Technical Data Sheet

DOWSIL™ SH 780 Sealant

Neutral (Oxime type), one-part silicone sealant
JIS A 5758 G-20LM, G-30SLM (SR-1-9030G) specified sealant

Features & Benefits

- One-part sealant for ease of use
- Cures to a flexible silicone elastomer
- Nonacidic cure enables use on a variety of substrates
- Non-sag
- Excellent adhesion properties for substrate such as various metals (except copper/brass), glass, tiles, earthenwares, etc.
- Inherently waterproof
- Remains flexible over a wide temperature range (-40 to 150°C)
- Greater UV stability and temperature and weather resistance than organic sealants such as urethane sealants and modified silicone sealants

Composition

- One-part
- Neutral cure (Oxime type)
- RTV sealant

Applications

- General-purpose sealing and bonding
- Space-filling rubber adhesive
- Caulking and sealing window and door frames

Typical Properties

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

Test[1]	Property	Unit	Result
JIS A 1439	Tack free (JIS)	minutes	6
JIS K 6249	Density	g/cm^3	1.03
JIS K 6249	Hardness (JIS type A)		19
JIS K 6249	Tensile strength	MPa	1.8
JIS K 6249	Elongation	%	600

1. JIS:Japanese Industrial Standard

Description

DOWSIL™ SH 780 Sealant is a one-part, neutral-cure (Oxime type) RTV sealant. It easily extrudes in any weather and cures quickly at room temperature.

This cold-applied, non-sagging silicone material cures to silicone rubber upon exposure to atmospheric moisture.

How to Use

Consult the "Sealant Hand Book," "JASS8 Waterproofing Work," and "Technological Indicator Concerning Watertight Design and Construction of the Outside Wall Joint."

Approvals/ Specifications

This sealant meets or exceeds the requirements of:

- JIS A5758 G-20LM G-30SLM (SR-1-9030G)
- JSIA F☆☆☆☆

Colors

DOWSIL™ SH 780 Sealant is available in several colors including: clear, white, aluminum, gray, light-gray 2, umber, dark brown, black, and stain.

Primer

Use primers to increase adhesion to glass, metal, and porous materials. It is recommended to test adhesion properties with the substrate prior to application.

Table 1: JIS A5758 (G-20LM/G-30SLM) Test Result (with DOWSIL™ Primer-D3(RF))

Properties	Condition	Unit	Results		Specification
Slump (length)	5 ± 2°C	mm	0		3 or less
	50 ± 2°C	mm	0		3 or less
Slump (breadth)	5 ± 2°C	mm	0		3 or less
	50 ± 2°C	mm	0		3 or less
Change in volume		%	6		10 or less
60% Modulus	23 ± 2°C	N/mm^2	Glass	0.3	0.4 or less
		N/mm^2	Aluminum	0.3	0.4 or less
	-20 ± 2°C	N/mm^2	Glass	0.3	0.6 or less
		N/mm^2	Aluminum	0.3	0.6 or less
Durability (9030G)	23 ± 2°C		Pass		No failure
Adhesion properties at maintained extension	23 ± 2°C		Glass	Pass	No failure
			Aluminum	Pass	No failure
	-20 ± 2°C		Glass	Pass	No failure
			Aluminum	Pass	No failure
Adhesion properties after exposure to artificial light through glass	23 ± 2°C		Glass	Pass	No failure
Adhesion properties at variable temperature	23 ± 2°C		Aluminum	Pass	No failure
Adhesion properties after immersion in water	23 ± 2°C		Glass	Pass	No failure
			Aluminum	Pass	No failure
Elastic recovery (G-20LM/G-30SLM)	23 ± 2°C	%	95/90		60 or more

Table 2: Tensile Adhesion Properties (JIS A1439: with DOWSIL™ Primer-D3(RF), Tensile Speed: 50 mm/min @ 20°C)

	Condition	50% Modulus (N/mm^2)	Max. Strength (N/mm^2)	Elongation at Max. Strength (%)
Aluminum	Initial	0.36	0.71	254
	@90 ± 2°C for 14 days	0.39	0.78	248
	@23 ± 2°C for 7 days in water	0.35	0.79	281
Glass	Initial	0.37	0.66	214
	@90 ± 2°C for 14 days	0.38	0.65	192
	@23 ± 2°C for 7 days in water	0.36	0.64	217
	In Xenon Weather Meter for 1300 hours	0.37	0.67	232

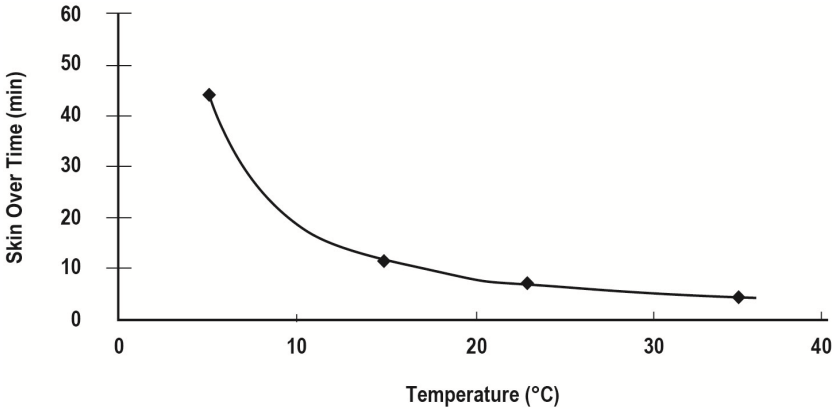

Figure 1: Surface Cure Speed

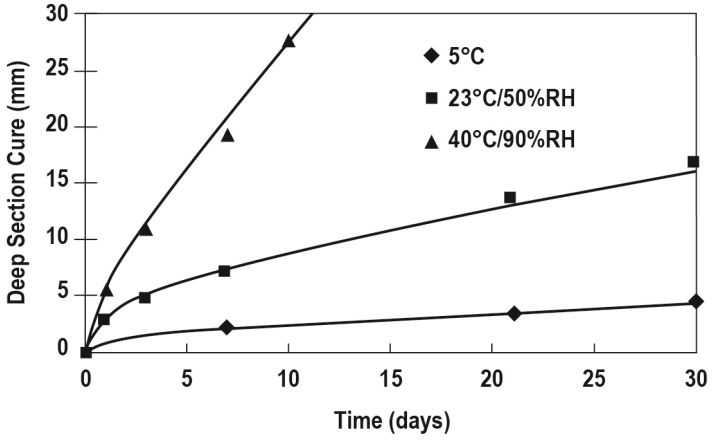

Figure 2: Deep Section Cure

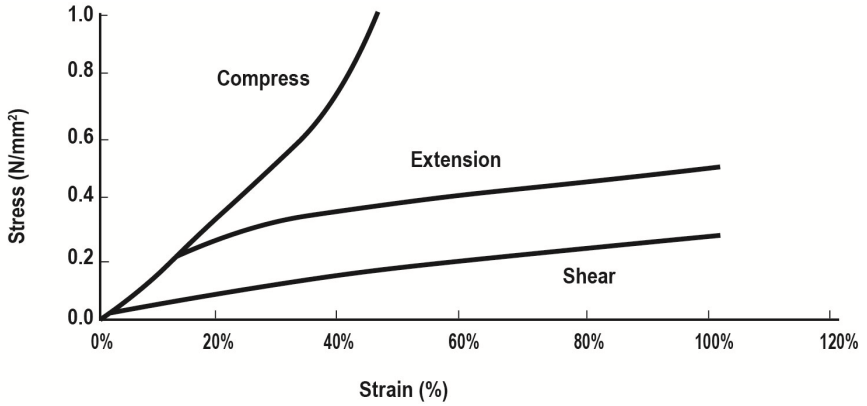

Figure 3: Stress Strain Curve (JIS A1439 test piece)

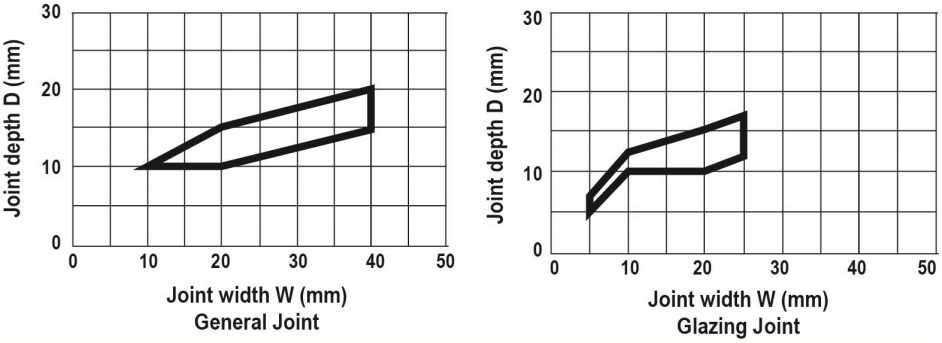

Figure 4: Setting of Joint Depth

Joint Design

The joint design must conform to "JASS8 (Construction standard of Architect Institute of Japan)" and "Technological Indicator Concerning Watertight Design and Construction of the Outside Wall Joint."

Table 3: General Adhesion Properties
Test method: JASS8 Simple adhesion test
Primer: DOWSIL™ Primer-D3(RF) or DOWSIL™ Primer-B
Cure condition: 23°C/50% RH × 7 days

Substrate		Primer	Cohesion failure %
Glass	Float Glass	DOWSIL™ Primer-D3(RF)	100%
	Heat Reflecting Glass	DOWSIL™ Primer-D3(RF)	100%
	Supper Heat Reflecting Glass	DOWSIL™ Primer-D3(RF)	100%
	Heat Absorbing Glass	DOWSIL™ Primer-D3(RF)	100%
	Porcelain-clad	DOWSIL™ Primer-D3(RF)	100%
	Ceramic Tile	DOWSIL™ Primer-D3(RF)	100%

Table 3: General Adhesion Properties (Cont.)

Substrate		Primer	Cohesion failure %
Metal	Anodized Aluminum	DOWSIL™ Primer-D3(RF)	100%
	Electrolytic Colorized Aluminum	DOWSIL™ Primer-D3(RF)	100%
	SPCC-SB (Ni Plated)	DOWSIL™ Primer-D3(RF)	100%
	SUS	DOWSIL™ Primer-D3(RF)	100%
	Hot Dip Zincing	DOWSIL™ Primer-D3(RF)	100%
Coating	Acryl Coating	DOWSIL™ Primer-D3(RF)	100%
	Melamine Coating	DOWSIL™ Primer-D3 (RF)	100%
	PVC Coating	DOWSIL™ Primer-D3(RF)	100%
Plastic	PET Glass	DOWSIL™ Primer-D3(RF)	100%
	Epoxy Glass	DOWSIL™ Primer-D3(RF)	100%
	Poly Stylene	DOWSIL™ Primer-D3(RF)	100%
	Rigid PVC	DOWSIL™ Primer-D3(RF)	100%
Rubber	Silicone Rubber	DOWSIL™ Primer-D3(RF)	100%
	Modified Silicone Rubber	DOWSIL™ Primer-D3(RF)	100%
	Poly Sulfide Rubber	DOWSIL™ Primer-D3(RF)	0%
	Urethane Rubber	DOWSIL™ Primer-D3(RF)	100%
Porous Substrate	Mortar, Concrete	DOWSIL™ Primer-B	100%
	ALC	DOWSIL™ Primer-B	100%
	Slate Siding Board	DOWSIL™ Primer-B	100%
Wood	Cedar, Cypress	DOWSIL™ Primer-B	100%
	Luan	DOWSIL™ Primer-B	100%

Notes

Adhesion properties might be different according to the manufacturer and the kind.
The adhesion test is recommended before apply sealant.
The use of the primer is recommended for to improve adhesion properties and durability.
There is a possibility that the sealant changes in quality by the contact of EPDM and CR with the sealant.

Primer

Recommended primers include:

- DOWSIL™ Primer-D3(RF) for glass, metal, varnished metal
- DOWSIL™ Primer-B for wood, mortar, concrete

Refer to the primer data sheet for details. Please contact Dow Sales Engineer for specific advice.

Handling Precautions

- The substrate surface should be clean and dry.
- After applying sealant, it is necessary to protect the surface from rain for at least one day.
- It is necessary to prevent the joint from extensive movement during cure.
- A stain may be visible around the joint when used on an outside wall joint.
- When using an air gun, air pressure should be controlled below 0.3 MPa.
- Sealant quality may be affected by contact with EPDM and Chloroprene.

Handling Precautions (Cont.)

- Product evolves methyl ethyl ketoxime (MEKO) which may discolor/corrode brass and copper or crack acryl resin and polycarbonate. Please do not use it for these substrates.
- When curing an alcohol sealant on/near or under a cured oxime sealant, it may discolor. When curing an oxime sealant on/near or under a cured alcohol sealant, it also may discolor.
- Do not use near an open flame.
- Not recommended for use at continuous temperatures above 150°C.
- Do not use on aquariums.
- Solvent based primers are highly flammable. Keep away from open flame.
- Oxime Sealant - This product generates methyl ethyl ketoxime (MEKO) during curing. In animal experiments in which MEKO is inhaled in large quantities for a long period of time, there has been health issues. Inhalation in large quantities for a long period of time may damage your health, so provide sufficient ventilation when using. If you need more information, please refer to Safety Data Sheet.

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

When stored in a cool and dark space, DOWSIL™ SH 780 Sealant has a shelf life of 12 months from the date of manufacture. It might be discolored during storage under high temperature. Refer to product packaging for “Date of Manufacture.”

Packaging Information

DOWSIL™ SH 780 Sealant is supplied in 330 ml disposable plastic cartridge. Please contact Dow Sales Engineer for specific advice.

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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