Bostik

The Adhesive Company

Chem-Calk® 955-SL

ONE-COMPONENT, SELF-LEVELING, POLYURETHANE ARCHITECTURAL GRADE SEALANT

TECHNICAL DATA SHEET

DATE OF LAST REVISION: 10/07/10

MANUFACTURER

Bostik, Inc.
211 Boston Street
Middleton, MA 01949-2128 USA
Customer or Technical Service: 1-800-7/BOSTIK
Technical Fax: (215) 957-0716
www.bostik-us.com

PRODUCT DESCRIPTION

Chem-Calk® 955-SL sealant is a one-component, self-leveling, polyurethane sealant capable of dynamic joint movement totaling 70% of original joint geometry (±35%). The sealant cures to a tough, flexible rubber when exposed to moisture present in the atmosphere.

Chem-Calk® 955-SL polyurethane has a pourable consistency. Its physical properties will remain relatively stable over time and in varying weather conditions. Its physical and mechanical properties remain consistent across a broad temperature range, from -40°F to 150°F (-40°C to 66°C).

APPLICABLE STANDARDS

- ASTM C-920, Type S, Grade P, Class 35, Use T, NT, A and M
- TT-S-00230C, Type I, Class A
- Canadian Specification CAN/CGSB-19.13-M87
- VOC Compliant: CARB, OTC and SQAQMD Compliant

BASIC USES

- Self-leveling, polyurethane sealant designed for sealing expansion joints, control and perimeter joints in parking decks, pavements, plazas, malls, patios, driveways, factory and institutional floors or any other areas subject to foot traffic and light vehicle traffic.
- Cures to form a durable, flexible, watertight bond with most building materials in any combination including: stone, masonry, blacktop, ceramic, marble, wood, steel, and aluminum.

TABLE 1: CHEM-CALK® 955-SL
TYPICAL UNCURED PROPERTIES*

Property	Value	Test Method/Note
Tool/Work Time	1.5 hrs.	Bostik Test Method
Skin Time	2.0 hrs.	Bostik Test Method
Consistency	Self-leveling	ASTM C-639
Curing Time @ 77°F	2-3 days	Varies w/relative humidity
Flow, Sag or Slump	Self-leveling	ASTM C-639
Staining & Color Change	None	ASTM C-510

TABLE 2: CHEM-CALK® 955-SL
TYPICAL CURED PROPERTIES*
(After 7 days cure at 77° F and 50% RH)

Property	Value	Test Method/Note
Hardness (Shore A)	35	ASTM C-661
Modulus @ 100% Elongation	80	ASTM D-412
Tensile Strength	171 psi	ASTM D-412
Elongation	500%	ASTM D-412
Adhesion Peel	>30 piw	ASTM C-794
Ozone Resistance	Excellent	
Joint Movement Capability	±35%	ASTM C-719
UV Resistance	Good	ASTM C-793

* Values given above are not intended to be used in specification preparation.

FEATURES & BENEFITS

- Self-leveling
- CARB, OTC, SQAQMD Compliant
- Simple installation
- Meets Green Building Standards

U.S. GREEN BUILDING COUNCIL MEMBER

SWR INSTITUTE® Sealant, Waterproofing & Restoration Institute www.swrionline.org

APPLICATION LIMITATIONS

- Construction substrates have become complex and diverse by nature and origin. Substrate chemistries and structures can interfere with adhesive performances of the sealant. **Adhesion to Substrate Pretest (ASP) is therefore MANDATORY to assess any adhesion and sealing characteristics**—*see Adhesion to Substrates Pretest section and see Installation Protocol section*. **This must be done pre-installation to avoid potential failures.** Call Technical Service for more information about surface preparation and possible priming.
- Do not apply over damp, contaminated, loose surfaces (See Installation Protocol and Surface Preparation), old sealants or other foreign substances that may impair the adhesion bond. Avoid air entrapment.
- Dampness and substrates with high moisture content will trigger extensive curing of the sealant within a very short period of time. This may cause an excess of bubbling and foaming within the sealant and at the bottom of the bead.

  High temperature/humidity can cause the sealant to develop bubbles during the curing process.

  Sealant installation is not recommended when the dew point of the substrate is close to ambient temperature or a moisture-vapor transmission condition is present increasing the potential for bubbling to form during cure.

  Porous substrates such as, but not limited to, marble, limestone and granite might absorb components of the Chem-Calk® 955-SL leading to staining of the substrate. **ASP with sufficient aging is mandatory to assess this potential issue.**
- The ultimate performance of Chem-Calk 955-SL depends on proper joint design and proper application with joint surfaces properly prepared (See Installation Protocol). Chem-Calk 955-SL is not recommended for joints with dimensions less than or greater than what is recommended below. (See Installation Protocol—Joint Design section.)
- Chem-Calk 955-SL must NOT be used to seal narrow joints or fillet joints.
- Smearing and feathering Chem-Calk 955-SL over joints is not recommended.
- Chem-Calk 955-SL is not recommended for continuous immersion in water or any other fluid. When fully cured, avoid exposure, even incidental, to fuels, chlorinated, acid and alkaline solutions. Chem-Calk 955-SL is not recommended for exterior or interior sealing below the waterline; please refer to Bostik® 940 Fast Set for marine applications.
- Chem-Calk 955-SL Black contains a unique formulation that allows it to be compatible with, and demonstrative optimal adhesion to, asphalt pavement/blacktop substrates. The use of Chem-Calk 955-SL Black is recommended for use in asphalt pavement/blacktop applications. The use of Chem-Calk 955-SL in colors other than black is not recommended for aspaltic/blacktop applications.
- During the curing of Chem-Calk 955-SL, do not expose to curing silicone sealants, curing Bostik® Chem-Calk® 2000, 2020, alcohol, acids or solvent-based materials.
- Lower relative humidity and temperature will significantly extend the curing time. Confined areas, deep joints and moisture barrier substrates may also affect the full cure time and extend it by many days.
- Until the sealant is fully cured, do not expose the sealant to any mechanical stress. Uncured sealant will not respond properly to cyclic expansion and contraction of the joint specified for the cured sealant only.
- The surface of a Chem-Calk 955-SL seal when exposed to UV rays and sunlight will NOT retain its gloss. This phenomenon can occur within a few weeks after exposure. The change is limited to the surface layer of the seal and should not compromise the sealing properties of the Chem-Calk 955-SL if the dimensions of the joint are proper and the sealant is otherwise properly applied. Chem-Calk 955-SL may remain tacky for a few hours and attract dust and dirt from the jobsite which may affect the appearance of the sealant. Check tack-free time to prevent dirt pickup.
- Chem-Calk 955-SL is not RTV silicone and therefore is suitable for painting with latex based paints. Paint chemistries and flexibility characteristics of the paint films over the sealant may affect wetting, adhesion and integrity of the paint layer; and it is therefore mandatory to pretest the paint or other coating over the Chem-Calk 955-SL to ensure the successful compatibility between the sealant and the paint/coating after a sufficient amount of time. See your paint manufacturer for specifications and limitations and call our Technical Service for more information. In general, oil-based paints are not recommended because of their poor elastic properties and because of their potential interaction with the sealant chemistry, which may create non-curing conditions for the sealant. Do not paint over the polyurethane sealant until it has fully cured.

INSTALLATION PROTOCOL

Joint Design:

In general, more joint movement can be accommodated in a thin bead of sealant than a thick bead. Chem-Calk 955-SL polyurethane sealant should be no thicker than 1/2" (12.7mm) and no thinner than 1/4" (6.4mm). In joints between 1/2" and 1", the ratio of sealant width to depth should be approximately 2:1. Sealant width in joints between 1/4" and 1/2" should be 1/4" deep. Joints with dynamic movement should not be designed in widths less than 1/4".

The self-leveling sealant should not be used in joints with more than a two degree slope. Joints formed with Chem-Calk 955-SL can be expected to extend and compress a total of 50% of the installation width with no more than 25% movement in a single direction without affecting the seal or adhesive bond.

Surface Preparation:

See limitations about surface preparation. Surfaces must be structurally clean, dry (no frost) and structurally sound, free of contaminants, including but not limited to dust, dirt, loose particles, tar, asphalt, rust, mill oil, etc. If substrate is painted or coated, scrape away all loose and weakly bonded paint or coating. Any paint or coating that cannot be removed must be tested to verify adhesion of the sealant or to determine the appropriate surface preparation if needed. (See *ASP* section on next page for details.)

To remove laitance and any other loose material, clean concrete, stone or other masonry materials with nonalcoholic-based solvent by washing, grinding, sandblasting or wire brushing as necessary . Do not use water to clean substrates. Dust must be thoroughly removed after cleaning.

Backer Rods and Bond Breaker Tapes:

Bond breakers, including but not limited to closed-cell polyethylene backer rods, are used to control depth of the sealant bead, provide a firm tooling surface and avoid three-sided adhesion. Where the depth of joint prevents use of backer rods, a polyethylene strip or tape must be used as a bond breaker to prevent 3-sided adhesion. Do not prime or damage the surface of the bond breaker. Refer to instructions given by rod and tape manufacturers for the correct backer rod and tape size related to joint size.

Priming:

Priming is always required for any on or below grade application or where standing water is expected to accumulate. Priming is required on all ferrous-based metals and in all applications exposed to intermittent or continuous water immersion. If sealant is to be applied to a material with specially treated surfaces or of particularly unusual surface characteristics, or if the sealant system will be exposed to intermittent ponded water, consult Bostik Technical Service for primer recommendations. **Prior to any use, however, it is always recommended that the sealant be applied on the surface to test adhesion. See Adhesion to Substrate Pretest (ASP) Program.**

It is the user's responsibility to check adhesion of the cured sealant on typical test joints at the project site before and also during application as weather conditions may affect the adhesion results (See *ASP* section on next page.). Refer to Bostik Primer product data sheet or call Technical Service for proper selection and application of Bostik Primers.

Tooling:

Chem-Calk 955-SL comes ready-to-use. Cut spout or tip to desired bead size. Apply moderate pressure to break seal inside the nozzle. Apply by using a professional caulking gun. Use opened cartridges and sausages the same day they are opened. Apply Chem-Calk 955-SL polyurethane sealant in a continuous operation using positive pressure to the bottom of the joint to properly fill and seal the joint. When applying, avoid air entrapment and overlapping. Tool the sealant before the skin forms with adequate pressure to spread the sealant against the backup material at the bottom and sides of the joint. A dry tool with a concave profile is recommended for that operation. Do not use water or soapy water for this operation. Avoid smearing and feathering of the sealant to allow full performance of the cured seam. Excess sealant should be dry-wiped or joints should be properly taped. Tooling of the uncured sealant will aid the wetting of the sealant to the substrate.

Also, check one-half hour or so after the sealant has been applied to be sure that no runout has taken place through voids in the bottom of the joint. Such an occurrence is easily repaired at this time by topping with new material.

Cleaning:

After dry-wiping uncured sealant from substrates and tools, remaining uncured sealant can be removed by using Xylene, Toluene or similar aromatic solvents. Please refer to the MSDS's provided for these solvents before use. Bostik® Hand and Tool towels can also remove uncured sealant. Cured sealant is usually very difficult to remove without altering or damaging the surface to which the sealant has been misapplied. Cured sealant can be removed by abrasion or other mechanical means (scrapers, putty knives).

Curing Time:

Chem-Calk 955-SL is a moisture cure, polyurethane sealant. On wood, with ambient air at 50% relative humidity and at 73°F, polyurethane sealants will generally skin within twenty-four hours and cure 1/16 of an inch per day. Lower temperature and lower relative humidity will significantly increase the skin time and cure time of a polyurethane sealant.

Painting and Coating:

Chem-Calk 955-SL is not RTV silicone and therefore is suitable for painting with latex-based paints. Paint chemistries and flexibility characteristics of the paint films over the sealant may affect wetting, adhesion and integrity of the paint layer, and it is therefore **mandatory** to pretest the paint or other coating over the Chem-Calk 955-SL to ensure the successful compatibility between the sealant and the paint/coating after a sufficient amount of time. See your paint manufacturer for specifications and limitations and call our Technical Service for more information. In general, oil-based paints are not recommended because of their poor elastic properties and because of their potential interaction with the sealant chemistry, which may create non-curing conditions for the sealant. Do not paint over the polyurethane sealant until it has fully cured

Maintenance:

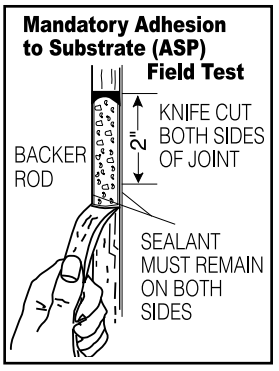
If the sealant becomes damaged, replace the damaged portion by removing the old sealant completely, cleaning the surfaces and reapplying a fresh and appropriate amount of new sealant in accordance with the directions and information contained in this data sheet.

MANDATORY ADHESION TO SUBSTRATES PRETEST— (ASP)

A hand pull test must be run before the job starts and at regular intervals during the job. It must be run on the job site after the sealant is fully cured, usually within 7 to 21 days. (Adhesion may develop fully after at least 14 days.)

The hand pull test procedure is as follows:

1. Make a knife cut horizontally from one side of the joint to the other.
2. Make two vertical cuts approximately two inches long, at the sides of the joint, meeting the horizontal cut at the top of the two-inch cuts.
3. Grasp the two-inch piece of sealant firmly between the fingers and pull down at a 90° angle or more, and try to pull the uncut sealant out of the joint.
4. If adhesion is sufficient, the sealant should tear cohesively in itself.
5. Sealant may be replaced by applying more sealant in the same manner as it was originally applied. Care should be taken to ensure that the new sealant is in contact with the original, and that the original sealant surfaces are clean, so that a proper bond between the new and old sealant will be obtained.



STORAGE • PACKAGING • SHELF LIFE

Shelf life of Chem-Calk® 955-SL must be checked prior to using the product; do not use past its shelf life. Caulk past its shelf life may not perform or adhere as described by this data sheet. High temperature and high relative humidity may reduce significantly the shelf life of polyurethane sealants. If you are unsure of the expiration date of your Bostik product, please call customer service at 1-800-7/BOSTIK (1-800-726-7845) to check if the product is still within its shelf life.

COLORS

Limestone
Light Gray
Black

PACKAGING

12–28 oz. cartridges per case
Note: Contact Customer Service for additional packaging options.

AVAILABILITY

Available from authorized Bostik distributors. Go to www.bostik-us.com and check on our distributor locator for the closest distributor in your location or call customer service at 1-800-7/BOSTIK (1-800-726-7845).

HEALTH AND SAFETY

Please refer to the MSDS for First Aid Information. Most current MSDS's can be found on Bostik's website at www.bostik-us.com or call customer service at 1-800-7/BOSTIK (1-800-726-7845).

TECHNICAL SERVICE

TECH SERVICE phone number: 1-800-7/BOSTIK (1-800-726-7845).

Field visits by Bostik personnel, Bostik manufacturer representatives or Bostik authorized distributor personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

WARRANTY (LIMITED WARRANTY) — IMPORTANT NOTICE

All statements, technical information and recommendations set forth herein are based on tests which Bostik believes to be reliable. However, Bostik does not guarantee their accuracy or completeness. The buyer and/or user should conduct its own tests of this product before use to determine proper preparation technique and suitability for proposed application. Any sales of this product shall be on terms and conditions set forth on Bostik's order acknowledgment. Bostik warrants that the product conforms with Bostik written specifications and is free from defects at the time it leaves Bostik's control. BOSTIK DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED AND/OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE BUYER'S SOLE REMEDY FOR NONCOMPLIANCE WITH THIS WARRANTY SHALL BE FOR THE REPLACEMENT OF THE PRODUCT OR REFUND OF THE BUYER'S PURCHASE PRICE. IN NO CASE WILL BOSTIK BE LIABLE FOR DIRECT, CONSEQUENTIAL ECONOMIC OR OTHER DAMAGES.

CHEM-CALK® COVERAGE CHARTS

COVERAGE FOR 10.1 FL. OZ. CARTRIDGE (298 mL)

Depth \ Width	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
1/8"	99	49	33	24	20	16	14	12
1/4"		24	20	12	10	8	7	6
3/8"			11	8	6	5	5	4
1/2"				6	5	4	3	3

LINEAR FEET PER 10.1 FL. OZ. CARTRIDGE

COVERAGE FOR 28 FL. OZ. CARTRIDGE (857 mL)

Depth \ Width	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
1/8"	288	145	95	71	58	48	40	36
1/4"		71	58	36	29	23	20	17
3/8"			32	23	17	16	13	11
1/2"				17	14	11	10	8

LINEAR FEET PER 28 FL. OZ. CARTRIDGE

COVERAGE FOR 20 FL. OZ. SAUSAGE (600 mL)

Depth \ Width	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
1/8"	288	145	95	71	58	48	40	36
1/4"		71	58	36	29	23	20	17
3/8"			32	23	17	16	13	11
1/2"				17	14	11	10	8

LINEAR FEET PER 20 FL. OZ. SAUSAGE

COVERAGE CHART FOR 1.5 GALLON PAIL (5.67 L)

Depth \ Width	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
1/8"	1848	924	615	462	369	308	264	231
1/4"		412	308	231	185	153	132	116
3/8"			204	153	123	102	87	77
1/2"				116	92	77	66	57

LINEAR FEET PER 1.5 GALLON PAIL

COVERAGE CHART FOR 5 GALLON PAIL (18.9 L)

Depth \ Width	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
1/8"	6150	3100	2050	1540	1230	1025	870	770
1/4"		1540	1240	770	615	510	440	370
3/8"			680	510	410	310	290	245
1/2"				370	305	245	220	185

LINEAR FEET PER 5 GALLON PAIL

PRIMER COVERAGE RECOMMENDATIONS

For one quart of primer, coverage is as follows:

1 unit	5 gallon pail
5 units	1.5 gallon unit
7 gallons	1 gallon unit

NOTE: All values are approximations and can vary due to joint dimension variations, porosity, and texture of substrates. Yield per cartridge is approximate due to variables beyond Bostik's control such as irregular joint configuration and installation technique.

TABLE 3: CHEM-CALK® 955-SL ASTM C-794 ADHESION-IN-PEEL TO COMMON CONSTRUCTION SURFACES*

Surface	Failure Type – %
Concrete***	Cohesive – 100
Brick	Cohesive – 100
Granite	Cohesive – 100
Marble**	Adhesive – 100
Limestone***	Cohesive – 100

* Values given above are not intended to be used in specification preparation.

** With primer, value is >25, Cohesive – 100.

***Peel values are reduced when unprimed samples are water-immersed.