

## ProTecStrong 855 – SPL

### Structural Protective Liner

*NSF 61*

#### PRODUCT DESCRIPTION

TCI ProTecStrong (855-SPL) is a structural protective liner comprised of thermoset epoxy and milled glass fibre. The system is specially designed as a structural protective repair material as well as a non-structural chemical-resistant protective coating. The product is formulated for use in potable water and wastewater facilities to protect concrete, brick, masonry, and steel surfaces against sulfuric acid, gases, and other chemicals usually found in the wastewater headspace.

#### TYPICAL USAGE

- Non-structural protection of new and existing concrete against chemical corrosive environments
- Rehabilitation of potable water feeder mains, water treatment plants, and facilities
- Structural reinforcing and rehabilitation for existing concrete
- Rehabilitation of brick wastewater tunnels
- Chemical protection of infrastructures for industrial applications
- Corrosion protection of metal accessories in potable water and wastewater facilities
- Protection of buried steel pipes
- High strength bond epoxy
- Sealing of surfaces against water and water vapour infiltration
- Repair or upgrade inferior materials.
- Rehabilitation, repair, and protection of manholes

#### FIELD OF APPLICATION

- Wastewater treatment plants & sewer trunks.
- Potable water treatment facilities and transmission lines
- Concrete wastewater pipes
- Brick wastewater pipes
- Manhole protection and rehabilitation
- Steel pipes and steel tanks
- Environmental protection for all infrastructures

#### ADVANTAGES

- High mechanical properties allow for effective structural rehabilitation of deteriorated concrete
- Ability to be applied on dry and/or damp substrates
- **NSF/ANSI/CAN 61 approved** for potable water applications
- High strength-to-weight ratio
- Can be used as a protective coating for very harsh environments
- Can be applied as external and/or internal protective coating
- High build and multi-coat ability
- Long pot life time and room temperature cure
- 100% solid and Zero Volatile Organic Components (VOC)

#### CHEMICAL CORROSION RESISTANCE

TCI ProTecStrong (855-SPL) is Severe Wastewater Analysis Tested “**SWAT**”, meeting and exceeding standards for chemically corrosive environments, as per **ASTM G210**.

For more detailed information please contact [info@tcicarbonfibre.com](mailto:info@tcicarbonfibre.com).

## MECHANICAL PROPERTIES

Mechanical property	Recommended Design Value
Tensile strength [psi] (Mpa)	9,400 (64.8)
Compressive strength [psi] (Mpa)	16,700 (115.1)
Flexural strength [psi] (Mpa)	16,750 (115.5)
Tensile modulus [ksi] (GPa)	1,515 (10.45)
Flexural modulus [Ksi] (GPa)	1,390 (9.58)
Ultimate Tensile Elongation [%]	0.9
Ultimate Flexural Elongation [%]	1.3

## EPOXY

TCI ProTecStrong (855-SPL) is a two-component, 100% solid, room temperature curing, thermoset epoxy system with long pot life characteristics.

Pot life at 23°C temperature, 200 g mass:	1.5 – 2.0 hours
Cure cycle:	3 days at room temperature or 6 hours at 45°C + 24 hours at room temperature
Shelf life:	two (2) years in original unopened, properly stored containers

## GLASS FIBRE

Milled glass fibre is added to TCI ProTecStrong (855-SPL) resin (Component A). The glass fibre provides the required stiffness to the final product and precludes any potential for thermal cracking for high-build applications.

## PACKAGING AND YIELD

TCI ProTecStrong (855-SPL) is a two-component system consisting of a resin blended with glass fibre and a hardener. Packaged separately in pre-weighed pails, the total volume is 14 Liters when mixed together.

The yield when mixed is 8.75 m<sup>2</sup> [94 ft<sup>2</sup>] @ 1.6 mm [63 mils] thick, applied in two coats.

## STORAGE

- Store TCI ProTecStrong (855-SPL) in an environment where the ambient temperature does not fall below 5°C or reach above 30°C
- Never Store chemical containers in an environment exposed to the weather or direct sunlight

## APPLICATION

### Surface preparation:

- Power wash substrates using a minimum of 5000 psi to remove existing coating, dust, laitance, grease, waxes, and any other foreign particles from the substrate surface.
- Concrete substrates must be sound and clean. Remove all spalled or fractured areas.

- Existing cracks in the concrete substrate (if dormant) can be bridged by TCI ProTecStrong (855-SPL) after the product is fully cured. The thickness of the coating system shall be proportioned depending on the width of existing crack or gap to be bridged over by the coating system.

#### **Mixing:**

- Mix TCI ProTecStrong (855-SPL) components, resin (Component 'A') and hardener (Component 'B') for at least 5 minutes.
- Always mix pre-weighed kits in their entirety to avoid human errors in proportioning the product components.
- Mix the product in quantities according to the rate of application by the installation team.

#### **Environmental conditions**

- Maintain a dry dehumidified environment and maintain the ambient temperature at a minimum of 10° F above the dew point.
- Substrate surfaces shall be at least at SSD (Saturated Surface Dry) condition prior to installation unless a suitable primer is used to prime moist substrates.
- Maintain the required environmental conditions of substrate surfaces until at least 48 hours after the installation has been completed.
- The surface temperature of the substrate shall not fall below 5° C. Don't apply the protective coating if the substrate surface temperature is above 40° C.

#### **Installation:**

- All substrate surfaces must be primed using TCI-800D for dry substrates and TCI 800W for damp substrates. Refer to the current 800-D/800-W material data sheet for mixing and application procedures.
- Apply the product within the pot-life time.
- Apply the product using manual trowels or squeegees.
- The coating thickness varies depending on the substrate conditions and the aim of application.
  - For new construction, or non-structural repair of existing facilities, TCI ProTecStrong (855-SPL) is recommended to be applied at a minimum thickness of 1/16" (1.6mm).
  - For structural repair and strengthening of deteriorated substrates, the required thickness varies as per design. TCI Carbon Fibre Technologies can provide technical support to prepare design documents.
- The maximum number of coats is unlimited.
- Successive coats must be applied within the recoat window of 48 hours.

#### **FINAL CURE AND RETURN TO SERVICE**

Allow 72 hours for final cure before returning to service, depending on conditions.

#### **NSF/ANSI/CAN 61 CERTIFICATION:**

Limitations:

- Minimum pipe diameter of 24 in [610 mm]
- Minimum tank size of 1,000 gallons [3,785 L]

## LIMITED WARRANTY

Ten (10) year material replacement warranty is available. For complete details contact [info@tcicarbonfibre.com](mailto:info@tcicarbonfibre.com). Copy is furnished upon request.

### Legal Disclaimer

Keep product's containers tightly closed, keep product's out of reach of children, product's are not for internal consumption, product's are for industrial use only, product's are for professional use only. IN CASE OF EMERGENCY: Call CANUTEC +1 (613) 996-6666. Prior to each use of any product of Technical Construction Infrastructure Inc. ("TCI"), user's must read and follow the warnings and instructions on the product's most current product label, specification, product's datasheet, product's safety datasheet, and product's material safety data sheet. Current safety datasheet, datasheet, and other TCI product literature can be obtained by emailing [info@tcicarbonfibre.com](mailto:info@tcicarbonfibre.com), or by calling +1 (905) 997-5800. The information included herein is for illustrative purposes only, and to the best of our knowledge, is accurate and reliable. TCI cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information.