



Willamette Valley Company
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Partnering through service,
innovation, and integrity

FastPatch HPRE - Kits

High Performance Rail Encapsulator

DESCRIPTION

FastPatch HPRE is a composite polyurethane, rail encapsulation system with patent pending integrated aggregate. HPRE is specifically designed for embedded rail applications and provides excellent electrical isolation, resilience, and vibration and sound damping. HPRE – Kit is installed using pail & pouch kits.

WHERE TO USE

- Embedded Track - between rail and concrete
- Special Track - intersection and stations
- Concrete Repair – spalls and large cracks

FEATURES AND BENEFITS

- Rapid cure - fast return to service
- 100% Solids, No Odor or VOC
- Integrated Aggregate – no need for gravel bags
- Excellent Concrete Adhesion
- Electrical Isolation
- Sound and Vibration Damping
- Self leveling

PACKAGING

4.0-gallon (15L), 0.5 cu.ft. Kits – Pail & Pouch

COLORS

Gray

SHELF LIFE

1 year when properly stored.

STORAGE

Store and ship this product in clean, dry, low-humidity, and shaded or covered environments between 50 and 90°F (10-32°C)

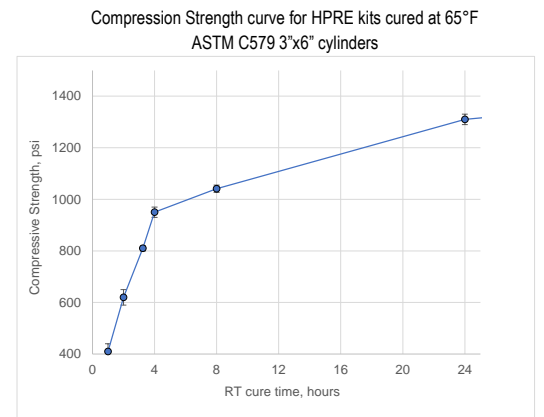
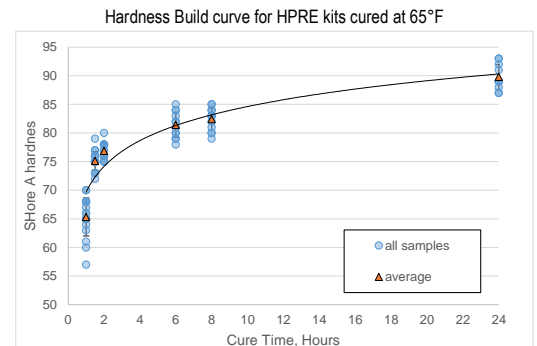
TYPICAL PROPERTIES

HPRE Full Composite Properties (polymer and aggregate)		
Adhesion to concrete, psi (MPa), ASTM D7234, unprimed	≥350 (2.4)*	
Adhesion to steel rail, psi (MPa), ASTM D4541, unprimed	≥300 (2.1)	
Elongation, %, ASTM D412, full cure	≥20	
Tensile Strength, psi, ASTM D412, full cure	400	
Thermal compatibility to concrete, ASTM C884	pass	
Surface resistivity, Ω/square, ASTM D257-14 (500V)	4.56E+14	
Volume resistivity, Ω*cm, ASTM D257-14 (500V)	1.66E+14	
Kit working time, min.	Kit tack-free time, min.	Kit temp.
8	30	104°F (40°C)
10-12	60	77°F (25°C)
12-14	90	59°F (15°C)
Ultimate hardness, Shore D, ASTM D2240	55-60	
VOC, lbs/gal (g/L), ASTM D2369	0	
Viscosity, cP, ASTM D4878, Mixed	6,000	
Service temperature, °F (°C)	-40 - 185 (-40 - 85)	
ASTM C579 Compression Strength vs Cure time		
	2" cubes	3"x6" cylinders
3 hours RT	1,500 psi (10.34 MPa)	810 psi (5.58 MPa)
24 hours RT	1,600 psi (11.03 MPa)	1,300 psi (8.96 MPa)
1 week RT	2,900 psi (20 MPa)	2,100 psi (14.48 MPa)

*Concrete cohesive failure mode. Limiting factor for HPRE concrete adhesion is the substrate quality.

HPRE Polymer Only Properties (no aggregate)

Compressive Set, %, ASTM D395 3 rd incremental set (24hr 70°C)	5
Shore hardness, ASTM D2240, full cure	85-90A, 40-45D
Elongation, %, ASTM D412, full cure	≥ 75
Tensile Strength, psi, ASTM D412, full cure	≥ 900 (6.2)



HPRE Chemical Resistance, ASTM D471, 70°F, 7 Day Immersion

	$\Delta\%$ volume	$\Delta\%$ weight
water	no change	0.73 \pm 0.09
10% NaCl	no change	0.87 \pm 0.10
5% NaOH	no change	0.65 \pm 0.09
10% CaCl ₂	no change	0.70 \pm 0.10
5% H ₂ SO ₄	no change	0.635 \pm 0.019
IRM-901 (oil #1)	no change	0.24 \pm 0.05
IRM-902 (oil #2)	no change	0.32 \pm 0.02
IRM-903 (oil #3)	no change	0.443 \pm 0.012
Jet A	no change	0.59 \pm 0.03
JP-4	2.2 \pm 1.0	1.5 \pm 0.2

APPLICATION INSTRUCTIONS**SURFACE PREPARATION:****Concrete**

1. The concrete must be structurally sound, clean, and the surface should be dry. HPRE can be applied to concrete newer than 28 days and in some cases as soon as 24 hours from when the concrete was poured. Contact your WVCO representative for more details.
2. Concrete surfaces must be free of dirt, moisture, loose particles, oil, asphalt, tar, paint, wax, rust, waterproofing and curing/parting compounds, membranes, and any previously installed materials or other foreign matter. Laitance and efflorescence must be removed prior to installation.
3. Clean concrete surfaces by grinding, abrasive blasting, wire brushing, saw cutting, or other appropriate method.

Steel

1. Steel surfaces must be cleaned before blasting according to SSPC-SP1. Remove any sharp edges and other surface imperfections.
2. Dry abrasive blast surface according to SSPC SP-6/NACE No. 3 Commercial Blast (minimum).
3. Test the surface for non-visible soluble salt contamination according to NACE 6G186. If necessary treat with CHLOR*RID or equivalent salt remover until less than 3ug/cm² is detected.

PRIMING:

1. Priming all surfaces is always recommended as it will optimize adhesion and durability. Prime with POLYQuik® POLYPRIME or other WVCO approved primer. Contact WVCO for more details about appropriate primer selection.
2. Refer to the primer Technical Data Sheet and the [POLYQuik Primers Installation Guideline](#) for detailed primer application instructions.

PROCESSING:

1. HPRE kits are designed to be applied as provided to provide the typical properties described in this TDS. Adding additional materials to or misapplying the kits will result in non-typical physical properties.
2. Whenever possible, condition all HPRE components (resin pail and iso pouch) to 70°F (21°C) before application.
3. At ambient temperatures \leq 40°F (5°C), HPRE components may be conditioned to 100°F (38°C) to aid in cure speed.
4. Kits are designed for single use. Do not subdivide.
5. Use 'eggbeater' style mixer with a drill capable of \geq 400 RPM.
6. Tear open and add "Part A ISO" pouch to the resin pail. Mix for 2 minutes.
7. Stop mixing and scrape the sides and bottom of pail, resume mixing for an additional minute.
8. After kit is uniformly well mixed, pour HPRE into the installation area.
9. Rail systems and geometries are varied. It is the responsibility of the installer to determine the most appropriate application method for the specific work project parameters. WVCO recommends honoring all joints in the substrates adhered to. HPRE has some small percentage of curing shrinkage based on the total dimensions of any continuous pour. Contact your WVCO representative for more details on recommended installation procedures and practices

NOTE: HPRE is cured to the touch ("tack-free") by approx. 60 minutes at 70°F (21°C). Colder temperatures will extend the cure time, warmer temperatures will shorten the cure time.

NOTE: HPRE surface may discolor with UV exposure. UV discoloration does not impact any aspect of material performance.

HEALTH AND SAFETY

Before handling, you should become familiar with the Safety Data Sheet (SDS) regarding the risks and safe use of this product. To obtain an SDS, please call 800-333-9826 or send an email to: msds@wilvaco.com.

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