



Global EcoTechnologies, inc.

ENDURA-FLEX® 1988 ELASTOMERIC POLYURETHANE

PRODUCT DATA

DESCRIPTION

ENDURA-FLEX® 1988 (EF-1988) is a specially formulated 100% solid, high build, aromatic, MDI elastomeric polyurethane coating/lining system for water and waste water applications. EF-1988 provides a seamless monolithic pinhole-free lining for protection of all types of concrete and steel. EF-1988 is self-priming on concrete or steel surfaces. Adhesion to concrete exceeds the cohesive strength of concrete and shows excellent adhesion to abrasive blasted steel by industry standards. There will be some color change in sunlight

TYPICAL USES

EF-1988 provides superior protection for gaseous and liquid phase exposures of concrete and steel storage tanks, potable water, waste water, clarifiers, digesters, sedimentation basins, chlorine contact or aeration basins, sewer manholes, pipe, or penstock and secondary containment.

CERTIFICATION

POTABLE WATER: Suitable in accordance with NSF/ANSI Standard 61-5

PIPE: Conforms to AWWA C222-08

FOOD: USDA and FDA approved

COLOR

Side A – Brownish, Side B - Various colors available, OFF-WHITE is standard. There will be some slight color change in sunlight that does not affect the performance of the coating. Aliphatic urethane top coat may be used.

PACKAGING

3 Drum kit, (1A:2B) 160 Gallons

Smaller kits (15 or 3 gallon) available upon request

MIXING

EF-1988 may not be diluted under any circumstances. Use appropriate cleaner for purge line and flushing of equipment and if spraying stops for periods exceeding the pot life of the material. Thoroughly mix Side-B until homogeneous. Side-A requires no mixing.

TECHNICAL DATA

Volume of Solids.....	100%
Mix Ratio.....	2:1 by volume
Shelf Life @ 75° F in sealed, unopened containers.....	1 year
VOC content, ASTM D-2369-81.....	0 gm/l
Thinner.....	None required
Clean-up.....	MEK
Coverage.....	1604 ft ² /mil/gallon
Pot Life.....	< 3 mins. @ 100° F
Sag Resistance.....	Excellent
Flashpoint.....	> 300° F
Dry Time @ 70° F to touch.....	20 minutes for Standard
Dry Time @ 70° F to touch.....	5 minutes for Fast*
Dry Time @ 70° F Lt. Foot.....	1 Hour
Dry Time @ 70° F Hvy. Foot.....	24 Hours
Cured to Service.....	24 Hours
Max. Recoat.....	24 Hours
After 24 hours surface must be abraded before recoating	
Full Cure.....	120 Hours
Film Thickness, Max.....	Unlimited
Concrete, Min.....	60 mils solid
Steel, Min.....	20 mils solid
Film Shrinkage.....	0 (wet to dry)
Edge-Hang.....	Excellent

*Accelerant can be added, to the Standard material, Base side only, in the field at a maximum rate of 24 oz. per 54-gallon drum.

Minimum substrate temperature above dew point at application.....	5° F
Service temperature resistance	
Immersion (Uninsulated).....	120° F
Immersion (Insulated, @250 mils Expanded film).....	150° F
Dry.....	180° F
Humidity tolerance at application.....	< 85%
Material temperature requirement for application	
Activator.....	95 to 105° F
Base.....	95 to 120° F
Allowable ambient air temperature for application	
Maximum.....	120° F
Minimum.....	-25° F

Primer: EF-1988 is self-priming. If required, other EF primers are available to assist contractor applications. EF-1200P and EF-1200PW are high performance two-part epoxy primer sealers.

EF-1200F is a chemically inert lightweight filler material that may be added to EF-1200P for resurfacing or filling voids. (consult EF-1988 Guide Specification)

NOTE: GET®, ENDURA-FLEX®, ENDURA-TUF®, ECOSYSTEM®, ARE TRADEMARKS OF GLOBAL ECOTECHNOLOGIES, INC. All recommendations, statements, and technical data contained herein are based on tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. User shall rely on his own information and tests to determine suitability of the product for the intended use and user assumes all risk and liability resulting from his use of the product. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer which proves to be defective. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss, or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements other than those contained in a written agreement signed by an officer of the manufacturer shall not be binding upon the manufacturer or seller. Manufacturer reserves the right to modify all data without prior notification or liability.

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PHYSICAL PROPERTY DATA

PHYSICAL PROPERTY	TEST METHOD	RESULT
Durometer Hardness @ 75°F.	ASTM D2240 30 minutes 60 minutes 4 hours 24 hours 48 hours	85-90 Shore A 95A Shore A 50D Shore D 65D Shore D 70D Shore D
Tensile Strength: PSI	ASTM D638	2800-3000 psi
Percent Elongation: @ 60 mils	ASTM D638	65% 41%
Abrasion Resistance: 1000 cycles; 1000 gms; CS-17	ASTM D4060	53 mg
Impact Resistance: @ 65 mils @ 80 mils	ASTM G14 – 2-inch dia. Pipe ASTM D-2794	210-inch lbs. (23.73 j) 35 psi
Weight per gallon: A-Activator B-Base	ASTM D1475	10.33 lbs./gal 8.71 lbs./gal.
Viscosity, CPS @ 80°F. A-Activator B-Base	ASTM D2196 Brookfield	210 1150
Cathodic Disbondment: 92 Day Exposure @ 60 mils Expanded	ASTM G8	.38 Average Disbonded Equivalent Circle Diameter (inches)
Atlas Cell: 150° F. Deionized Water @ 250 mils Expanded	NACE STANDARD TM-01-74 Test procedure A	12 Months, No Effect
Elcometer Adhesion: Steel, no primer; SSPC SP-10	ASTM D4541 (Scored to Steel)	>1500 PSI (3.5 – 4 mil Profile)
Tear Resistance:	ASTM D624	461 lbf/in.
Accelerated Weathering (QUV):	ASTM G 23	Slight chalk/color change
Accelerated Weatherometer:	ASTM D2565 (89) Modified	330 Days, Moderate chalk/color change
Heat Aged 180°F. - 30 days:	ASTM D573	D65/36% Elongation
Water Absorption	ASTM D570	< .5%
Water Vapor Permeability:	ASTM D1653-91A	@ 75-80 mils .048 grams/ 23 hrs/ft ² (144 in ²)
Dielectric Strength: 80 mils @ 500 volts/mils	ASTM D149	8140 volts total (To breakdown); 103 volts/mils
Thermal Shock: @ 60 mils	-50° F. to 200° F. Eight Cycles	Pass - No Effect
Cavitation: @ 60 mils	Nozzle-3/4 in., 200 gpm, 175 psi 25 Hours - two samples	Pass
High Humidity: @ 60 mils	ASTM B117 (90) Modified 124 Days	Pass - No Effect
Immersion: @ 60 mils	ASTM D870 (87) Modified 630 Days	Pass - No Effect Finished/filtered/raw/softened waters
Salt Fog: @ 60 mils	ASTM B117 (90) 112 Days	Pass - No Effect