

CCS™ COATING, POLYUREA MEMBRANE

Elastomeric Polyurea Membrane For Waterproof Surfacing

CCS Coating, Polyurea Membrane is a two - component, short work life/fast curing, elastomeric, polyurea membrane. It cures to a tough, chemical and abrasion resistant material suitable for waterproofing, corrosion protection and containment of many aqueous chemical solutions. Polyurea Membrane may be applied on most construction substrates including concrete, asphalt, steel and wood in both interior and exterior applications. It is self-priming on most dry and damp substrates. It may be used in conjunction with an appropriate primer when maximum bond strength to the substrate is required. In applications requiring enhanced skid/slip and wear resistance, Polyurea Membrane may be seeded with aggregate or top coated with a suitable epoxy/aggregate - wearing course. The cured material has excellent resistance to vehicular impact and abrasion, most automotive and aircraft fluids and pavement deicing chemicals. Each type of installation may have specific application and performance requirements. Evaluation of trial mixes particularly under low temperature, damp conditions prior to installation is recommended.

Features

- Convenient 1:1, by vol. mix ratio
- Fast cure for short downtime—2 hours!
- Self-priming on dry and damp substrates
- Suitable for manual or spray application
- Does not embrittle; stays tough and elastic
- Resists road, auto and aircraft chemicals
- Environmentally safe-No VOC

Limitations: Prime coat dry and damp substrates when maximum bond strength to the substrate is required. Do not apply primer and/or binder system on wet substrates. Concrete substrates on or below grade must have a functioning vapor barrier to minimize the potential for blistering/delaminating of the membrane. Before applying, determine that on-grade slabs are not subject to hydrostatic pressure that can cause blistering/delaminating of the membrane. The minimum recommended installation temperature in manual applications is 40 deg. F. The minimum cure temperature is 35 deg F. Environmental exposure (e.g., direct sunlight) will result in chalking, loss of gloss and color fade. Do not add solvents or otherwise thin this material.

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

Shelf Life: One-year minimum in unopened, original containers when stored between 60 and 90 deg F in a dry place away from sunlight. Partially used containers of Part A must be flushed with nitrogen and resealed immediately after use to preserve shelf stability.

Chemical Resistance: CCS Polyurea Membrane is 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 or damp but not wet 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.

Mixing: CCS Polyurea Membrane 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. Transfer the appropriate quantity of Part A into a mixing container. Begin mixing using a Jiffy mixer blade attached to a low speed (350 - 750 rpm) electric or pneumatic drill. Add the appropriate quantity of Part B taking care, to slowly pour the Part B into the vortex of the mixing Part A. The addition of Part B should take 30 - 45 seconds. Mix an additional 1-minute. Warning! The working time of the mixed product is 5 to 10 minutes due to increasing viscosity prior to gel

Installing: CCS Polyurea Membrane is self-priming on most dry and damp substrates. Maximum bond strength to the substrate requires prime coating the substrate with a suitable primer (consult ChemCo Systems, Inc. for primer recommendations). For manual application, pour mixed material onto the prepared/primed substrate and Spread to the desired coverage with a V-notched trowel or squeegee. For spray application, two-component, meter, and mix and dispense equipment is recommended. The membrane may be recoated as soon as the previous coat is tack-free (approx. 30 minutes @ 73 deg. F). Aggregate, if used, must be broadcast into the membrane immediately after application. An epoxy/aggregate wearing course may be applied as soon as the membrane is tack-free. Typical applied thickness is 30 mils for pedestrian surfaces and 60 mils for vehicular surfaces. Membrane thickness may be reduced by approx. 50% when employing an epoxy/aggregate-wearing course.

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 ⁽¹⁾

Property ⁽²⁾	Test Method	Value
Mix Ratio, A : B,	by vol by wt	1 : 1 100: 87
Color:	Part A Part B Mixed	VISUAL Concrete blue-gray Clear amber Concrete blue-gray
Weight per Gallon, lb:	Part A Part B Mixed	ASTM D 1475 9.2 8.2 8.7
Viscosity, cp:	Part A Part B Mixed	ASTM D 2393 2700 225 1450
Gel Time, 60 g, minutes	@ 73 deg. F @ 40 deg. F	ASTM C 881 12 15
Thin Film Cure Time, hours:	touch dry hard dry	ASTM D 1640 0.5 2.0
Tensile Strength, psi Elongation at Break, % Modulus @ 100% Elongation, psi	ASTM D 412	1200 375 500
Tear Resistance, lbf/in Water Absorption, 7 days, %	ASTM D 624 ASTM D 570	225 0.53
Shore Hardness,	A durometer D durometer	ASTM D 2240 90 40
Bond Strength To ASTM C 109 Cement Mortar (3), psi:	Unprimed Primed	ASTM D 4541 Dry 350 500 Damp 225 325
Taber Abraser (4), mg. Loss	ASTM D 4060	14

(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.

(4) CS-17 wheels, 1000 g load, 1000 cycles.

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 polyurethane 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 amine hardener, HMIS Health Hazard Rating- 2 (Moderate Hazard). Contains alkaline amines. Warning! Causes eye and skin irritation. 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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