PolySpec THIOKOL

TECHNICAL DATA SHEET – PERMAREZ® 300

Revised: 2/2017

DESCRIPTION

PermaRez 300, is a vinyl ester novolac resin used as a binder for select aggregates and powders to create mortars; and as a saturant for fiberglass reinforcement. This can be used to make high build composite systems for heavy-duty linings on concrete and steel substrates. These resins, fillers and reinforcement fabrics combine to produce dimensionally stable linings ideally suited for immersion and splash and spill exposure of concentrated acids and aggressive solvents.

TYPICAL APPLICATION

PRIMER	PolySpec PE-310 on Steel: (2–3 mils DFT) PolySpec PE-310 on Concrete: 500-800 sq ft per gallon
DETAIL PREPARATION	Putty mortar made of PolySpec-Futura PE-310 Primer and F-4 Powder
BASECOAT	PermaRez 300 w/F-4 Powder @ 50–60 mils
FABRIC	Type W (24 oz. woven-roving)
SATURANT	PermaRez 300 @ 25 mils
TOPCOAT	PermaRez 300 w/F-4 Powder @ 50–60 mils PolySpec Smoothing Liquid #1
OPTIONS	Carbon-Filled, Non-Silica Applications (recommended for fluoride or caustic service) Powder: F-5 Powder / Fabric: Type V (Nexus Veil)

BENEFITS

- Excellent resistance to aggressive acids, alkalies and solvents; withstands attack from 75% sulfuric acid, 37% hydrochloric acid and 100% phosphoric acid
- Seamless, high tensile strength composite
- Extremely low permeation rate; superior performance to acid-proof brick
- Excellent dimensional stability; withstands wide temperature range

RECOMMENDED USES

- Steel process and storage tanks
- Concrete waste treatment sumps
- Trenches, pedestals, curbs
- Secondary containment
- Truck loading/unloading areas
- Chemical pump pads
- FGD Equipment

GENERIC DESCRIPTION: Vinyl Ester Novolac

STANDARD COLORS:
Gray (Amber liquid, before addition of Powder)

PACKAGING:
5-Gallon Unit

Filler Powder sold separately; per 5-Gallon Unit:
- 125 pounds F-4 Powder, sold in 50 lb bags
- 30 pounds F-5 Powder, sold in 30 lb pails

Fabric sold separately:
- Type W (24 oz cloth) sold in 765 ft^2 rolls
- Type V (Nexus Veil) sold in 6,000 ft^2 rolls

PolySpec Smoothing Liquid #1 sold separately
(HARDENER SOLD SEPERATELY)

MIX RATIO: 1 GAL R : 2.5 OZ H

COVERAGE: 15 ft^2 / gallon @ 120 mils
(Includes two 60 mil coats and saturant)
SEE SYSTEM DETAILS IN "TYPICAL INSTALLATION" PORTION OF THIS DOCUMENT

PERMAREZ® 300

REINFORCED LINING FOR CONCRETE & STEEL, ACID & SOLVENT RESISTANT

ITW Engineered Polymers

PolySpec THIOKOL

TECHNICAL DATA SHEET – PERMAREZ® 300

PERFORMANCE DATA

COMPRESSIVE STRENGTH (ASTM C - 579)	12,000 psi
TENSILE STRENGTH (ASTM C - 307)	3,000 psi
FLEXURAL STRENGTH (ASTM C - 580)	12,500 psi
HARDNESS, SHORED (ASTM D - 2240)	85 – 90
BOND STRENGTH (ASTMD - 4541)	425 psi
ABRASION RESISTANCE (ASTM D - 4060)	100 mg
OPERATING TEMPERATURE, MAXIMUM, DRY: WET:	392ºF Dependent on chemical exposure
VOC	1.58 lb/gal ; 190 gm/L

STORAGE & INSTALLATION

STORAGE ENVIRONMENT	Dry area , 65-80 ºF
APPLICATION TEMPERATURE, AMBIENT	50-95ºF
APPLICATION TEMPERATURE, SUBSTRATE	Minimum 5ºF above dew point
SHELF LIFE, PROVIDED STORAGE ENVIRONMENT GUIDELINES ARE FOLLOWED	60 days
POT LIFE, @ 77ºF	35 minutes
FULL SERVICE, @ 77ºF	7 days
RECOAT WINDOW	Minimum: 4 Hours, Maximum: 24 hours

CONSIDERATIONS & LIMITATIONS

1. For best results, work area should be humidity and temperature controlled.
2. Work area must be well ventilated. Fresh air respirators are recommended when working with this product.
3. Do not thin with solvents unless advised to do so by ITW Engineered Polymers.
4. Confirm product performance in specific chemical environment prior to use.
5. Prepare substrate according to “Surface Preparation” portion of this document.
6. Do not apply to slabs on grade unless a heavy unruptured vapor barrier has been installed under the slab.
7. Always use protective clothing, gloves and goggles consistent with OSHA regulations during use. Avoid eye and skin contact. Do not ingest or inhale. Refer to Material Safety Data Sheet for detailed safety precautions. For industrial/commercial use. Installation by trained personnel only.

SURFACE PREPARATION

CONCRETE: Apply only to clean, dry and sound concrete substrates that are free of all coatings, sealers, curing compounds, oils, greases or any other contaminants.

- New concrete should be cured a minimum of 28 days.
- Concrete that has been contaminated with chemicals or other foreign matter must be neutralized or removed.
- Remove any laitance or weak surface layers.
- Concrete should have a minimum surface tensile strength of at least 300 PSI per ASTM D-4541.
- Surface profile shall be CSP-3 to CSP-5 meeting ICRI (International Concrete Repair Institute) standard guideline #03732 for coating concrete, producing a profile equal to 60-grit sandpaper or coarser. Prepare surface by mechanical means to achieve this desired profile.
- Moisture vapor transmission should be 3 pounds or less per 1,000 square feet over a 24 hour time period, as confirmed through a calcium chloride test, as per ASTM E-1907. Quantitative relative humidity (RH) testing, ASTM F-2170, should confirm concrete RH results <75%.
- All surface irregularities, cracks, expansion joints and control joints should be properly addressed prior to application.
- Outgassing may occur due to the porosity of some concrete surfaces. To reduce the effect of outgassing, the primer and coating should be applied when the temperature of the concrete substrate is dropping. This usually occurs in the evening; however, the concrete substrate temperature should be measured with a surface thermometer for verification. Double priming will greatly reduce the effects of outgassing by additionally filling the pores in the concrete.

STEEL: For immersion service, “White Metal” abrasive blast with an anchor profile of 2–4 mils in accordance with Steel Structures Painting Council Specification SP-5-63 or NACE No. 1 is required. For splash and spillage exposure, “Near White” SP-10-63 or NACE No. 2 is required.

Refer to PolySpec Surface Preparation Guidelines for more details.

INSTALLATION STEPS

1. Prime surface with PolySpec PE-310 Primer. See data sheet for application details.
2. Use a mortar/mud mixture of PolySpec PE-310 mixed with F-4 Powder, (approximately 4–parts powder to 1-part mixed resin), to round the corner radius of vertical to horizontal transitions, to smooth weld seams, and to patch holes and irregularities. See data sheet for application details.
3. Pour Hardener #3 into PermaRez 300 Resin pail. Mix thoroughly using a jiffytype mixer operated at low speed until a proper blend is attained. Scrape the sides of the pail to ensure the product has been properly mixed; any unmixed material left on the side of the pail will not cure.
   NOTE: *Mix ratio is 2.5 ounces Hardener #3 to one gallon PermaRez 300 Resin.*
4. Stir in F-4 or F-5 filler powder and mix well until all particles are wetted out.
   NOTE: *Mix ratio is approximately 25 pounds F-4 (or 6 pounds F-5) filler per mixed gallon of binder.*
5. Spread basecoat mixture onto surface by trowel to a thickness of 1/16”. Immediately lay the reinforcement fabric into the basecoat and press out all air pockets with a dry paint roller.
6. Saturate the reinforcement with a coat of catalyzed PermaRez 300 Resin (without powder). Roll out saturant coat until the whiteness of the reinforcement disappears.
7. After the saturated basecoat has dried, grind down any burrs that have appeared on the surface.
8. Spread topcoat mixture (PermaRez 300 with filler powder) with a steel trowel as evenly as possible to a thickness of 1/16”.
   NOTE: *Recoat time over saturant coat is normally 24 hours.*
9. Before topcoat is allowed to dry, smooth with a paint brush dipped lightly in PolySpec Smoothing Liquid #1.
10. Always wear gloves when using this product.

1galR : 2ozH / DOC PE310 TDS