ProGuard® E-TUFF® 7097

MULTI-PURPOSE, LOW MODULUS, EPOXY ADHESIVE AND BINDER

TECHNICAL DATA SHEET FOR PROFESSIONAL CONTRACTOR USE ONLY

DESCRIPTION

ProGuard® E-TUFF® 7097 is a two component, 1:1 ratio, 100% solids, low modulus, low viscosity, moisture tolerant, rapid setting, single or multi-step semi-rigid epoxy adhesive and epoxy binder. Formulated for use in bonding skid resistant materials to hardened asphalt and concrete, as a binder in epoxy mortars. VOC complaint in all States and Provinces in North America.

ProGuard® E-TUFF® 7097 is the epoxy binder for the following ChemCo System:

a. **ProGuard® E-TUFF® 7097-HFST High Friction Surface Treatment Overlay**
b. **ProGuard® E-TUFF® 7097-ENS Header, Joint Nosing and Patching Mortar**
c. **ProGuard® E-TUFF® 7097-Bridge Deck Overlays, Elevated Highways and Partner Structures**
d. **ProGuard® E-TUFF® 7097-DECO Epoxy can be dyed and used with colored glass or colored mineral aggregates for demarcation, such as, bike lanes, bus lanes and walking lanes.**

TYPICAL USES

Use as a neat epoxy binder adhesive to bond approved aggregates and/or pavement marking materials to cured asphalt or concrete pavements. Use as an above grade interior or exterior horizontal crack filler or surface sealer to minimize the intrusion of water and waterborne contaminants. All aggregates must comply with federal, state and province for pavement or bridge or elevated highway or park structure specifications.

FEATURES

- Abrasion, Chemical and Impact Resistant
- Creates a Below Aggregate Protection Layer to Reduce Water and Water Borne Chemical Intrusion
- Excellent Adhesion
- Low Viscosity and Low Modulus Epoxy Binder
- Mix Ratio 1:1 By Volume for Ease of Use
- Rapid Cure Return to Traffic Formula
- Broadcast Aggregate to Support Preservation and Friction (HFST) Application
- Resin, Hardener and Aggregate for a Concrete Repair Mortar
- Neat Resin and Hardener to Gravity Filling of Horizontal Cracks

**Cold weather formulation available upon request.*

COLOR

Clear Light Amber Unpigmented. E-TUFF®7097 Décor can be dyed, such as Green: Part A (Blue) dye & Part B (Yellow) dye indicator.

PACKAGING

10-gallon kit: 5 gallon pail of Side-A (18.9 liters) and 5 gallon pail of Side B (18.9 liters)

100-gallon kit: 50 gallon drum of Side-A (189 liters) and 50 gallon drum of Side B (189 liters)

500-gallon kit: 250 gallon tote of Side-A (946 liters) and 250 gallon tote of Side B (946 liters)

600 ml twin cartridges (10 per case).

TECHNICAL DATA

Meets: ASTM C881, Type III, Grade 1, Class C and AASHTO M235, Type III, Grade 1, Class B & Class C.

ESTIMATED COVERAGE

Single and Multi-Layer Coverage

Course #1: Epoxy rate: 40 sq.ft. /gallon (1 liter/sq.m)
Aggregate rate: 1-1.5 lb/sq.ft. (4.88-7.32 kg/sq.m).
Course #2: Epoxy rate: 20 sq.ft./gallon (2 liter/sq.m)
Aggregate rate: 1-1.5 lb/sq.ft. (4.88-7.32 kg/sq.m).

Epoxy Mortar Coverage

Epoxy Mortar: 2 gallon (7.6 liter) epoxy mixed with 10 gallon (37.8 liters) of washed and dried aggregate yields approximately 1.2 cu.ft.

SURFACE PREPARATION

Concrete: The pavement must be a minimum of 30 days old, sound free of all contaminates, including oil, grease, dust, laitance and other bond breaking materials. Mechanically abrade the concrete surface by grinding, abrasive blasting or shot blasting to an International Concrete Repair Institute, Guideline No. 310.2R, CSP 3 – CSP 5.

Asphalt: Prepare asphalt pavement per Asphalt Institute's MS-16 Asphalt in Preservation and Maintenance, and MS-17 Asphalt Overlays for Highway and Street Rehabilitation.

Sweep and remove loose contaminants from the asphalt surfaces. Spray with a steady stream of water to dislodge and remove small embedded residue and blast with clean air to clear the surface of residue.

MIXING

Hand Mixing: Condition material prior to mixing to 65°F to 85°F (18°C to 29°C) for ease of mixing and optimum flow when using. Premix each side for thirty seconds, then place 1 part by volume Side A and 1 part by volume Side B into a clean pail and mix for three minutes at a low speed using a Rapid Pail Mixer or a ½ hp heavy duty drill with a Jiffy type paddle utilizing the 1 Man Stand.

Automatic Mixing: Condition material for automated mixing per the manufacturer's recommendation or 75°F (24°C). Automatic plural component mixing and dispensing equipment. Check to make sure that volume is dispensed at the correct ratio and that the material is thoroughly mixed, before putting the equipment into service. Follow the manufacturer's recommendations.

APPLICATION

AUTOMATED APPLICATION

Surface and ambient temperature must be a minimum of 50°F (10°C). Utilize one of the following methods for the application of ProGuard® E-TUFF®7097 and aggregate wearing coarse. The automated installation can continuously heat, cool, mix, meter and apply the epoxy binder in continuous passes and layers.

MECHANICAL MIXING AND APPLICATION

ProGuard® E-TUFF® 7097 resin and hardener is used as the epoxy binder with a truck mounted resin dispensing equipment onto the pavement section to be treated in varying widths at a uniform thickness. Operations shall proceed in such a manner that will not allow the material to separate in the mixing lines, cure, dry, or otherwise impair to the surfacing aggregate. The mixed sides shall be applied mechanically onto the prepared pavement surface at a minimum rate of 3-4 gallons 100 sq.ft. (1.21-1.63 liter/sq.m.) for a multiple coat system or 25-32 sq.ft. per gallon (0.6 - 0.79 sq.m. per liter) for a one coat system. Immediately broadcast the aggregate onto the epoxy binder at a minimum rate of 1-1 ½ lbs./sq.ft. (0.45-0.68 kg/sq.ft.).

MINIMUM CURING TIME FOR EPOXY BINDER AND AGGREGATE	
60°F (16°C)	6 Hours
65°F (18°C)	5 Hours
70°F (21°C)	4 Hours
75°F (24°C)	3 Hours
80°F (27°C)	2.5 Hours

TECHNICAL DATA

PHYSICAL PROPERTIES AT 77°F +/- 2°F (25°C +/- 1°C) RESIN AND HARDENER	TEST METHOD	VALUE
Viscosity	ASTM D2393	< 1,700 cps
Gel Time (60 gr. Mass)		> 30 minutes
Tack Free Time		3-5 hours
Bond Strength to Concrete 24 hrs.	ASTM D1583	300 psi (2 MPa)
Compression Strength	ASTM D695	3250 psi (22 MPa)
Compressive Modulus	ASTM D695	61,700 psi (425 MPa)
Tensile Strength	ASTM D638	4000 PSI (28 Mpa)
Tensile Elongation	ASTM D638	60%
Recoat Time	ASTM D1640	3 hours
Flexural Strength	ASTM D790	3,000 psi (21 MPa)
Shrinkage on Cure	ASTM D2566	0.2%
Water Absorption (24 Hr.)	ASTM D570	0.2%
Slant Shear (7 Day)	ASTM C882	1,200 psi (8 MPa)
Thermal Compatibility	ASTM C884	Pass
Chloride Ion Permeability	AASHTO T277	0.0 Coulomb

PHYSICAL PROPERTIES AT 77°F +/- 2°F (25°C +/- 1°C) RESIN, HARDENER AND AGGREGATE	TEST METHOD	VALUE
Compressive Strength **2 Hours** **24 Hours** **7 Days**	ASTM C579	 1,500 psi (10 MPa) 5,000 psi (35 MPa) 5,200 psi (36 MPa)
Tensile Strength	ASTM C307	2,900 psi (20 MPa)
Tensile Strength	ASTM C307	<1%

CURING

Cold Temperature Formula Available Upon Request It is highly recommended that all sides be conditioned in advance of use to 75°F (24°C). This may take 48 hours. It is to the contractor's benefit to maintain the sides at elevated temperatures. Lower temperatures increase the binder's viscosity and increase curing time.

STORAGE AND SHELF LIFE

The material should be stored between 40°F to 95°F (5°C to 35°C), store in dry environment and out of direct sunlight. The shelf life of properly stored and open containers is 24 months. Excessive temperature differential and/or high humidity can shorten the shelf-life.

LIMITATIONS

- Minimum substrate temperature is 50°F (10°C)
- Maximum substrate temperature for non-automated systems is 95°F (35°C)
- Do not thin with solvent. Solvent will prevent proper cure
- Do not use wet aggregate. Aggregate must be clean, washed, kiln dry, and bagged.
- Do not place on magnesium phosphate cement concrete

SAFETY

- Eyes: Hold eyelids apart and flush thoroughly with water for 15 minutes. Contact a physician immediately.
- Skin: Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water.
- Inhalation: Remove person to fresh air.
- Ingestion: Do not induce vomiting. In all cases, contact a physician immediately.
- SDS: Obtain, read and understand the Safety Data Sheet before use of this or any other ChemCo Systems products.

CAUTION

- Side A – Irritant
- Side B – Corrosive
- Product is a strong sensitizer
- Use with adequate ventilation
- Wear protective clothing, gloves and appropriate eye protection (safety glasses, googles or face shield).
- Do not take internally

READ SDS PRIOR TO USING PRODUCT.
FOR PROFESSIONAL USE ONLY.
KEEP OUT OF REACH OF CHILDREN. MADE IN THE USA.

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PROJECT NOTES

ChemCo Systems