Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Neopoxy NPR-5300 Series Wastewater Epoxy Catalog

"High quality epoxy resins for infrastructure protection and rehabilitation"

Applications: Repair and protection of corroded or new manholes, sumps, wet wells, pipelines, vaults, tanks, concrete surfaces, exposed aggregate, cracks, and more.

Catalog Version: November 2023

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Table of Contents

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Introduction

Protection and rehabilitation of wastewater infrastructure has been at the core of Neopoxy's business for nearly two decades. NPR-5300 Series Wastewater Epoxy consistently ranks highest among competitors in strength, chemical resistance, and long-term durability. These specialized products have been used worldwide for a wide variety of wastewater projects, ranging in size from small pipelines to large wastewater treatment plants. Major infrastructure contractors and municipal engineers alike consistently turn to NPR-5300 Series Wastewater Epoxy for unmatched reliability.

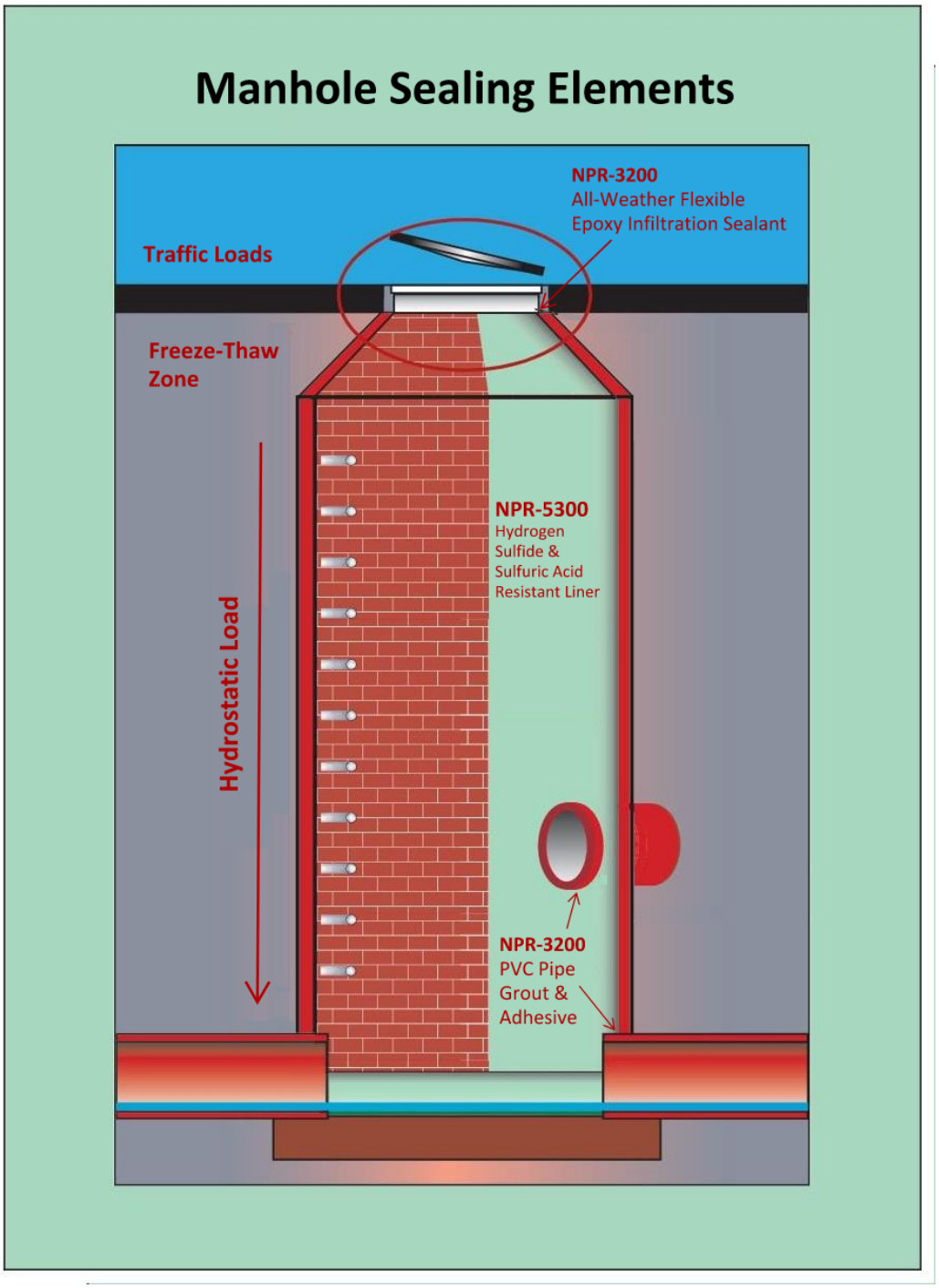
Applications: Repair and protection of corroded or new manholes, sumps, wet wells, pipelines, vaults, tanks, concrete surfaces, exposed aggregate, cracks, and more. NPR-5300 Series Wastewater Epoxy comes in five different viscosities, making it suitable for nearly any epoxy application.

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Liner Comparison Chart

	Liner Type						
Criteria	**Neopoxy NPR-5300**	**PVC Liner**	**CIPP Felt Liner**	**CIPP FRP Liner**	**Polyurethane (PU) Flex Liner**	**Cement w/ Epoxy Topcoat**	**Ca-Al Cement**
Liner Material	*NPR-5300*	PVC	Felt	Fiberglass	PU	Cement	Cement
Adhesive Material	*NPR-5300*	*NPR-3203*	*NPR-5305*	*NPR-5300*	PU	Cement	Cement
Barrier Material	*NPR-5300*	PVC	Polyester	Polyester	PU	*NPR-5302*	Cement
Protective Coating	◆	◆	◆	◆	◆	◆	◆
Adhesive pH Range 0-14	◆	◆	◆	◆			
Barrier pH Range 0-14	◆	◆			◆	◆	
Monolithic Structure	◆						◆
Inexpensive Repairs	◆	◆	◆	◆	◆	◆	◆
Moisture Tolerant	◆	◆	◆	◆		◆	◆
Bonds to Host Surface	◆					◆	◆
Conforms to Host Surface	◆	◆			◆	◆	◆
ASTM F1216 Compliance	◆		◆	◆			
Ambient Cure	◆	◆			◆	◆	◆
Does Not Wrinkle	◆	◆			◆	◆	◆
Does Not Shrink	◆	◆			◆	◆	◆
Non-Toxic Ingredients	◆	◆				◆	◆
Easily Inspected	◆				◆	◆	◆

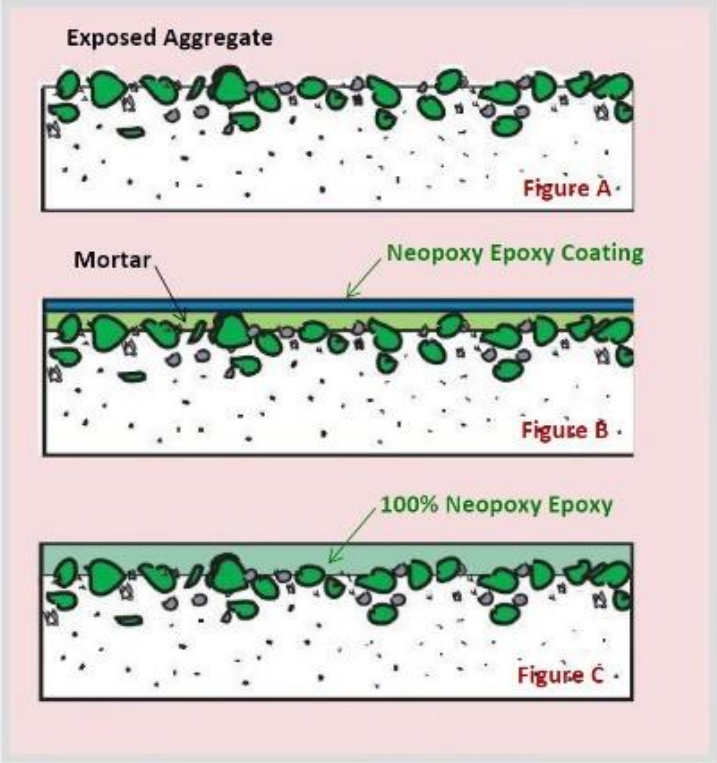
Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com



Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Advantages of High Build Epoxy and Direct-To-Aggregate Bonding

While concrete can be used to smooth a rough aggregate surface prior to epoxy application (Figure B), concrete has much lower bonding properties than a 100% epoxy liner. **NPR-5300 Series Wastewater Epoxy** is designed to be used as a high build structural liner for deteriorated concrete structures (Figure C). While an application layer of 80 to 125 mils provides a corrosion resistant barrier to common sewer gases and concentrations of sulfuric acid, application of a layer 250 mils or above greatly increases the ability of the lining to resist physical abuse and external pressures (see "Epoxy Load Bearing Study" on next page). This type of application also provides protection from scraping or chipping caused by pipeline maintenance equipment.

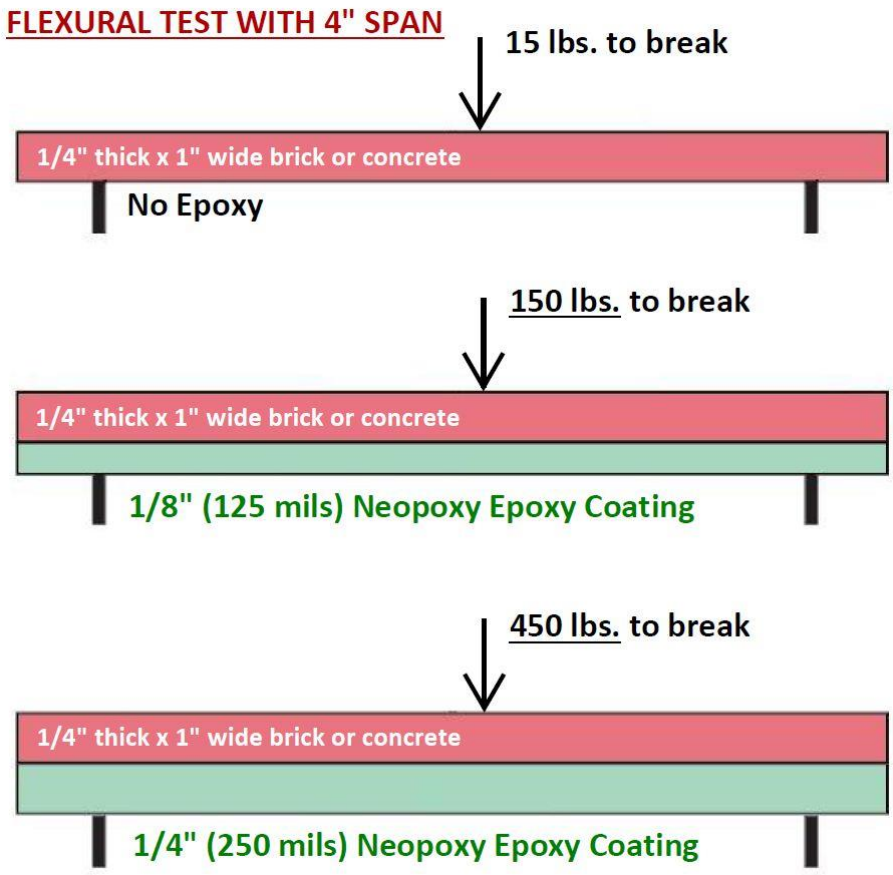


Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Epoxy Load Bearing Study

In this study, **Neopoxy NPR-5303 Medium Viscosity Epoxy** was applied to concrete and brick samples. Each sample was cut to ¼" thickness and 1" width. All samples were then tested on a calibrated Instron testing machine.

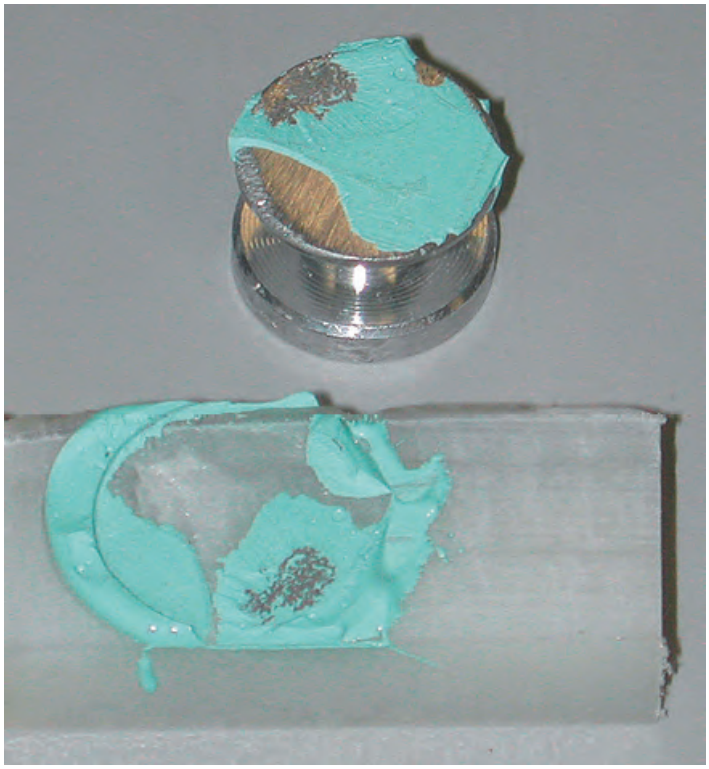
First, uncoated samples were tested as controls. Epoxy was then applied to samples at 1/8" (125 mils) and 1/4" (250 mils). As can be seen by the results below, the Neopoxy lining dramatically increased the flexural strength of the samples. The concrete and brick samples produced nearly identical results.



Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Adhesion to CIPP Pipeline Material

Neopoxy NPR-5300 Series Wastewater Epoxy is designed to seal manhole structures to all brands of cured-in-place pipe (CIPP) materials containing polyester or epoxy resins. In testing, adhesion of NPR-5303 Medium Viscosity Epoxy to cured CIPP polyester resin and felt laminate demonstrated a pull strength in excess of 5000 psi, per ASTM D-4541-95el. A photo of the tested sample is below. Note that partial failure occurred at the connection between the epoxy and aluminum dolly surface, ultimately lowering adhesion strength. This test demonstrates the incredibly strong bond between NPR-5303 and CIPP materials.



Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

Addendum 1: NPR-5300 Series Technical Data Sheets

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5305 One-Step Kit

Super High Viscosity Hand-Applied Structural Epoxy System

Neopoxy's innovative epoxy kit makes repairing and protecting infrastructure easy. Both the resin and hardener epoxy components are pre-packaged in a single bucket, allowing for a simple one-step mixing process. The epoxy can be prepared for application in minutes with only a drill and mixing paddle. Once applied, the epoxy quickly cures into a high strength, chemical and corrosion resistant protective surface that can last for decades.

- **Single Package - No Measuring, Weighing, or Messy Cleanup**
- **Easy to Mix and Apply**
- **Quick Curing**
- **Very Strong Surface Bond**
- **Chemical and Corrosion Resistant**
- **Prevents Inflow and Infiltration**
- **Third-Party Tested**
- **Environmentally Safe / No VOCs**
- **Protects for Decades**

Uses: Repair and protection of corroded or new manholes, sumps, wet wells, pipelines, vaults, tanks, concrete surfaces, exposed aggregate, cracks, and more. Epoxy can be applied up to ½" thick in a single pass.

Size Options: 3 Gallon, 1.5 Gallon, 1 Gallon, or .5 Gallon. One gallon covers 12 square feet at 1/8" thickness (125 mils).

Neopoxy's NPR-5305 One-Step Kit requires only simple tools to mix and apply.

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5305 One-Step Kit

Storage, Mixing, and Application Instructions

Epoxy systems are comprised of a resin and a hardener component that cure when mixed together. Neopoxy **NPR-5305 One-Step Kits** are conveniently pre-packaged at our factory with both the resin and hardener in the same bucket. **Mixing the components is very easy and requires no weight or volume measurements.**

Storage & Shelf Life: Store product at 40°-80°F. Shelf life at 75°F is three months from the manufacture date indicated on label. Shelf life may be longer at lower storage temperatures.

Safety: Use of safety goggles, particle masks, coveralls, and chemical resistant gloves is recommended. Work in a clean, well-organized area with adequate ventilation. Read and understand the product safety data sheet (SDS).

Tools Required: Personal protective equipment (PPE) listed above, right angle ½" drill with an RPM range of 450 to 1750 (such as a Milwaukee Super Hawg), mixing paddle, and joint knife or trowel.

Preparation: Surface must be clean with no standing water. Product adheres best to cool surfaces. Infiltration must be stopped before applying epoxy.

Mixing: Open the **NPR-5305 One-Step Kit**. Using the drill and mixing paddle, mix the kit contents at low speed until the epoxy is sufficiently fluid to mix at high speed. Make sure the mixing paddle reaches all the way to the bottom of the bucket. Mix thoroughly until a smooth color is evident.

Application: Immediately begin application with a joint knife or trowel, removing all mixed epoxy from the bucket as rapidly as practical and safe. Spread the epoxy ¼" thick onto a flat disposable surface (to then transfer to desired application area) or directly onto the surface to be protected. Multiple layers may be made to build thickness, but the materials must be allowed to cure and become cool to the touch before applying the next layer. Applications of up to ½" per layer may be made.

HARDENING (CURE) TIME: Epoxy is "mass sensitive," meaning that the larger the volume, the shorter the time it takes to harden and become unworkable. For example, when applied onto a surface at ¼" thickness, the product will harden in approximately one hour. However, when applied at thickness of ½", the time to harden may be as little as 30 minutes. *It is very important to limit the mass of mixed epoxy by spreading it to extend the working time.*

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5305 One-Step Kit

Super High Viscosity Hand-Applied Structural Epoxy System

Typical Physical Properties

Initial Cure Time, 100 Grams @ 77°F (25°C)	**Approximately 30 minutes**
Specific Gravity (resin)	1.06 – 1.09 G/ml
Weight Per Gallon (resin)	8.9 – 9.1 Lbs
Specific Gravity (hardener)	1.64 – 1.71 G/ml
Weight Per Gallon (hardener)	13.7 – 14.3 Lbs
Weight Per Gallon (mixture)	11.3 – 11.7 Lbs
Flexural Modulus (ASTM D-790)	550,000 psi
Flexural Strength (ASTM D-790)	11,500 psi
Tensile Elongation (ASTM D-638)	5%
Tensile Strength (ASTM D-638)	7,000 psi
Tensile Modulus (ASTM D-638)	290,000 psi
Compressive Strength (ASTM C-579)	>18,000 psi
Coefficient of Linear Thermal Expansion	37 x 10-6 cm/cm/OC
Maximum Service Temp. (ambient cure)	150°F (66°C)
Maximum Service Temp. (postcured)	168°F (76°C)
Shore D Hardness (ASTM D-2240-15e1)	>86
Shrinkage	<0.5%
Adhesion: Concrete (ASTM D-4541-95el)	Concrete Fails
Adhesion: Steel (ASTM D-4541-95el)	2000 psi
Abrasion Resistance (D4060-95, CS17)	50mg/1000 @1000 gram load

Third party testing and extensive field experience demonstrates excellent chemical resistance to 30% sulfuric acid, 5% nitric acid, 5% sodium hydroxide, hydrogen sulfide, caustics, gasoline, and other hydrocarbons.

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5305 One-Step Kit

Super High Viscosity Hand-Applied Structural Epoxy System

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5301
Super Low Viscosity Sprayable Epoxy System

NPR-5301 is a rapid curing, high strength, high corrosion resistant modified epoxy resin designed to repair manholes, sumps, wet wells, pipelines, tanks, and more. **It is also recommended for waterproofing.** Excellent cure at low temperatures and in the presence of water. Typically develops a hard surface in 1-2 hours. Rapid development of physical properties. Film thickness of 5 – 40 mils in a single pass by spray or brush.

Third party testing and extensive field experience demonstrates excellent chemical resistance to 30% sulfuric acid, 5% nitric acid, 5% sodium hydroxide, hydrogen sulfide, caustics, gasoline, and other hydrocarbons.

Typical Physical Properties

Mix Ratio (Resin/Hardener)	***1.5 to 1 by Volume***
Mix Ratio (Resin/Hardener)	1 to 1 by Weight
Initial Cure Time, 100 Grams @ 77°F (25°C)	**30 minutes**
Specific Gravity (resin)	1.06 – 1.09 G/ml
Weight Per Gallon (resin)	8.9 – 9.1 Lbs
Specific Gravity (hardener)	1.64 – 1.71 G/ml
Weight Per Gallon (hardener)	13.7 – 14.3 Lbs
Weight Per Gallon (mixture)	11.3 – 11.7 Lbs
Flexural Modulus (ASTM D-790)	600,000 psi
Flexural Strength (ASTM D-790)	15,000 psi
Tensile Elongation (ASTM D-638)	5%
Tensile Strength (ASTM D-638)	7,500 psi
Tensile Modulus (ASTM D-638)	290,000 psi
Compressive Strength (ASTM C-579)	20,000 psi
Coefficient of Linear Thermal Expansion	37 x 10-6 cm/cm/OC
Maximum Service Temp. (ambient cure)	150°F (66°C)
Maximum Service Temp. (postcured)	168°F (76°C)
Shore D Hardness (ASTM D-2240-15e1)	>86
Shrinkage	<0.5%
Adhesion: Concrete (ASTM D-4541-95el)	Concrete Fails
Adhesion: Steel (ASTM D-4541-95el)	>2500 psi
Abrasion Resistance (D4060-95, CS17)	50mg/1000 @1000 gram load

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5302
Low Viscosity Sprayable Epoxy System

NPR-5303 is a rapid curing, high strength, high corrosion resistant modified epoxy resin designed to repair manholes, sumps, wet wells, pipelines, tanks, and more. Excellent cure at low temperatures and in the presence of water. Typically develops a hard surface in 1-2 hours. Rapid development of physical properties. Film thickness of 10 – 70 mils in a single pass by spray or brush.

Third party testing and extensive field experience demonstrates excellent chemical resistance to 30% sulfuric acid, 5% nitric acid, 5% sodium hydroxide, hydrogen sulfide, caustics, gasoline, and other hydrocarbons.

Typical Physical Properties

Mix Ratio (Resin/Hardener)	***1.5 to 1 by Volume***
Mix Ratio (Resin/Hardener)	1 to 1 by Weight
Initial Cure Time, 100 Grams @ 77°F (25°C)	**30 minutes**
Specific Gravity (resin)	1.06 – 1.09 G/ml
Weight Per Gallon (resin)	8.9 – 9.1 Lbs
Specific Gravity (hardener)	1.64 – 1.71 G/ml
Weight Per Gallon (hardener)	13.7 – 14.3 Lbs
Weight Per Gallon (mixture)	11.3 – 11.7 Lbs
Flexural Modulus (ASTM D-790)	600,000 psi
Flexural Strength (ASTM D-790)	15.000 psi
Tensile Elongation (ASTM D-638)	5%
Tensile Strength (ASTM D-638)	7,500 psi
Tensile Modulus (ASTM D-638)	290,000 psi
Compressive Strength (ASTM C-579)	20,000 psi
Coefficient of Linear Thermal Expansion	37 x 10-6 cm/cm/OC
Maximum Service Temp. (ambient cure)	150°F (66°C)
Maximum Service Temp. (postcured)	168°F (76°C)
Shore D Hardness (ASTM D-2240-15e1)	>86
Shrinkage	<0.5%
Adhesion: Concrete (ASTM D-4541-95el)	Concrete Fails
Adhesion: Steel (ASTM D-4541-95el)	>2500 psi
Abrasion Resistance (D4060-95, CS17)	50mg/1000 @1000 gram load

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5303

Medium Viscosity Sprayable Structural Epoxy System

NPR-5303 is a rapid curing, high strength, high corrosion resistant modified epoxy resin designed to repair manholes, sumps, wet wells, pipelines, tanks, and more. Excellent cure at low temperatures and in the presence of water. Typically develops a hard surface in 1-2 hours. Rapid development of physical properties. Film thickness of 40 – 150 mils in a single pass by spray or brush.

Third party testing and extensive field experience demonstrates excellent chemical resistance to 30% sulfuric acid, 5% nitric acid, 5% sodium hydroxide, hydrogen sulfide, caustics, gasoline, and other hydrocarbons.

Typical Physical Properties

Mix Ratio (Resin/Hardener)	***1.5 to 1 by Volume***
Mix Ratio (Resin/Hardener)	1 to 1 by Weight
Initial Cure Time, 100 Grams @ 77°F (25°C)	**30 minutes**
Specific Gravity (resin)	1.06 – 1.09 G/ml
Weight Per Gallon (resin)	8.9 – 9.1 Lbs
Specific Gravity (hardener)	1.64 – 1.71 G/ml
Weight Per Gallon (hardener)	13.7 – 14.3 Lbs
Weight Per Gallon (mixture)	11.3 – 11.7 Lbs
Flexural Modulus (ASTM D-790)	600,000 psi
Flexural Strength (ASTM D-790)	15,000 psi
Tensile Elongation (ASTM D-638)	5%
Tensile Strength (ASTM D-638)	7,500 psi
Tensile Modulus (ASTM D-638)	290,000 psi
Compressive Strength (ASTM C-579)	20,000 psi
Coefficient of Linear Thermal Expansion	37 x 10-6 cm/cm/OC
Maximum Service Temp. (ambient cure)	150°F (66°C)
Maximum Service Temp. (postcured)	168°F (76°C)
Shore D Hardness (ASTM D-2240-15e1)	>86
Shrinkage	<0.5%
Adhesion: Concrete (ASTM D-4541-95el)	Concrete Fails
Adhesion: Steel (ASTM D-4541-95el)	>2500 psi
Abrasion Resistance (D4060-95, CS17)	50mg/1000 @1000 gram load

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5304

High Viscosity Sprayable Structural Epoxy System

NPR-5304 is a rapid curing, high strength, high corrosion resistant modified epoxy resin designed to repair manholes, sumps, wet wells, pipelines, tanks, and more. Excellent cure at low temperatures and in the presence of water. Typically develops a hard surface in 1-2 hours. Rapid development of physical properties. Film thickness of 80 – 300 mils in a single pass by spray, trowel, or brush.

Third party testing and extensive field experience demonstrates excellent chemical resistance to 30% sulfuric acid, 5% nitric acid, 5% sodium hydroxide, hydrogen sulfide, caustics, gasoline, and other hydrocarbons.

Typical Physical Properties

Mix Ratio (Resin/Hardener)	***1.5 to 1 by Volume***
Mix Ratio (Resin/Hardener)	1 to 1 by Weight
Initial Cure Time, 100 Grams @ 77°F (25°C)	**30 minutes**
Specific Gravity (resin)	1.06 – 1.09 G/ml
Weight Per Gallon (resin)	8.9 – 9.1 Lbs
Specific Gravity (hardener)	1.64 – 1.71 G/ml
Weight Per Gallon (hardener)	13.9 – 14.3 Lbs
Weight Per Gallon (mixture)	11.3 – 11.7 Lbs
Flexural Modulus (ASTM D-790)	600,000 psi
Flexural Strength (ASTM D-790)	15,000 psi
Tensile Elongation (ASTM D-638)	5%
Tensile Strength (ASTM D-638)	7,500 psi
Tensile Modulus (ASTM D-638)	290,000 psi
Compressive Strength (ASTM C-579)	20,000 psi
Coefficient of Linear Thermal Expansion	37 x 10-6 cm/cm/OC
Maximum Service Temp. (ambient cure)	150°F (66°C)
Maximum Service Temp. (postcured)	168°F (76°C)
Shore D Hardness (ASTM D-2240-15e1)	>86
Shrinkage	<0.5%
Adhesion: Concrete (ASTM D-4541-95el)	Concrete Fails
Adhesion: Steel (ASTM D-4541-95el)	>2500 psi
Abrasion Resistance (D4060-95, CS17)	50mg/1000 @1000 gram load

Neopoxy LLC
23964 Clawiter Road
Hayward, California 94545
Phone: 510-782-1290
Fax: 510-782-1292
www.neopoxy.com

NPR-5305

Super High Viscosity Hand-Applied Structural Epoxy System

NPR-5305 is a rapid curing, high strength, high corrosion resistant modified epoxy resin designed to repair manholes, sumps, wet wells, pipelines, tanks, and more. Excellent cure at low temperatures and in the presence of water. Typically develops a hard surface in 1-2 hours. Rapid development of physical properties. Film thickness of 100 – 500 mils in a single pass by trowel or brush.

Third party testing and extensive field experience demonstrates excellent chemical resistance to 30% sulfuric acid, 5% nitric acid, 5% sodium hydroxide, hydrogen sulfide, caustics, gasoline, and other hydrocarbons.

Typical Physical Properties

Mix Ratio (Resin/Hardener)	1.5 to 1 by Volume
Mix Ratio (Resin/Hardener)	***1 to 1 by Weight***
Initial Cure Time, 100 Grams @ 77°F (25°C)	**30 minutes**
Specific Gravity (resin)	1.06 – 1.09 G/ml
Weight Per Gallon (resin)	8.9 – 9.1 Lbs
Specific Gravity (hardener)	1.64 – 1.71 G/ml
Weight Per Gallon (hardener)	13.7 – 14.3 Lbs
Weight Per Gallon (mixture)	11.3 – 11.7 Lbs
Flexural Modulus (ASTM D-790)	550,000 psi
Flexural Strength (ASTM D-790)	11,500 psi
Tensile Elongation (ASTM D-638)	5%
Tensile Strength (ASTM D-638)	7,000 psi
Tensile Modulus (ASTM D-638)	290,000 psi
Compressive Strength (ASTM C-579)	>18,000 psi
Coefficient of Linear Thermal Expansion	37 x 10-6 cm/cm/OC
Maximum Service Temp. (ambient cure)	150°F (66°C)
Maximum Service Temp. (postcured)	168°F (76°C)
Shore D Hardness (ASTM D-2240-15e1)	>86
Shrinkage	<0.5%
Adhesion: Concrete (ASTM D-4541-95el)	Concrete Fails
Adhesion: Steel (ASTM D-4541-95el)	2000 psi
Abrasion Resistance (D4060-95, CS17)	50mg/1000 @1000 gram load