color		White
	Physical Form		Paste
CTM* 0097	Specific Gravity		1.38
ASTM C 1183	Extrusion Rate, 90 psi, 1/8" orifice	g/min	160
As Supplied – Black Curing Agent			
	Color		Black
	Physical Form		Pourable liquid
CTM 0097	Specific Gravity		1.02
As Supplied – Gray Curing Agent			
	Color		Gray
	Physical Form		Pourable liquid
CTM 0097	Specific Gravity		1.22
As Catalyzed – Mixed at 9:1 Base-to-Curing Agent by Volume			
CTM 0092	Working Time (Snap Time)	minutes	20-40
ASTM D 2202	Flow/Sag (Slump)	inches (mm)	<0.2 (<5.1)
As Cured – 7 Days at 25°C (77°F) and 50 percent Relative Humidity			
ASTM C 661	Durometer Hardness, Shore A	points	43
ASTM D 412	Tensile Strength	psi (MPa)	228 (1.6)
ASTM D 412	Elongation	percent	219
ASTM C 794	Adhesion-in-Peel, Cohesive Failure		
	Aluminum	percent	100
	Glass	percent	100

¹For IG units used in structural glazing applications, it is the responsibility of the insulating glass manufacturer to determine the amount of *Dow Corning 982 Silicone Insulating Glass Sealant* to be applied and in what configuration.

²Per ASTM E 774, Standard Specification for Sealed Insulating Glass Units.

*CTMs (Corporate Test Methods) correspond to standard ASTM tests in most instances. Copies of CTMs are available upon request.

Figure 1: Dual-Seal Type



DESCRIPTION

Dow Corning 982 Silicone Insulating Glass Sealant is a two-part silicone sealant. As supplied, the base component, *Dow Corning*[®] 982 Silicone Insulating Glass Sealant–Base, is a smooth, white paste. The curing agent component, *Dow Corning*[®] 2-Part Curing Agent, is a pourable liquid available in black or gray. Once mixed at the proper base-to-curing agent ratio, the material cures to a durable, high-modulus, flexible silicone seal that is chemically stable.

Dow Corning 982 Silicone Insulating Glass Sealant’s unique weatherability enables it to retain design properties even after years of exposure. Tensile strength and adhesion do not change significantly with aging or exposure to weather. Seals remain weatherproof.

HOW TO USE

Design Considerations

Insulating glass units intended for conventional dry glazing or residential window application should be designed with the secondary sealant dimensions in accordance with the “Sealant Manufacturers Minimum Sealant Dimensions and Placement Survey,” distributed by SIGMA, 01 July 1989.

Insulating glass units intended for structural silicone glazing applications should contain secondary seal depths as determined by industry-accepted standards, such as the trapezoidal load distribution rule and load-sharing principles. Summaries of these standards are available from Dow Corning.

Adhesion and compatibility should be evaluated before sealant use. If requested, Dow Corning may provide assistance in performing adhesion testing to coated glass³ or spacer surfaces before using *Dow Corning* 982 Silicone Insulating Glass Sealant in production quantities.

Surface Preparation

Before using this product, clean all surfaces, removing all foreign matter and contaminants, such as grease, oil, dust, water, frost, surface dirt, old sealants or glazing compounds and protective coatings.

Clean all metal, glass and plastic surfaces by mechanical or solvent procedures. Always wipe solvents on and off with clean, oil- and lint-free cloths.⁴

Mixing

To obtain ultimate physical properties, *Dow Corning* 982 Silicone Insulating Glass Sealant–Base and *Dow Corning* 2-Part Curing Agent should be thoroughly mixed using an airless mixing system. *Dow Corning* 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.

Dow Corning 982 Silicone Insulating Glass Sealant is supplied as two separate components. As a custom feature for the customer, the cure rate may be adjusted by changing the base-to-curing agent mix ratio from 9:1 to 10.5:1 by volume. Sealant physical properties are not significantly changed over this range. Changes in the temperature and humidity of the environment, however, will affect snap time. See Table I for ratio weight volumetric equivalents.

Table I: Weight Equivalents of Volumetric Mixing Ratios

Volume Ratio	Equivalent Weight Ratio	
	Black Curing Agent	Gray Curing Agent
9:1 to 10.5:1	12:1 to 14:1	10:1 to 12:1

Because of its reactivity with atmospheric moisture, *Dow Corning* 2-Part Curing Agent should not be exposed to air for prolonged periods.

During shutdown of mixing equipment, dispensing and mixing lines should be purged with uncatalyzed base to minimize sealant buildup.

Lot matching of *Dow Corning* 982 Silicone Insulating Glass Sealant–Base and *Dow Corning* 2-Part Curing Agent is NOT required.

Testing

Dow Corning 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 expected sealant cure rate at proper mix ratio
- 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. Specific procedures for these recommended tests can be supplied by Dow Corning.

Tooling

To obtain optimum adhesion, joints should be tooled immediately after sealant application to ensure complete substrate contact.

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH

³Some coatings may require edge deletion for optimal long-term system performance. Contact your glass supplier for recommendations.

⁴Follow solvent manufacturer’s recommended safe handling instructions and applicable federal, state and local laws.

HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE DOW CORNING WEBSITE AT WWW.DOWCORNING.COM, OR FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY CALLING YOUR GLOBAL DOW CORNING CONNECTION.

USABLE LIFE AND STORAGE

When stored in closed, airtight containers at or below 27°C (80°F), *Dow Corning* 982 Silicone Insulating Glass Sealant–Base and *Dow Corning* 2-Part Curing Agent will have a shelf life of 12 months from date of manufacture. Refer to product packaging for “Use By” date.

PACKAGING

Dow Corning 982 Silicone Insulating Glass Sealant–Base and *Dow Corning* 2-Part Curing Agent are sold as separate components, allowing manufacturers to purchase and create their own kits.

The base component is available in drums. The curing agent is supplied separately in both pails and drums.

LIMITATIONS

Dow Corning 982 Silicone Insulating Glass Sealant should not be applied:

- As a primary or single seal in an insulating glass unit
- 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
- On food contact surfaces – this product does not comply with FDA food additive regulations
- In below-grade applications
- In contact with or exposed to sealants that liberate acetic acid
- In continuous immersion in water

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 Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, www.dowcorning.com, or consult your local Dow Corning 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 Dow Corning’s 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 Corning will warrant that *Dow Corning* 982 Silicone Insulating Glass Sealant will maintain its flexibility and adhesion to glass and metal spacers in insulating glass units for a period of 10 years if the insulating glass manufacturer uses the product under the following conditions:

- Within its stated shelf life
- With compatible substrates
- With a base-to-curing agent mix ratio from (9:1 to 10.5:1 by volume)
- According to Dow Corning’s recommendations for application and quality control testing
- In an insulating glass unit that has been tested and certified to a CBA rating level by an approved certified test laboratory

Limitations: This warranty specifically excludes failure of the sealant due to:

- Natural causes such as lightning, earthquake, hurricane, tornado, fire, etc.
- Stress on the sealant exceeding 20 psi
- Movement of the structure resulting in stresses on the sealant that exceed Dow Corning’s published specifications for elongation for the sealant, whether due to structural settlement, design error or construction error
- Continuous immersion in water
- Disintegration of the underlying substrates
- Mechanical damage to the sealant caused by individuals, tools or other outside agents
- Changes in the appearance of the sealant from the accumulation of dirt or other contaminants deposited on the sealant from the atmosphere

Remedies: In the event of a claim under this warranty, the insulating glass manufacturer must notify Dow Corning Corporation in writing within 30 days of the occurrence of the failure. Dow Corning’s sole liability shall be to furnish sufficient replacement material or refund of the purchase price of all goods shown to be other than as warranted.

Any labor or other costs associated with the repairs are the responsibility of the insulating glass manufacturer.

DOW CORNING SHALL NOT BE LIABLE FOR AND EXPRESSLY DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGE, WHETHER IN CONTRACT OR IN TORT, INCLUDING NEGLIGENCE. THIS WARRANTY IS IN LIEU OF ALL WRITTEN OR ORAL, EXPRESS OR IMPLIED WARRANTIES, AND DOW CORNING SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE.

