

X-Shield EpoxyLock EPN

High performance epoxy novolac coating for concrete and steel

Product Description

X-Shield EpoxyLock EPN is a high performance, high build epoxy novolac protective coating suitable for use in a wide range of applications including those requiring extremely high chemical resistance.

A high build spray applied version is available for extreme applications.

Advantages

- Can be applied to steel and concrete
- High abrasion resistance
- Excellent chemical resistance
- Waterproof

Typical Uses

- Protection of concrete and steel structures from aggressive chemical environments.
- Wall and floor coating for industrial facilities
- Protection of marine structures
- Protection of steel pipelines

Specification Compliance

SCAQMD Rule 1168

Green Seal GS-03

LEED NC v2.2 EQ 4.2

Application Properties

Property	Typical Results
Dry film thickness	500 microns (21mils) [2 coats] 1000 microns (40mils) one coat for high build version
Application temperature	5 to 45C (41 to 115F)
Pot life	35 to 45 mins at 20C (68F) 15 to 20 mins at 35C (95F)
Recoat time	8 to 20 hours at 20C (68F) 4 to 7 hours at 30C (86F)
Full cure	5 days at 35C (68F)

Volatile Organic Content

VOC = <50 g/L

Chemical Resistance

X-Shield EpoxyLock EPN is suitable for use in contact with the following chemicals. The chemical shown in italics may cause discoloration when in contact with the coating, and the coating will only be resistance to occasional spillage.

Acetic acid 10% Ammonium acetate
Aluminum ammonium sulfate Ammonium chloride

Ammonium ferrous sulfate	Isopropanol
Ammonium hydroxide 30%	Jet fuel A1
Ammonium oxalate	Kerosene
Ammonium thiocyanate	Lactic acid 20%
Benzene	Magnesium sulfate
Benzoyl chloride	Methyl isobutyl ketone
Boric acid	Mineral spirit
<i>Brake fluid</i>	Nicotinic acid 2%
Brine 10%	<i>Nitric acid 30%</i>
<i>Carbon tetrachloride</i>	Phosphoric acid 10%
Castor oil	Potassium hydroxide 50%
<i>Chromic acid 10%</i>	Potassium chromate
Citric acid 50%	Potassium sodium tartrate
Corn oil	Potassium sulfate
Crude oil	Propylene glycol
Diethanolamine 88%	Rapeseed oil
Distilled water	Sea water
Engine oil	<i>Skydrol</i>
Ethanol	Sodium benzoate
Ethylene glycol	Sodium disulphite
Ferrous sulfate	Sodium hydroxide 50%
Formaldehyde 37%	Sodium thiocyanate
Gasoline	Sour Gas (80°C)
Hexamine 25%	<i>Sulfuric acid 98%</i>
Hexane	Sunflower oil
Hydrochloric acid 50%	Tartaric acid 50%
<i>Hydrofluoric acid 25%</i>	Toluene
Hydrogen peroxide	Xylene
	Zinc acetate

The above mentioned chemicals can come in contact with X-Shield EpoxyLock EPN, it is required to be washed with plenty of water to prevent any further attack. It is not recommended to test in immersed conditions.

X-Shield EpoxyLock EPN is not suitable for use with the following chemicals:

Chemicals at greater concentrations than shown above

Acetone	Ethylene glycol momoethyl ether
Benzyl alcohol	Formic acid
Chloroform	Methanol
Ethyl acetate	Tetrahydrofuran 99%

Color

Grey.

Theoretical Coverage

4m² per liter (158ft² per gallon) per coat.

Actual coverage will depend on wastage and surface profile

and can be up to 20% higher than theoretical coverage. For high build version - 1m² per liter at 1mm.

Packaging

4 and 15 liter packs.

Larger packs available for spray application.

Shelf Life

18 months when stored below 35C (95F) under shade in a dry environment.

Installation Guidelines

X-Shield EpoxyLock EPN should be applied by experienced coating crews. NCC X-Calibur provides detailed method statements on all its products for use in various applications. These must be referred to prior to starting work. The information below is a summary intended for guidance only.

Surface Preparation

Concrete

The substrate must be structurally sound. Loose or unsound concrete should be removed and made good. Surfaces must be entirely free of oil, grease, paint, corrosion deposits, dust, laitance or other surface deposits. The surface should be prepared by light grit blasting or high pressure water blasting to produce a lightly exposed aggregate surface. The use of a primer is not normally required on good quality well prepared substrates. However if the substrate is very porous or subject to high loads then the surface should be primed with X-Prime SF. If the substrate has a relative humidity >75% then prime using X-Prime MT100. Any bug holes should be filled with an X-Shield BugFill.

Steel

Surfaces should be thoroughly cleaned and degreased to SSPC-SP1 prior to blasting. All sharp edges, protuberances, welds, etc should be ground down to remove any sharp edges. The degreased surface should now be grit blasted to a minimum SA 2½ in accordance with BS7079 Part A1 or equivalent. This means very thorough blast cleaning using chilled steel grit to provide near white metal 85% clean. The surface shall be free from all foreign matter. A surface profile of 45 microns is the recommended finish. All dust and abrasive residue must be removed from the surface prior to application of the first coat. Depending on the level of corrosion protection required, an anti-corrosion or holding primer may be necessary.

Mixing

Add the hardener 'Part B' into the base 'Part A' and mix using a slow speed drill (500 rpm) with an X-Shield Coating Mixer Paddle for 3 minutes or until both components have fully dispersed and are uniform in color. Be sure to rotate the mixer throughout the drum. Mix only full packs.

Application

Apply in two coats of 250 micron (10.5mils) wet film thickness using brush or roller. The first coat should be applied in such a manner as to ensure a good bond.

Allow first coat to dry for at least 8 hours at 20C (68F) or 4 hours at 35C (95F). For application by airless spray including application of the high build version consult NCC X-Calibur before use. Clean equipment using X-Shield Solvent.

UV Resistance

X-Shield EpoxyLock EPN is resistant to ultra violet radiation from direct sunlight and will maintain its chemical and physical properties. As is typical with all epoxy coatings, the color will change slightly on exposure to sunlight.

Limitations

Will not accommodate movement cracks.

Do not be apply within 3C of the dewpoint or if it is within 5C of the dewpoint and dropping.

Avoid excessive application.

Avoid skin contact.

Do not discard into the water system.

Apply only on to slabs that have a waterproofing system installed in order to prevent blistering due to osmosis.

Protect from chemical and water spillage until fully cured

Health and Safety

This product is for industrial use only by trained operatives. It is potentially hazardous if not used correctly. Please refer to the Material Safety Data Sheet (MSDS) prior to the purchase and use of this product. The MSDS can be obtained via our website www.ncc.com.eg.

Authorized Technical Specialist

Please note that only NCC X-Calibur Authorized Technical Specialists ('ATSS') are permitted to change any of the information in this data sheet or to provide written recommendations concerning the use of this product. Visit www.ncc.com.eg for a full list of NCC X-Calibur ATSSs.

Datasheet Validity

NCC X-Calibur makes modifications to its product datasheets on a continuous basis. Please check the datasheet update section on www.ncc.com.eg to ensure you have the latest version.

Warranties

NCC X-Calibur supplies products that comply with the properties shown on the current datasheets. In the unlikely event that products supplied are proved not to comply with these properties, then we will replace the non-compliant product or refund the purchase price. NCC X-Calibur does not warrant or guarantee the installation of the products as it does not have control over the installation or end use of the products. Any suspected defects must be reported to NCC X-Calibur in writing within five working days of being detected. NCC X-Calibur Construction Chemicals **makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties express or implied.** NCC X-Calibur Construction Chemicals shall not be liable for damages of any sort including remote or consequential damages, down time, or delay.