

# CCS™ Grout, Low Temperature Seal

## Non-Sag Epoxy Paste Adhesive For Crack Sealing Or Bonding

CCS Grout, Low Temperature Seal is a two - component, non-sag, epoxy paste adhesive designed for surface sealing of non-moving horizontal, vertical and overhead cracks and delaminations in concrete, masonry, stone and sealed wood in preparation for repair by pressure injection grouting. The low temperature reactivity of the product makes it ideally suited for crack sealing on cool and cold substrates where thin film high strength and hardness are required and when an extended low temperature cure time is not a constraint. The buttery, non-sag consistency facilitates the measuring and mixing of small quantities and enhances applicator production rates. CCS Grout, Low Temperature Seal also may be used as a bonding adhesive for most rigid construction materials and is specifically designed for bonding applications in cool and cold environments. The product has a characteristic amine odor and may be considered for interior applications with adequate ventilation. Cured material exhibits generally poor color stability with moderate discoloring and chalking when exposed to direct sunlight. CCS Grout, Low Temperature Seal bonds to dry, damp and wet substrates and can be applied up to 3/8 inch thick without sag or flow.

### Features

- Convenient 2:1 , by vol. mix ratio
- Short work life for fast cure and low temperature use
- Thin film high strength and hardness
- Buttery consistency; non-sagging at applied thickness of 3/8 inch
- Bonds to dry, damp and wet substrates
- Contrasting A and B component colors
- Environmentally safe- No VOC solvents

**Limitations:** The recommended minimum substrate temperature during installation and for cure is 40 deg F. The maximum in-service temperature should not exceed 20 deg F below the HDT in bonding applications subjected to substantial and sustained shear stresses that may cause creep. Do not add solvents or otherwise thin this material.

**Packaging & Colors:** Standard package sizes of Part A & Part B are 2 and 10 gallons. Color is Concrete gray (blue-gray).

**Chemical Resistance:** CCS Low Temperature Seal has excellent resistance to a wide range of commonly encountered deicing chemicals, salts and aircraft and automotive fluids. It has limited resistance to hydrocarbon solvents. 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 or damp (not wet) 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 Low Temperature Seal is a two-component system. The resin to hardener (Part A : Part B) mix ratio is 1:1, by volume. Read all material safety data (MSDS) 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. This product is a short working life/fast-curing material; use quantities that can be applied before the working life of the material expires. For crack sealing applications, transfer the appropriate quantities of Part A and Part B onto a palette and manually mix with a margin trowel until streak-free and uniform in color. For bonding applications, transfer the appropriate quantities of Part A and Part B into a mixing container. Blend thoroughly using a Jiffy mixer blade attached to a low speed (350-750 rpm) electric or pneumatic drill.

**Installing:** For crack sealing applications, trowel a thin layer of material over the crack with a margin trowel, taking care to force material into the crack. Allow for adequate cure of the epoxy seal before beginning pressure injection of epoxy adhesive. For bonding applications, apply material on both surfaces to be bonded in thicknesses sufficient to fill all gaps between the two surfaces. Mate the surfaces and apply pressure until excess adhesive is extruded from the joint. Ideally, the material thickness at the bond line should be 1/32-1/8 inch. Surfaces must be mated while the adhesive is tacky. Allow for adequate cure of the epoxy adhesive before the bonded section is returned to service.

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

**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.

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

Property <sup>(2)</sup>		Test Method	Value
Mix Ratio, A:B,	by vol by wt		2: 1 100: 46
Color:	Part A Part B Mixed	VISUAL	White Black Concrete blue-gray
Weight per Gallon, lb:	Part A Part B Mixed	ASTM D 1475	12.5 11.1 12.0
Viscosity, p:	Part A Part B Mixed	ASTM D 2393	6200 8200 7000
Non-Sag Thickness, inches		ASTM D 2730	3/8
Gel Time, 100 g, minutes	@40 F @73 F	ASTM D 2471	90 18
Compressive Yield Strength, psi		ASTM D 695	12,200
Compressive Modulus, psi		ASTM D 695	525,000
Time To Bond Strength Greater Than ASTM C 109 Mortar, hours	@40F @73F	ASTM D 4541	18 4
Heat Deflection Temp., deg F		ASTM D 648	128
Slant Shear Strength, psi (Adhesive applied to wet cement mortar)		AASHTO T-237	Cement mortar failure (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) Cure schedule, 24 hours @ 73 F. Compressive strength of cement mortar, 4500 psi.

**Handling and Toxicity:** This bulletin does not accompany the product when sold. For hazard warnings, safe handling and first aid instructions, READ CAREFULLY 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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