Technical Data Sheet

Antas-SK59 Silicone Weatherproof Sealant

One-part, Class 50, None-staining for porous substrate

Description

Antas-SK59 is a one-component, neutral-curing, high-movement-capability silicone weatherproof sealant, specially designed for high-rise curtain walls and large-panel curtain walls. It exhibits excellent weather resistance and anti-staining properties, with no risk of staining porous materials such as natural stone. It effectively minimizes vertical run-down staining near horizontal curtain wall joints.

Features

- Non-staining to various porous building materials such as marble, granite, limestone, bricks, mortar, and ceramic tiles.
- Easy tooling with good extrudability and thixotropy within the temperature range of 5℃ to 45℃.
- ±50% movement capacity.
- Excellent weather and aging resistance, virtually unaffected by ultraviolet rays, ozone, and water.
- The cured silicone rubber has good resistance to high and low temperatures. It maintains good adhesion and elasticity within the temperature range: -50℃ to 150℃.
- Compatible with other neutral silicone sealants.

Applications

- Non-staining sealing for high-rise stone curtain wall, ceramic plate and other porous materials.
- Weatherproof sealing for high-rise and super high-rise curtain walls, large-panel curtain walls.
- For other applications, please consult antas technical team.

Typical Properties

Test Method	Property	Unit	Result
	Before curing		
ASTM C 639	Flow, Vertical	mm	0
	Flow, Horizontal	mm	0
ASTM C1183	Extrudability	ml/min	109
ASTM C661	Tack-free time	h	1.6
	After 21 days of curing at 23°C and 50% RH		

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ASTM C 1246	Heat aging, weight loss	%	0.29
	Heat aging, cracking		None
	Heat aging, chalking		None
ASTM C 661	Hardness	Shore A	34.6
ASTM C 719	Joint movement		±50%
ASTM C1248	Staining/migration, natural stone		None

Please contact ANTAS for more mechanical properties

Approvals

- ASTM C 920 Standard Specification for Elastomeric Joint Sealants
- ASTM C 1248 Standard Test Method for Staining of Porous Substrate by Joint Sealants

Colors

Black, White, Grey, Customized with RAL Color Code

Packaging

590mL sausage, 20pcs/carton

Substrate preparation

The substrate must be clean, dry, sound and homogeneous, free from oils, grease, dust or other loose, friable particles.
For more detailed advice and instructions please contact ANTAS team.

Priming

Antas-201 Primer can be used to improve the adhesive performance, please consider whether to apply the primer based on the adhesion test results.
For further priming procedures, please consult the ANTAS team.

Backing material

Open and closed-cell Polyethylene rods and strips are widely used as the backup material to determine the sealant depth and to avoid three-sided adhesion that limits sealant movement capacity. It is necessary to ensure that the backing material is compatible with the sealant, and will not release gas that may cause the sealant to bubble before using it.

Curing and Maintenance

Curing speed: 2-2.5mm/24h under 23℃ and 50% humidity condition.
It takes 21 days to cure fully: to achieve full adhesion performance and mechanical properties.
During the initial stage of sealant application, it is necessary to maintain the fixation and flatness of the area to be sealed.
Generally, no maintenance is required. If the sealant seam is damaged, the damaged part can be replaced by removing the accumulated dirt with a solvent and filling it with a product of the same color and quality.

Weatherseal Dimension Design

To realize the intended function of weather sealant, the weatherseal joint dimension should be determined after a sound calculation and evaluation, including the joint design type, sealant movement capability, and potential loads or displacements of this joint structure. The general weather seal dimensions are recommended as below table:

Substrate	Sealant width, mm	Sealant depth, mm
Metal, glass, stone	6 ~ 12	6
	12 ~ 24	1/2 width

Notes:
Sealant width should always have a minimum of 6mm.
Sealant depth should always have a minimum of 6mm.
Please contact ANTAS for joint dimensions beyond the above recommendations.

Joint movement capacity

Under the influence of thermal displacement of the substrate panel and other factors, there are four basic types of sealant joint displacement: compression, tension, vertical shear, and horizontal shear. The selected joint sealant should be suitable for the above four displacements or several combinations of those displacements, including tension-compression, or tension-compression combined with vertical shear or horizontal shear.
Therefore, in designing and selecting joint sealants, a full analysis and evaluation of the joint dimension and various types of displacements should be carried out to ensure that the joint movement capacity of the selected sealant can fully adapt to these displacements.

Antas-SK59 with ± 50% joint movement capacity can be used on below joint dimension applications（Substrate: aluminum panel）

		Panel length, mm						
Joint width	Movement capacity	1000	1500	2000	2500	3000	3500	4000
10mm		38.1%	/	/	/	/	/	/
15mm		19%	28.6%	38%	47.6%	/	/	/
20mm		12.7%	19%	25.4%	31.7%	38.1%	44.4%	/
25mm		9.5%	14.3%	19%	23.8%	28.6%	33.3%	38.1%
30mm		7.6%	11.4%	15.2%	19%	22.8%	26.6%	30.5%

Notes: The testing sealant joint movement classification is based on GB/T13477/ ISO9047 test conditions of tension at -20℃ and compress at 70℃. When the service temperature is going to be lower than -20℃, the cured silicone rubber tends to be harder and exhibiting higher stress in joint bead, in this case larger joint width or higher movement capacity than the calculated width or movement capacity is recommend to achieve longer service life.

Project tests

Antas weatherproof sealant has good adhesion to most general building materials. However, with the material diversification and the continuous emergence of new materials, silicone products cannot guarantee good adhesion and compatibility with all materials. Therefore, it's necessary to conduct adhesion test, compatibility test with building materials like glass, aluminum, rubber gasket, backing materials, setting

block, stones and non-staining test for porous substrates like natural stone. Those pre-tests are essential quality control procedures to get project warranty. Please contact with ANTAS for more information.

Sealant Usage Consumption Rate

antas-SK59 weatherproof silicone sealant (590ml) theoretical usage length.

Thickness (mm)	Width (mm)						
	6	9	12	15	18	21	24
6	16.3	10.9	8.2	6.5	5.4	4.7	4.1
9	/	7.2	5.4	4.4	3.6	3.1	2.7
12	/	/	4.0	3.3	2.7	2.3	2.0

Note: the actual sealant usage rate varies a lot because of the difference in joint design, installation location, maintenance techniques, and the actual material usage waste. When calculating the amount of sealant used in a project, it is usually recommended to consider a 10% construction loss for single-component sealant.

Limitations

- On building materials that bleed oil, plasticizer or solvent, including materials such as impregnated wood, oil-based caulks, green or partially vulcanized rubber gaskets, or tapes or bituminous below-grade waterproof or asphalt-impregnated fiberboard.
- In totally confined spaces, which may hinder proper curing.
- When substrate surface temperature is over 45 ℃ or below 5 ℃.
- On the wet, frosty surface, continuously immersed in water, or exposed to humidity all year round.
- On the surface contact with food directly.
- For continual extreme pressure and temperature.
- When the cured sealant surface is intended to be painted.
- On the painted surface, which may cause adhesive failure due to cracking or peeling of the painting film
- For structural glazing.
- Not suitable for bronze surface.

Warranty

Antas offers project technical services and project warranties. Please consult the ANTAS team for further information.

Storage

- 12 months from the manufacturing date under 27℃ in the original unopened package.
- Keep in a shady and well-ventilated space.
- Keep away from children.

Transportation

Flammable but non-explosive.
It can be transported by air, sea and land as normal products.

User notice

It is recommended that users conduct adhesion and compatibility tests before officially using this product. Due to the diversity of practical applications, Jointas does

not guarantee any issues that may arise under specific conditions when using antas products and is not responsible for any direct, indirect, or incidental damages. If users encounter any issues during the use of the product, please contact antas after-sales service department, and Jointas technician will do their best to assist you.