

CCS™ BONDER PASTE LoTemp

LOW TEMPERATURE, SHORT WORK LIFE, EPOXY PASTE ADHESIVE FOR BONDING

TECHNICAL DATA SHEET FOR PROFESSIONAL CONTRACTOR USE ONLY

DESCRIPTION

CCS™ Bonder Paste, LoTemp is a 1:1 ratio, two-component, low temperature, short working life, structural epoxy paste adhesive designed for application on vertical, horizontal and overhead surfaces and for anchor bolts, dowels and rebar. The excellent physical properties of the product allow its use in applications requiring resistance to creep and stress relaxation, maintenance of mechanical properties at high ambient temperatures and high load bearing strength. Primary applications include general bonding of hardened to hardened concrete, plastic concrete to hardened concrete, masonry and stone to themselves or each other, steel plate bonding (external reinforcement), bonding applications on vertical and overhead surfaces and anchoring bolts, dowels and rebar into vertical, horizontal and overhead oriented holes in concrete, masonry or stone. It is designed for bonding and grouting applications requiring low temperature cure or short set times at elevated temperatures. It also may be used as a surface seal in a pressure injection crack repair process. The product is non-sag to an applied thickness of 1/4+ inch (6.35 mm) and bonds to dry, damp and wet substrates. It meets **ASTM C 881, Type I, II, IV and V, Grade 3, Class B and C** and **AASHTO M235, Type I, II, IV and V, Grade 3, Class B and C** requirements for bonding agents in load bearing applications.

FEATURES

- Convenient 1:1 by vol. mix ratio, low temperature and short work life for at elevated temperatures
- Bonds to dry, damp and wet (no free-standing water) substrates
- Adjustable work life/viscosity using product blends
- Exceptional substrate wetting/water displacement
- Environmentally safe- No VOC solvents

SURFACE PREPARATION

Surface Preparation: Substrate surfaces must be dry or damp, sound and free of all bond-inhibiting substances. Prepare surfaces in accordance with International Concrete Repair Institute, ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair, Concrete Surface Profile, CSP 3 to CSP 4. The concrete surfaces should have a minimum strength of 250 psi in direct tension per ASTM C1583 Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method). Steel surfaces should be cleaned to "white metal" according to SSPC-SP 5/NACE No. 1 White Metal Blast Cleaning is a standard used for white metal blast cleaning put forth by the Society for Protective Coatings (SSPC) and NACE international standard.

MIXING

CCS™ Bonder Paste, LoTemp is a two-component system. The resin to hardener (Part A:Part B) mix ratio is 1:1, by volume. Read all safety data sheets (SDS) information before handling the product. Wear safety glasses and clean neoprene rubber gloves when handling the materials. Premix the individual components before drawing from bulk packaging. Transfer the appropriate quantities of Part A and Part B into a mixing container. Use quantities that can be applied before the pot life of the material expires. Blend thoroughly using a

TECHNICAL DATA^{1,2,3}

PHYSICAL PROPERTIES ²	TEST METHOD	VALUE		
Mix Ratio, A:B		1:1 by volume 100:140 by weight		
Color	Visual	Part A White, Part B Black, Mixed blue-gray		
Temperature		50°F (10°C)	73°F (23°C)	105°F (40.6°C)
Gel Time, 60 gr, minutes	ASTM C881	31	21	5
Temperature		40°F (4°C)		60°F (15°C)
Shear Bond Hardened to Hardened 2 day	ASTM C881 ASTM C882	1,080 psi (7.46 MPa)	1,030 psi (7.10 MPa)	
Shear Bond Hardened to Hardened 14 day	ASTM C881 ASTM C882	1,770 psi (12.20 MPa)	2,100 psi (14.5 MPa)	
Compressive Strength	ASTM D695	13,310 psi (91.77 MPa)	12,650 psi (87.21 MPa)	
Compressive Modulus	ASTM D695	630,000 psi (4,349.90 MPa)	580,000 psi (3,998.96 MPa)	
Shear Bond Plastic to Hardened Concrete	ASTM C881 ASTM C882	1,520 psi (10.48 MPa)		
Non-Sag Thickness	ASTM C881	1/4 + Inch (6.35 mm)		
Flexural Strength	ASTM D790	10,000 psi (68.95 MPa)		
Flexural Modulus	ASTM D790	420,000 psi (2,896 MPa)		
Linear Shrinkage, in/in, 48 hours	ASTM D2566	0.0001		
Water Absorption 14 days	ASTM D570	0.2%		
Heat Deflection Temp	ASTM D648	129°F (53.9°C)		

(1) The properties listed are typical and descriptive of the product and should not be used for specification purposes. For specification preparation, reference the ChemCo Systems, Inc., product guideline specification.

(2) Cure schedule, 7 days at 73° ± 4°F (23°C ± 1°C) and test temperature, 73° ± 4°F (23°C ± 1°C), unless otherwise stated.

(3) Compressive strength of cement mortar, 4500 psi (31.03 MPa).



Jiffy mixer blade attached to a low speed (350 - 750 rpm) electric or pneumatic drill. Proper mixing will take 2 - 3 minutes. For general and steel plate bonding, apply mixed material with a trowel to the surfaces and spread to the specified bond line thickness on both surfaces to be mated.

INSTALLING

Establish contact between the surfaces using positive contact pressure. Maintain contact pressure until the adhesive has set. Remove excess material (squeeze-out) before the material sets. To grout bolts, dowels and rebar into horizontal and overhead holes, place the required amount of material in the hole (approx. 40% of hole volume) using a caulking gun with a nozzle of appropriate length. Retract the nozzle tip as the hole fills. Insert the bar slowly while rotating to expel air. Secure the bar in the center of the hole.

In addition, Bonder Paste LoTemp is designed to be placed with ChemCo Systems' Model C Paste Pump equipment. It is designed to automatically meter, mix and pump the material from 5-gallon pails using air-driven plural component pumps. It eliminates off-ratio mixes and increase placement productivity when placing Bonder Paste LoTemp material as a wide crack injection, surface seal, filling slots, grooves and placing anchor bolts, dowels and rebar. Contact ChemCo Systems for more information.

CLEAN UP

Excess mixed product is best removed from the work area and tools before it hardens. Use of rags and solvents such as acetone or heavy-duty detergents facilitate cleaning. Cured product may be removed from tools by soaking in an epoxy stripper.

CHEMICAL RESISTANCE

Bonder Paste, LoTemp has excellent resistance to a wide range of commonly encountered chemicals including acids and bases, aircraft and automotive fluids, cutting oils, etc. Performance is a function of the specific chemical end concentration, exposure times and housekeeping procedures. For information on specific chemicals and exposure conditions, contact a ChemCo Systems, Inc., technical representative.



Limited Warranty: Please read all information in the General Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. These products are for professional use only and preferably applied by professionals who have prior experience with ChemCo Systems materials or have undergone training in application of ChemCo Systems materials. Published technical data and instructions are subject to change without notice. Contact your local ChemCo Systems representative or visit our website for current technical data, instructions, and project specific recommendations.

ChemCo Systems warrants its products to be free of manufacturing defects and that they will meet ChemCo Systems' current published physical properties. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product which proves to be defective. There are no other warranties by ChemCo Systems of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. ChemCo Systems shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. ChemCo Systems shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. ChemCo Systems reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

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PACKAGING

Standard package sizes of Part A + Part B are 2, 10 and 90 gallon (7.57 lts., 37.85 and 340.69) kits.

SHELF LIFE

Three years minimum in unopened, original containers when stored between 60°F and 90°F (16°C and 32°C) in a dry place away from sunlight. Remixing of components may be required upon prolonged storage.

LIMITATIONS

The recommended minimum substrate temperature during installation and cure is 40°F (4°C). The maximum in-service temperature should not exceed 20°F (10°C) below the HDT in applications subjected to substantial and sustained shear stresses that may cause creep. When bonding plastic concrete containing resinous admixtures, establish the suitability of the concrete mix before actual use. Do not add solvents to this material.

HANDLING AND TOXICITY

This bulletin does not accompany the product when sold. For hazard warnings, safe handling and first aid instructions, CAREFULLY READ THE SAFETY DATA SHEETS AND CONTAINER WARNING LABELS.

Part A: Liquid epoxy resin, HMIS Health Hazard Rating- 2 {Moderate Hazard}. Warning! Causes eye and skin irritation. May cause allergic skin reaction. Harmful if swallowed. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid prolonged or repeated contact with skin.

Part B: Liquid epoxy hardener, HMIS Health Hazard Rating- 3 (Serious Hazard). Contains alkaline amines. Danger! Causes severe eye and skin burns. May cause allergic skin and respiratory reaction. Combustible, corrosive. Do not get in eyes or skin or on clothing. Avoid breathing vapor. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat and open flame.