

## LOW-MODULUS, 1:1 RATIO, HIGH FRICTION SURFACE POLYMER

### DESCRIPTION

HFP 1:1 is a moisture-insensitive, low-modulus, two-component high friction surface polymer.

### APPLICATIONS

HFP 1:1 is designed for binding High Friction Surfacing Aggregates to asphalt and concrete on grade and elevated surfaces. Specific applications include:

- Asphalt roadways
- Bridge decks
- Roadway departure areas
- Horizontal curves
- Stop zones / Intersections
- High grade roadways
- Parking structures

### ADVANTAGES

- Excellent bond strength
- Moisture insensitive to minimize contaminants
- High early strength
- High tensile elongation allows for non-linear expansion and contraction (move with the roadway)
- High tensile strength for superior retention of aggregates
- High range of flexibility
- Easy to mix - 1:1 ratio
- Fast set time for quick return to traffic
- Designed for automated pump or hand mix application
- Non-regulated, hazmat certification or placards not required for transport.

### COMPLIANCES

- Tested to AASHTO PP79 standards [Title: *High Friction Surface Treatment for Asphalt and Concrete Pavements*]
- Transportation within the United States is non-regulated by the DOT

### PACKAGING

10-gallon unit

- Component A: (1) 5-gallon pail
- Component B: (1) 5-gallon pail

110-gallon unit

- Component A: (1) 55-gallon drum
- Component B: (1) 55-gallon drum

500-gallon unit

- Component A: (1) 250-gallon tote
- Component B: (1) 250-gallon tote

**Appearance of Components:** A - Clear, B - Amber

**Shelf Life:** 2 years in original unopened container

**Storage:** 50°F to 95°F in dry and dark conditions

**Temperature Considerations: IMPORTANT!** Epoxy resins are temperature sensitive and care should be taken to condition all components to between 65°F to 95°F for a minimum of 24 hrs. prior to mixing and placement. Temperatures colder than stated range increase viscosity of resins and inhibit mixing and flow of materials. Temperatures warmer than stated range decrease viscosity of resins, hasten the cure and reduce the

working time. Mixing and curing at less than ideal temperatures, <60°F or >95°F, will require special considerations.

### COVERAGE

Minimum Coverage Rates:

	Epoxy	Aggregate
Asphalt Road	1 gallon/26-32 sq. ft.	14-20 lbs./sq. yd.

### CURE TIME

Use the table below to determine minimum cure times based on the temperature of the materials and substrate.

	Average Temperature of Materials & Substrate (°F)					
Cure Temp	60-64	65-69	70-74	75-79	80-84	85+
Cure Time	3 hrs	2.5 hrs	2 hrs	1.5 hrs	1 hr	1 hr

\*Set times are merely averages, site conditions will dictate actual cure response for sweeping as well as open to traffic time.

### INSTALLATION

**Surface Preparation:** Remove all traffic control markings from roadway, if required. **CONCRETE:** For concrete surfaces, clean surface by shot-blasting to remove all contaminants. Concrete surface should be at a minimum ICRI CSP 5 for surface roughness. Remove dust and debris by blowing off with oil-free compressed air. Prefill cracks larger than 1/4" with premixed resin, add aggregate to larger voids. **ASPHALT:** For asphalt surfaces, clean pavement using mechanical sweepers and blow down with oil-free compressed air to remove all dirt, debris and surface contaminants. Prefill cracks larger than 1/4" with premixed resin, add aggregate to larger voids. Asphalt surfaces should be at least 45 days old prior to applying HFP 1:1.

**Mixing:** Mechanically mix Component A with Component B 1:1 by volume with Jiffy type mixer and low-speed variable drill at 300 rpm for a minimum of 3 minutes. Mix only the quantity that can be used within its gel time. **BULK:** For bulk mixing, a positive displacement pump, incorporating a static mixing wand and meter, is recommended.

**Placement:** Apply neat HFP 1:1 by pouring the material on the surface. Distribute material evenly with a 1/4" notched squeegee or other approved placement method. Epoxy resin should be uniform in coverage, no puddles, sags or rippled areas. Broadcast select aggregate to properly cover liquid resin to refusal. The aggregate should be moisture free and free of dirt, clay, etc., and manufactured for HFST applications. After cure, remove excess aggregate prior to opening to traffic. Please consult with E-Chem for Project Specification Guidance.

### LIMITATIONS

- For professional use only
- Do not thin with solvents
- Compressed air equipment must have an oil/air separator.
- Minimum age of concrete must be 28 days before applying as a HFST.
- HFP 1:1 is a vapor barrier after curing.

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- Substrate temperatures must be 50°F and rising prior to installation: 50°F minimum must be maintained during stated cure period.
- Consult E-Chem representative when mixing or placing outside of the temperature recommendations listed.

#### **CLEAN UP**

**EQUIPMENT:** Uncured material can be removed with C-Clean 100 or approved solvent. Cured material can only be removed mechanically.

**MATERIAL:** Collect with absorbent material. Flush area with water. Dispose of in accordance with local, state and federal disposal regulations.

#### **CAUTIONS**

##### **READ SDS PRIOR TO USING PRODUCT!**

- Component A: Irritant
- Component B: Irritant
- Product is a strong sensitizer. Use of safety goggles and chemical resistant gloves are recommended.
- Use in a well-ventilated area and avoid breathing vapors
- Use of a NIOSH/MSHA organic vapor respirator is recommended if ventilation is inadequate.
- Avoid skin contact

#### **FIRST AID**

**EYE CONTACT:** Flush immediately with water for at least 15 minutes. Contact physician immediately.

**RESPIRATORY CONTACT:** Remove person to fresh air.

**SKIN CONTACT:** Remove any contaminated clothing.

Remove epoxy immediately with a dry cloth or paper towel. Solvents should not be used as they carry the irritant into the skin. Wash skin thoroughly with soap and water.

**IF INGESTED:** Do not induce vomiting. If swallowed give water to drink. Seek medical treatment immediately.

**GENERAL:** Remove contaminated soaked clothing immediately. In the event of persistent symptoms receive medical treatment.

**CURED EPOXY RESINS ARE INNOCUOUS.**

#### **WARRANTY**

This product is warranted and guaranteed to be of good quality. Manufacturer, as its sole and exclusive liability hereunder, will replace material if proved defective. This warranty and guarantee are expressly in lieu of all others, express or implied, including any implied warranty of merchantability or fitness for a particular purpose and may not be extended by representatives or any persons, written sales information, or drawing in any manner whatsoever. While the manufacturer recommends uses for the product based on tests believed reliable, no warranties, express or implied, or guarantees can be given as to particular methods of use or application, nor can performance be warranted, expressly or impliedly, or guaranteed under special conditions. Distributors, salespersons or company representatives are not authorized to extend or vary any warranties or guarantees beyond those outlined herein, nor may the manufacturer's or seller's limitation of liability be waived or altered in any manner whatsoever.