CCS™ BONDER PASTE LWL

LONG WORKING LIFE EPOXY PASTE ADHESIVE FOR BONDING

TECHNICAL DATA SHEET FOR PROFESSIONAL CONTRACTOR USE ONLY

DESCRIPTION

CCS[™] Bonder Paste LWL (Long Work Life) is a two-component, long working life, structural, epoxy paste adhesive designed for application on vertical surfaces and in horizontal and overhead oriented holes. The 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 the filling of wide cracks, gaps and voids in concrete and masonry, bonding of hardened concrete, masonry and stone to themselves and each other and anchoring bolts, dowels and rebar into horizontal and overhead oriented holes in concrete, masonry or stone. The working/cure time and viscosity of Bonder Paste, LWL can be adjusted by blending with the appropriate companion products (see below). The product is non-sagging in an applied thickness of 1/2 inch, bonds to dry, damp and wet (no free standing water) substrates and meets the **ASTM C 881** requirements for bonding agents in load bearing applications.

FEATURES

- Convenient 2:1, by vol. mix ratio
- Long work life for high temperatures, limited access
- Bonds to dry, damp and wet (no free standing water) substrates
- Adjustable work life/viscosity with related product blends
- Exceptional substrate wetting/water displacement
- Environmentally safe No VOC solvents

SURFACE PREPARATION

Concrete surfaces may be dry, damp or wet (no free standing water) but must be sound and free of all bond-inhibiting substances. Prepare surfaces in accordance with ASTM D 4259 or ACI 503R and ChemCo Systems' specific recommendations. Cleaned concrete surfaces should have a minimum strength of 250 psi in direct tension. Steel surfaces should be cleaned to "white metal" according to SSPC SP 5.

MIXING

CCS[™] Bonder Paste LWL is a two-component system. The resin to hardener (Part A:Part B) mix ratio is 2:1, by volume. Read all safety data sheet (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 Jiffy mixer blade attached to a low speed (350-750 rpm) electric or pneumatic drill. Proper mixing will take 2-3 minutes

INSTALLING

For fairing and leveling applications, apply mixed material on the prepared substrate using a margin or finishing trowel. Fill wide cracks, gaps and voids by pumping or caulking the material into place. When bonding two solid surfaces, apply bonding agent to both surfaces. 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.

TECHNICAL DATA¹

PHYSICAL PROPERTIES ²	TEST METHOD	VALUE			
Mix Ratio, A:B		2:1 by volume 100:35 by weight			
Weight per Gallon	ASTM D1475	Part-A: 12.3 lbs Part-B: 8.4 lbs Mixed: 11.0 lbs			
Viscosity	ASTM D2393	Part-A: Part-B: Mixed	@50°F	@73°F 7700 4800 6700	@105°F
Gel Time, 1 quart, hours	ASTM D2471		4.4	1.4	0.5
Non-Sag Thickness, inches	ASTM D2730	1/2			
Thin Film Properties Open Time, Hours Hard Dry Time, Hours Cure Time, Days	AASHTO T-237 ASTM D1640 AASHTO T-237		5 38 14	4 10 7	0.7 3 3
Compressive Yield Strength	ASTM D695	10,000 psi			
Compressive Modulus	ASTM D695	350,000 psi			
Flexural Strength	ASTM D790	10,000 psi			
Flexural Modulus	ASTM D790	450,000 psi			
Heat Deflection Temp	ASTM D648	120°F			
Bond Strength 2 Day Cure @ 60°F 14 Day Cure @ 60°F	ASTM C882	1000 ⁽³⁾ psi 1500 ⁽³⁾ psi			
Slant Shear Strength, psi: 7 day cure at 73°F	AASHTO T237	>5,000			

(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 product guideline specification.

(2) Cure schedule, 7 days at 73° ± 4°F and test temperature, 73° ± 4°F. (3) Compressive strength of cement mortar, 4500 psi.



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When grouting 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.

BLENDING WITH COMPATIBLE PRODUCTS

The working life/cure time of Bonder Paste, LWL may be decreased, if required, by pre-blending the Part B with the Part B of the short work life product, Bonder Paste, SWL. The viscosity of Bonder Paste, LWL may be decreased by blending the mixed product with mixed companion liquid product, Bonder Liquid, LWL. The long and short work life and liquid and paste forms of the product employ a 2:1 (by vol.) mixing ratio that must be maintained at all times.

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 heavyduty detergents facilitate cleaning. Cured product may be removed from tools by soaking in an epoxy stripper.

CHEMICAL RESISTANCE

Bonder Paste, LWL 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 and concentration, exposure times and housekeeping procedures. For information on specific chemicals and exposure conditions, contact a ChemCo Systems technical representative.

PACKAGING & COLORS

- Standard package sizes of Part A + Part B are 3 and 15 gallons.
- Standard color is tan-gray; black, safety yellow, white and brick red custom colors available.

SHELF LIFE

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

LIMITATIONS

Do not apply on wet substrates. Minimum installation and cure temperature is 50°F. Apply after daily substrate temperature has peaked. Concrete floors on or below grade must have a functioning vapor barrier to minimize the potential for blistering or delaminating of the applied coating. (Slab on grade floors should be investigated prior to coating for excessive moisture vapor transmission (see also ChemCo's MVR Coating)). Broadcast aggregate must be resistant to the chemicals used in the exposure area and must be completely encapsulated by a topcoat. Exposure to 98% sulfuric acid will cause formation of a reddish surface film that can be removed by washing with water. Do not add solvents or otherwise thin 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.

TECHNICAL SUPPORT

Additional information, technical assistance, and management services are also available from a ChemCo Systems Technical Representative at info@chemcosystems.com or 650-261-3790.

The properties listed in this bulletin are typical and descriptive of the product and should not be used for specification purposes. For specification preparation, reference the specification of this product available from ChemCo Systems.



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 amaner 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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