XO SCIENCE
NEXT GENERATION COATINGS

TECHNICAL DATA SHEET
XO.XTREME™

PRODUCT PROFILE

Generic Description

Self-Priming Nano-engineered Aliphatic Amine Epoxy.

Features / Advantages

XO.XTREME™ contains a proprietary nano bonding technology that creates a nearly impenetrable bond with a steel substrate. The tightly cross-linked epoxy matrix of **XO.XTREME™** excels across the spectrum of industrial applications. **XO.XTREME™** exhibits excellent corrosion and chemical resistance and is non-leaching, making it ideal for use in marine environments and for immersion service in brine and other corrosive conditions. Unlike many competitors, **XO.XTREME™** is highly UV stable and is suitable for extreme exterior environments. With nano engineering and ultra low VOC levels, **XO.XTREME™** is the most workable, most versatile and easiest to apply advanced epoxy on the market.

Where to Use

Tanks and pipes, off shore platforms, ballast tanks, ships, marine environments, chemical containment vessels, bridges and civil structures, waste water treatment facilities, and in applications where extreme bonding and corrosion protection is essential.

SURFACE PREP STEEL

Surfaces to be coated must be clean, free of oil, dirt, grease and other contaminants with a minimum preparation level of SSPC-SP6/NACE 3 (Commercial Blast) or SSPC-SP12/NACE 12 (UHP Water Jetting) or better. For immersion coatings, prep with SSPC-SP10/NACE 2 (Near-White Blast).

CONCRETE

Allow new concrete to cure for a minimum of 21 days. All surfaces must be clean, dry and free of oil, grease, sealers and curing compounds.

CURING TIME

At 75°F (24°C), 6 hours to handle surfaces or recoat, with a full return to service within 24 hours for most atmospheric condition applications. For immersion applications, a 5 day minimum cure time is recommended. Note that curing time varies with surface temperature, air movement, humidity and film thickness.
The maximum time between recoating is 72 hours. If more than 72 hours have elapsed between coats, then the coated surface should be scarified before top coating.

PHYSICAL DATA

Ultra low VOCs

Unthinned: 0.35 lbs/gallon (45 g/l)
Thinned 6%: 0.70 lbs/gallon (85 g/l)
Thinned 10%: 1.20 lbs/gallon (145 g/l)

Temperature Resistance

Dry: 250°F (121°C) Intermittent 275°F (135°C)
Uninsulated Tanks (Immersion Service): Continuous 120°F (49°C), Intermittent 140°F (60°C)
Insulated Tanks (Immersion Service): Continuous 180°F (82°C), Intermittent 210°F (99°C)

Product Characteristics

Coating Thickness	General Service Applications - Single 5 mil coat, Immersion Service: Two 5 mil coats
Color	Grey or Beige
Solids Volume	82% ± 2%
Theoretical Coverage	1,315 ft^2 (122 m^2) per 1 mil thickness

Sheen	Semi-gloss
Mixing Ratio	1:1, Part A and Part B
Pot Life	2½ hours at 60°F (16°C), 1½ hours at 77°F (25°C), ¾ to 1 hour at 100°F (38°C)
Clean Up	Xylene or MEK
Thinning	Up to 10% by volume, use Xylene or MEK
Number of Components	Two: Part A (Resin) and Part B (Hardener)
Packaging	5 gallon (18.9 litre) pails and 1 gallon (3.8 litre) cans - Order equal quantities of Part A and Part B
Net Weight per Gallon	13.10 ± 0.25 lbs per gallon (1.57 ± 0.11 kg per litre)
Temperature	Acceptable substrate range of 50°F (10°C) to 120°F (49°C) Storage range of 20°F (-7°C) to 115°F (46°C) Apply at product temperatures from 50°F (10°C) to 100°F (38°C)

TEST RESULTS

ABRASION
ASTM D 4060

Method: CS-17 wheel, 1000 gram load. System: one coat of **X0.XTREME™** cured 14 days at 75°F (24°C). Results: no more than 60 mg loss after 1,000 cycles.

ADHESION
cured ASTM D 4541 on steel
Method E, Type V Tester

System: one coat of **X0.XTREME™** applied to SSPC-SP10/NACE No. 2 Near-White Blast Cleaned steel and 7 days at 75°F (24°C). Results: no less than 3,000 psi (26.5 MPa), average of three tests, cohesion failures only with no coating removed from the steel surface.

ASTM D 7234

System: one coat of **X0.XTREME™** applied to both 3,000 psi and 9,000 psi concrete and cured for 7 days at 73°F (23°C). Results: pull-off strength of **X0.XTREME™** exceeded the tensile strength of the concrete.

CATHODIC DISBONDMENT
ASTM G 8

System: **X0.XTREME™** applied to SSPC-SP10/NACE No. 2 Near-White Metal Blast Cleaned steel and cured 30 days at 75°F (24°C). Results: classification group A. No debonding.

CHEMICAL IMMERSION
Cleaned Immersion
at 75°F (24°C)

System: two 5 mil coats of **X0.XTREME™** applied to SSPC-SP10/NACE No.2 Near-White Metal Blast steel and cured seven days at 75°F (24°C), immersed in chemicals listed below. Results: no blistering, cracking, rusting cracking, rusting or delamination of film after continuous immersion.

Aliphatic Hydrocarbons	Liquid Fertilizers	Xylene
Ammonium Hydroxide 10%	Dry Fertilizers	Brine Water Solution 18%
Aviation Gas 100/130	Hydrogen Peroxide 3-5%	Gasoline
Boric Acid 5%	Isopropanol	Diesel / Biodiesel
Citric Acid 50%	Potassium Hydroxide 10-40%	Palm Oil
Ethanol 190 to 240	Sodium Hydroxide 10-50%	Crude Oil
Sulfuric Acid 20%	Toluene	

IMMERSION
ASTM D 870

System: two 5 mil coats of **X0.XTREME™** applied to SSPC-SP10/NACE No.2 Near-White Metal Blast steel Cleaned and cured 14 days at 75°F (24°C). Results: no blistering, cracking, rusting or delamination of film after 12 months continuous immersion in deionized water at 200°F (93°C). Test simulates insulated tanks.

SALT FOG
ASTM B117

System: two 5 mil coats of **X0.XTREME™** applied to SSPC-SP10/NACE No.2 Near-White Metal Blast Cleaned steel and cured 7 days at 75°F (24°C). Results: no blistering, cracking, rusting or delamination of film and no rust creepage at the scribe line after 3,000 hours of continuous exposure.

STEAM PRESSURE

Method: test panels placed under 15-17 psi (0.10-0.12 MPa) steam pressure at 250°F (121°C) for one cycle of six hours. System: two 5 mil coats of **X0.XTREME™** applied to steel, cured 7 days at 75°F (24°C). Results: no blistering or cracking of coating after 6 hours of exposure.

SPECIAL QUALIFICATION

Passes the performance requirements for MIL-PRF-4556F for interior coating of steel fuel tanks using a two-coat system at 8 mil thickness (dry).

CONTACT US

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