Technical Data Sheet

Antas-193 Silicone Weatherproof Sealant

One-part, 35HM, Weatherproof Silicone Sealant

Description

antas-193 is one-component, neutral curing, weatherproofing RTV silicone sealant. It is designed for general weather sealing applications for glazing, glass curtain wall, metal façades, metal roof and other building façades. It cures by reaction with moisture in the air to form a durable silicone rubber with good elasticity and weatherability.

Features

- RTV silicone sealant, neutral cure, no pollution or corrosion on metals, coated glass and other general building materials.
- Excellent adhesion to a wide range of building materials.
- High modulus, ±35% movement capability.
- Remains flexible and stable from - 50°C to 150°C after curing.
- Good weatherability, UV resistance, and ozone resistance.
- Good compatibility with other neutral silicone sealants.

Applications

- General weather sealing for glass curtain wall, metal façade, metal roof, and aluminum composite panel (ACP) cladding.

Typical Properties

Test Method	Property	Unit	Result
	Before curing, 23ºC, 50%RH		
ASTM C 639	Flow, vertical	mm	0
	Flow, horizontal	mm	0
ASTM C 1183	Extrudability	ml/min	75.9
	Density	g/cm³	1.42
	Tack-free time	min	40
	After curing, 12x12x50 mm sealant size		
ISO 7389	Elastic recovery rate at 100% extension		
	Aluminum	%	93
	Glass	%	94
ISO 8339	Tensile strength at 100% Elongation (23ºC)		
	Aluminum	N/mm^2	0.52
	Glass	N/mm^2	0.57

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Test Method	Property	Unit	Result
ISO 8339	Elongation at break (23ºC)		
	Aluminum	%	430
	Glass	%	385
ISO 8340	Tensile properties at 100% extension (23ºC)		
	Aluminum		Non adhesive failure
	Glass		Non adhesive failure
ASTM C 1246	Heat aging, weight loss	%	0.9
	Heat aging, cracking		None
	Heat aging, chalking		None
ASTM C 719	Joint movement		±35%
GB/T 18583	VOC content	g/L	45
ASTM C 661	Hardness	Shore A	33

Please contact ANTAS for more mechanical properties

Approvals

- ASTM C 920 class 35HM
- EN 15651-1 EXT-INT 25HM
- ISO 11600 25HM
- SGBP Green Certification in Singapore
- SIRIM Certification in Malaysia

Colors

Black, White, Grey, Customized with RAL Color Code

Packaging

300mL cartridge, 24pcs/carton
500mL sausage, 20pcs/carton
590mL sausage, 20pcs/carton

Substrate preparation

The substrate must be clean, dry, sound and homogeneous, free from oils, grease, water, dust, frost, old sealant or other foreign matters. Please move away loose or 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 refer to the adhesion test results to decide whether to use primer or not. 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 fully achieve adhesion performance and

mechanical properties.

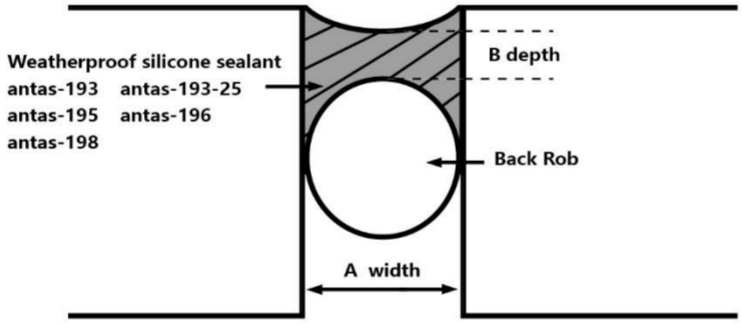
During the initial stage of sealant application, it is necessary to maintain the fixation and flatness of the area to be sealed.

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.

Typical Weatherseal Joint Design

Commonly used weatherproof joint design on glass, metal and stone curtain wall

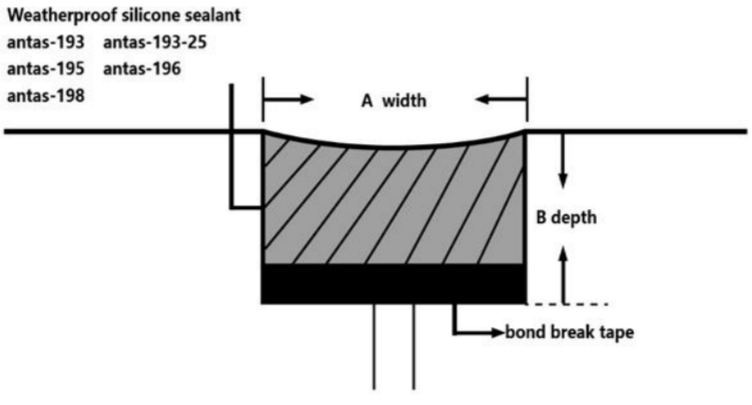
Figure 1: Deep joint



Ratio of A:B should be about 2:1

Figure 2: Shallow joint

For shallow joint depth where there isn't enough space to install backup foam, please use bond break tape on the bottom to avoid three-sided adhesion.



Two non-porous substrates

Weatherseal Dimension

To realize the intended function of weather sealant, weatherseal joint dimension should be determined after a sound calculation and evaluation which includes

Design

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	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 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-193 with ±35% 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
15mm		19%	28.6%	/	/	/	/	/
20mm		12.7%	19%	25.4%	31.7%	/	/	/
25mm		9.5%	14.3%	19%	23.8%	28.6%	33.3%	/
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 and ASTM C 719 test conditions of tension at -20 ℃ / -26 ℃ and compress at 70℃. When the service temperature is going to be lower than -26℃, 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. But 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.

Weather Sealant Consumption Rate

antas-193 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 of joint design, installation location, maintenance techniques and the actual material usage waste.

Limitations

- On building materials that bleeds oil, plasticizer, solvents, 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 in case of difficulties in curing.
- When substrate surface temperature is over 45 ºC or below 5 ºC.
- 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.
- For structural glazing。
- Not suitable for bronze surface.

Warranty

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

Storage

- 12 months from the manufacturing date under 30ºC 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, ANTAS 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 ANTAS technician will do their best to assist you.