



UltraPruf® II SCS2902

UltraPruf® II SCS2900 Silicone Sealant

Product Description

UltraPruf® II SCS2900 sealant is a one-part, neutral cure, low modulus, matte finish and firm bodied weatherproofing silicone sealant that offers excellent adhesion, weatherability and elasticity.

COMPOSITION AND MATERIALS

UltraPruf® II SCS2900 series weatherproofing sealant is a one component, neutral cure, low modulus product which is designed for use on all types of substrates commonly used in perimeter seals, curtainwall joints and glazing applications. Formulated from proven silicone polymers, the sealant provides long lasting, elastomeric adhesive beads which are resistant to attack by the elements such as rain, snow, sunlight, ozone and atmospheric pollutants.

UltraPruf® II SCS2900 series weatherproofing sealant is easy to gun and apply at temperatures ranging from -35°F (-37°C) to 140°F (60°C) allowing the sealant to be used in any climate as long as the substrates are clean, dry, and frost free. After cure, UltraPruf® II SCS2900 series weatherproofing sealant has a ±50% joint movement capability in properly designed and installed joints.

UltraPruf® II SCS2900 series weatherproofing sealant cures on exposure to moisture in the air. The temperature performance after cure is from -55°F (-48°C) to +200°F (93°C).

PACKAGING

UltraPruf® II SCS2900 series weatherproofing sealant is available in 10.1 fl. oz. (.299 ml) plastic cartridges packaged in cartons of 24 cartridges, 2 gallon pails, and 20.0 fl. oz. "sausages". The units are designed for convenience in shipping and are easily handled by warehouse workers and mechanics on scaffolds and staging.

COLORS

UltraPruf® II SCS2900 series weatherproofing sealant is available in the following six colors:

SCS2902	White
SCS2903	Black
SCS2904	Limestone
SCS2909	Aluminum Gray

SCS2920	Precast White
SCS2997	Bronze

Key Performance Properties

BASIC USES

UltraPruf® II SCS2900 series weatherproofing sealant is intended for use for perimeter seals around windows, curtain wall joints and other weatherseal applications between metals, masonry, concrete, glass, paints and plastic substrates (see Table 2).

UltraPruf® II SCS2900 series weatherproofing sealant adheres to most common building substrates usually without priming. The low modulus property allows use in joints subject to ±50% movement. This characteristic is maintained over a wide temperature range after full cure.

LIMITATIONS

UltraPruf® II SCS2900 series sealant is not recommended for: horizontal joints exposed to foot or vehicular traffic or in horizontal joints where prolonged water immersion occurs.

UltraPruf® II SCS2900 series weatherproofing sealant should not be applied on:

- Concrete surfaces which contain residual form oil or other bond breaking contaminants that may interfere with sealant adhesion.
- Building materials which might bleed oil or solvents these include, but are not limited to, impregnated wood and certain vulcanized rubber gaskets or foams, tapes or failed sealants and caulking compounds.
- Areas where atmospheric contaminants might change the appearance of light colored sealants. Silicone sealant is weather-resistant and resists chalking, degradation and erosion. As a result, environmental contaminants tend to cling to the sealant and the sealant surface may take on the color of the contaminant. Darker colors should be used to minimize this effect.
- Reflecting, high-gloss or light-colored surfaces where aesthetics are critical, until adequate on-site sealant, surface and ambient atmospheric tests simulating building design are conducted to upon by the seller and the purchaser as a result of testing for stain or discoloration.
- Totally confined spaces, as the sealant requires atmospheric moisture for completion of cure and generation of properties.
- Surfaces which will be painted, as painting over rubber is not recommended. The paint film does not stretch with the extension of rubber and the adhesion of the paint to the sealant is not adequate.
- Surfaces with special or protective coatings, such as mirrors, or to surfaces such as Teflon®, polypropylene or polyethylene without the approval of the manufacturer of the article, plastic or material.
- Unprepared or wet surfaces. Do not use water for tooling and do not apply to wet or damp surfaces.
- Surfaces where adhesion has not been verified by on-site testing under actual use conditions.
- Structural glazing applications as the adhesive bead.
- Applications where FDA or USDA compliance is required.

Typical Product Data

Table 1: UltraPruf® II SCS2900		
WEATHERPROOFING SEALANT TYPICAL PROPERTIES¹		
(After 21 Days at 23°C and 50% Relative Humidity)		
Property	Value	Test Method 3
Tooling Time	30 Minutes	@ 75°F/50% RH
Sag/Slump	0.1 in. max.	ASTM C639
Tack-Free Time	3 hours	ASTM C619
Cure Time	7 days	to 3/8" depth
Dynamic Movement Capability	±50%	ASTM C-719
Hardness (Shore A)	25	ASTM D2240
Tensile Strength	360	ASTM D412
Ultraviolet & Ozone Resistance	Excellent	Weatherometer – Twin Arc
Staining on Concrete	None	ASTM D1248

¹ Contact GE Silicones Quality Assurance for certification details of Federal Specifications.

Typical Product Data**TECHNICAL DATA**

UltraPruf® II SCS2900 series weatherproofing sealant is basically unaffected by normal weathering conditions such as sunlight, ultraviolet radiation, rain, snow and temperature extremes. Its weatherability enables it to retain its properties after years of exposure. The sealant has resistance to detrimental effects caused by polluted atmospheres and many chemicals and chemical solutions. See Table 1 for Typical Properties and Table 2 for Adhesion Characteristics. Joints formed with this sealant can be expected to extend and compress 100% of the installation width with no more than 50% in a single direction without affecting the seal or adhesive. UltraPruf® II SCS2900 series silicone sealant is compatible with laminated glass, insulating glass units and acrylic and Lexan® polycarbonate glazing sheet.

Table 2: UltraPruf® II SCS2900 WEATHERPROOFING SEALANT TYPICAL PROPERTIES⁴	
ASTM C-794 Peel Adhesion 14 days 73°F/50% RH and 7 days water immersion	lbs. f/in. Cohesion % (kN/m)
Stainless Steel (primed*)	30 lbs. f/in
Mill Finish Aluminum (primed*)	30 lbs. f/in
Anodized Aluminum	30 lbs. f/in 100% Cohesion
Carbon Steel	30 lbs. f/in 100% Cohesion
Concrete (primed*)	30 lbs. f/in 100% Cohesion
Glass	30 lbs. f/in 100% Cohesion
Acrylic Sheet	30 lbs. f/in 100% Cohesion
Lexan® Polycarbonate Sheet	30 lbs. f/in 100% Cohesion
PVC Sheet (primed*)	30 lbs. f/in 100% Cohesion

Polyester Fiberglass Sheet	30 lbs. f/in 100% Cohesion
†Kynar 500® Resin Based Paints (primed*)	30 lbs. f/in 100% Cohesion
⁴ Values are not intended for use as specifications.	

Specifications

APPLICABLE STANDARDS

Contact GE Silicone Quality Assurance for details on certification to:

- Fed. Spec.TT-S-00230C
- Fed. Spec.TT-S-001543A
- ASTM C920, Type-S, NS, Class 25

FILING SYSTEMS

- Electronic SPEC-DATA®
- SPEC-DATA® II
- Sweet's Architectural File 07920/GEN
- GE Silicone Technical Centers

Instructions for Use

PRIMING

UltraPruf® II SCS2900 series weatherproofing sealant adheres without primer to many common construction materials however, some materials such as concrete, mill finish aluminum, galvanized steel, fluoropolymer paint coatings (Kynar) and other materials with variable surface characteristics often require priming. In view of unpredictable surface characteristics, trial applications should be made to check adhesion to the specific materials to be used on the project. SS4179 primer is recommended for concrete, some paints and plastic surfaces.

INSTALLATION

JOINT DESIGN

Figure 1 illustrates why a thin bead of silicone sealant will accommodate more movement than a thick bead. Obviously, a thin bead is the most desirable. UltraPruf® II SCS2900 series silicone sealant should be no thicker than 3/8" (9.5mm) and no thinner than 1/8" (3.2mm). Non-gassing polyethylene or flexible polyurethane foam rod is the recommended backup material. If the joint is too shallow to allow foam rod, use a polyethylene tape (Figures 1 and 2).

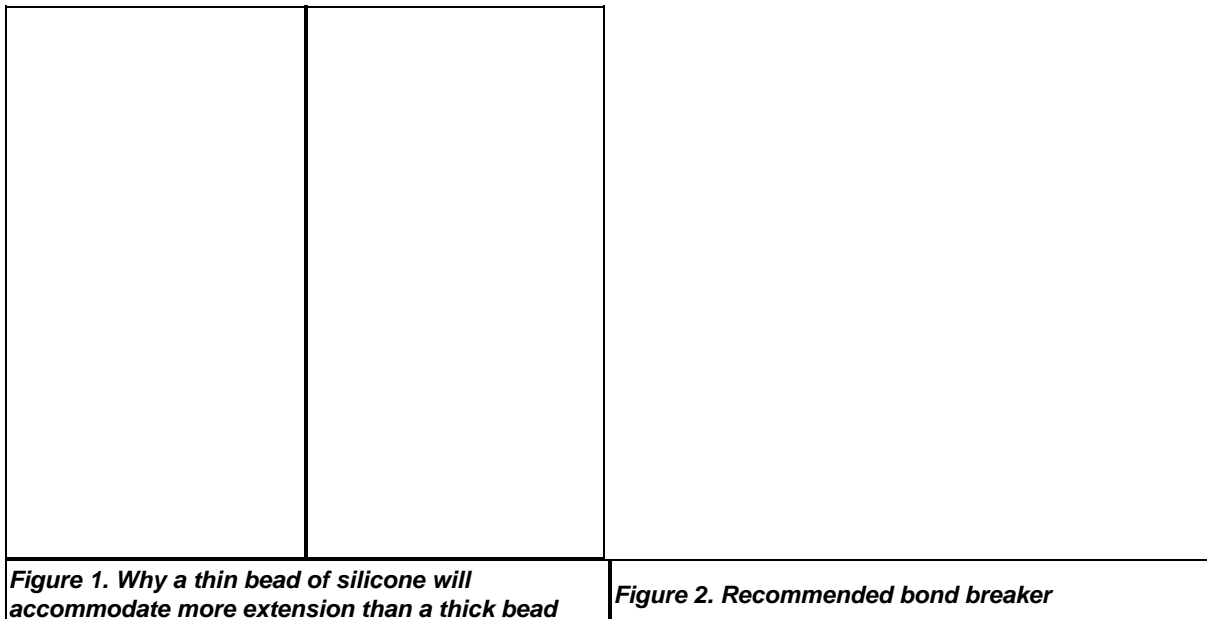


Figure 1. Why a thin bead of silicone will accommodate more extension than a thick bead

Figure 2. Recommended bond breaker

Curtainwall expansion joints should be designed to allow installation and retention of the bond-breaking backup material during the installation and subsequent curing of UltraPruf® II SCS2900 series weatherproofing sealant.

The dimensions of curtainwall expansion joints and similar applications change daily as a result of solar heat gain, wind forces and seasonal changes. The movement in a sealant bead installed on the sunny side of a building or during the hottest portion of the day in metal, glass and plastic applications will be almost entirely in extension during the cold season or cycle, while the movement of a bead installed during the coldest condition will be almost entirely in compression during the hottest season. If UltraPruf® II SCS2900 series weatherproofing sealant cannot be installed when the design width is approximately halfway between the dimensional extremes, the designed joint width must be at least twice the total anticipated joint movement. For example, if the total anticipated movement in an expansion joint in which UltraPruf® II SCS2900 series weatherproofing sealant is to be installed is 1/4" (6.4mm), the designed joint width must be 1/2" (12.8mm).

Lap shear joints should have a bead width which is equal to or greater than the total anticipated movement.

Small curtainwall panels and lights should allow a minimum width of 1/8" (3.2mm) for the sealant bead. Larger panels and lights (or those in which a great deal of movement is expected) should allow a minimum width of 3/16" to 1/4" (4.8 to 6.4mm) for the sealant bead. Glazing of plastic lights and sealing of wall panels fabricated from plastics require larger than usual joint dimensions due to the greater movement potential caused by plastic's higher coefficients of thermal expansion. Consult with the nearest GE Silicones Technical Center for recommendations on large or unusual applications.

JOINT FILLER MATERIALS

The depth of the UltraPruf® II SCS2900 series weatherproofing sealant bead is regulated by the depth of the backer rod. The rod stock should be 25%–50% greater than the width of the joint, thereby extending continuous pressure against the joint walls and expanding the contracting with the bead movement without pushing the sealant out of the joint during the compression cycle. RUBBER BACK-UP MATERIALS OFTEN STAIN SEALANTS AND ARE NOT RECOMMENDED, UNLESS TESTED FOR COMPATIBILITY.

PREPARATORY WORK

CLEAN ALL CONCRETE, MASONRY AND STONE JOINTS OF ALL CONTAMINANTS AND IMPURITIES. CONCRETE FORM RELEASE AGENTS, WATER REPELLENTS, CONCRETE LAITANCE, ALL OLD SEALANTS AND OTHER SURFACE TREATMENTS AND PROTECTIVE COATINGS ARE EXAMPLES OF MATERIALS WHICH MUST BE REMOVED FROM THE JOINT SURFACES TO OBTAIN PROPER SEALANT ADHESION. POROUS SUBSTRATES SHOULD BE CLEANED WHERE NECESSARY BY GRINDING, SAW CUTTING, BLAST CLEANING (SAND OR WATER), MECHANICAL ABRADING OR COMBINATION OF THESE METHODS TO PROVIDE A SOUND, CLEAN SURFACE FOR SEALANT APPLICATION. DUST, LOOSE PARTICLES, ETC., SHOULD BE BLOWN OUT OF JOINTS WITH OIL-FREE COMPRESSED AIR OR VACUUM CLEANED.

Clean all metal, glass and plastic surfaces by mechanical or solvent procedures. Detergent or soap and water treatments are not recommended. Protective films must be removed by a solvent recommended by the manufacturer of the substrate or other means which leave no residue. In all cases where used, solvents should be wiped dry with a clean cloth or lintless paper towels. Cleaning solvents should not be allowed to air dry or evaporate without wiping. Architectural coatings, paints and plastics should be cleaned with a solvent approved by the manufacturer of the product.

Cleaning of all surfaces should be done on the same day in which the sealant is applied. CAUTION: SOLVENTS MAY BE FLAMMABLE AND/OR TOXIC.

MASKING

The use of masking tape is recommended where appropriate to ensure a neat job and to protect adjoining surfaces. Do not allow masking tape to touch clean surfaces to which the silicone sealant is to adhere. Masking tape should be removed immediately after the finish tooling of the sealant is accomplished and before the sealant begins to cure.

METHOD OF APPLICATION

Install back-up material or joint filler, setting blocks, spacer shims and tapes as specified. Apply silicone sealant in a continuous operation, horizontally in one direction and vertically from the bottom to the top of the joint opening. A positive pressure adequate to properly fill and seal the joint width should be employed. Tool or strike the silicone sealant with light pressure to spread the material against the back-up material and the joint surfaces. The light-weight consistency of silicone sealant responds easily to light tooling pressure and facilitates void-free placement. A tool with a concave profile is recommended to keep the silicone sealant within the joint.

In glazing, tool the sealant at the sill so that precipitation and cleaning solutions will not pool. Silicone sealant can be applied at outdoor temperatures as low as -35°F (-37°C) provided that surfaces are clean, dry and frost free.

Excess sealant should be cleaned from glass, metal and plastic surfaces while still uncured using a solvent. On porous surfaces the excess sealant should be allowed to progress through the initial cure or set up. It should then be removed by abrasion or other mechanical means.

ESTIMATING REQUIREMENT

TABLE 3
Linear Feet per Gallon of UltraPruf® II SCS2900
Series Weatherproofing Sealant for Various Joint Sizes

Widths, Inches Depth	1/8	1/4	3/8	1/2	5/8	3/4	1
1/8	1232	616	411	307	246	205	154
3/16	—	411	275	205	164	137	103
1/4	—	307	205	154	123	103	77
3/8	—	—	137	103	82	68	51

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Handling and Safety

Material Safety Data Sheets are available upon request from GE Silicones. Similar information for solvents and other chemicals used with GE products may be obtained from the supplier.

Availability

SCS2902 Insulating Glass Sealant is available on a direct basis from GE Silicones. Contact the nearest GE Technical Service Center for availability and cost.

Government Requirement

Prior to considering use of a GE Silicones product in fulfilling any government requirement, please contact the Government and Trade Compliance office at 413-448-4624.

CDS5060

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