

Neopoxy NPR-3200 Series PVC Adhesive & Primer Catalog

“High quality epoxy resins for infrastructure protection and rehabilitation”



Applications: Bonding PVC liners and pipes with CIPP liners, concrete, and other substrates (i.e. steel, brick, wood, etc.)

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Introduction

Polyvinyl Chloride (PVC) is the world's second largest selling thermoplastic after Polyethylene, with annual production topping 40 million tons. PVC is widely used for a variety of pipeline infrastructure, plumbing, and other construction applications.

Neopoxy developed the **NPR-3200 Series** two-part epoxy to bond PVC pipes and liners to PVC materials, CIPP liners, concrete, and a variety of other substrates.

Prior to this product being released, bonding PVC was only possible with the following methods:

1. *Solvent Bonding*: Complicated process using highly flammable, volatile, toxic ingredients. Cannot be used to bond PVC to substrates. Works poorly below 40°F (5°C) and on wet surfaces.
2. *PVC Cement*: Only effective at bonding rigid PVC when in tight contact, such as with PVC plumbing pipe and PVC pipe fittings. Cannot be used to bond PVC to substrates. Works poorly on wet surfaces.
3. *"Tacky" Adhesive*: Used for application such as bonding PVC tiles to floors but has minimal peel and shear strength. Works poorly on wet surfaces.
4. *Other methods* require complex preparation and techniques.

Neopoxy's NPR-3200 Series PVC Adhesive & Primer is simple to use, bonds rigid or flexible PVC to a variety of substrates, fills gaps between surfaces (no tight contact needed), yields excellent peel and shear strengths, cures underwater, and contains no VOCs.

Since 1996, the NPR-3200 Series has been used and trusted by over 100 companies and municipalities, including major companies such as CH2M Hill, Sekisui SPR Americas, Insituform, and Michels.



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Typical Properties of NPR-3200 Series

Typical Cured Properties

Flexural Modulus	82,000 psi
Tensile Modulus	76,000 psi
Maximum Strength	2,000 psi
Maximum Elongation	40%

Bonding Strength to Different Substrates, Shear

Unabraded hard PVC	1,300 psi
Abraded hard PVC	1,800 psi
Unabraded smooth ABS	400 psi
Abraded smooth ABS	600 psi
Cold rolled carbon steel	1,800 psi
Sandblasted carbon steel	2,100 psi

Typical Bonding Strengths to Different Substrates, 180° Flexible PVC Peel Strength

Unabraded hard PVC	12.6 lbs./in
Abraded hard PVC	25.4 lbs./in
Abraded smooth ABS	13.0 lbs./in
Abraded polyester	18.6 lbs./in
Dry concrete brick	30.0 lbs./in
Wet concrete brick	21.4 lbs./in
Dry red brick	27.9 lbs./in
Wet red brick	25.9 lbs./in

T-Peel Strength of Flexible PVC with NPR-3200 Series

Water washed surface	23.3 lb./in
Abraded surface	31.6 lb./in



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Neopoxy NPR-3200 Series PVC Adhesive & Primer

Storage, Mixing, and Application Instructions

Epoxy systems are comprised of a resin and a hardener component that cure when mixed together. The proper ratio of the two components is dependent upon the chemical formulation. **NPR-3200 Series PVC Adhesive & Primer** is designed to be mixed according to the instruction below.

Mixing Ratio by *Weight* - 4:3

- Resin (Component A): Four (4) Parts
- Hardener (Component B): Three (3) Parts

Mixing Ratio by *Volume* - 1:1

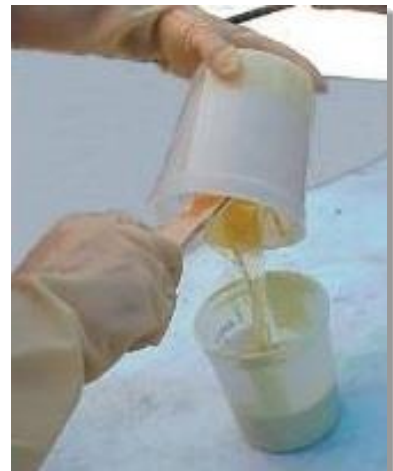
- Resin (Component A): One (1) Part
- Hardener (Component B): One (1) Part

Mixing & Application Instructions: Once the components have been measured according to the above ratios, add them to a suitable mixing container. Mix well with a low speed, low shear mixer at 400 - 800 rpm until a smooth color is obtained. Use a wooden paint stick to ensure that material on the sides and bottom of the container have been mixed. It typically takes 2-3 minutes to achieve a homogenous color. Immediately apply to the surfaces to be adhered, primed, or coated. Spreading the mixture promotes longer working time.

Storage & Shelf Life: It is recommended to use NPR-3200 Series PVC Adhesive & Primer within one year of the manufacture date indicated on label. Store product between 35-80°F (2-27°C).

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). For cleanup, use mineral spirit or glycol ethers (such as Arcosolv PM) available from local chemical distributors. In case of spills or leaks, contain and collect spill with absorbent materials, then transfer to a suitable container. Dispose of in accordance with federal and local regulations.

Addendum 1: NPR-3200 Series Technical Data Sheets





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NPR-3201

Super Low Viscosity PVC Adhesive

NPR-3201 is a super low viscosity chemical resistant two-part epoxy system originally designed to bond flexible PVC materials to rigid thermoset polymers. Prior to the release of NPR-3201, bonding flexible PVC could only be achieved through solvent bonding or other more complex adhesive systems. This simple to use, chemically distinct epoxy system has no solvents and bonds to many differing substrates. NPR-3201 is hydrophobic and yields excellent peel and shear strengths. It cures at ambient temperature. NPR-3201 may be utilized as an adhesive, primer, or for the impregnation of laminate. The primer application allows adhering a PVC liner to concrete using NPR-5300 series epoxies.

Typical Physical Properties

Property	Component A (Resin)	Component B (Hardener)
Color	Yellow	Amber
Odor	Slight	Slight Amine
Density (g/ml)	1.20 - 1.25	0.90 - 0.95
Viscosity 20 RPM @ 77°F (25°C), cPs	35,000	70,000
Flash Point (Closed Cup)	> 200°F (93°C)	> 200°F (93°C)

Mixture Properties

<i>Mix Ratio (Resin/Hardener)</i>	<i>1 to 1 by Volume</i>
Mixture Working Time	30 - 40 Minutes
Initial Cure Time	4 Hours
Complete Cure Time	24 Hours



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NPR-3202

Low Viscosity PVC Adhesive

NPR-3202 is a low viscosity chemical resistant two-part epoxy system originally designed to bond flexible PVC materials to rigid thermoset polymers. Prior to the release of NPR-3202, bonding flexible PVC could only be achieved through solvent bonding or other more complex adhesive systems. This simple to use, chemically distinct epoxy system has no solvents and bonds to many differing substrates. NPR-3202 is hydrophobic and yields excellent peel and shear strengths. It cures at ambient temperature. NPR-3202 may be utilized as an adhesive or as a primer. The primer application allows adhering a PVC liner to concrete using NPR-5300 series epoxies.

Typical Physical Properties

Property	Component A (Resin)	Component B (Hardener)
Color	Yellow	Amber
Odor	Slight	Slight Amine
Density (g/ml)	1.20 - 1.25	0.90 - 0.95
Viscosity 20 RPM @ 77°F (25°C), cPs	35,000	160,000
Flash Point (Closed Cup)	> 200°F (93°C)	> 200°F (93°C)

Mixture Properties

<i>Mix Ratio (Resin/Hardener)</i>	<i>1 to 1 by Volume</i>
Mixture Working Time	30 - 40 Minutes
Initial Cure Time	4 Hours
Complete Cure Time	24 Hours



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NPR-3203

Medium Viscosity PVC Adhesive

NPR-3203 is a medium viscosity chemical resistant two-part epoxy system originally designed to bond flexible PVC materials to rigid thermoset polymers. Prior to the release of NPR-3203, bonding flexible PVC could only be achieved through solvent bonding or other more complex adhesive systems. This simple to use, chemically distinct epoxy system has no solvents and bonds to many differing substrates. NPR-3203 is hydrophobic and yields excellent peel and shear strengths. It cures at ambient temperature. NPR-3203 may be utilized as an adhesive or as a primer. The primer application allows adhering a PVC liner to concrete using NPR-5300 series epoxies.

Typical Physical Properties

Property	Component A (Resin)	Component B (Hardener)
Color	Yellow	Amber
Odor	Slight	Slight Amine
Density (g/ml)	1.20 - 1.25	0.86 - 0.90
Viscosity 20 RPM @ 77°F (25°C), cPs	170,000	170,000
Flash Point (Closed Cup)	> 200°F (93°C)	> 200°F (93°C)

Mixture Properties

<i>Mix Ratio (Resin/Hardener)</i>	<i>1 to 1 by Volume</i>
Mixture Working Time	30 - 40 Minutes
Initial Cure Time	4 Hours
Complete Cure Time	24 Hours



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NPR-3204

High Viscosity PVC Adhesive

NPR-3204 is a high viscosity chemical resistant two-part epoxy system originally designed to bond flexible PVC materials to rigid thermoset polymers. Prior to the release of NPR-3204, bonding flexible PVC could only be achieved through solvent bonding or other more complex adhesive systems. This simple to use, chemically distinct epoxy system has no solvents and bonds to many differing substrates. NPR-3204 is hydrophobic and yields excellent peel and shear strengths. It cures at ambient temperature. NPR-3204 may be utilized as either a thin film or as a filler-adhesive, the latter of which is useful for bonding uneven surfaces and in repairs of all types.

Typical Physical Properties

Property	Component A (Resin)	Component B (Hardener)
Color	Yellow	Amber
Odor	Slight	Slight Amine
Density (g/ml)	1.20 - 1.25	0.86 - 0.90
Viscosity 20 RPM @ 77°F (25°C), cPs	170,000	300,000
Flash Point (Closed Cup)	> 200°F (93°C)	> 200°F (93°C)

Mixture Properties

<i>Mix Ratio (Resin/Hardener)</i>	<i>1 to 1 by Volume</i>
Mixture Working Time	30 - 40 Minutes
Initial Cure Time	4 Hours
Complete Cure Time	24 Hours



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NPR-3205

Super High Viscosity PVC Adhesive

NPR-3205 is a super high viscosity chemical resistant two-part epoxy system originally designed to bond flexible PVC materials to rigid thermoset polymers. Prior to the release of NPR-3205, bonding flexible PVC could only be achieved through solvent bonding or other more complex adhesive systems. This simple to use, chemically distinct epoxy system has no solvents and bonds to many differing substrates. NPR-3205 is hydrophobic, cures well underwater, and yields excellent peel and sheer strengths. It cures at ambient temperature. NPR-3205 may be utilized as either a thin film or as a filler-adhesive, the latter of which is useful for bonding uneven surfaces and in repairs of all types.

Typical Physical Properties

Property	Component A (Resin)	Component B (Hardener)
Color	Yellow	Amber
Odor	Slight	Slight Amine
Density (g/ml)	1.20 - 1.25	0.86 - 0.90
Viscosity 20 RPM @ 77°F (25°C), cPs	600,000	300,000
Flash Point (Closed Cup)	> 200°F (93°C)	> 200°F (93°C)

Mixture Properties

<i>Mix Ratio (Resin/Hardener)</i>	<i>1 to 1 by Volume</i>
Mixture Working Time	30 - 40 Minutes
Initial Cure Time	4 Hours
Complete Cure Time	24 Hours