Technical Data Sheet

DOWSIL™ SE 5400 Sealant

One-part, RTV sealing sealant for architectural/industrial applications, JIS A 5758 G-F-25HM (SR-1-9030) specified sealant.

Features & Benefits

- DOWSIL™ SE 5400 Sealant is a one-part, RTV type architectural/industrial grade sealing sealant
- DOWSIL™ SE 5400 Sealant is a JIS A 5758 G-F-25HM (SR-1-9030) specified silicone sealant
- DOWSIL™ SE 5400 Sealant shows better weatherability, heat stability, low-temperature resistance, water resistance, restorability, and fatigue resistance compared with organic elastomeric sealing materials such as urethane sealants and modified silicone sealants
- Excellent stable properties in wide range of temperature
- It is a non-solvent, non-sag type sealing material
- As it is an alcohol type sealant, can be applied to metals such as iron, and plastic materials such as acryl or polycarbonate
- Ease of use; one-part composition eliminates mixing
- As it has high tear strength, crack resistance is high and shows less propagation properties of flaw

Composition

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

Applications

- DOWSIL™ SE 5400 Sealant is an easy to use, one-part sealing sealant. It can be used to seal or repair around glass, and to seal and fill not only for plastic panels but also for various substrates.

Typical Properties

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

Test[1]	Property	Unit	Result
	Appearance		Paste
	Flowability		No
JIS A 1439	Tack-free	minutes	10

1. JIS: Japanese Industrial Standard.

Form No. 63-6167-01-0420 S2D

Typical Properties (Cont.)

Test	Property	Unit	Result
JIS K 6249	Density[2]		1.47
JIS K 6249	Hardness[2] (JIS A)		34
JIS K 6249	Tensile strength[2] in shear	N/cm^2	188

2. Density, hardness and tensile strength are measured after cured by cure condition: 23±2°C/50% RH × 7 days.

Approvals/ Specifications

- JIS A 5758 G25HM 9300 (SR-1)
- JSIA F☆☆☆☆

Colors

DOWSIL™ SE 5400 Sealant is available in white, black, gray, and amber.

How to Use

How to use must conform to *"Sealing Materials Handbook", "JASS8 (Construction standard of Architect Institute of Japan) Water proof works"* and *"Technological indicator concerning watertight design and construction of the outside wall joint."*

Primer

Please use a primer on glass, metal, and porous material to achieve the highest quality of adhesion. In addition, to confirm adhesion properties, please conduct a test on the substrate in use. Typical primers used are as follows. Please refer to the primer data sheet for details of the primer. Please contact a sales engineer for specific advice.

- Glass, metal, varnished metal: DOWSIL™ Primer-D3(RF)
- Concrete: DOWSIL™ Primer-B

Table 1: Evaluation Result of JIS A 5758

Properties	Condition	Unit	Evaluation Result	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
Elastic Recovery	23 ± 2°C	%	97	70 or more
Change in Volume		%	4	10 or less
Durability	23 ± 2°C		Pass	9030

Table 2: Evaluation Result of JIS A 5758

Properties	Condition	Unit	Evaluation result		Result
			Substrate	Data	
100% Modulus	23 ± 2°C	N/mm^2	Glass	0.7	0.4 or above
		N/mm^2	Aluminum	0.7	0.4 or above
	-20 ± 2°C	N/mm^2	Glass	0.7	0.4 or above
		N/mm^2	Aluminum	0.7	0.4 or above
Adhesion properties at maintained extension	23 ± 2°C		Glass	NP	No failure
			Aluminum	NP	No failure
	-20 ± 2°C		Glass	NP	No failure
			Aluminum	NP	No failure
Adhesion properties after artificial light exposure	23 ± 2°C		Glass	NP	No failure
Adhesion properties after exposure compression, heat and tensile, cooling	23 ± 2°C		Aluminum	NP	No failure
Adhesion properties after immersion in water at maintained extension	23±2°C		Glass	NP	No failure
			Aluminum	NP	No failure

NP: No particular abnormality

Table 3: Evaluation Result of Tensile Adhesion (JIS A 1439 Tensile Adhesion Test Piece)

Substrate	Primer	Condition	n	50% Modulus	Max		Elongation at break	Failure mode		
					Tmax	Emax		CF	tCF	AF
				N/mm^2	N/mm^2	%	%	%	%	%
Aluminum	No	Standard aging	1	0.52	1.67	486	487	100	0	0
			2	0.52	1.62	436	438	100	0	0
			3	0.54	1.66	428	430	100	0	0
			Average	**0.53**	**1.65**	**450**	**452**	**100**	**0**	**0**

[Test piece] JIS A 1439 H type
[Tensile speed: 50 mm/minute]
[Fracture mode] CF: Cohesion failure, tCF: Thin layer cohesion failure, AF: Adhesion failure
[Condition] Initial: 23 ± 2°C /50 ± 5% RH × 14 days + 30 ± 2°C × 14 days

Table 4: General Adhesion Properties Against Various Substrates (Data Without Primers)[1]

Stage		Mode of Failure	
		Initial	After Hot Water Immersion
Glass	Float Glass	CF 100%	CF 100%
	Heat Reflecting Glass	CF 100%	CF 100%
	Super Heat Reflecting Glass	CF 100%	CF 100%
	Heat Absorbing Glass	CF 100%	CF 100%
	Porcelain-clad	CF 100%	CF 100%
	Ceramic Tile	CF 100%	CF 100%
Metal	Anodized Aluminum	CF 100%	CF 100%
	Electrolytic Colorized Aluminum	CF 100%	CF 100%
	SPCC-SB (Machining) (Iron)	CF 100%	CF 100%
	Stainless Steel	CF 100%	CF 100%
	Copper	CF 100%	CF 100%
	Hot Dip Zincing	CF 100%	CF 100%
Coating	Acrylic Coating	CF 100%	CF 100%
	Melamine Coating	CF 100%	CF 100%
	PVC Coating	CF 100%	CF 100%
Plastic	PET	CF 100%	CF 100%
	Epoxy Glass	CF 100%	CF 100%
	ABS	CF 100%	CF 100%
	Acryl	CF 100%	CF 100%
	Poly Styrene	CF 100%	CF 100%
	Poly Carbonate	CF 100%	CF 100%
	Rigid PVC	CF 100%	CF 100%

1. Test method: JASS8 Simple adhesion test.
   Aging condition: Initial 23°C/50% RH × 7 days.
   Hot water immersion: Initial +50°C hot water immersion × 7 days.

Notes:

1. Composition, manufacturing method, and finished coating might be different depending on the manufacturer and the substrate. An adhesion test is recommended prior to use.
2. The use of the primer suitable to the substrate is recommended to improve adhesion properties and durability, particularly in case of CF 50% in the above table. The use of primers below is strongly recommended.
   - Metal, glass: DOWSIL™ Primer-D3(RF)
   - Porous substrate: DOWSIL™ Primer-B
3. In case of metals, it is recommended to clean the adhesion surface with a nylon scrubbing brush, or of that kind, before solvent cleaning.

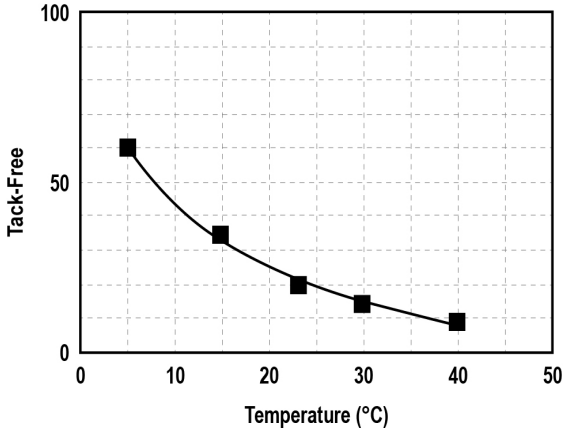

Figure 1: Surface cure rate of DOWSIL™ SE 5400 Sealant

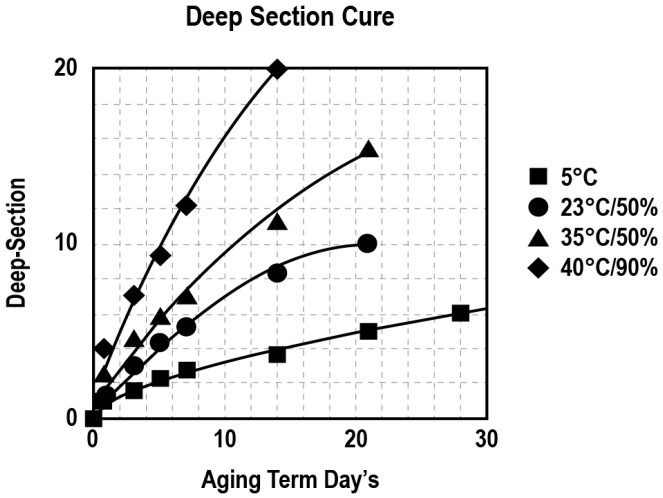

Figure 2: Deep section cure rate of DOWSIL™ SE 5400 Sealant

Handling Precautions

- The surface of the substrate should be clean and dry before applying sealant.
- Protect uncured sealant from rain; surface roughness or under cure might occur if rain drops within one day after sealant application.
- Surface wrinkle or internal cracking defect may occur if joint moves largely during sealant curing.
- Contamination may occur when stone joints and slate joints are in use for outside wall. Please contact a sales engineer beforehand when appearance is important.
- When using an air gun to apply, pressure should be controlled below 0.3 MPa (3.0 kgf/cm^2). Higher pressure may cause squeezing of sealant or breaking of cartridge.
- Change in sealant quality (poor adhesion, discoloration, softening) may be observed if the sealant comes in contact with back-up material or tarpaulin made from EPT (EPDM) or CR. Prior confirmation is recommended.
- Applying uncured or curing stage oxime sealant may cause the uncured sealant to discolor.
- Applying uncured or curing stage oxime sealant to DOWSIL™ SE 5400 Sealant may cause the uncured sealant to discolor.
- Bubbling and cracking may occur if the sealant is applied to a substrate during the summer when surface temperatures may be extreme (particularly with dark color substrates).
- Internal cracking and discoloration may occur when the construction joint is too deep. When considering joint depth (D) and width (W), please refer to the profile coefficient D/W $\leqq$ 1.0. It is important to allow the sealant a sufficient number of days to fully cure. Please use the inter-connected cell sponge as a back-up material for suitable curing.
- The sealant is not suitable for use in areas with continuous exposure to high temperatures (highest temperature limit: 120°C).

Handling Precautions (Cont.)

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

Please store DOWSIL™ SE 5400 Sealant in a cool and dry place, away from direct sunlight. The sealant has a shelf life of 12 months from the date of manufacture. Refer to product packaging for “Date of Manufacture.”

Packaging Information

DOWSIL™ SE 5400 Sealant is supplied in 330 ml plastic cartridges.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health and Environmental Information

- As this sealing material is not a non-flammable material, please do not use the sealant where it may come into contact with flames.
- Insufficient ventilation may cause irritation to the eyes or may be harmful by inhalation. Please use under proper ventilation conditions.
- Recommended primers contain flammable solvent (Fire Service Act hazardous materials Class 4), do not allow contact with flames.
- For skin contact of uncured sealant, please wipe off immediately, and wash well with plenty of water and soap.
- In case of eye contact, please flush immediately with water, and get medical attention.

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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