

CSS-EP

Epoxy Paste and Filler

SIMPSON**Strong-Tie**

®

DESCRIPTION

CSS-EP is a two-component, high-strength, high-modulus epoxy paste system used to fill and transition irregular substrates and adhere Simpson Strong-Tie® Composite Strengthening Systems (CSS) laminates in both surface-mounted and near-surface-mounted (NSM) applications. This product has been evaluated per ICC-ES AC125 for concrete and unreinforced masonry strengthening using externally bonded fiber-reinforced polymer (FRP) composite systems. This product is NSF-listed safe for potable water. Please refer to the NSF listing for the NSF 61-listed application. This product is part of the tested assembly in UL Design No. N861, which achieved a four-hour fire rating when subjected to ASTM E119 / UL 263 full-scale fire testing. Please refer to UL Online Certifications Directory for the UL listing.

CODES

ICC-ES ESR-3403



MATERIAL PROPERTIES

Part A & B Properties

Consistency	Non-sag thixotropic paste
Color	Part A: White Part B: Black Mixed: Gray
Density	Part A: 12.45 lbs/US gal (1.49 kg/L) Part B: 11.24 lbs/US gal (1.35 kg/L) Mixed: 12.05 lbs/US gal (1.44 kg/L)

Cured Epoxy Properties

Property	ASTM	Cure Schedule	Test Value
Tensile Strength	D638	7 days at 72°F (22°C)	3,090 psi (21 MPa)
Tensile Modulus	D638	7 days at 72°F (22°C)	685,000 psi (4,720 MPa)
Elongation at Break	D638	7 days at 72°F (22°C)	0.56%
Flexural Strength	D790	7 days at 72°F (22°C)	7,450 psi (51 MPa)
Flexural Modulus	D790	7 days at 72°F (22°C)	920,000 psi (6,340 MPa)
Compressive Strength	D695	7 days at 72°F (22°C)	15,300 psi (106 MPa)
Compressive Modulus	D695	7 days at 72°F (22°C)	689,000 psi (4,750 MPa)
T _g	D3418	7 days at 72°F (22°C)	144°F (62°C)

PERFORMANCE FEATURES

- Long working time
- High elongation
- Ambient cure
- NSF listed
(info.nsf.org/certified/pwscomponents)
- High versatility
- VOC 7 g/L (mixed)
- Minimal odor
- UL listed
(www.ul.com/database)

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

3 US gallon (11.4 L)

Model No.

CSS-EP-3KT

MIXING RATIO

2A:1B 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.



FIRE RESISTANCE CLASSIFICATION FOR
USE IN BEAM/SLAB REINFORCING SYSTEM
<R37897>

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

Combine components A and B into a clean mixing container at a 2A:1B mix ratio by volume. Mix with a drill and mixing paddle until uniformly blended (approximately 5 minutes at 500 rpm).

Application

Apply paste to substrate surfaces using a trowel. Use a paste profiler or trowel when applying to laminates. This product may also be used for near surface mounted (NSM) applications.

Pot Life: 1 hour at 70°F (21°C).

Cure Time: 72 hours at 70°F (21°C).

Coverage Rates:

Laminates*	50mm (1.97 in.) width: ~100 LF/US gal (~8.1 m/L)	100mm (3.94 in.) width: ~50 LF/US gal (~4.0 m/L)
	60mm (2.36 in.) width: ~85 LF/US gal (~6.8 m/L)	120mm (4.72 in.) width: ~40 LF/US gal (~3.2 m/L)
	80mm (3.15 in.) width: ~65 LF/US gal (~5.2 m/L)	150mm (5.90 in.) width: ~35 LF/US gal (~2.8 m/L)
	90mm (3.54 in.) width: ~55 LF/US gal (~4.4 m/L)	

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

Limitations

- Only install when the ambient and substrate temperatures are between 45°F (7°C) and 95°F (35°C)
- Do not thin epoxy paste
- Where moisture vapor transmission is expected, note that CSS-EP will create a vapor barrier
- Do not apply CSS-EP in lifts greater than 1 in. (25 mm)

CAUTION

Component “A”: May cause eye and/or skin irritation. Prolonged or repeated exposure may cause skin sensitization.

Component “B”: **CORROSIVE!** Severe irritation to eyes and skin. Prolonged or repeated exposure may cause skin sensitization. Components of this product may affect the central nervous system.

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 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: In case of contact, remove product and immediately wash affected area with plenty of soap and water for at least 5 minutes. Do not apply greases or ointments. Remove contaminated clothing. Clean contaminated clothing with soap and water before re-use. If redness, burning or swelling persists, seek medical advice.

Ingestion: DO NOT INDUCE VOMITING. Never administer anything by mouth to an unconscious person. Rinse out mouth with water, then drink sips of water to remove taste from mouth. Seek medical advice. Do not leave affected person unattended. If vomiting occurs spontaneously, lay affected person on side and keep head lower than waist to prevent aspiration.

Inhalation: If respiratory irritation or distress occurs, remove victim to fresh air. If breathing is difficult, give oxygen. If breathing stops, apply artificial respiration. Seek medical advice.

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 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 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.