

# SILPRO

Epoxy Bonding Agent  
Moisture Mitigation

## CIE 100 EPOXY™ (VAPOR HALT™ 125)

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**CIE 100 EPOXY™** is a solvent-free, moisture insensitive, 100% solids, low modulus, two-component bonding agent and moisture mitigation system designed for use as a primer with self-leveling toppings and other applications where a superior bond is required. **CIE 100 EPOXY™** reduces the passage of water vapor and moisture through concrete slabs on or below grade. **CIE 100 EPOXY™** can be used over in-plane cracks less than ¼ in. wide, saw-cut control joints and construction joints. **CIE 100 EPOXY™** is also excellent for use as a binder for concrete skid-resistant overlays on bridges and elevated slabs.

### USE CIE 100 EPOXY™ FOR:

- Bonding to Green Concrete
- Reducing vapor emission from 25lbs to 3lbs or less
- Reducing vapor emission from 100% RH per ASTM F-2170
- Bonding agent for self-leveling toppings
- Primer system over in-plane cracks less than ¼ in. wide, saw-cut control joints and construction joints
- Bonding skid-resistant overlays to bridges and elevated slabs
- Patching concrete as epoxy mortar when mixed with sand

### TECHNICAL DATA

Laboratory Tests	Results	Specifications
Mix Ratio	1:1	None
D-695 Compressive Modulus	80,000-120,000 psi	130,000 psi max.
D-638 Tensile Strength	2,700-3,200 psi	None
D-638 Tensile Elongation	40%-50%	30% min
C-882 Bond Strength (14 day cure)	2,800-3,200 psi	1,5000 psi min.
D-570 Absorption	0.1%-0.5%	1.0% max
C-881 Gel Time	15-30 minutes	30 minutes max.
C-881 Brookfield Visc. RV3 @ 20rpm	1100-4000 cps	100,000 cps max.
D-2240 Shore D Hardness	68-74	None
C-883 Shrinkage	Pass	Pass
C-884 Thermal Compatibility	Pass	None
AASHTO T-227 Chloride Ion Permeability	0 coulombs	None
Caltrans Test 419 Flexural Creep		3 Day: 0.0070" 7 Day: 0.0100"
ASTM D-790 Flexural Yield	3,400-5,800	
C-579 Compressive Strength 3 hours w/aggregate	3500 psi	n/a
C-579 Compressive Strength 24 hours w/aggregate	7000 psi	n/a
ACI 503R Adhesive Strength	24 hrs >500 psi (concrete failure)	n/a
ASTM E96/E96M-16	0.00	20 mil

### PRE-INSTALLATION SUBSTRATE TESTING FOR MOISTURE MITIGATION

If the history of the slab and its potential contaminants is unknown, it is recommended to test the substrate to determine the suitability of **CIE 100 EPOXY™**.

1. Extract (dry) multiple cores of the concrete substrate that are 2-4 inches in diameter and 2-4 inches in length.

**Note:** The number of cores that need to be extracted is based on the size of the area. In general, all jobs require a minimum of 2 core samples. Jobs over 10,000 sq. ft., require a minimum of 4 core samples, and jobs over 50,000 sq. ft. require a minimum of 6 core samples. The number of cores required is dependent on a multitude of variables including size, past use of space, known contaminants, etc. To determine the proper number of core samples required for a particular job contact Silpro.

2. Send core samples to an independent lab for analysis. Silpro recommends Mineralogy, Inc. for this testing:

*Mineralogy, Inc.*

*www.mineralogy-inc.com*

*Phone: 877-744-8284*

3. Have the lab test for the following:

*Inorganic content:* with Ion Chromatography, sample depth 0-3mm and 3-6mm below top of concrete surface for Sodium (Na), Potassium (K), Sulfate (SO<sub>4</sub>) and Chloride (Cl) concentrations in ppm. Further test depths 6-9 mm and 9-12 mm may be necessary, depending on the results for the 3-6mm depth.

*Organic content:* with Infrared Spectroscopy Analysis. Results in ppm and %ASR (*Alkali Silica Reaction*)

**Note:** All testing costs are the responsibility of the Installer.

4. Depending on the initial test results for contaminants received (contact Silpro for additional information,) further testing may be required such as: *Microscopic Analysis of the split core, X-Ray Diffraction Mineralogical and/or Energy Dispersive X-Ray Analysis.* Silpro will then decide whether the installation of **CIE 100 EPOXY™** is appropriate and whether it can be warranted

### SURFACE PREPARATION

Surface must be solid, completely clean, and free of oil, wax, grease, sealers, curing compounds, asphalt, paint, dirt, loose surface material and any contaminant that will act as a bond breaker. Weak concrete surfaces must be cleaned down to solid sound concrete by mechanical means. Acid etching or chemical cleaning is not acceptable. Expansion joints and all moving joints in the substrate must be honored through the applied underlayment.

**Moisture Mitigation:** New concrete must be a minimum of 5 days old. **Note:** Shrinkage cracks may still occur and will void the warranty of **CIE 100 EPOXY™**. Prepare the surface to sound concrete by shot blasting, scarifying, or other means to achieve a profiled porous surface with an ICRI CSP profile of 3 or greater. Pre-dampen the concrete surface for optimal results and coverage. Use a non-shed roller to apply the **CIE 100 EPOXY™** evenly over the substrate.

For Customer Service, Call Silpro At 1-800-343-1501

## SURFACE PREPARATION CONTINUED

Ensure proper coverage by measuring the area for each kit.

**Crack Repair:** Mechanically prepare the surface to a CSP of 3-5. Remove any loose materials. Mask with painter's tape approximately 1 1/2 in. on each side of the in-plane crack, control joint or cold joint. The epoxy mix ratio is 1:1. The activated pot-life is 12 to 15 minutes at 70°F (21°C). Pre-fill deep cracks or joints along the surface area prior to application.

**Bonding Agent:** Repair delaminations, potholes and cracks. Clean surface by shotblasting to remove all contaminants. Remove dust and debris by blowing off with oil-free compressed air. See Limitations for required minimum product and application temperatures. Mechanically mix component A with component B at 1:1 by volume with Jiffy-type mixer and low-speed variable drill 300 rpm for a minimum of 3 minutes. Mix only the quantity that can be used within its gel time.

**Sand Broadcast:** Broadcast to refusal with #20 to #30 silica sand while the epoxy is fresh, but within 15 minutes of applying epoxy. Allow CIE 100 EPOXY™ to cure for 12 hours before installing a repair mortar or underlayment. Coverage will be approximately 1 lb. per square foot. Do NOT open to traffic. After a minimum of 12 hours, remove excess sand. Approximately one half of the sand can be cleaned up and reused. Proceed with the applicable underlayment or topping material.

## APPROXIMATE COVERAGE

**Crack repair:** At 1/16 in. to 1/8 in. thickness, coverage for 1 gallon is 30 to 50 square feet. The average crack or cold joint will take a 3 in. wide ribbon of epoxy. One gallon of epoxy will yield approximately 120 square feet of crack or joint repair.

**Bonding Agent:** Bonding agent coverage is approximately 180-240 square feet per kit.

**Moisture Mitigation:** Moisture mitigation coverage must be no less than 155 sq ft per gallon. Actual coverage will vary depending on the surface profile and range between 90 to 155 sq feet per gallon.

## CLEAN UP

Uncured material can be removed using citrus cleaner or other approved solvent. Cured material can only be removed mechanically.

## SHELF LIFE

2 years when stored in unopened container.

## STORAGE

Always keep in cool/dry place unexposed to sunlight. Prevent product from freezing.

## PACKAGING

2 gallon / 3.79 liters (both components in 1-gallon cans)

## LIMITATIONS

- Do not thin with solvents.
- Minimum age of concrete must be 5 days prior to applying CIE 100 EPOXY™.
- Minimum substrate and ambient temperature should be 55° and above.
- Minimum epoxy temperature should be 65° before application.

## CAUTION!

SILPRO offers products that may contain cement, latex, epoxy, and other chemicals. Please review the Safety Data Sheet before the use of this product.

## GUARANTEE

10 year and custom warranties available upon request. Standard warranty available for all applications. Contact SILPRO, LLC for details.

