Technical Data Sheet

DOWSIL™ 3553 Bonding Adhesive

Construction Sealant

Features & Benefits

- Excellent adhesion to coated or reflective glass and aluminum
- Fast cure one-component technology, ideal for use at low temperature and/or low humidity in workshops
- Packaged for both manual and robot applications
- Silicone technology providing outstanding UV resistance
- Service temperature range -40°C (-40°F) to up to 100°C (212°F)
- Non-corrosive cure
- Resistant to ozone
- Minimum waste and downtime by eliminating base purging and static mixer maintenance
- Non-slumping, permitting ease of both manual and automated glazing
- Excellent mechanical properties

Applications

- Glazing for residential and commercial glazing.
- Glazing applications in solar thermal panels with its fast curing and high temperature resistance features.
- Glass panel incorporating specialty glass (pyrolithic of soft coated, laminated, tinted, enameled) types.
- Glazing for applications under extreme conditions of humidity and temperatures, high or low.
- Glazing for applications with high sun exposure.
- Adhering and jointing of glass elements.

Typical Properties

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

Test[1]	Property	Unit	Result
	As supplied		
	Color		Black
CTM 0097	Specific gravity	kg/liter	1.34
CTM 0364	Extrusion rate (nozzle 6mm at 6.2 bar)	g/minute	135

1. CTM: Corporate Test Method, copies of CTMs are available on request.

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Typical Properties (Cont.)

Test	Property	Unit	Result
CTM 155A	Penetration	1/10mm	150
	Application temperature	°C °F	5 to 40 41 to 104
	After application		
	Working time 23°C (73°F) at 50% R.H.	minutes	5–10
CTM 0062	Slump or flow	mm	1.4
CTM 0098	Skin-over time 23°C (73°F) at 50% R.H.	minutes	10–15
CTM 0095	TFT, tack-free time	minutes	26
CTM 0663	Curing time 23°C (73°F) at 50% R.H.	mm	3.8mm/24 hours
	Curing time 23°C (73°F) at 50% R.H.	mm	8.0mm/72 hours
	After 7 days of cure at 23°C (73°F) at 50% R.H.		
CTM 0099	Hardness (Shore A)		38
CTM 0137A	Tensile strength	MPa	1.58
CTM 0137A	Elongation at break	%	400
CTM 0137A	Modulus	MPa	0.84

Description

DOWSIL™ 3553 Fast Cure Silicone Sealant can be used as a composite bonding adhesive for joining glass panels. It has a high green strength making it possible to handle the unit quickly and a high cure rate (4.0 mm in 24 hours) as a one-component sealant. When cured it has a high modulus for a good mechanical assembly of glass panels.

DOWSIL 3553 Silicone Sealant is a neutral cure sealant, offering several advantages over acetoxy silicone formulations:

- Consistent adhesion to aluminum, glass and other mineral substrates
- High strength of bond due to its high modulus of elasticity.

How To Use

Surface Preparation

Ensure that surfaces to be sealed are clean, dry and free from frost. Clean all surfaces of release agents, water repellents, laitance, dust, dirt, old sealants and other contaminants which could impair adhesion. Non-porous surfaces should be cleaned and degreased by wiping with a suitable solvent such as DOWSIL™ R40 Universal Cleaner on an oil- and lint-free cloth before application of sealant.

Note: When using any solvent, always provide adequate ventilation. Avoid heat, sparks and open flames. Observe and follow all precautions listed on the solvent container label.

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How to Use (Cont.)

Application On Coated Glass

If direct adhesion of DOWSIL 3553 Silicone Sealant is needed, official approval of the glass manufacturer is required with regard to the long term adhesion of the coating to the glass. If there is any doubt concerning the adhesion of the coating to the glass, the coating shall be removed from the area where the sealant will come in contact with the glass. Experience shows that good adhesion is usually obtained on clear and tinted float glass and on hard pyrolithic coatings. However, adhesion should be checked on soft magnetron coatings, silk screen enameled coatings and on non-float colored glass (for instance stained glass) or on glass where composition is different from usual borosilicate glass manufactured through a float process.

Installation

Testing

Several factory quality control tests are recommended to ensure optimum sealant performance. These tests include:

- Slump test
- Cure test to ensure expected sealant cure rate in the local conditions of temperature and humidity
- Peel adhesion test to ensure proper sealant adhesion to production surface.

These tests should be performed for every lot change.

Dispensing

Simple transfer ram pump can be used to dispense DOWSIL 3553 Silicone Sealant either by hand or robot gunning. When robot gunning is used, it is recommended that all flexible hoses do not transmit vapor; ideally Teflon® lined hoses should be used. As the product requires only atmospheric moisture to cure, solvent flushing of pumping equipment is generally not necessary, even when equipment has been left standing. However, it must be ensured that a cap is placed on the dispensing nozzle.

When manually gunning the sealant, apply by pushing the material forward into the cavity to ensure maximum contact and adherence with the surfaces and may also give a smooth professional finish. Tooling should be completed in one continuous stroke within 5 to 10 minutes after sealant application and before a skin forms.

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

When stored in cool, dry conditions below 25°C (77°F) in the original unopened containers DOWSIL 3553 Silicone Sealant has a total shelf life of 8 months from the date of production.

Packaging Information

DOWSIL 3553 Silicone Sealant is supplied in 600 ml sausages packed in box of 20, and 250 kg drums.

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Limitations

The DOWSIL 3553 Silicone Sealant:

- Cannot be used in totally confined spaces, as the sealant requires atmospheric moisture to cure and in addition, releases by-products during the curing process
- In contact with bituminous substrates, substrates based on natural rubber, chloroprene or EPDM, or on building materials which might bleed oils, plasticizers or solvents, on green or partially vulcanized rubber gaskets and tapes.

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.

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