GB 668 Pavement Silicone Sealant

DESCRIPTION

GB 668 is specially designed for the lasting weatherproofing seal of concrete joints. Because of its low modulus and excellent extension and compression recovery (+100/-50 percent of original joint width), GB 668 exhibits outstanding performance in highway, airport, bridge and other concrete joints where high movement occurs. Accelerated weather aging test proves that GB 668 is definitely qualified to withstand the temperature extremes and strong violet rays of concrete pavement. Once exposed to moisture in the air, GB668 begins its room temperature cure to form an elastic silicone rubber with lasting weatherproofing seal performance.

FEATURES

- One part, ready to use as supplied ,good gunnability, dispensed directly from container into joints by hand or with an air-powered pump
- Excellent unprimed adhesion and bonding to concrete
- High movement capability-able to accommodate the extension and contraction, and shear deformation of concrete joints without itself being destroyed
- Low modulus-able to stretch in the joint with little force. This can better protect the concrete surfaces from being damaged
- Resilient-once cured, strong anti-embedding performance, preventing gravels and other incompressible into the joints which may result in joint edge failure
- Highly elasticity and extension recovery-the sealant can be stretched to 100 percent or compressed to 50 percent of the joint width. When released, it will resume its original shape without splits or cracks
- Excellent temperature extreme resistance -cured GB 668 has a stable performance over the temperature range from -60℃ to +150℃
- Excellent lasting weatherability-the Si-O-Si high energy bond can not be destroyed by UV or ozone

BASIC USES

GB 668 pavement silicone sealant is specially formulated for

- Sealing the transverse, longitudinal, center lines and shoulder joints of concrete pavement.
- Sealing the extension and contraction concrete joints of high ways, airports, bridges, warehouses, parking lots, stadiums, architectural settlements, etc.
- It can be used as original sealant in new concrete constructions or as remedial/ repair sealant for old constructions.

TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

Test Method	Property	Unit	Result
GB/T 13477 (ASTM D 2377)	Tack free time	min.	60
GB/T 13477 (ISO 8394)	Extrusion rate	ml/min.	180
GB/T 531 (ISO7619)	Hardness	Shore A	30
GB/T 13477 (ISO 8339)	100% modulus	MPa	0.4
GB/T 528 (ISO 37)	Elongation at break(dumbbell type)	%	1000
GB/T 13477 (ISO 11600)	Movement capability	%	+100～-50
ASTM C793	Aging resistance		Qualified

*GB: Chinese National Standard
ASTM: American Society for Testing and Materials
ISO: International Standardization Organization

COLOURS

GB 668 is available in black, grey and other customized colours.

PACKAGING

GB 668 is available in disposable cartridges (net 300ml), sausages (net 590ml) and in pails (25kg).

SPECIFICATIONS

GB 668 is designed to meet or even exceed the requirement of

- JC/T 881-2001
- ASTM C 920-01,D5893-96

STORAGE AND SHELF LIFE

GB 668 should be stored at or below 27℃ in original unopened containers. It has a shelf life of 12 months from the date of production.

LIMITATIONS

GB 668 should not be applied:

- In totally confined spaces as sealant requires atmospheric moisture for cure
- To frost laden or damp concrete surfaces
- When substrate surface temperature is below 4℃ or over 40℃
- New concrete should be allowed to cure and dry for at least 28 days of good drying weather. For each day of rain that occurs during that period, an additional day should be added to the 28-day drying time. For fast completion and or high early concrete
  mixes, please contact GB Technical Services
- The sealant bead should be recessed below the surface of concrete surface to prevent abrasion from traffic and snow removal equipment.
- The adhesion to substrates other than concrete should be checked before performing full-scale sealing.

TECHNICAL SERVICES

- Complete technical information and literature.
- Adhesion test

GB 668 exhibits excellent unprimed adhesion to concrete. But due to the diversity of concrete configuration and substrate surface cleaning status, we can not guarantee that GB 668 is applicable to all the concrete. Adhesion testing should be conducted prior to the large scale site application.

SAFETY INFORMATION

- GB 668 is a chemical product, not edible, no implantation into body and should be kept away from children.
- Cured silicone rubber can be handled without any risk to health.
- Wear gloves for sealant application
- Should uncured silicone sealant contact with eyes, rinse thoroughly with water and seek medical treatment if irritation persists; should contact with skin, wipe off with cloth, then wash with sopy water
- Avoid prolonged exposure of skin to uncured silicone sealant.
- Good ventilation necessary for work &cure places.

JOINT DESIGN AND A PPLICATION

Please refer to Application Guide for GB 668 Pavement Silicone Sealant

USAGE ESTIMATION

thickness	the application length (m) of a piece of GB 668 (590ml)					
6mm	16	12	9.8	8	6.5	4.9
9mm	10.9	8.2	6.5	5.4	4.3	3.2
12mm	8.2	6.1	4.9	4	3.2	2.4
	6mm	8mm	10mm	12mm	15mm	20mm
	glue line width(mm)					

Note: The actual usage may be not 100% the same as above figures because of joint design, backer rod and on-site waste.

DISCLAIMER

The information presented herein is offered in good faith and is believed to be accurate. However, because conditions and methods of using our products are

beyond our control, this information should not be used in substitution for customer’s tests to ensure that our products are safe, effective, and fully satisfactory for specific applications.

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Application Guide for GB 668 Pavement Silicone Sealant

JOINT DESIGN

Proper joint design enables the sealant to better accommodate the movement of concrete joints.

Low modulus GB 668 easily withstands 100 percent extension and 50 percent compression of the original joint width. However, the recommended joint design is ±25%（50 percent total）and not at the sealant limits. This difference ensures a successful seal when job site joint width is different from the designed. Therefore, the joint design dimensions should be less than the ultimate sealant capability.

A thin bead of sealant accommodates more movement than a thick one. GB 668 should be no thicker than 13mm and no thinner than 6mm.Within this limits, the sealant width-to-depth ratio should be 2:1.

In all cases, the sealant must be recessed below the pavement surface at least 4mm. For the wide joints, 12mm recess is acceptable to avoid possible damages to sealant by road-working operations such as grinding of the surface (see Table 1).

JOINT PREPARATION

All the residues, especially those from saw-cutting and previous sealants must be blasted off. Leaving materials of this type on the surface of the joint face prevents the development of a good adhesive bond. A clean joint will have no visible signs of residual sealant or debris on the joint surfaces, and will leave no residual cement powder or dust on your fingers after rubbing the joint face.

Table 1 Recommended Joint Design

Joint width (mm)	6	8	10	12	15	20
Recessed below surface (mm)	4	4	4	5	5	6
Sealant thickness (mm)	4	4	6	7	8	8
Backer rod diameter (mm)	9	13	16	22	32	64
Total joint depth (mm)	10	12	14	16	18	18

When applied to old concrete joints, the original sealant must be removed mechanically, and should not use solvent containing cloth to dissolve the old sealant.

Joint surface must be clean, dry and frost free when the sealant is installed.

BACKER ROD SELECTION AND PLACEMENT

Backer rod must be placed into the joints before applying silicone sealant. Open or close cell polyethylene rods should be the best choice as backing material. The primary functions of the backer rod is to prevent three-sided adhesion of the sealant, the bond to bottom and to control the thickness of the sealant bead.

The backer rod should be about 25percent oversized so that it fits tightly into the joint. A loose backer rod will be pushed deeper into the joint when the sealant is installed and will not provide adequate support for proper tooling. Thus, the thickness of the sealant bead cannot be controlled as required.

Use a special roller to press the backer rod into the joints , the depth of the roller is the designed thickness of the sealant. After the placement of backer rod, check whether there is spot allowing sealant leakage and the depth is desirable or not.

SEALANT INSTALLATION

No matter the sealant is applied manually or by use of an air-powered pump, the nozzle should be moved steadily along the joint, pushing the sealant ahead to form a uniform bead.

Immediately after applying and before a skin forms, tooled the sealant against the joint faces and the bead is recessed the required minimum 4mm below the pavement surface.