TECHNICAL DATA SHEET

NPR-1551 EPOXY

High Heat Epoxy System for Infrastructure Protection

Rev. 20251215

DESCRIPTION

Neopoxy NPR-1551 Epoxy is a two-part 100% solids structural epoxy coating formulated to withstand high temperatures. Moderately fast ambient cure time and rapid development of physical properties during post-cure. NPR-1551 Epoxy demonstrates excellent chemical resistance to sulfuric acid, nitric acid, sodium hydroxide, hydrogen sulfide, caustics, gasoline, and other hydrocarbons.

FEATURES

- Heat resistant formula
- 100% solids, solvent free, no VOCs
- Chemical and corrosion resistant
- Very strong surface bond
- Prevents inflow and infiltration
- Protects for decades
- Structural coating
- Verified by independent testing

USES

- Coating industrial or other infrastructure that operates at temperatures up to 250°F (120°C).
- Protection of new or corroded concrete and steel infrastructure, including manholes, sumps, wet wells, pipelines, vaults, tanks, concrete surfaces, cracks, WTPs, and more
- PVC coating and bridging with other materials (requires primer coat with Neopoxy NPR-3200 PVC Adhesive)

PACKAGING OPTIONS

- 8.5 Gallon Set (Hand Application), 5 55-Gallon Drum Set (Spray Application)
- Additional sizes available in One-Step Kits and Sets: .5 gal, 1 gal, 1.5 gal, 3 gal

PHYSICAL PROPERTIES

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Description	Standard	Data
Mix Ratio (Resin/Hardener)	-	**1.5 to 1 by Volume 1 to 1 by Weight**
Initial Cure Time, 100 Grams @ 77°F (25°C)	-	2 Hours
Weight Per Gallon (Resin)	-	8.9 - 9.2 Lbs
Weight Per Gallon (Hardener)	-	15.2 - 15.4 Lbs
Weight Per Gallon (Mixture)	-	12.0 - 12.3 Lbs
Specific Gravity (Resin)	-	1.06 - 1.09 G/ml
Specific Gravity (Hardener)	-	1.53 - 1.57 G/ml
Maximum Service Temperature (Postcured at 200°F (93°C))	-	250°F (120°C)
Glass Transition Temperature (Postcured at 180˚F (82˚C))	-	212˚F (100˚C)
Glass Transition Temperature (Postcured at 200˚F (93˚C))	-	265˚F (130˚C)
Coefficient of Linear Thermal Expansion	-	3.7×10^{-6} cm/cm/°C
Shrinkage	-	<0.5%
Viscosity, Resin @ 20 RPM, 77°F (25°C) (Brookfield Spindle LV-4 [64])	-	100,000 cPs
Viscosity, Hardener @ 20 RPM, 77°F (25°C) (Brookfield Spindle LV-4 [64])	-	100,000 cPs
Flexural Strength	ASTM D-790	11,000 psi
Flexural Modulus	ASTM D-790	570,000 psi
Tensile Strength	ASTM D-638	6,000 psi
Tensile Elongation	ASTM D-638	3.0%
Shore D Hardness	ASTM D-2240	>87
Adhesion to Concrete	ASTM D-4541 ASTM D-7234	Concrete Failure
Adhesion to Steel	ASTM D-4541	>3,000 psi
Volatile Organic Compounds (VOCs)	ASTM D-3960	0.0 Lbs/Gallon

DIRECTIONS FOR USE

SURFACE PREPARATION: Any concrete surface must be fully cured prior to coating (typically 28 days for Portland cement). All inflow and infiltration must be stopped prior to application. High pressure wash all surfaces to be coated at minimum 4000 PSI in order to remove contaminants, paint, laitance, etc. After power washing, remove standing water and blow warm air on surface until visibly dry. There should be no darkened areas, as this may indicate surface moisture. For confirmation of surface dryness, applicant may choose to do the "Plastic Sheet Method" test detailed in ASTM D4263. Surface pH should be between 6-10. The product can be applied to any concrete surface profile, CSP 1 to CSP 10 (the rougher the surface the stronger the adhesion). Steel surfaces to be coated should be prepared according to SSPC-SP 10/NACE No. 2 "Near White Blast Cleaning". Steel surfaces may also require following SSPC-SP-1 (Solvent Cleaning) to remove any soluble contaminants.

APPLICATION CONDITIONS: The temperature of the air and surface to be coated should be between 40-80°F during application. It is important to apply the product while the temperature is either stable or falling. Relative humidity must be below 80%.

MIXING & HAND APPLICATION: Product must be mixed according to the Mix Ratio shown in the Physical Properties table in this document. Mix product in bucket with paint stick or right angle ½" drill (such as Milwaukee Super Hawg) with paint mixing paddle until there is no streaking and color is a consistent light green. When mixing, make sure to scrape the sides and reach all the way to the bottom of the bucket. Using a paint trowel or putty knife, remove mixed epoxy from the bucket as rapidly as practical and safe. Spread the epoxy directly onto the surface to be protected.

SPRAY APPLICATION: Specialized high pressure plural component spray equipment is required for spray application (i.e. Graco XP-50). Please consult with Neopoxy representative if interested in spray application.

POST-CURE: In order to achieve high temperature resistant physical properties, NPR-1551 must be post-cured after initial two-hour ambient cure. The post-cure can be achieved in one of three ways: (1) blowing hot air on the application area, (2) running hot water over the application area, or (3) blowing steam over the application area. For all three methods, the temperature should be gradually ramped up and then held at 200°F (93°C) or higher for one hour. All three methods offer similar results as far as final physical properties.

CLEAN UP: Clean any surface spills or overspray as quickly as possible with isopropyl alcohol or acetone. For cleaning skin, first wipe off epoxy with soft rag and then wash area with soap and warm water.

SHELF LIFE & STORAGE: Store product in closed container at 40°-80°F. Shelf life is one year from the manufacture date indicated on label.

SAFETY: Use of safety goggles, particle masks, coveralls, and chemical resistant gloves is recommended. Work in a clean, well-organized area with adequate ventilation. Keep uncured product containers tightly closed and away from children at all times. Please read and understand the full safety recommendations as set forth in the Safety Data Sheets (SDS) available on our website.

ADDITIONAL PRODUCT INFORMATION

COATING THICKNESS: Product may be applied at up at 300 mils (.3") in one single pass. Exceeding this maximum application thickness may result in sagging. While every project and surface is different, it is considered "standard" to apply 125 mils to new concrete infrastructure and 250 mils to corroded concrete infrastructure. Please consult with Neopoxy representative to determine the best thickness for your project. Since this is a 100% solids solvent-free product, there is minimal shrinkage. Wet and dry-film thicknesses are equal.

COVERAGE: One gallon covers 12 square feet at 1/8" thickness (125 mils).

CURE TIME: Epoxy is "temperature sensitive," meaning that it will cure faster at higher temperatures. Epoxy is also "mass sensitive," meaning that the larger the volume, the shorter the working time. It is important to limit the mass of mixed epoxy by continuing to mix it or by spreading it to extend the working time.

ENVIRONMENTAL: Neopoxy epoxies are comprised entirely of reactive solids (resin & hardener), which means that there are no solvents or thinners that evaporate during the curing process. Since the curing process binds all reactive components, the cured epoxies are inert, non-leeching, and safe for use on stormwater infrastructure, wastewater infrastructure, or for discharge into a wastewater treatment facility or natural body of water. Prior to mixing the epoxy, the applicant must handle the uncured resin and hardener with care and clean up any spills in accordance with local environmental regulations. For additional information please reference Safety Data Sheets (SDS) available on our website.

RECOAT WINDOW: Multiple layers may be applied to build thickness, but the materials must be allowed to cure and become cool to the touch before applying the next layer. Recoat window may be extended up to several months as long as the surface is clean and free of contaminants and amine blush.

THINNING: To lower viscosity, place containers in heated room or submerge bottom of container in hot tap water. For plural component spray application, drum heaters or inline heaters may be used. **Do not thin with solvents.**