

# DOW CORNING® 983

## Structural Glazing Silicone Sealant

### FEATURES

- Structural capability (See Limitations paragraph)
- Excellent adhesion to most surfaces including glass, reflective coatings, metals and paints
- Consistently non-slump
- Excellent weatherability, durability, and recovery after repeated extension and compression
- Lot matching of base and curing agent not necessary
- Excellent mechanical properties
- Resistant to ozone, ultra-violet radiation and temperature extremes

### Two-part silicone rubber

### APPLICATIONS

- Designed for use in structural adhesive/sealant applications such as factory glazing and curtainwall production.

### TYPICAL PROPERTIES

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

Test method*	Property	Unit	Value
<b>Base: as supplied</b>			
	Color and consistency		Viscous white paste
	Specific gravity		1.40
	Storage life	months	12
<b>Curing agent: as supplied</b>			
	Color and consistency		Black liquid
	Density		1.03
	Flammability		Non-flammable
	Storage life	months	12
<b>As mixed<sup>1</sup></b>			
	Color and consistency		Black non-slump paste
	Density		1.36
	Working time	minutes	20 to 25
	Corrosiveness		Non-corrosive
	Handling time	hours	Max. 3
<b>As cured - 7 days at room temperature</b>			
ISO 8339	Tensile strength	MPa	1.0
ASTM D624	Tear strength, (Die B)	KN/m	9.8
ISO 8339	Elongation at break	%	100
ASTM D2240	Durometer hardness, Shore A	Points	45
	Service temperature range	°C	-20 to +150

1. Mixed by weight at 12:1 or volume at 8.8:1 base-to-curing agent ratio. (Other mixes are possible but Dow Corning should be consulted to ascertain adhesion and structural properties.)

\* ASTM: American Society for Testing and Materials.

ISO: International Standardisation Organisation.

### DESCRIPTION

DOW CORNING 983 Sealant is a two-component, neutral curing part silicone formulation that cures to a high-modulus elastomeric adhesive

sealant. (A physical property profile that is suitable for structural adhesive applications).

## CURE

Neutral alkoxy; cures at room temperature giving off a small amount of alcohol.

## INSTALLATION

### Joint design

Optimum joint design for structural glazing applications demands careful consideration of the dead and live loads to be imposed on the sealant bead. Dow Corning provides joint dimension and print reviews as part of a comprehensive technical service package. For structural glazing applications, DOW CORNING 983 Sealant beads should, as a general rule, the structural bite must be a minimum of 6mm. The glue line thickness must be a minimum of 6mm. The structural bite must be equal to or greater than the glue line thickness. The minimum structural bite is calculated with the equation  
Structural Bite (mm) =

$$\frac{0.5 \times \text{Short Side of Panel (mm)} \times \text{Windload (kPa)}}{\text{Sealant Design Strength (138kPa)}}$$

The structural sealant joint must be able to be filled using standard caulking practices. The structural joint must not move during cure. The joint design must allow the sealant exposure to air so that it can cure. If the silicone is intended to support the deadload, a 6.9 kPa deadload design strength is allowable.

Note: Other proprietary systems may have alternative details. The appropriateness of such systems will be determined on a case-by-case basis.

These are preliminary guidelines, consistent with common industry practice.

### Preparatory work

Clean all joints and glazing pockets, removing all foreign matter and contaminants such as grease, oil, dust, water, frost, surface dirt, old sealants, or glazing compounds and protective coatings.

Metal, glass and plastic surfaces should be cleaned by mechanical or

solvent procedures. Where used, solvent should be wiped on and off with clean, oil- and lint-free cloths.

### Priming

When using DOW CORNING 983 Sealant, priming is not usually required. Prior to general job use, it is always recommended that a bead of sealant be applied to the substrate material to test adhesion.

For structural applications, contact Dow Corning for advice.

### Masking

Areas adjacent to joints may be masked to ensure a neat sealant line. Do not allow masking tape to touch clean surfaces to which the silicone sealant is to adhere. Tooling should be completed in one continuous stroke immediately after sealant application and before a skin forms. Masking tape should be removed immediately after tooling.

## APPLICATION METHOD

To obtain best results, it is recommended that DOW CORNING 983 Sealant Base and Curing Agent be thoroughly mixed using an airless mixing system.

DOW CORNING 983 Sealant is compatible with existing commercial two-part silicone dispensing equipment. Neither hand mixing nor hand-held power mixers are satisfactory due to incorporation of air resulting in altered physical properties. Lot matching of DOW CORNING 983 Sealant Base and Curing is not required.

DOW CORNING 983 Sealant Curing Agent should be stirred before use because settling can occur during shipment. Because of its reactivity with atmospheric moisture, the curing agent should not be exposed to air for prolonged periods of time. The curing agent is not flammable, so special precautions for storage are not necessary.

Changes in the humidity of the environment will affect snap time. To

aid in the proper adjustment of mix ratio, it is recommended that Dow Corning and/or the dispensing pump manufacturer be contacted.

DOW CORNING 983 Sealant offers unprimed adhesion to most coated and uncoated glasses as well as most metal spacers. This sealant is compatible with all neutral Dow Corning construction sealants and most common glazing components. It is important that adhesion and compatibility be evaluated before sealant use. To obtain optimum adhesion, joints should be tooled immediately after sealant application to ensure complete substrate contact. During shutdown it is recommended that the dispensing and mixing lines be purged with uncatalyzed base prior to solvent flush.

## COMPOSITION AND MATERIALS

DOW CORNING 983 is a two-part RTV silicone sealant. As supplied, the base is a smooth, white paste and the curing agent is a non-flammable, black, pourable liquid. Once catalyzed, the material cures to a high modulus, flexible silicone rubber. Priming is not required for most common construction substrates. To ensure proper adhesion a sample should be tested and/or trial installation placed on the project.

## MAINTENANCE

No maintenance is needed. If sealant becomes damaged, replace damaged portion. DOW CORNING 983 Sealant will adhere to cured silicone sealant which exhibits a clean knife-cut or abraded surface.

## TECHNICAL SERVICES

Complete technical information and literature are available from Dow Corning and authorized building sealant distributors. Laboratory testing including print review, adhesion testing, compatibility testing and stain testing are available from Dow Corning.

## HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. 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 FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

## AVAILABILITY

DOW CORNING 983 Silicone Glazing & Curtainwall Adhesive/Sealant is marketed through local Dow Corning offices and authorized building sealant distributors.

## USABLE LIFE AND STORAGE

When stored at or below 25°C in the original unopened containers, DOW CORNING 983 Sealant has a usable life of 12 months from the date of production.

Sealant kept beyond its suggested usable life should not be used for structural applications. Consult your local Dow Corning representative if material is stored beyond the recommended life.

## PACKAGING

As a kit, DOW CORNING 983 Base and Curing Agent are available in 226.8kg drums and 19kg pails. DOW CORNING 983 Base is also available in 28kg pails suitable for small pump dispensing.

## LIMITATIONS

DOW CORNING 983 Sealant should not be used for structural applications without the prior written approval of Dow Corning Construction Industry Technical Department. Each project should be specifically and separately approved by Dow Corning. Project-specific approval involves the following prerequisites:

- Joint dimension and print reviews.
- Successful laboratory adhesion and compatibility testing to all project building components.
- Demonstrated ability to provide adequate insurance coverage.
- Observance of professional sealant application and workmanship standards.

Dow Corning shall not be liable for any possible claims arising from structural use of DOW CORNING 983 Sealant for projects which have not been specifically approved by Dow Corning.

For projects which have been approved, Dow Corning will issue a structural adhesive warranty on a case by case basis.

For further details, conditions and remedies, consult the Dow Corning Structural Glazing warranty. It is the user's exclusive responsibility to ensure project compliance with the local building regulations. Because of a potential for incompatibility, DOW CORNING 983 Sealant should not come in contact, with or be exposed to, sealants that liberate acetic acid.

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 Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning representative.

## 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. Dow Corning's sole warranty is that the product will meet the Dow Corning 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. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

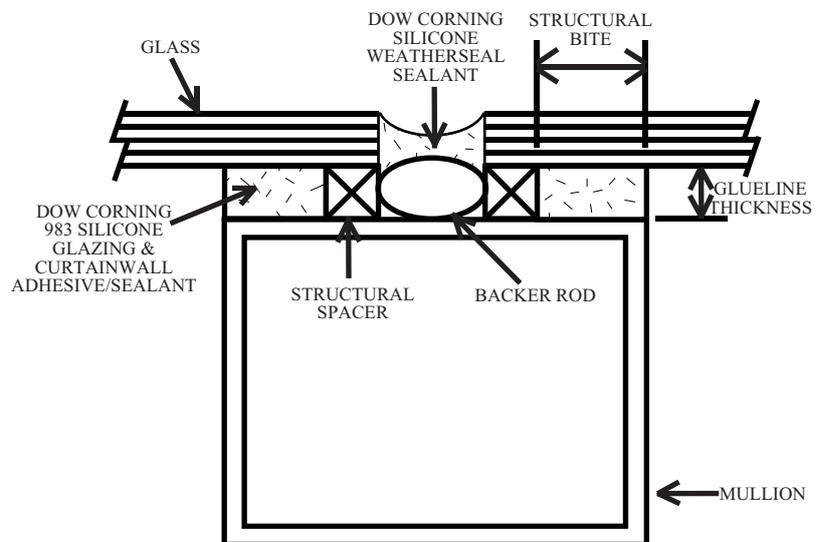


Figure 1

