

HFP 1:1

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 designed for binding high friction surfacing aggregates to asphalt, concrete on grade and elevated surfaces.

APPLICATIONS

- Asphalt Roadways
- Roadway Departure Areas
- Horizontal Curves
- Stop Zones / Intersections
- High Grade Roadways
- Parking Structures

ADVANTAGES

- Excellent bond strength
- Moisture insensitive
- High early strength
- High tensile elongation allows for non-linear expansion and contraction (move with the roadways)
- High tensile strength for superior retention of aggregates
- Easy to mix - 1:1 ratio
- Fast set time for quick return to traffic
- Designed for automated pump or hand mix application

COMPLIANCES

- Meets AASHTO MP41 Standard Specification for High Friction Surface Treatment for Asphalt and Concrete Pavements Using Calcined Bauxite

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 containers

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 between 65 °F to 95 °F for a minimum of 24 hours 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 <50 °F or >100 °F will require special considerations.

COVERAGE

Minimum Coverage Rates:

	Epoxy	Aggregate
Surface	1 gallon/26-32 ft ²	14-20 lbs./yd ²

CURE TIME

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

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

*Set times are averages. Site conditions will dictate actual cure response for sweeping excess aggregate and opening to traffic times..

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/or 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 30 days old prior to applying HFP 1:1.

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Mixing:

Hand Mixing: Mix Component A with Component B, 1:1 by volume, with a Jiffy Mixer or similar using a low-speed variable drill at 300 rpm for a minimum of 3 minutes. Mix only the quantity that may be used within the gel time.

Mechanical Mixing: Mix components using a positive displacement pump that is capable of heating, metering and dispensing polymer resin via a static mixer

Placement: Apply neat HFP 1:1 by dispensing the material on the surface. Distribute material evenly with a ¼" 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 manufactured for HFST applications and be moisture free as well as free of dirt, clay or any debris. After cure, remove excess aggregate prior to opening to traffic.

LIMITATIONS

- For professional use only
- Do not thin with solvents
- Compressed air must have an oil/air separator
- Minimum age of concrete must be 28 days before applying HFP
- HFP 1:1 is a vapor barrier after curing
- Substrate temperatures must be 50 °F and rising prior to installation and > 50 °F must be maintained during the entire curing period-see curing guidelines for proper cure
- Consult E-Chem representative when mixing or placing outside of the temperature recommendations

CLEAN UP

Equipment: Uncured material may be removed with C-CLEAN100 or approved solvent. Cured material may 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 ENTIRE SDS PRIOR TO USING PRODUCT!

- Component A: Irritant
- Component B: Irritant
- Product is a strong sensitizer - wear chemical resistant gloves, protective clothing, eye protection and face protection
- Use in 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 manufacturers or seller's limitation of liability be waived or altered in any manner whatsoever. For additional details, please refer to the Terms and Conditions.

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PHYSICAL PROPERTIES^{1,2,3}

Property	Standard	Units	Values
Viscosity (75 °F)	D2196/D2556/D1084	cP	2,000 - 3,000
Gel Time (75 °F)	ASTM C881/ AASHTO M235	Minutes	10 - 15
Compressive Strength (3 hours w/sand)	ASTM C579	psi	>1,200
Compressive Strength (24 hours w/sand)			>3,500
Compressive Modulus (7 days Neat)	ASTM D695		<130,000
Tensile Strength (7 days 75 °F)	ASTM D638		>2,000
Tensile Elongation (7 days 75 °F)		%	35 - 45
Shore D Hardness	ASTM D2240	Shore D	65 - 75
Absorption	ASTM D570	%	<0.3
Flash Point (Part A)	ASTM D3278	°F	>212
Flash Point (Part B)			
Thermal Compatibility	ASTM C884	Pass/Fail	Pass

1. Product testing results based on representative lot(s). Average results will vary according to the tolerances of the given property.
2. Full cure time is listed above to obtain the given properties for each product characteristic.
3. Results may vary due to environmental factors such as temperature, moisture and type of substrate.