

Low Modulus Polysulfide Epoxy Overlay T-48

T-48 is a premium quality, two-component, polysulfide epoxy based overlay used for restoring bridge decks and other pavements. It is a completely impervious overlay that will prevent any ingress of moisture, chlorides, salts, and other corrosion inducing substances. Transpo T-48 system is typically applied at the thickness of only ¼” – ½”, eliminating the need to relocate joints, end dams, drain structures or catch basins. It will add less than 3-4 pounds of deadweight load per square foot of deck area, an important consideration for older structures.

Application Procedure

Surface Preparation: It is strongly recommended that all surfaces that are to receive Transpo T-48 must be thoroughly clean and free of all dirt, grease, rust and other contaminants that might interfere with the proper adhesion of the polymer overlay. All damaged or deteriorated concrete shall be removed, cut back to sound concrete, and repaired with appropriate materials and methods. All surfaces, including those that are patched, must be thoroughly shot-blasted to ICRI concrete surface profile (CSP-5). Steel bridge decks (orthotropic) should be blasted to steel structures painting council SSPC-SP10 (near white metal) or SSPC-SP5 (white metal) finish with a minimum 4 mil anchor profile. FRP bridge decks should be sandblasted to a medium sandpaper finish. To verify that the surface preparation is adequate, ASTM C 1583-04 or ACI 503R tensile adhesion tests should be performed.

Mixing: Transpo T-48 resin comes in two components (T-48A resin and T-48B hardener). Thorough and complete mixing of these two components is vital for uniform curing and performance. Mix parts A & B together in a 2:1 volume for 2-3 minutes using a Jiffy mixer (or equal) powered by low speed (400-650 rpm) electric drill until blend is uniform.

Transpo T-48 is applied using either a Slurry or Broom-and-Seed method. It is recommended that the ambient and deck temperature be between 50°F and 100°F at the time of application. The deck surface must be dry and the dew point must be at least 5°F lower than the deck temperature. Relative humidity level must be less than 60% to ensure proper overlay cure as per specifications.

Slurry Method

T-48 Slurry is installed by mixing, placing and finishing the epoxy mortar in a single application to the specified project thickness. The single application of material significantly reduces the probability of inducing air voids into the overlay and thus provides high waterproofing characteristics. Additionally, the possibility of potential contamination to the surface which exists with multiple coat application methods is eliminated. Reduced installation time allows the riding surface to be opened to vehicular traffic in a short period of time. The slurry method can be applied as follows:

Priming: Transpo T-48 resin is applied using 1/8” notched squeegees at the rate of approximately 40 square feet per gallon (approximately 100 square feet per gallon for steel and FRP decks). Temperature of Transpo T-48 resin must be above 50°F for mixing.

Slurry-Base Coat Application: The base coat consists of T-48 epoxy resin and blended T-48 powder component. A unit mix, measuring approximately 1.08 cubic feet, consists of the following:

Material Component	Quantity
T-48A Resin	2 gallons
T-48B Hardener	1 gallon
T-48 Powder (52.5 lb bag)	2 bags

These components can be mixed using drill powered paddles, mortar mixers or special high volume continuous mixing equipment. It is recommended that the base resin components (T-48A and T-48B) be mixed thoroughly prior to adding the T-48 powder. Mixing can also be done in multiples of the above ratio. The base coat is spread to its desired thickness by trowels, gauge rakes, screed or automatic equipment.

Broadcast: Broadcast aggregate can be applied to the slurry base coat after 5-20 minutes (depending on temperature) until refusal. Standard basalt (having a Mohs Hardness of 6 or above) or any other similar material can be used as a cover aggregate. Broadcasting can be accomplished either by hand or by the use of mechanical spreading machines. After cure, the excess aggregate can be swept off. Aggregates must be kept dry for reuse.

Broom-and-Seed Method

Epoxy overlay is applied by placing alternate layers of epoxy resin and broadcast aggregate until the designed thickness is achieved. Transpo T-48 epoxy overlay can be applied in a two-coat (1/4") or three-coat (3/8") application.

Resin Application: The first coat of T-48 resin is applied using 1/8" notched squeegees at the rate of approximately 40 square feet per gallon on the prepared surface.

Broadcast: Immediately after resin application, broadcast aggregate can be applied, at approximately 1.5 pounds per square foot, until refusal. Standard basalt (dry, dust-free, and having a Mohs Hardness of 6 or above) or any other similar material can be used as a cover aggregate. Broadcasting can be accomplished either by hand or by the use of mechanical spreading machines. After cure, the excess aggregate can be swept off. Aggregates must be kept dry for reuse.

The second and third coats must be applied after the initial set of the previous coat. The T-48 resin for the second and third coats are applied at the rate of approximately 20 square feet per gallon and broadcast aggregate at approximately 1.5 pounds per square foot.

Storage

Transpo T-48 should be stored in tightly sealed containers in a dry location and at normal room temperatures (50°F – 85°F). Some epoxy materials may crystallize during storage at low temperatures. The epoxy can be used once it has reached desired application temperatures.

Packaging

	55 Gallon Drum		5 Gallon Pail	
	Part A	Part B	Part A	Part B
Gross Weight lb (kg)	537 (244)	430 (195)	53.1 (24)	42.4 (19.3)
Net Weight lb (kg)	500 (227)	393 (178)	50 (23)	39.3 (17.8)
Nominal Volume gal (L)	50 (189)	50 (189)	5 (19)	5 (19)

Caution

Transpo T-48B (hardener component) contains an alkaline amine. Prolonged or repeated contact may cause sensitivity in some individuals. It is recommended that all persons involved in mixing and application wear protective clothing such as goggles, rubber boots, rubber gloves. As with all chemicals, read MSDS prior to use.

Properties*

Property	Unit of Measure	Test
Neat Resin		
Mix Ratio	2:1 by volume	
Viscosity	1200 - 1600 cps (MPa-sec)	Brookfield
Density	8.8 lb/gal (1.05 g/ml) min.	ASTM D2849
Pot Life @ 70°F	15 - 30 minutes	AASHTO T237
Flash Point	200°F (93°C) min.	ASTM D1310
Solids Content	100%	ASTM D1644
Compressive Strength**	5000 psi (34 MPa) min.	ASTM C579 Method B
Tensile Strength	1800 psi (12 MPa) min.	ASTM D638 Type I
Tensile Adhesion (to concrete)	250 psi (1.7 MPa) min.	ACI 503R
Tensile Elongation	45% min.	ASTM D638 Type I
Shore D Hardness	60 min.	ASTM D2240
Filled System (Mortar)		
Compressive Strength**	5000 psi (34 MPa) min.	ASTM C579 Method B
Flexural Strength	1800 psi (12 MPa) min.	ASTM D790
Tensile Strength	1800 psi (12 MPa) min.	ASTM D638 Type I
Tensile Modulus of Elasticity	600,000 psi (4.10 GPa) max.	ASTM D638 Type I
Flexural Modulus of Elasticity	440,000 psi (3.0 GPa) max.	ASTM D790
Tensile Adhesion (pull-off concrete)	250 psi (1.7 MPa) min.	ASTM C1583-04 / ACI 503R
Bond Strength	100% substrate failure	ASTM C1583-04 / ACI 503R
Coefficient of Thermal Expansion	20-24 x 10 ⁻⁶ in./in./°F (11-13 x 10 ⁻⁶ mm/mm/°C)	ASTM C531
Freeze-Thaw Resistance	Pass (no change)	ASTM C666
Wet Skid Resistance	50 min.	ASTM E274

*To be used as general guidelines only

**Samples should be made using 2.75 volume parts 20-30 sand per ASTM C778, No. 20 to No. 30 sieve to one volume part of mixed epoxy

Warranty

The following warranty is made in lieu of all other warranties, either expressed or implied. This product is manufactured of selected raw materials by skilled technicians. Neither seller nor manufacturer has any knowledge or control concerning the purchaser's use of either product and no warranty is made as to the results of any use. The only obligation of either seller or manufacturer shall be to replace any quantity of this product that proves to be defective. Neither seller nor manufacturer assumes any liability for injury, loss or damage resulting from use of this product.

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