



The Willamette Valley
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Partnering through service,
innovation, and integrity

FastPatch HPRE-MD

High Performance Rail Encapsulator – Meter Dispensed

DESCRIPTION

FastPatch HPRE-MD is a composite polyurethane rail encapsulation system with patent pending integrated aggregate. HPRE-MD is specifically designed for embedded rail applications and provides excellent electrical isolation, resilience, and vibration and sound damping. HPRE-MD is dispensed by WVCO PRE-TEC division WV-651. HPRE-MD also comes in a slope grade version for applications on an incline or decline up to 5° / 9%.

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
- 4.0 gal/min (32 cu. ft. per hour) application rate from WV-651 at 70°F

PACKAGING

250-Gallon (950 L) Totes

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)

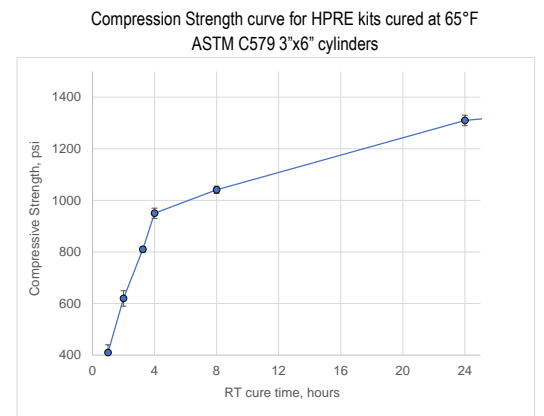
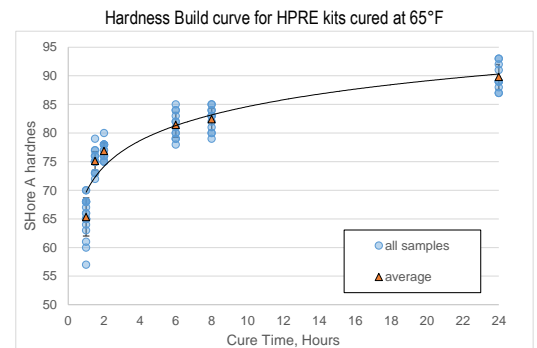
TYPICAL PROPERTIES

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 (MPa), ASTM D412, full cure		400 (2.76)
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
working time, min.	tack-free time, min.	Temp.
4-5	15	104°F (40°C)
8	30	77°F (25°C)
15	60	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 (MPa), 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. Use WVCO/Pre-Tec (or equivalent) meter at 6:1 volume ratio. Always use approved static mix tubes
2. For specific questions about your metering equipment contact your WVCO representative or customer support.
3. Whenever possible, condition all HPRE components (resin, iso, and aggregate) to 70°F (21°C) before application.
4. At ambient temperatures \leq 40°F (5°C), HPRE components may be conditioned to 100°F (38°C) to aid in cure speed.
5. Mechanically mix the HPRE resin component for at least 30 minutes or until well mixed before application. It is particularly important to mix the HPRE resin if it has been allowed to sit in storage for an extended period of time.
6. Test the performance of the meter and HPRE before applying into the work area. It is recommended a small portion of material is dispensed into a cup and the material cure time and color/mixing monitored for uniformity and conformance at the start of each work period. Do not proceed with application into the work area if the initial test does not cure properly.
7. Continuously dispense material and minimize triggering on/off whenever possible to prevent improperly mixed material.
8. Static mix tubes should be replaced if application stops for longer than 5 minutes or if material flow is restricted.
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

SLOPE GRADE:

If you are applying the slope grade HPRE-MD, material must be conditioned to at least 70°F (21°C) AND the hydraulic flow to the meter must be at least 2.0 gallons per minute. If these criteria cannot be met throughout the duration of installation, the slope grade material should not be used.

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: sds@wilvaco.com.

DISCLAIMER OF WARRANTY

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