



TECHNICAL DATA SHEET

Bostik® Chem-Calk® Heavy Duty Polyurethane Construction Adhesive

ONE-COMPONENT; GUN GRADE CONSTRUCTION ADHESIVE

DATE OF LAST REVISION: 11/16/05

PRODUCT

Bostik® Chem-Calk® Heavy Duty Polyurethane Construction Adhesive is a one-component, gun grade, polyurethane construction adhesive.

MANUFACTURER

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In MA: (978) 777-0100
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APPLICABLE STANDARDS

- AFG-01, HUD UM-60A
- ASTM C-557, ASTM D3498.
- VOC Compliant
- CARB and OTC Compliant (Low VOC)

PRODUCT DESCRIPTION

Bostik® Chem-Calk® Heavy Duty Polyurethane Construction Adhesive is a one-component, moisture cure polyurethane adhesive exhibiting high strength. It is easy to apply and demonstrates superb performance in the cured state, and is suitable for both interior and exterior installations. HDCA typically does not require priming to achieve a watertight seal on common construction materials such as stone, concrete, masonry, cedar, wood, anodized aluminum, galvanized steel, vinyl, fiber-cement board, etc. (See *Installation Protocol* for achieving proper seal.) It is environmentally safer than typical solvent-release materials and exhibits low odor.

Chem-Calk® Heavy Duty Polyurethane Construction Adhesive can bond to wet, frozen or treated lumber. It is ideal for installing sub-floor assemblies (plywood, OSB) to floor joists, from site erected structures and factory constructed housing such as modular and mobile homes. It is also recommended for applying stair treads, slate floors, wood floors, furring strips, patio decks, and suitable for most vertical applications.

When used in conjunction with mechanical fasteners, it may eliminate squeaks and nail pops.

Typically, less Heavy Duty Construction Adhesive is needed than the traditional solvent-based construction adhesives due to the higher solids content and considerably lower shrinkage.

Polyurethane sealants/adhesives in general can withstand a wide range of temperature exposure in the range of -40°F to 150°F (-40°C to 65°C).



TABLE 1: CHEM-CALK HEAVY DUTY CONSTRUCTION ADHESIVE TYPICAL UNCURED PROPERTIES

(Not intended to be used in specification preparation)

Property	Value	Test Method/Note
Skin Time (ambient conditions)	60 min.	Bostik Test Method
Extrusion Rate (70°F, 50 psi)	185 g/min.	ASTM C603, Modified
Sag Test ¹	Pass	ASTM C639, Modified
Frozen Lumber Adhesion	Good	ASTM D3498
Shrinkage	Negligible	Bostik Test Method
Wetting on Lumber:		
Frozen	Good	ASTM D3498
Wet	Good	ASTM D3498
VOC Content	115 g/L	EPA Method 24
Chemical Type	Polyurethane	Premium
Solids	95 ±2%	Mathematical Calculation
Weight/gallon	15 lbs.	ASTM D1475
Flash Point	135°F (57°C)	ASTM D3828

¹1/4" x 1/4" square notched trowel configuration

TABLE 2: CHEM-CALK HEAVY DUTY CONSTRUCTION ADHESIVE TYPICAL CURED PROPERTIES²

(Not intended to be used in specification preparation)

Property	Value	Test Method/Note
Oxidation Resistance	Good	ASTM D3498
Tensile Strength	440 psi	ASTM D412
Lap Shear Strength ³	440 psi	ASTM D3498
Out-gassing from Cure Process	Negligible	Bostik Test Method

²After 14 days cure at 77°F and 50% RH

³100% Cohesive Failure

BASIC USES

- Bonding to wet, frozen or treated lumber
- Sub-floor assemblies (plywood, OSB) and floor joists from site erected structures to factory constructed housing such as modular and mobile homes
- Stair treads, slate floors, wood floors, furring strips, and patio decks
- Suitable for most vertical applications
- When used in conjunction with mechanical fasteners, it may eliminate squeaks and nail pops.

FEATURES AND BENEFITS

- | | |
|---------------------|-------------------------|
| ■ Low Odor | Installer friendly |
| ■ Easy Gunning | User friendly |
| ■ Low Solvent | Minimal shrinkage |
| ■ Moisture Reactive | Multi-environmental use |

APPLICATION LIMITATIONS

- Construction substrates have become complex and diverse by nature and origin. Substrate chemistries and structures can interfere with adhesive performances of the adhesive. **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 ASP, surface preparation, and possible priming.
- Do not apply over damp, contaminated, loose surfaces (See *Installation Protocol* and *Surface Preparation*), old adhesives or other foreign substances that may impair the adhesion bond. Avoid air entrapment.
- Dampness and substrates with high moisture will trigger extensive curing of the adhesive within a very short period of time. This may cause an excess of bubbling and foaming within the adhesive and at the bottom of the bead.
- Porous substrates such as but not limited to marble, limestone and granite might absorb components of the Bostik® Chem-Calk® Heavy Duty Construction Adhesive leading to staining of the substrate. **ASP with sufficient aging is mandatory to assess this potential issue.**
- Smearing and feathering Bostik® Chem-Calk® Heavy Duty Construction Adhesive over joints is not recommended.
- Chem-Calk® Heavy Duty Polyurethane Construction Adhesive is not recommended to be exposed to direct traffic areas; and not recommended to be directly exposed to UV light.
- Bostik® Chem-Calk® Heavy Duty Construction Adhesive 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® Heavy Duty Construction Adhesive is not recommended for exterior or interior sealing /adhesion below the waterline; please refer to Bostik® 940 Fast Set for marine applications.
- Contact of Bostik® Chem-Calk® Heavy Duty Construction Adhesive with asphalts (i.e., back coating of window flashing, etc.) and other filler compounds impregnated with oil, asphalt, tar, etc., may deteriorate the cohesive strength of the substrate and ultimately compromise the seal.
- During the curing of Bostik® Chem-Calk® Heavy Duty Construction Adhesive, do not expose to curing silicone sealants, curing Bostik® Chem-Calk® 2000, 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 adhesive is fully cured, do not expose the adhesive to any mechanical stress.

INSTALLATION PROTOCOL

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 adhesive 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.

Tooling:

Bostik® Chem-Calk® Heavy Duty Construction Adhesive 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 cartridges and sausages the same day they are opened. Apply Bostik® Chem-Calk® Heavy Duty Construction Adhesive 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 adhesive before the skin forms with adequate pressure to spread the adhesive 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 adhesive to allow full performance of the cured seam. Excess adhesive should be dry-wiped.

Cleaning:

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

Curing Time:

Bostik® Chem-Calk® Heavy Duty Construction Adhesive is a moisture cure, polyurethane adhesive. On wood, with ambient air at 50% relative humidity and at 73°F, polyurethane adhesives / 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 time and cure time of a polyurethane adhesive/sealant.

Maintenance:

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

MANDATORY ADHESION TO SUBSTRATES PRETEST— (ASP)

Construction substrates have become complex and diverse by nature and origin. Substrate chemistries and structures can interfere with adhesive performances of the adhesive. **Adhesion to Substrate Pretest (ASP) is therefore MANDATORY to assess any adhesion and sealing characteristics. This must be done pre-installation to avoid potential failures.** Call Technical Service for more information about ASP protocol, surface preparation, and possible priming.

STORAGE • PACKAGING • SHELF LIFE

Shelf life of Bostik® Chem-Calk® Heavy Duty Polyurethane Construction Adhesive must be checked prior to using the product; do not use this product beyond one year of manufacture date. Adhesive 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 the adhesive. If you are unsure of the expiration date of your Bostik product, please call customer service at 1-888-603-8558 to **check if the product is still within its shelf life.**

COLORS

Mustard	12–10.1 oz. cartridges per case
	12–29 oz. cartridges per case

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 1-888-603-8558.

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 1-888-603-8558.

TECHNICAL SERVICE

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

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.**

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

		Width							
		1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
Depth	1/8"	97	49	32	24	19	16	13	12
	1/4"		24	19	12	9	7	6	5
	3/8"			10	7	6	5	5	4
	1/2"				5	5	4	4	3

LINEAR FEET PER 10.1 FL. OZ. CARTRIDGE

NOTE: All values are approximations and can vary due to joint dimension variations, porosity, and texture of substrates.

COVERAGE FOR 30 FL. OZ. CARTRIDGE (885.4 ml)

		Width							
		1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
Depth	1/8"	288	145	95	72	58	47	40	36
	1/4"		72	58	36	29	23	21	18
	3/8"			32	23	17	16	13	11
	1/2"				18	15	12	10	8

LINEAR FEET PER 30 FL. OZ. CARTRIDGE