

PRODUCT DESCRIPTION

High performance and Low Cost, this 40 mil, thick, crack-bridging containment lining bridges moving concrete cracks and joints 50 mils in width, with memory to return as cracks open and close. *Elasti-Liner[®] III* is the latest product in the most advanced family of containment linings available anywhere. *Elasti-Liner[®]* has earned KCC back to back Vaaler Awards, and is widely known as “**The Ultimate Containment Linings**”[®] with these unique advantages;

- **100% Solids, Zero VOC**
- **Unprecedented crack-bridging ability**
- **Seamless monolithic, applied directly over moving cracks and joints.**
- **Unequaled Chemical Resistance to a wide array of acids, caustics & some solvents**
- **Unaffected by UV Light & Weathering**
- **Excellent abrasion resistance**
- **Applied over new and old concrete and over cracked containment coatings**
- **Resistant to thermal shock in hot spills**
- **Unaffected by freeze – thaw cycles**
- **Elongation linear throughout temperature range of -40°F to 200°F (-40°C to 93.3°C)**
- **Slip Resistant finish available**
- **Excellent permeation resistance**

TYPICAL PROPERTIES

Solids Content	100%
Volatile Organic Content	Zero VOC
Mix Ratio	1 Parts Resin to 1 Part Hardener
Viscosity @ 75°F	3,000 – 3,500 cps
Weight / Gallon	8.6 ± 0.2 lbs./gal. (mixed)
Thinner	DO NOT THIN
System Thickness (minimum DFT)	40 mils above primer
Coverage (theoretical)	40 sq.ft. / gal @ 40 wet / dry mils
(practical)	38 sq.ft./ gal @ 40 wet/ dry mils
Available Color	Black
<i>(Applied in two 20 mil coats. Vertical surface with warm temp may require 3 coats)</i>	

Data Shown reflects typical values obtained in routine testing in accordance with stated standards in controlled laboratory conditions at stated temperatures.

PRODUCT MARKETS & USES

A high performance containment lining for new or old concrete, also applied over cracked existing containment linings. *Elasti-Liner[®] III* is also used with geo textile fabrics directly to earth, as well as a full time immersion lining in pits, trenches or tanks.

- Every Type of Industrial Plant
- Chemical Processing
- Electronics & Semi-Conductor
- Industrial & Municipal WWT
- Food Processing
- Mining & Metals
- Pharmaceutical Facilities
- Pulp & Paper Plants
- Refining & Petrochemical Processing
- Hazardous Waste Facilities

ADDITIONAL GROUP PRODUCTS

Elasti-Liner[®] I - 50% Acetic, 40% Nitric & 75% Sulfuric Acid resistance, coupled with the ability to bridge moving cracks 80 mils wide. Easy to install, *Elasti-Liner[®] I* is a great crack-bridging containment lining that is unequaled by any product in the industry.

Elasti-Liner[®] II The highest performance in chemical resistance, 98% Sulfuric, 70% Nitric, 49% HF, Glacial Acetic and 50% Chromic with ability to bridge cracks in excess of 100 mils. This is “The Ultimate Containment Lining”.

Elasti-Liner[®] Joint & Cove. Extruded, autoclave cure, Joint and Cove overlay tape, secured by patented *Elasti-Liner[®]* Joint and Cove Adhesive,

PHYSICAL PROPERTIES (cured at 7 days) 75°F

Tensile Strength at break (ASTM D-412)	620 lbs. force/ in ²
Tensile Strength at 50% Elongation (ASTM D-412)	350 lbs. force/ in ²
Elongation at break (ASTM D-412)	115% average
Bond Strength to Concrete (ASTM D-4541)	> tensile strength of concrete
Shore "A" Hardness (ASTM D-2240)	70 to 80
Tear Strength (ASTM D-624)	80 lbs. force/ in ²
Impact Strength	undamaged @ highest force possible
Abrasion Resistance (ASTM D-4060 – Taber Test)	25 mg loss/ CS 17, 1000 cycles, 1000 grams

Chemical Resistance - *Elasti-Liner® III* is suitable for immersion conditions in lining sumps, trenches and concrete tanks up to 200°F in aqueous & dry powder environments, depending on chemical exposure and concentration %. Recommended to 240°F in aqueous and splash and spill conditions, except for with solvents which are restricted to a maximum of 100°F.

Elasti-Liner® III is recommended for 72 hour spill containment of numerous industrial chemicals; some examples are listed herein. Contact KCC to confirm suitability for your specific application environment.

ACIDS	ALKALINES (Caustic)	SOLVENTS, CHEMICALS
1-80% Acetic	All Plating Solutions	All Alcohols
1-100% Adipic	All Pulp Liquors	Animal & Mineral Oils
1-10% Chromic	1-10% Ammonium Fluoride	Fuels
1-37% Hydrochloric	1-29% Ammonium Hydroxide	Lubrication Oils
1-20% Nitric	1-5% Calcium Hydroxide	Methanol
1-85% Phosphoric	1-50% Sodium Hydroxide	Sour Crude Oils
1-40% Sulfuric Acid	1-15% Sodium Hypochlorite	

Note: Adding water to a spilled or dripping acid causes an immediate exothermic reaction, which can quickly degrade any polymer lining in a run up of high temperature. Always be sure to flood spilled acid areas with extreme quantities of water in wash down to minimize any chance of a damaging exothermic reaction occurring. Follow all of your company safety regulations, wearing protective clothing, goggles, boots, gloves and breathing cartridge respirator.

RESISTANCE TO WEATHERING:

All *Elasti-Liner®* products are specially formulated to resist color fade and chalking when used outdoors in UV light. However, over time the color may lose some of its luster. This will not adversely affect the overall performance of the lining system in chemical containment applications. Unlike many other polymers, *Elasti-Liner® III* will retain excellent chemical resistance and crack-bridging properties with age.

STORAGE AND SHELF LIFE:

Elasti-Liner® III components must be stored in their original sealed containers in a cool, dry area out of direct sunlight in temperatures ranging from 60°F (10.0°C) to 80°F (26.6°C).

TYPICAL SHELF LIFE

Temperature	Life in Months
@ 50°F (10°C)	12
@ 75°F (23.9°C)	8
@ <90°F (32.2°C)	6

INSTALLATION PROCEDURES – GENERAL

*Be certain to read, and understand all application procedures in this bulletin, with special attention to Mixing, Application and Safety information for *Elasti-Liner® III*, before you proceed with any phase of the product mixing or installation. You must be able to measure dew point, surface temperatures and be able to time your mixing operations. Do Not Proceed without these capabilities.*

INSTALLATION PROCEDURES – GENERAL

Surface Preparation – Of Steel:

All steel surfaces to be coated required to be coated require a “Near White Metal” abrasive blast to SSPC-SP-10 or NACE 2 with an abrasive blast media that cleans and removes 95% of all visible mill scale and rust. Use of special primers for steel may be required. To be certain of the correct procedures, consult with KCC for specific recommendations on application of *Elasti-Liner®III* to steel substrates.

Surface Preparation – Of Concrete:

All oil, grease, chemicals and / or weak surface laitance must be removed by either mechanical or chemical methods. Mechanical methods such as abrasive blasting, blastracking or scarifying are all acceptable methods.

Chemical methods such as acid etching and detergent application should only be used when other methods cannot be used . Chemical methods wet the concrete, when the preference is to have the concrete dry. Further, novices in such methods will invariably leave chemical salts on the surface preventing proper adhesion. To perform cleaning of concrete by chemical methods, the applicator must be competent and experienced in such procedures.

Concrete must have a sufficient tensile strength (250 psi minimum) and be clean and dry. All pits, surface imperfections, sharp corners, undercut areas from forms, honeycombing and bug holes exposed as the result of concrete cleaning must be repaired by “scratch coating”.

Existing polymer coating materials on the concrete surface may only require high pressure washing or light abrasive blasting, but must be well bonded to the concrete surface and must be tested for confirmation of bond. Further, adhesion tests are essential to determine that the primer for *Elasti-Liner®III* achieves proper bond to the existing polymer coating. For specific surface repair materials recommendations, contact KCC Corrosion Control.

MIXING AND APPLICATION:

PRIOR TO MIXING OF ANY COMPONENTS, MEASURE THE TEMPERATURE OF THE SURFACE TO BE COATED USING INFRARED OR DIAL SURFACE THERMOMETERS. DO NOT ATTEMPT TO MIX MATERIALS FOR APPLICATION IF SURFACE TEMPERATURE IS BELOW 50°F (10°C) , ABOVE 90°F (32.2°C), OR WITHIN 5° OF THE DEW POINT, IT IS IN THIS RANGE THAT WATER IS FORMING ON THE SURFACE TO BE COATED, AN UNACCEPTABLE CONDITION OF INSTALLATION. DO NOT USE AIR TEMPERATURE AS A DETERMINATION OF SURFACE TEMPERATURE.

When coating concrete surfaces, blowholes caused by air being expelled by concrete, as it warms up, may occur through the primer or the coating itself. Stop all work ! The concrete is expelling air as the concrete heats up. This is a condition to avoid.

Concrete generally expels air during the day as it warms up and concrete intakes air during early evening and night as it cools down. The best time to apply any primer or coating is when concrete is cooling down, and intaking air, as confirmed by the temperature drop of the concrete surface by careful surface temperature measurement. This will reduce the possibility of air being expelled, creating primer or concrete blow holes.

Other precautions such as shading the work area from sunlight, well in advance of any possible heating up of the surface, to minimize heating of the surface of concrete or steel, by sunlight and to minimize the heating of the substrate and cyclic temperature change will also reduce expulsion of air. The use of KCC’s TECHNI-PLUS primers and Epoxy Scratch Coat mix will minimize and may eliminate air expulsion from concrete if primer and coating are applied during the time when concrete is cooling. Always consult KCC Corrosion Control for any questions you may have in any aspect of the product or the proper application. Call KCC at 800-395-5624, ask for technical services support.

Elasti-Liner®III – PACKAGING

	1 Gal Unit	5 Gal Unit	30 Gal Unit
Resin Part A:	4.6 lbs.	23.0 lbs.	138.0 lbs.
Hardener Part B	4.0 lbs.	20.0 lbs.	120.0 lbs.

All KCC products are in unitized packaging. That is to say that all the components of a product are in individual, pre-measured components that are to be mixed on the jobsite, without the need for any measuring of one material into the next. The order of addition is always, B is added to and thoroughly mixed into A and C is thoroughly mixed into A & B.

Elasti-Liner®III – POT LIFE & RECOAT TIME

Temp. Time °F (°C)	Pot Life in Min.	Minimum Time To Recoat	Maximum To Recoat
70 (21)	70	4 hrs.	72 hrs
80 (26.6)	50	3 hrs.	72 hrs.
90 (32.2)	30	2 hrs.	48 hrs.

Recoat time is affected by film thickness. Times stated are for 20 wet mils. Thinner films will require faster recoating.

Elasti-Liner® III – MIXING INSTRUCTIONS

All KCC materials require proper and thorough mixing in a prescribed order to achieve the desired results. **The order of addition is always, B is added to and thoroughly mixed into A and C is thoroughly mixed into A & B.**

Please carefully follow this mixing method:

We strongly recommend that mixing be performed in the original unitized cans provided by KCC. If you are mixing from a 30 gallon (113.5 L) drum or for any reason not using the unitized cans, be very certain that the cans you are using are clean and dry, with no foreign matter of any kind present.

1. Using a mechanical (Jiffy type) mixer blade, thoroughly stir Elasti-Liner® III Resin, (Part A) for two minutes prior to adding any other component. Proper mixing means keeping the blade(s) under the liquid surface and minimizing air in the mix.

2. After stirring Part A for two minutes, continue to mix by slowly adding Part B, pouring Part B slowly into the mixing vortex created by the mixer, but stay away from the mixer shaft.

Frequently stop the mixer, and scrape material off the sides of the bucket using a clean, flat bladed tool. Then continue on mixing for the full two (2) minutes required. Do not count scraping time as mixing time.

IT IS CRITICAL THAT THE ENTIRE QUANTITIES OF BOTH COMPONENTS - PART A AND PART B ARE USED AND MIXED INTO THE FULL UNIT.

Proper ratio of components is very important to ultimate cure and film properties. Leaving out any amount of any component assures failure. Therefore make sure that you do not leave out any material and **never thin the mix or the finished product unless authorized by a KCC factory technical representative.**

Elasti-Liner® III – APPLICATION INSTRUCTIONS

1. **Surface Temperature:** In order to achieve expected product results, Elasti-Liner® III must be applied when substrate temperatures are cooling and concrete is no longer expelling air (a condition usually present in early evening), or on a completely sealed and shaded surface (a primed and scratch coated surface). **Elasti-Liner® III must not be applied at**

surface temperatures below 40°F (4.4°C) or above 100°F (37.7°C).

2. **Application Methods:** It is recommended that short nap paint rollers be used on vertical surfaces, and that flat bladed squeegees and spiked rollers be used on horizontal surfaces. Airless spray application is also recommended. Brush application is generally only recommended for touch up of small areas, inaccessible to spray equipment or rollers.

3. **Application Thickness:** Elasti-Liner® III system thickness is 100% solids and requires a 40 mils DFT (dry film thickness) not including E 3 series primer. 40 mils WFT (wet film thickness) will result in 40 DFT.

On horizontal surfaces a single coat may be applied at 40 mils WFT in one application. On verticals it is applied in two coats, each 20 mils WFT.

Elasti-Liner® III commonly used in Sumps or Trenches is applied at 60 mils DFT. one single coat may be applied on horizontal surfaces at 60 mils WFT. Verticals will require 3 coats each at 20 mils WFT.

In rolling horizontal surfaces, consistent film thickness is achieved by using steel spiked rollers, which can also be used as a good idea behind an airless spray application. Brushes are only recommended for small touch up areas not accessible by spray or roller.

4. **Application to Previously Coated Surfaces:** Prior to application of any coating to a previously substrate surface, compatibility testing **must** be performed by application of test patches and the subsequent adhesion and / or peel testing. Such test are to determine sufficiency of the bond to the existing coating or lining by the new KCC materials, as well as to test adequacy of bond to the existing coating or lining to the concrete. If testing confirms compatibility with the Elasti-Liner® III system (including E 3 primer), then the system may be applied over the existing coating or lining, provided that the surfaces of the existing material are well cleaned and roughened to the finish equivalent of coarse grit sandpaper.

5. **Application to Bare Concrete:** Application of the Elasti-Liner® III system to new or old, concrete is best achieved if the concrete surface is dense and free of voids. Removal of concrete surface laitance and other contaminants must be achieved by abrasive blasting to fully clean the concrete and then concrete must be cleaned of dust and blast debris and residue. If old concrete is contaminated with oils or other chemicals, then chemical cleaning will have to be employed to assure proper bond to the concrete. For more complete information on concrete surface preparation, see (KCC Specification SC-01).

6. Application to Primed or Scratch Coated Surfaces: An E 3 series primer is always first applied after the concrete has been thoroughly tested and cleaned. If repairs are required using Epoxy Scratch Coat mix, the concrete is always first primed with an E 3 series primer, and then repaired with a KCC recommended material such as Epoxy Scratch Coat mix. After cure of Epoxy Scratch Coat mix is achieved, you do not have to re-prime the repaired surface, area. Simply start applying the basecoat (first coat) of *Elasti-Liner® III*, which is then followed by subsequent topcoats as required.

7. Slip Resistant (SR3) Additive for Final Topcoat Surface: For areas where personnel walk on the surface of *Elasti-Liner® III*, it is recommended to apply a topcoat that incorporates SR3 additive to obtain the degree of profile and slip resistance the owner or end user requires. Prior to application of a slip resistant topcoat, properly mix *Elasti-Liner® III* topcoat resin (Part A) with (Part B), and then mix into the A&B mix, SR3 additive at the rate of 1 to 1 ½ lbs per 5 gallons of topcoat A&B mix. 1 ½ lbs. of SR3 additive measures 2 quarts of dry volume, 1 lb. of SR3 additive measures 1.3 quarts by dry volume.

The topcoat containing SR3 additive is then applied by short nap paint roller (use a roller with a phenolic core), and apply the topcoat mix to 30 to 35 wet mils. When spraying with SR3 additive, thinning and use of a larger tip may be required. Contact KCC for more information. **NEVER USE SAND OR OTHER ABRASIVE MINERALS AS A BROADCAST GRIT IN *Elasti-Liner® III*.**

***Elasti-Liner® III* - APPLICATION EQUIPMENT:**

Elasti-Liner® III has recoat limitations. It is required that successive topcoats be applied within 24 to 48 hours. **However, *Elasti-Liner® III* may be recoated as soon as the surface of the material is cured well enough to resist damage by walking on the surface.**

REPAIR PROCEDURES: Any area to be repaired must be first cleaned of all chemical residue. Wipe area with ketone solvent or degreaser. Abrade the target surface with 20 mesh sandpaper. Be sure to abrade an area of approximately 1" larger in all directions than the entire area to be repaired. Dust of the area to be repaired and solvent wipe. Allow solvent to dry for at least 10 minutes. Over the entire previously prepared area to be repaired, apply a topcoat of *Elasti-Liner® III* at the rate of 15 to 20 dry mils and then after cure, continue with successive coats to achieve total thickness.

CURE TIME: Cure time is dependent on both air and substrate temperatures. The ambient air temperature

will not likely be the same as the temperature of the substrate due to shade versus direct sunlight. Further, steel is more easily heated by sunlight than concrete, by ambient air temperatures. In winter, steel or concrete may be colder than ambient air. And the *Elasti-Liner® III* system must **not** be applied if the **SURFACE TEMPERATURE IS BELOW 40°F (4.4°C), OR ABOVE 100°F (37.7°C), OR WITHIN 5° OF THE DEW POINT.**

Time to Complete Cure for Chemical Exposure

Substrate Temperature °F (°C)	Hours of Cure time Required
>40 (4.4)	96
50 (10)	72
70 (21.1)	48
80 (26.6)	36

INSPECTION OF FILM INTEGRITY: During installation of the coating, care must be taken to provide for application of the correct, uniform, specified material thickness. This is only accomplished by careful and regular checking of the wet film thickness at pre-specified intervals, (generally in a certain grid pattern of sq.ft. area.). After allowing adequate cure time based on the actual substrate temperature, the surface should be inspected for sags, runs and any foreign matter. Any area found to need repairs must be checked must be repaired in accordance with the procedures in this bulletin. Repaired areas must also be subjected to checking WFT and visually inspected for any defects or discontinuities in the coating surface.

CLEAN UP PROCEDURES: Rollers, brushes and tools should be cleaned immediately after use. KCC recommends clean up of uncured material with 622 Clean Up solvent. *Elasti-Liner®* is very resistant to solvents when fully cured. Contact KCC for specific recommendations. **NEVER USE ACETONE FOR CLEAN-UP!**

SAFETY:

Elasti-Liner® III Resin is a unique resin system. *Elasti-Liner® III* (KCC ORANGE LABEL) contains multiple cross linking agents and other components and **MUST NOT BE STORED WITH OTHER KCC RED LABEL (AMINES) OR KCC YELLOW LABEL (PEROXIDES)**. All components must be stored in a cool dry place out of direct sunlight.

Elasti-Liner® III Topcoat Part A and Hardener Part B are flammable. All *Elasti-Liner® III* sealed components must be stored in a cool, dry place out of direct sunlight.

IT IS VERY IMPORTANT THAT MATERIAL MIXING AND APPLICATION BE PERFORMED AWAY FROM ANY SPARKS, OPEN FLAME OR ANY SOURCE OF IGNITION. SMOKING IS NOT ALLOWED WITHIN 50 FEET OF WORKSITE. USE ONLY CLASS I GROUP D EXPLOSION PROOF ELECTRIC MIXING EQUIPMENT. AIR DRIVEN NON-SPARKING MIXERS ARE PREFERRED.

When working with any polymers, hardeners and dry aggregate fillers always wear appropriate safety glasses, breathing protection, clothing and gloves. Any contaminated clothing should be washed prior to being reworn.

The ventilation should be sufficient to provide as many air changes per minute as required to meet OSHA guidelines with special consideration for enclosed areas or trenches and sumps. When using these materials any sources of ignition should be eliminated within a 50 ft. range. NIOSH organic vapor cartridge respirators must be worn at all times during mixing and application.

The vapors given off during application and cure should not be allowed to build up, use proper ventilation for safety and regulatory compliance.

Material Safety Data Sheets Are Important ! Your MSD Sheets have been supplied with your shipment. If you do not have proper MSD Sheets for each KCC product you are installing, call KCC at once - 800-395-5624 and KCC will fax or e-mail required MSD Sheets immediately. KCC Corrosion Control recommends that the supervisors and personnel applying the materials thoroughly read, understand, discuss and adhere to these instructions prior to and during the mixing and application of any material.

If a resin, accelerator or hardener are splashed into the eyes, immediately flush the eyes and the area around the eyes with clean water for 15 minutes and Immediately CONTACT A PHYSICIAN. BE SURE TO TAKE MSD Sheets to the HOSPITAL OR TO THE PHYSICIAN. IF INGESTED DO NOT INDUCE VOMITING AND CONTACT A PHYSICIAN IMMEDIATELY !

IN ANY EMERGENCY SITUATION CONTACT CHEMTREC AT 800/424-9300.

Nothing in this bulletin is intended to replace safety rules and regulations adopted by your employer and / or the company who owns the site in which you are working if you are a contractor. Those rules and regulations, along with Local, State and Federal rules and regulations apply. KCC is making suggestions on installing materials properly in a Safety First manner.

Dispose of all empty containers; bags, cans, bottles and excess material in accordance with all customer site rules and regulations as well as all applicable Federal, State and Local Codes.

WARRANTY

For product warranty consult and read KCC Corrosion Control Co., Ltd. **STANDARD TERMS AND CONDITIONS (U. S. Rev. 04/2004 KCC-Sale)**, which constitute the total Warranty provided by KCC Corrosion Control Co., Ltd.

The information contained in this bulletin is believed to be accurate and reliable but does not represent each and every necessary step for proper installation. Material is to be sold only to Professional Coating / Lining Installers who have requisite knowledge and experience with such systems. If you lack such knowledge and experience, DO NOT INSTALL THIS PRODUCT, immediately contact KCC toll free - 800-395-5624.

The information contained herein is believed to be accurate and reliable but is not to be construed as implying any warranty or guarantee of performance. The suggestions or recommendations and data contained herein are based on laboratory tests and field data that are believed to be accurate and reliable. The suggestions or recommendations of data contained in this bulletin are made without guarantee or representations as to results. We suggest that the user evaluate these suggestions or recommendations in your facility or laboratory or in field testing prior to use. For specific Corrosion Control Co., Ltd. product Limited Warranty and Limitations of Liability see KCC Corrosion Control Co., Ltd. Terms and Conditions of Sale - U.S. Rev. 04/2004 KCC - Sale. No statement contained herein shall infer or be construed as granting the right or permission to use, in any manner what so ever, any patent owned by any KCC company or any KCC affiliate company.

KCC Corrosion Control

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