

PRODUCT DESCRIPTION:

EPOXAL 3:1 is a high solids, solvent-based, low VOC epoxy coating that is a high performance epoxy coating intended for use on concrete flooring, walls and metal coating with rapid development of properties. It is available in clear, colour and as a metal primer.

PRODUCT FEATURES:

- Very rapid cure and property development at ambient and low temperatures.
- Excellent resistance to organic acids
- Good resistance to waterspotting
- Good color and color stability.
- Can be applied by brush roller and spray.
- Longer pot life than 100% solids coatings.

PERFORMANCE DATA

Typical Performance After 7 Days Cure @25°C(77°F)

GLASS TRANSITION TEMPERATURE:	52°C(ASTM 3418-82)
COMPRESSIVE STRENGTH:	10.9 KSI(ASTM 695-85)
COMPRESSIVE MODULE:	290 KSI(ASTM 695-85)
TENSILE STRENGTH:	8.9 KSI(ASTM 638-88)
TENSILE MODULUS:	480 KSI(ASTM D638-88)
TENSILE ELONGATION:	8.0 %(ASTM D638-88)
FLEXURAL STRENGTH:	15.3 KSI (ASTM D790-86)
FLEXURAL MODULUS:	556 KSI(ASTM D790-86)
HARDNESS:	84 (SHORE D)

60° SPECULAR GLOSS:	125(ASTM D523-85)
MAR RESISTANCE:	1.2 Kg(ASTM D5178-91)

TECHNICAL DATA

POT LIFE:	1 hour @ 21°C(70°F) (decreases at higher temperatures)
PACKAGING:	1 Gal, 4 Gal. & 20 Gal. Units.
SHELF LIFE:	1 year in unopened container @ minimum 20°C(68°F)
COLOUR:	Clear and colours
SHEEN:	Gloss
MIXING RATIO:	3:1 Resin to Catalyst (by volume)
PERCENT SOLIDS BY VOLUME:	63%(clear), 73%(colours)
THEORETICAL COVERAGE	Clear-1010 sqft/US Gal @ 1 mil DFT Colour-1170sqft/US Gal @ 1mil DFT
RECOMMENDED DFT:	10 to 16 mils(min. two coats)
CURE TIME @22°C(72°F):	Recoat-4-5 hrs Light Traffic-14hrs Full Cure-7 days
VOC, g/L:	320(clear), 230(colours)
FLASH POINT: (closed cup)	-4°C(Part A) 27°C(Part B)
MIXED VISCOSITY: @ 25°C(77°F)	Clear-250±50 CPS Colours-2500±500 CPS (ASTM D445-83)
CLEANUP:	NPC Epoxal Thinners

NOTE: The above data is solely based on lab testing done under strictly controlled conditions. Ambient temperature was used for all testing. No warranty can be

given as to the accuracy of this information as it will depend upon conditions at actual project locations, which are beyond our control.

TYPICAL USES:

- Used in conjunction with other NPC flooring systems as a primer, base coat and topcoat.
- Light to medium duty industrial floors, (i.e. warehouse or production areas subject to abuse).
- Sanitary environments subjected to constant cleaning, (i.e. laboratories, clean rooms, food production areas, washrooms).
- Secondary containment areas.

SURFACE PREPARATION:

New Concrete Preparation:

All surfaces to be coated must be clean, dry and free of all contaminants. New concrete must be cured a minimum of 28 days with no more than 3% moisture content. Any curing or hardening compounds, form oils, release agents or laitance must be removed by means of mechanical abrasion. Shot blasting or diamond grinding are the recommended methods. These two means of mechanical abrasion will clean the surface and open the pores of the concrete to allow maximum penetration of the primer. Ensure the methods of mechanical abrasion are dust-free.

Existing Concrete Preparation:

Ensure all loose concrete is removed, using a scarifier, diamond grinder, bush hammer or other methods. Remove any contamination, including grease and oil using an industrial cleaner. (Consult your NPC representative for recommended cleaners) Prepare the entire floor by method of a shot blaster, or diamond grinder. Patch any uneven or damaged concrete using “NPC Epoxal 100 Patch” or consult your NPC representative for further instructions.

Existing coated surfaces must be intact and tightly bonded to substrate below. If stability of existing coating is in question, test a small section and check for lifting. Hard or glossy surfaces must be abraded to improve adhesion performance. *NPC will not warrant the application of Epoxal coatings over an existing paint or urethane.*

Wood Preparation:

All wood surfaces to be coated must be clean, dry and free of all contaminants. The wood surface must be very rigid, with no possible movement. Fill any voids, or seams with NPC “Epoxal 100 Patch”

PRIMING:

Bare Concrete or Wood: Reduce EPOXAL 3:1 15% by volume with Epoxal Thinners. Apply at a spread rate of 5-7 mils WFT.

Metal: Use Epoxal 3:1 Metal Primer.

Concrete Block: Use Epoxal WB Blockfiller.

Other Surfaces: Consult your NPC representative.

MIXING:

Epoxal 3:1 is always mixed at a ratio of 3 Parts A to 1 Part B by volume. Always premix the Part A (resin) component of the mixture thoroughly. Epoxal 3:1 is supplied in different quantities. 2L units, 1 Gal. units, and 4 Gal. units can be mixed in the original container by adding the Part B into the Part A. If smaller quantities are required, ensure Part A is premixed, then measure accurately by volume 1 Part B into 3 Parts A in a clean mixing container.

Always mix the two components for a full 5 minutes with a jiffy mixer or stir stick. Allow the mixed material to stand for 5 minutes minimum. This is called the induction period. After the induction period, mix quickly and use.

This will produce a smooth pinhole free surface. If there are any pinholes, an additional coat should be applied.

For a proper bond additional coats must be applied within 24-48 hours after the completion of the first coat, depending on temperature. If this window is surpassed, mechanical abrasion must be used to prepare the coating before any further coats. NPC recommends a minimum of two coats, with the prime coat being 5-7 mils. The second coat should be applied at a thickness of 8-10 mils to provide a smooth uniform coat.

Do not wait more than 15 minutes between applying mixes of material to the floor.

Waiting longer between mixes may cause problems with working properties and colour consistency.

APPLICATION:

- Mix the material according to instructions provided.
- Pour the mixed material on the prepared floor immediately.
- Spread over the desired area using a rubber squeegee or flexible trowel to achieve uniform thickness. Brush any edges around walls or permanent objects.
- Saturate a medium nap roller and back roll the material to remove any squeegee lines and provide an aesthetically pleasing finish.
- Allow coating to cure.
- Repeat this process for the second and any further coats.

To achieve a textured finish, a third coat can be applied.

- Mix the material according to instructions provided.
- Spread the mixed material at a thickness of 5-6 mils with a rubber squeegee and back roll with a saturated medium nap roller.
- Using a hopper blower, broadcast a small amount of graded silica sand over the entire floor. Silica 530 will create a medium texture that is non-slip, and relatively easy to clean.

- Back roll the coating immediately to encapsulate the sand and to achieve a uniform textured surface.
- Allow coating to cure.

CURING:

At a temperature of 22^oC(72^oF), **EPOXAL 3:1** will be tack free within 4-5 hours. It will support light traffic at 14 hours and will reach full cure and chemical resistance in 7 days.

LIMITATIONS:

- This product must be applied to a substrate with a minimum temperature of 10^oC(50^oF).
- This product will amber if it is under prolonged ultra violet light.
- This product is not recommended for areas that are exposed to severe thermal shock.
- Working time and cure times are very dependant on temperature.
- Maintain a constant temperature before and during application period, and until coating is cured.

CHEMICAL AND SOLVENT RESISTANCE TESTING

[After 7 days curing at 22^oC(72^oF)]

10% HCl	E
10% Nitric Acid	E
15% Resorcinol	E
25% H ₂ SO ₄	G
50% Sodium Hydroxide	E
70% H ₂ SO ₄	G
Acetic Acid Glacial	G
Acetone	G
Alcohols (Methyl, Ethyl Butyl, Benzoyl)	S
Beer	E
Bleach	E
Brake Fluid	G
Brine	E
Carbon Disulphite	E
Carbonated Drinks	E
Concentrated H ₂ SO ₄	S
Concentrated H ₃ PO ₄	NR
Concentrated HCl	S
Concentrated Nitric Acid	NR
Diesel Oil	E
Distilled Tap Water	E
Gasoline	E
High Flash Naphtha	E
Hydrogen Peroxide	G
Ketchup	G
Lactic Acid	E
MEK	G
Methylene Chloride	NR
Mustard	G
Oleic Acid	E
Skydrol	E
Toluene	E
Trichlorethane	E
Wine	G
Xylene	E

Rating References

E= Excellent, G= Good (may stain but no change in film condition), S= Suitable for occasional spillage, NR= Not recommended (film destroyed)