CASTEK® A TRANSPO INDUSTRIES COMPANY INC.

Technical Data Sheet

High Molecular Weight Methacrylate (HMWM) Crack Sealer Sealate® (T-70-10 and T-70 MX-30)

Sealate® is a specially formulated, high molecular weight methacrylate resin system that is highly effective for sealing and filling cracks in concrete structures.

Application Procedure

Surface Preparation: It is strongly recommended that all concrete surfaces that are to receive Sealate® be thoroughly clean and sound. Remove all surface dirt, grease, paint, rust, and other contaminates by sand blasting or shot blasting. Applications on LMC overlays do not require blasting or mechanical abrasion, the surface can be high pressure washed to remove contamination. Before application of Sealate® the surface must be dry for 24 hours and just prior to application cracks should be cleaned with dry high pressure compressed air. The concrete surface should be visibly dry and the moisture content in the concrete should be tested according to ASTM D4263. The temperature of the deck and air should be between 50ºF and 100ºF prior to resin application.

Mixing: Table 1 lists the mixing ratios of the two curing agents. Add the appropriate amount of Cobalt Napthenate promoter to Sealate® resin and stir well. Then add the corresponding amount of CHP initiator, stir again for 1-2 minutes. If machine applied, the resin should be mixed utilizing a two component resin system using promoted resin for one part and initiated resin for the other part. Mixing ratio of promoted/initiated resin should be 1:1. The mixed resin should be applied to the concrete surface within 5 minutes of complete mixing.

Table 1: Mixing Instructions for Sealate®, Cobalt Napthenate and CHP

Sealate® (gal)	Cobalt Napthenate (mL)	CHP (mL)
1	75	150
5	375	750

CAUTION: **Never mix CHP initiator with Cobalt promoter. Violent reaction will result!**

Application: The rate of application of promoted/initiated resin should be approximately 100-150 square feet per gallon. However, this will vary depending on the surface, porosity, size, and quantity of cracks present in the area being treated.

Spray equipment, if used, should be airless, generating sufficient pressure to atomize mixed resins. If hand applied, the concrete surface should be flooded with the resin, allowing sufficient time for penetration into the surface and complete filling of all cracks. Excess material should be redistributed using squeegees or brooms within 15 minutes after application. The quantity of initiated/promoted resin mixed at one time should be limited to 5 gallons for manual application.

Broadcasting of Aggregate: Broadcast sand should be applied to the entire treated area prior to cure, typically at 1-2 pounds per square yard. The sand used should be 12 x 16 mesh, #1 or #2 blasting sand, and should have a maximum moisture content no greater than 0.5%. It should be placed within 15-20 minutes of the resin application and before any setting of monomer occurs. Traffic can be restored once the concrete surface is cured tack-free. Refer to Table 2 for temperature restrictions and cure times.

Table 2: Cure Times for Sealate®

Ambient Temperature	Approximate Cure Time	
	T-70-10	T-70 MX-30
50°F – 70°F	7 – 12 hr	8 – 16 hr
70°F – 100°F	4 – 7 hr	5 – 8 hr

*Cure times are approximate and will vary with ambient and deck temperature, humidity, and sunlight. Structures can be opened to traffic only after complete cure is achieved.

Table 3: Properties* of Sealate®

Property	Results		Test Method
	T-70-10	T-70 MX-30	
Appearance	Amber Liquid	Amber Liquid	
Viscosity	15 – 25 cps (MPa-sec)	10 – 25 cps (MPa-sec)	ASTM D2395
Density	8.4 – 8.6 lb/gal (1.01 – 1.03 g/mL)	8.1 – 8.5 lb/gal (0.97 – 1.02 g/mL)	ASTM D1425
Gel Time/Pot Life @ 70ºF	35 – 40 min	50 – 60 min	AASHTO T237
Tack Free Time @ 70ºF	4 – 7 hr	6 – 8 hr	AASHTO T237
Flash Point	>210°F (>99°C)	>200°F (>93°C)	ASTM D1310/ASTM D93/ASTM 3278
Solids Content	100%	100%	ASTM D1644
Tensile Strength	1,600 psi (>11.0 MPa)	>500 psi (>3.4 MPa)	ASTM D638 Type I
PCC-SSD Bond Strength	>615 psi (>4.2 MPa)	>615 psi (>4.2 MPa)	CA Test 551
Tensile Elongation	1 – 5%	>30%	ASTM D638 Type I
Compressive Strength (24 hr)**	>8,150 psi (56.2 MPa)	>3,500 psi (>24.1 MPa)	ASTM C579 Method B
Volatile Content	30% max	40 – 45%	ASTM D2369
Slant Shear Bond Strength	>1,500 psi (>10.3 MPa)	>1,500 psi (>10.3 MPa)	ASTM C882
Vapor Pressure @ 77°F	0.62 mm Hg	0.52 mm Hg	ASTM D323 Reid Method

*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

Packaging

Sealate® comes in 1, 5 and 55- gallon containers. The initiator, Cumene Hydroperoxide (CHP) and the Cobalt Napthenate promoter are provided in separate labeled containers and in pre-measured quantities to make scale mixes of Sealate®.

Storage

Sealate® should be stored in tightly sealed containers in a dry location and at normal room temperatures (50ºF - 85ºF). The initiator, Cumene Hydroperoxide (CHP) and the Cobalt Napthenate promoter are provided in separate labeled containers, and should be stored in a cool shaded area separately from each other and away from the monomer.

Caution

Direct contact with Sealate® may produce minor skin irritations to persons prone to such reactions. It is recommended that all persons involved in mixing and application wear protective clothing such as goggles, rubber boots, and rubber gloves. As with all chemicals, read MSDS prior to use.

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 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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