

# CSS-ESLPL

Long Pot-Life Epoxy Primer &amp; Saturant



## DESCRIPTION

CSS-ESLPL is a two-component, long pot-life, high-strength, high-modulus epoxy resin system used to prime substrates and saturate the Simpson Strong-Tie Composite Strengthening Systems (CSS) fabrics. When extended with fumed silica, thickened CSS-ESLPL is used as a high-performance substrate repair material and CSS finish coating.

## CODES

ICC-ES ESR-3403



## MATERIAL PROPERTIES

### Part A and B Properties

Viscosity at 72°F (22°C)	<b>Part A:</b> 10,400 cps <b>Part B:</b> 10 cps <b>Mixed:</b> 500 cps
Color	<b>Part A:</b> Clear <b>Part B:</b> Amber <b>Mixed:</b> Clear to Pale Amber
Density	<b>Part A:</b> 9.76 lb./US gal. (1.17 kg/L) <b>Part B:</b> 7.90 lb./US gal. (0.95 kg/L) <b>Mixed:</b> 9.12 lb./US gal. (1.09 kg/L)

### Cured Epoxy Properties

Property	ASTM	Cure Schedule	Test Value
Tensile Strength	D638	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	4,800 psi (33 MPa) 9,250 psi (64 MPa) 8,900 psi (61 MPa)
Tensile Modulus	D638	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	256,000 psi (1,760 MPa) 241,000 psi (1,660 MPa) 246,000 psi (1,700 MPa)
Elongation at Break	D638	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	0.96% 2.93% 2.36%
Flexural Strength	D790	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	8,050 psi (56 MPa) 13,500 psi (93 MPa) 13,400 psi (92 MPa)
Flexural Modulus	D790	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	483,000 psi (3,330 MPa) 360,000 psi (2,480 MPa) 456,000 psi (3,140 MPa)
Compressive Strength	D695	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	11,200 psi (77 MPa) 12,600 psi (87 MPa) 12,600 psi (87 MPa)
Compressive Modulus	D695	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	345,000 psi (2,380 MPa) 378,000 psi (2,610 MPa) 430,000 psi (2,960 MPa)
T <sub>g</sub>	E1640	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	117°F (47°C) 169°F (76°C) 142°F (61°C)
Density	D792	7 days at 72°F (22°C) +3 days at 140°F (60°C) 7 days at 95°F (35°C)	9.57 lb./US gal. (1.15 kg/L) 9.57 lb./US gal. (1.15 kg/L) 9.57 lb./US gal. (1.15 kg/L)



## PERFORMANCE FEATURES

- Long pot-life
- Extended working time at high temperatures
- High elongation
- Ambient cure
- Minimal odor
- High versatility
- VOC 6 g/L (mixed)

## APPLICATIONS

### Seismic Retrofit

- Shear strengthening
- Displacement/ductility
- Life safety

### Load Rating Upgrade

- Increased live loads
- New equipment
- Change of use

### Damage Repair

- Deterioration/corrosion
- Blast/vehicle impact

### Defect Remediation

- Size/layout errors
- Low concrete strengths

### Blast Mitigation

- Hardening
- Progressive collapse

## STRUCTURES

- Buildings
- Bridges
- Parking garages
- Chimneys
- Piers/wharfs
- Tunnels
- Pipes

## ELEMENTS

- Columns
- Beams
- Slabs
- Walls
- Piles
- Pier caps

## SUBSTRATES

- Concrete
- Masonry
- Timber
- Steel

## PACKAGING

### Kit Size

2.96 US gallon (11.2 L)  
148 US gallon (560 L)

### Model No.

CSS-ESLPL-3KT  
CSS-ESLPL-148KT

## MIXING RATIO

2.0A:0.96B by volume

## SHELF LIFE

2 years in unopened container

## STORAGE

Store material in a dry area between 45°F (7°C) and 95°F (35°C) with no exposure to moisture.

## Surface Preparation

Repair existing substrate per ICRI Guideline No. 310.1R. Concrete shall be abrasively prepared to achieve an open pore structure and CSP-3 in accordance with ICRI Guideline No. 310.2R by means of grinding, sand blasting, shot blasting, or pressure washing. Application surface shall be clean, sound, and free of standing water at time of application. All dust, laitance, grease, curing compounds, and other foreign materials that may hinder the bond must be removed before installation.

## Mixing

Add for standard 3 US gal. kits, the premeasured contents of the Part B container to the premeasured contents of the Part A container. Mix with a mixing drill and paddle until uniformly blended (approximately 5 minutes at 500 rpm). When thickened CSS-ESLPL is required, add CAB-O-SIL® TS-720 Fumed Silica by Cabot Corporation before mixing at a maximum ratio of 2 parts fumed silica to 1 part epoxy, by volume.

## Application

Apply epoxy to substrate surfaces using a nap roller. Saturate fabrics using manual or mechanical rollers, ensuring full fiber saturation is achieved. Use trowels to apply thickened epoxy. This product may also be used for near surface mounted (NSM) laminate applications.

**Pot Life:** 4 hours at 72°F (22°C)  
45 minutes at 95°F (35°C)

**Cure Time:** 7 days at 72°F (22°C)  
24 hours at 95°F (35°C)

### Coverage Rates:

#### Priming\*

**Concrete:** 200 SF/US gal. (4.9 m<sup>2</sup>/L)

**CMU:** 100 SF/US gal. (2.5 m<sup>2</sup>/L)

**Brick:** 150 SF/US gal. (3.7 m<sup>2</sup>/L)

\*Highly dependent on the substrate condition/profile. These are typical values.

#### Saturating\*\*

**6–12 oz./yd.<sup>2</sup> (204–407 g/ m<sup>2</sup>) fabrics:**

~75 SF/US gal. (~1.8 m<sup>2</sup>/L)

**18–27 oz./yd.<sup>2</sup> (611–915 g/ m<sup>2</sup>) fabrics:**

~50 SF/US gal. (~1.2 m<sup>2</sup>/L)

**CSS-CUCF44 fabric:**

~25 SF/US gal. (~0.6 m<sup>2</sup>/L)

\*\*Highly dependent on waste. These are typical values.

## Limitations

- Only install when the ambient and substrate temperatures are between 70°F (21°C) and 110°F (43°C)
- Do not thin epoxy
- Where moisture vapor transmission is expected, note that CSS-ESLPL will create a vapor barrier
- Do not apply thickened CSS-ESLPL in lifts greater than 1 in. (25 mm)

## CAUTION

**Component “A”:** **WARNING!** Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction.

**Component “B”:** **Danger!** Causes severe skin burns and eye damage. May cause an allergic reaction.

**Protective Measures:** The use of safety glasses and chemically resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the PEL. Refer to Safety Data Sheets (SDS) available at [strongtie.com/sds](http://strongtie.com/sds) for detailed information.

## FIRST AID

**Eye Contact:** Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. If redness, burning, blurred vision, or swelling persists, seek medical advice.

**Skin Contact:** Remove contaminated clothing and product, immediately wash affected area with soap and water. Do not apply greases or ointments. If rash or irritation persists, consult a physician.

**Ingestion:** Rinse mouth immediately. Do not induce vomiting unless told to do so by a poison control center or doctor. If vomiting occurs, keep head low so that stomach contents don't get into the lungs. Never give anything by mouth to an unconscious person. Consult a physician immediately.

**Inhalation:** If breathing is difficult, remove patient to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if needed. If patient continues to experience difficulty breathing, consult a physician.

## CLEAN-UP

### Environmental Precautions

Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters and soils.

**Small Spills:** Soak up with an absorbent material, such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.

**Large Spills:** Approach suspected leaks with caution. Construct a dike or trench to contain material. Soak up with an absorbent material, such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.

### Disposal

Dispose of container and unused portions in accordance with local, state and federal regulations. Emptied container may contain product residue and should not be reused.

## LIMITED WARRANTY

This product is covered by the Simpson Strong-Tie RPS Product One-Year Limited Warranty, which is available at [strongtie.com/limited-warranties](http://strongtie.com/limited-warranties) or by calling Simpson Strong-Tie at (800) 999-5099.

## IMPORTANT INFORMATION

It is the responsibility of each purchaser and user of each Product to determine the suitability of the Product for its intended use. Prior to using any Product, consult a qualified design professional for advice regarding the suitability and use of the Product, including whether the capacity of any structural building element may be impacted by a repair. As jobsite conditions vary greatly, a small-scale test patch is required to verify product suitability prior to full-scale application. The installer must read, understand, and follow all written instructions and warnings contained on the product label(s), Product Data Sheet(s), Safety Data Sheet(s), and the [strongtie.com](http://strongtie.com) website prior to use. For industrial use only by qualified applicators. KEEP OUT OF REACH OF CHILDREN!

**WARNING!** Cancer and reproductive harm — [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).