

CCS™ BONDER PASTE LWL

Long Work Life Epoxy Paste Adhesive For Bonding

CCS Bonder Paste, LWL (Long Work Life) is a two-component, long work life, structural, epoxy paste adhesive designed for application on vertical surfaces and in horizontal and overhead oriented holes. The Bonder Paste LWL is designed for applications requiring creep and load bearing stress, 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, steel, stone and FRP 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 ASTM C 881, type IV for bonding agents in load bearing applications.

Features

Convenient 2: 1, by vol. mix ratio

Very 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 - 0 VOCs

Low exotherm

Limitation: The recommended minimum substrate temperature during installation and cure is 50°F. (For installation and cure temperatures down to 40°F or when a faster cure is needed, use CCS Bonder Paste, SWL.) The maximum in-service temperature should not exceed 20 deg. F 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. The viscosity may be decreased only by blending with the appropriate companion product (see, *Blending With Compatible Products*).

Packaging & Colors: Standard package sizes of Part A & Part B are 3 and 15 gallons. Standard color is Concrete gray

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, Inc., technical representative.

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: 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 (SDS) information before handling the product. Wear safety glasses, rubber gloves and proper PPE 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.

Blending with Compatible Products: The work 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.

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. 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 bulk 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

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

TYPICAL PROPERTIES (1)

Property (2)	Test Method	Value		
Mix Ratio, A:B,	by vol by wt	2:1 100:35		
Weight per Gallon, lb:	Part A Part B Mixed	ASTM D 1475	12.3 8.4 11.0	
Viscosity, p:	Part A Part B Mixed	ASTM D 2393	@ 50°F	@ 73°F @ 105°F
			7700	
			4800	
			6700	
Gel Time, 1 quart, hours		ASTM D 2471	4.4	1.4 0.5
Non-Sag Thickness, inches		ASTM D 2730	½	
Thin Film Properties:				
Open Time, hours		AASHTO T-237	5	4 0.7
Hard Dry Time, hours		ASTM D 1640	38	10 3
Cure Time, days		AASHTO T-237	14	7 3
Compressive Yield Strength, psi		ASTM D 695	10,000	
Compressive Modulus, psi		ASTM D 695	350,000	
Flexural Strength, psi		ASTM D 790	10,000	
Flexural Modulus, psi		ASTM D 790	450,000	
Heat Deflection Temp., °F		ASTM D 648	120	
Bond Strength, psi:	2 day cure @ 60° F 14 day cure @ 60° F	ASTM C 882	1000 (3) 1500 (3)	

(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 and test temperature, 73° ± 4 F unless otherwise indicated.

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

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

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

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

DISCLAIMER: NO EXPRESS WARRANTY IS MADE WITH RESPECT TO THE RESULTS OF ANY USE OF THIS PRODUCT. NO IMPLIED WARRANTIES, INCLUDING AND NOT LIMITED TO AN IMPLIED WARRANTY OF MERCHANTABILITY OR AN IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE MADE WITH RESPECT TO THIS PRODUCT. NO LIABILITIES FOR PERSONAL INJURY, LOSS OR DAMAGE RESULTING FROM THE USE OF THIS PRODUCT IS ASSUMED. CHEMCO SYSTEMS, INC., RESERVES THE RIGHT TO ALTER OR DISCONTINUE THE PRODUCT DESCRIBED HEREIN AT ANY TIME AND WITHOUT PRIOR NOTICE.

CCS™ is a trade name of ChemCo Systems, Inc.