

## CCS™ Binder, Patch - Nosing - Slurry

### Low Modulus Toughened Binder for Epoxy Mortars and Concretes

CCS Binder, Patch, Nosing, Slurry is a two-component, low viscosity, low modulus, toughened epoxy binder formulated specifically for exterior applications. Blended with suitable aggregate, CCS Binder, Patch, Nosing, Slurry concretes, mortars and aggregate broadcast systems may be used for rebuilding damaged joint nosing, repairing spalls and protecting concrete and steel surfaces including those subject to mechanical shock. The product is also used to bond flexible elastomeric materials to rigid substrates such as concrete or steel. The cured product has excellent resistance to abrasion and impact from cars, trucks, forklifts and steel wheeled carts. Its short cure cycle, tolerance of surface dampness, resistance to most automotive and aircraft fluids make it ideally suited for a variety of repairs. Evaluation of trial mixes particularly under low temperature, damp conditions prior to installation is recommended. **Meets ASTM C881, Type III, Grade 1.**

#### Features

- Convenient 2:1, by vol. mix ratio
- Fast cure for short downtime
- Low viscosity for high aggregate loading
- Does not embrittle; stays tough and flexible
- Withstands thermal and mechanical shock
- Resists auto, aircraft and road chemicals
- Environmentally safe - No VOC solvents

**Limitations** Minimum installation temperature is 40 °F. Maximum thickness of approx. 1-½" per lift. Do not add solvents or otherwise thin this material.

**Packaging & Colors:** Standard package sizes of Part A + Part B are 3 and 15 gallons. Standard color is clear, custom colors available:

**Chemical Resistance:** Resistant to a wide range of commonly used deicing chemicals and aircraft and automotive fluids. It has limited resistance to hydrocarbon solvents. Performance is a function of the specific chemical and concentration, ambient and solution temperatures, 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 (dry substrates preferred) and 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.

#### Aggregate Selection:

**Mortars and concretes:** The preferred aggregate for most applications is high silica sand (> 85% SiO<sub>2</sub>), washed, kiln-dried, graded and bagged. The sand particles should be round to sub angular in shape. A good gradation for low void content is a 2:1 or 3:1 blend of #12 or 16 mesh and #70 or 80 mesh. If using a single sand fraction a #20 to 30 mesh is recommended. For layer thickness of approx. 1 ½ inches, a dense graded aggregate typical of ASTM C 33 (Gradation #8, 3/8 in. max.) may be used.

#### Aggregate Selection (continued):

**Slurry coat and multiple layer broadcast systems:** The recommended aggregate size is #6 x 12, 8 x 16, 12 x 20 or 20 x 40 mesh depending on the installed thickness. Vehicular surfaces: For maintenance of long-term skid resistance, consider use of polish-resistant aggregate such as aluminum oxide, silicon carbide, blast furnace slag, trap rock, etc. For all applications, the maximum particle size of the aggregate selected should not exceed 1/3 of the installed thickness.

**Mixing:** CCS Binder, Patch, Nosing, Slurry is a two-component system. The resin to hardener (Part A : Part B) mix ratio is 2:1, by volume. Read material safety data (MSDS) information before handling the product. Wear safety glasses and rubber gloves when handling the materials. Premix the individual components before drawing from bulk packaging. Transfer appropriate quantities of Part A & Part B into a mixing container. Use quantities that can be applied before the potlife of the mixed 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. Pour the mixed binder into a mortar or plaster mixer, add aggregate (coarse first, fine last) and mix an additional 1 - 2 minutes.

#### Installing:

**Mortars and concretes:** Prime the substrate with mixed binder components at a thickness is 8-10 mils (100 - 125 sq ft/gal). Apply the epoxy mortar or concrete to the primed substrate while the primer is still tacky. The mortar or concrete may be rodded, tamped, screeded or troweled into place. Clean application tools frequently.

**Slurry coats:** Blend 1 part by volume of premixed binder and 2 - 2 1/2 parts by volume of aggregate in a mortar mixer for 2 - 3 minutes. Apply the slurry in a thickness of 3/8 inch and strike-off with a screed bar. Broadcast additional aggregate (10 - 14 lb/sq yd) into the surfacing until all wet spots are gone. Allow to cure 6 - 8 hours, remove excess aggregate by sweeping.

**Multiple layer coats:** Apply mixed binder at a rate of approx. 45 sq ft/gal by roller, squeegee or spray. Uniformly broadcast aggregate (8 - 10 lb/sq yd) until no wet spots are visible. Allow curing for 2 - 5 hours. Remove excess aggregate by sweeping. Apply the second coat at approx. 30 sq ft/gal. Broadcast aggregate at 12 - 14 lb/sq yd. Remove excess after 2 - 5 hour cure. Repeat process, if necessary to build-up to the specified thickness. Allow extra cure time for the top layer (4 - 6 hours). Remove all excess aggregate by sweeping.

TYPICAL PROPERTIES <sup>(1)</sup>

Property <sup>(2)</sup>	Test Method	Value
Mix Ratio, A:B,	by vol	2:1
	by wt	100: 43
Color:	Part A	VISUAL
	Part B	Clear amber
	Mixed	Clear amber
Weight per Gallon, lb:	Part A	ASTM D 1475
	Part B	9.2
	Mixed	7.8
		8.7
Viscosity, cp:	Part A	ASTM D 2393
	Part B	310
	Mixed	265
		285
Gel Time, 1 quart, minutes	ASTM D 2471	30
Tensile Strength, psi	ASTM D 638	2200
Tensile Modulus, psi	ASTM D 638	16,000
Elongation at Break, %	ASTM D 638	60
Bond Strength to	ASTM D 4541	
ASTM C109:	dry	500 (3)
Cement Mortar, psi	damp	430 (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.
- (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, CAREFULLY READ THE MATERIAL 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.

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