SIL-ACT® Product Data

EP-5000

100% Solids, Low-Modulus, Epoxy Urethane Co-polymer

ADVANCED CHEMICAL TECHNOLOGIES, Inc.

"Protecting the World's Infrastructure"

ABOUT

SIL-ACT® EP-5000 is a fast setting, solvent free, 100% solids, moisture-insensitive, low-modulous epoxy urethane co-polymer overlay resin. It is designed primarily for bonding skid-resistant overlays to bridges, elevated slabs and PCCP, including High Friction Surface Treatments.

BENEFITS

- Epoxy urethane technology
- Excellent bond strength
- Moisture- insensitive
- Nonflammable
- Easy to mix - 1:1 ratio, color coded
- Retains high tensile elongation at low temperatures
- No primer required
- Designed for automated pump
- Non-regulated, hazmat certification or placards not required for transport

COMPLIANCES

- ASTM C881 (Type III. Grade 1. Class B & C.)
- Transportation within the United States is non-regulated by the DOT
- AASHTO
- VOC compliant, 0 g/L
- ASTM E96/E96M

Before starting, please refer to this product data sheet and the Material Safety Data Sheet for **SIL-ACT® EP-5000.** Copies may be obtained from ACT upon request.

Application - Bonding Skid-Resistant Overlays

1. Clean surface by shotblasting to remove all contaminants, ICRI Level 5 minimum. Remove dust and debris by blowing off with oil-free compressed air.
2. Mechanically mix component A with component B 1:1 by volume with Jiffy type mixer and low-speed variable drill at 300 rpm for a minimum of 3 minutes. Mix only the quantity that can be used within its gel time. BULK: For bulk mixing, a positive displacement pump, incorporating a static mixing wand and meter, is recommended.
3. Apply neat Sil-Act® EP-5000 by 3/16" to 1/4" notched squeegee course 1 at a coverage rate of 10 mils @ 150 sq. ft. per gallon and course 2 at 20 mils @ 80 sq. ft. per gallon.
4. Broadcast select aggregate to refusal. The aggregate should be angular grain or fractured Flint, Basalt or Bauxite having less than 0.2% moisture and free of dirt, clay, etc. The aggregate should have a minimum MOHS scale hardness of 7 unless otherwise approved.
5. After initial cure of first course, remove extra aggregate. Do not open to traffic.
6. Apply second course of epoxy and aggregate at the specified rate. Remove excess aggregate. Allow to cure followimg the table herein. Open to traffic.

Minimum Curing Times

Average Temperature of Materials & Substrate (°F)

Cure Temp	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Course 1	4 hrs	3.5 hrs	3 hrs	2.5 hrs	2 hrs	1.5 hrs	1 hr	1 hr
Course 2	6 hrs	5.5 hrs	5 hrs	45 hrs	3 hrs	2 hrs	1.5 hrs	1 hr

*Set times are merely averages. Site conditions will dictate actual crre response for sweeping and 1st and 2nd layers, as well as open to traffic.

Coverage

Minimum Coverage Rates (3/8" overlay)

	Epoxy	Aggregate
Course 1	1 gallon/40 sq. ft.	10 lbs./sq. yd.
Course 2	1 gallon/20 sq. ft.	14 lbs./sq. yd.

TECHNICAL DATA

PROPERTY	TEST	SIL-ACT® EP-5000
Mixing Ratio		1:1 by volume
Epoxide Equivalent Weight	ASTM D-1652	174 avg
Viscosity, cP (spindle #3 @ 20RPM) @73ºF	ASTM C-881	2565 cP (51.3% torque)
Gel Time, minutes (60 grams @ 73ºF)	ASTM C-881	~19 minutes
Exothermic Temperature, ºF (60 grams @ 73ºF)	ASTM D-2471	~278ºF
Flexural Strength, psi (7 days cure @ 73ºF; composite)	ASTM C-580	4205 psi avg
Hardness (type D, 7 days cure @ 73ºF; after 10 seconds)	ASTM D-2240	70
Adhesion to Concrete, psi (2nd layer @ 24 hours cure @ 73ºF)	ACI 503	564 psi (100% concrete failure)
Abrasion Resistance, mg (20 mils; 7 days cure @ 73ºF; 1000 grams / CS-17 / 1000 cycles)	ASTM D-4060	79.1 mg lost avg
Tensile Strength, psi (Type I; 7 days cure @ 73ºF; 0.25"/min)	ASTM D-638	2722 psi avg
Elongation at Break, % (Type I; 7 days cure @ 73ºF; 0.25"/min)	ASTM D-638	45.0% avg
Compressive Yield Strength, psi (7 days cure @ 73ºF; 0.25"/min)	ASTM D-695	5608 psi avg
Compressive Modulus, psi (7 days cure @ 73ºF; 0.25"/min)	ASTM D-695	117333 psi avg
Water Absorption, % (7 days cure @ 73ºF, 24 hours immersed)	ASTM C-570	0.23% avg
Thermal Compatibility (7 days cure @ 73ºF; 5 cycles)	ASTM C-884	PASS
Slant Bond Strength, psi (14 days moist cure @ 73ºF/95% humidity)	ASTM C-882	1987 psi avg
Chloride Ion Permeability (3 coats; 48 hours cure between coats)	ASTM C-1202	Negligible (22 Coulomb avg)
Permeability	ASTM E96/96M	0.000 @ 20 mils wet thickness

Appearance of Components: A - Blue, B - Yellow
Shelf Life: 2 years in original unopened container
Storage: 50ºF to 95ºF in dry dark conditions
Temperature Considerations: IMPORTANT! Epoxy resins are temperature sensitive and care should be taken to condition all components between 65ºF to 95ºF for a minimum of 24 hours prior to mixing and placement. Temperatures colder than stated range increase viscosity of resins and inhibit mixing and flow of materials. Temperatures warmer than stated range decrease viscosity of resins, hasten the cure and reduce the working time. Mixing and curing at less than ideal temperatures, <60ºF or >95ºF, will require special considerations.

Limitations

- For Professionals Only
- Do not thin with solvents
- Minimum age of concrete must be 28 days before applying as an overlay
- Consult with an Advanced Chemical Technologies, Inc. representative when used on exterior slabs on grade subject to freezing
- SIL-ACT® EP-5000 is a vapor barrier after curing
- Substrate temperatures must be 50ºF and rising prior to installation; 50ºF must be maintained minimum of 8 hours post installation or meet curing guidelines stated above for proper cure
- Consult with an Advanced Chemical Technologies, Inc. representative when mixing or placing outside of the temperature recommendations listed.

Cleanup

EQUIPMENT: Uncured material can be removed with an approved solvent. Cured material can only be removed mechanically.

MATERIAL: Collect with absorbent material. Flush area with water. Dispose of in accordance with local, state and federal disposal regulations.

Packaging

2 gallon kit (1 gallon Part A & 1 gallon Part B)
10 gallon kit (1-5 gallons Part A & 1-5 gallons Part B)
104 gallon kit (1-52 gallons Part A & 1-52 gallons Part B)
520 gallon kit (1-260 gallon Part A & 1-260 gallon Part B)

First Aid

EYE CONTACT: Flush immediately with water for at least 15 minutes. Contact physician immediately.
RESPIRATORY CONTACT: Remove person to fresh air.
SKIN CONTACT: Remove any contaminated clothing. Remove epoxy immediately with a dry cloth or paper towel. Solvents should not be used as they carry the irritant to the skin. Wash skin thoroughly with soap and water.
IF INGESTED: Do not induce vomiting. If swallowed give water to drink. Seek medical treatment immediately.
GENERAL: Remove contaminated soaked clothing immediately. In the event of persistent symptoms, receive medical treatment.
CURED EPOXY RESINS ARE INNOCUOUS.

Caution

- Part A: Irritant
- Part B: Irritant
- Product is a strong sensitizer. Use of safety goggles and chemical resistant gloves are recommended.
- Use of a NIOSH/MSHA organic vapor respirator is recommended if ventilation is inadequate.
- Avoid skin contact.