

# CCS™ GROUT, CAPSULE AND PRESSURE POT

## Epoxy Adhesive For Pressure Injection Grouting

CCS Grout, Capsule and Pressure Pot is a two - component, long pot life, low viscosity, epoxy adhesive designed for application with pre-mixed capsules or multi-port pressure pot injection systems. It may also be used as a penetrant for gravity feed repair of cracks in horizontal concrete slabs. This product has a long working life and a low exothermic reaction (minimal heat generation during cure) that make it suitable for use with capsule and multi-port pressure pot systems. It is ideally suited for applications where a relatively large mass of adhesive is employed. The low viscosity and long pot life allow for deep penetration into fine cracks and in concrete structures where voids or honeycombs may be located. Primary uses include filling of narrow cracks and filling of wide cracks (>¼"), gaps, voids and inadequate consolidations (honeycombs) in concrete; filling of wide delaminations in concrete; and, filling of cracks and wide delaminations in wood structures (beams). Wherever possible, large voids should be pre-packed with clean, dry aggregate prior to pressure injection grouting.

### Features

Low viscosity for deep penetration into fine cracks

Long working life for filling of large voids and tributary cracks

Low exotherm for minimal heat build-up in thick cross-sections

Suitable for application with capsule and pressure pot systems

Does not embrittle; stays tough and resilient

Environmentally safe - No VOC solvents

**Limitations:** Concrete substrates must be dry. The recommended minimum substrate temperature during installation and for cure is 50 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 & Color:** Standard package sizes of Part A & Part B are 2.8 and 14 gallons. Color is clear amber

**Chemical Resistance:** CCS Grout, Capsule and Pressure Pot has excellent resistance to a wide range of commonly encountered chemicals including acids and bases, aircraft and automotive fluids, petroleum fuels, cutting oils, etc. 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 substrates must be dry, sound and free of all bond-inhibiting substances. Prepare cracks by blowing clean with oil-free compressed air or by flushing clean with an appropriate cleansing solution as required to remove foreign substances and contaminants. Prepare exposed surfaces for bonding in accordance with *ASTM D 4259* or *ACI 503R, Chapter 5* and ChemCo Systems, Inc.'s specific recommendations. Properly prepared 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 Grout, Capsule and Pressure Pot is a two-component system designed for use with pre-mix capsules and multi-port pressure pot injection systems. The resin to hardener (Part A:Part B) mix ratio is 1.8:1, by volume. For premixed application systems, transfer appropriate quantities of Part A and Part B into a mixing container. Use quantities that can be applied before the pot life 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. Automatic meter, mix and dispense application equipment should be routinely checked several times a day to determine that the equipment is motoring the components accurately and delivering thoroughly mixed material. 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.

**Installing:** Install material in accordance with established industry procedures and guidelines. For specific information on repair by pressure injection grouting, see *ACI 503R, Chapter 7*. Use only trained workmen with experience in pressure injection repair. For topical applications (gravity feed crack filling), pour mixed material onto the substrate and distribute with a squeegee to a coverage rate of 100 - 125 sq ft/gal. Reapply the material as needed until the cracks are full. Remove excess material with a squeegee. Maintaining the slip and skid resistance of pedestrian and vehicular traffic surfaces usually requires broadcasting fine aggregate onto the fresh surface. Allow for adequate cure of the epoxy adhesive before the structure is returned to service.

**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 maybe removed from tools by soaking in an epoxy stripper.

**Shelf Life:** 3 years minimum in unopened, original containers when stored between 60 and 90 deg. in a dry place away from sunlight. Remixing of components may be required upon prolonged storage.

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

<b>Property</b> <sup>(2)</sup>		<b>Test Method</b>	<b>Value</b>
Mix Ratio, A:B,	by vol		1.8:1
	by wt		100:47
Color:	Part A	VISUAL	Clear amber
	Part B		Clear amber
	Mixed		Clear amber
Weight per Gallon, lb:	Part A	ASTM D 1475	9.3
	Part B		7.8
	Mixed		8.8
Viscosity, cp:	Part A	ASTM D 2393	220
	Part B		70
	Mixed		140
Gel Time, 1 quart, hours		ASTM D 2471	2
Tensile Strength, psi		ASTM D 638	7200
Elongation at Break, %		ASTM D 638	2.5
Hardness, Shore D		ASTM D 2240	84
Heat Deflection Temperature, deg. F		ASTM D 648	118
Slant Shear Strength, psi: dry		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) 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 - 2 (Moderate Hazard). Toxic if absorbed by skin or ingested. 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.

**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.**

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