ONE-COMPONENT, ADVANCED URETHANE SEALANT, CONSTRUCTION GRADE

DATE OF LAST REVISION: 02/25/05

MANUFACTURER
Bostik, Inc.
211 Boston Street
Medford, MA 01949-2128   USA
Telephone: (888) 603-8558
In MA: (781) 777-0100
Technical Service: (800) 523-2678
Technical Fax: (215) 957-0716
www.bostik-us.com

APPLICABLE STANDARDS


PRODUCT DESCRIPTION

BASIC USES

- Seals joints between most vinyl siding, fiber cement board (FCB), aluminum, most metals, and other common building materials.
- Interior and exterior bonds—transitional seal between building materials.
- Perimeter seals for windows, doors and other wall penetrations on vinyl, fiber cement board (FCB) and other siding materials.
- Metal building constructions/synthetic materials.

TECHNICAL DATA SHEET

Chem-Calk® 2000
ONE-COMPONENT, ADVANCED URETHANE SEALANT, CONSTRUCTION GRADE

TABLE 1: CHEM-CALK® 2000 SMOOTH TYPICAL UNCURED PROPERTIES*

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<th>Property</th>
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* Values given above are not intended to be used in specification preparation.

FEATURES & BENEFITS

- Solvent-free
- Low odor
- Non water-based
- Non yellowing
- Cold weather friendly
- Multi-environmental use
Construction substrates have become complex and diverse by nature and origin. Substrate chemistry and structure can interfere with adhesion. The Surface Preparation Protocol (ASP) is therefore MANDATORY to assess any adhesion and sealing characteristics of the Chem-Calk sealant. See Installation Protocol 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 sealants that may affect the adhesion bond. Avoid air entrapment.

Damaged or substrates with high moisture 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.

Porous substrates such as not limited to marble, limestone and granite might absorb components of the Chem-Calk 2000 leading to failure of the substrate. AS6 with sufficient aging is mandatory to assess this potential issue.

The ultimate performance of Chem-Calk 2000 depends on proper joint design and proper application with joint surfaces properly prepared (See Installation Protocol). Chem-Calk 2000 is not recommended for joints with dimension less than or greater than what is recommended below. (See Installation Protocol—Joint Design section.)

Chem-Calk 2000 must not be used to seal narrow joints, fillet joints and nail holes. Smearring and feathering Chem-Calk 2000 over joints is not recommended.

Chem-Calk 2000 is not recommended for horizontal joints or traffic-bearing joints where abrasion resistance is required (roadways, driveways, runways, etc.). Please refer to Bostik® Chem-Calk® 503 and Bostik Chem-Calk® 955-SL for this application.

Chem-Calk 2000 is not recommended for continuous immersion in water or any other fluid. When fully cured avoid exposure, even incidental, to fuels, chlorinated, and alkali and alkaline solutions. Chem-Calk 2000 is not recommended for exterior or interior sealing below the waterline; please refer to Bostik® 940 Fast Set for marine applications.

Contact of Chem-Calk 2000 with alcohols (i.e., back coating of windows, adhesives for paper, etc.) and other non-alkaline wetting agents incorporated with oil, asphalt, tar, etc., may deteriorate the cohesive strength of the substrate and ultimately compromise the seal.

During the curing of Chem-Calk 2000, do not expose to alcohol, acids or solvent-based materials.

Lower relative humidity and temperature will significantly extend the curing time. Confinement 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 Chem-Calk 2000 sealant when exposed to UV rays and sunlight will not yellow but over time its gloss may change. Chem-Calk 2000 may remain lustrous for a few hours and attract dust and dirt from the job site which may affect the appearance of the sealant. Check back-free time to prevent dirt pickup.

Chem-Calk 2000 is not recommended for glazing applications. Bond line strength can be affected by UV rays through the clear material, low joints, and moisture barrier substrate may also affect the full cure time and extend it by many days.

Becker Rods and Bond Breaker Tapes:

Backer rods, 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 permits 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.

Primers:

In general, application of Chem-Calk 2000 does not require priming the substrates. However, some substrates may require a Bostik® Primer. It is the user’s responsibility to check adhesion of the cured sealant on typical test substrates to avoid problems. Bostik® Primer at the project site when necessary. Under certain environmental 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 2000 comes ready-to-use. Cut spout or tip to desired bead size. Avoid overapplying, avoid air entrapment and overtopping. 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 foil with a conical profile is recommended for that operation. Do not use water or soap/cream for this operation. Avoid smearing and feathering of the sealant to allow full performance of the cured sealant. Excess sealant should be dry-wiped orjoins should be properly taped.

Cleaning:

After dry-wiping uncured sealant from substrates and tools, remaining uncured sealant is removed by using Xylene, Naphtha or similar aromatic solvents. Please refer to the MSDS provided for these solvents before use. Bostik® Hand Gloves and Specialtly Adhesive Remover 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 2000 is a moisture cure, hybrid sealant. On wood, with ambient air at 50% relative humidity and at 73°F, hybrid sealants will generally skin within one hour and cure 1/16 of an inch per day. Lower temperature and lower relative humidity will significantly increase the skin and cure time of a polyurethane sealant.

Painting and Coating:

Chem-Calk 2000 is not RTV silicone and therefore is suitable for painting with latex-based paints. Paint chemists 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 prevent the paint or other coating over the Chem-Calk 2000 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.

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. Substrate is painted or coated, scope 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 it needed. (See ASP section on next page for details.)

To remove lacquer 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.

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-piece piece of sealant firmly between the fingers and pull straight up to remove the sealant.
4. If adhesion is sufficient, the sealant should come completely away from the joint.
5. Sealant must 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 2000 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 moisture cure sealants. If you are unsure of the expiration date of your Bostik product, please call our customer service at 1-888-610-8556 to check if the product is still within its shelf life.

Colors

White Stone Almond Bronze

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 our customer service at 1-800-603-8556.

Technical Service

Tech Service phone number: 1-800-523-2678.

Field visits by Bostik personnel, Bostik manufacture 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 jobs.

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 their own tests 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 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.

Manufacturing:

Chem-Calk 2000 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 such as Bostik® K410042TG. Use opened during the curing of Chem-Calk 2000, do not expose to alcohol, acids or solvent-based materials.
Construction substrates have become complex and diverse by nature. Adhesion and integrity of the paint layer, and it is therefore mandatory to protect the paint coating or other coating materials over the Chem-Calk 2000 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. General, oil-based paints are not recommended because of their poor elastic properties and because of their poor interaction with the sealant chemistry, which may create non-curing conditions for the paint. Do not paint over Chem-Calk 2000 sealant until it has fully cured.

Joint Design:
In general, more joint movement can be accommodated in a thin bead of Chem-Calk 2000 than a thick bead. Chem-Calk 2000 sealant should be no thinner than 1/2" (12.7mm) and no thicker 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 depth 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".

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 oxide, etc. Substrate is painted or coated, scope 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 to or to determine the appropriate surface preparation it needed. (See ASP section on next page for details.) To remove latency 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 polyelethylene 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 polyelethylene 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:
In general, application of Chem-Calk 2000 does not require priming the substrate. However, some substrates may require the use of a Bostik primer. It is the user’s responsibility to check adhesion of the cured sealant on typical test panels at the site. So, if there is any question about the adhesive requirements or characteristics that 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 2000 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 such as Bostik Chem-Calk® 595® and Bostik Chem-Calk® 595-SSIL for this application.

Cleaning:
After dry-wiping uncured sealant from substrates and tools, remaining uncured sealant can be removed by using MIPA, NMP or similar aromatic solvents. Please refer to the MSDS provided for these solvents before use. Bostik Hand Towels and Special Adhesive Remover 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 2000 is a moisture cure, hybrid sealant. On wood, with ambient air at 50% relative humidity and at 73°F, hybrid sealants will generally skin within one hour and cure 1/16 of an inch in 24 hours or 1/8 inch in 7 days. Lower temperature and lower relative humidity will significantly increase the skin and cure time of a polysulfide sealant.

Painting and Coating:
Chem-Calk 2000 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 adhesion, and integrity of the paint layer. It is therefore mandatory to protect the paint or other coating over the Chem-Calk 2000 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 polysulfide 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 applying 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. Adhesion may develop fully after up to 14 days at 73°F.

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 one vertical cut 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 out of the joint.
4. If adhesion is sufficient, the sealant will come out complete and unaltered.
5. Sealant must 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.

Biaxial Nitrocellulose Kraft Paper
CHESAPEAKESIDES OF JOINT
2-INCH MATERIAL
KNIFE CUTS
BIAxIAL NITROCELLULOSE
KRAFT PAPER
SEALANT MUST REMAIN ON BOTH SIDES
STORAGE • PACKAGING • SHELF LIFE
Shell life of Chem-Calk 2000 must be checked prior to using the product; do not use past its shelf life. Caution 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 moisture cure sealants. If you are unsure of the expiration date of your Bostik product, please call customer service at 1-888-610-8558 to check if the product is still within its shelf life.

COLORS
White       Stone       Almond       Bronze

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 1-800-603-8558.

HEALTH AND SAFETY
Please refer to the MSDS for First Aid Information. Most current MSDS can be found on Bostik’s website at www.bostik-us.com or call customer service at 1-800-603-8558.

TECHNICAL SERVICE
TECH SERVICE phone number: 1-800-523-2678.

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 premises. Bostik does not warrant the final product which may differ from the original product due to different conditions and factors such as temperature, humidity, etc. Before installation, buyer should conduct its own tests of this product before use to determine proper preparation technique and suitability for proposed application. No warranties, whether expressed or implied, including the WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE BUYER’S SOLE AND EXCLUSIVE 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.

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Term of Warranty:
In general, Chem-Calk 2000 has a limited warranty. After the Warranty Period, the product may be returned to the place of purchase for inspection and approval. However, the Warranty Period is not presumptive of shelf life.

Mandatory Adhesion to Substrates (ASP)
Sealant depth 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".
**APPLICABLE STANDARDS**

- ASTM C920, TYPE S, GRADE NS, CLASS 25, USE NT, A AND M
- CARB and SCAQMD Compliant
- Meets VOC Requirements for OTC Regulation
- AAMA Compliant 802.3-05, Type 1, 808.3-05

**PRODUCT DESCRIPTION**


**BASIC USES**

- Seals joints between most vinyl siding, fiber cement board (FCB), aluminum, most metals, and other common building materials.
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- Perimeter seals for windows, doors and other wall penetrations on vinyl, fiber cement board (FCB) and other siding materials.
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**FEATURES & BENEFITS**

- Solvent-free
- Low odor
- Non-water-based
- No washout properties
- Non-yellowing
- Colored Aesthetics
- Cold weather friendly
- Multi-environmental use