



Item# UME38 Revised: 2/5/2015

Urethane-Modified-Epoxy (UME) coating

Description

Epoxytec Uroflex™ is a very unique, two component, 100% solid urethane-modified-epoxy (UME) and novolac-hybrid coating and lining system. Uroflex™ is a high-build, self-leveling coating system incorporating a high degree of flexural modulus. Adheres impressively well to concrete, steel, and wood. Uroflex™ is applicator friendly and easy to apply; conveniently produced as a one-to-one mix ratio by volume. Uroflex™ is “green” formulated, environmentally friendly, 100% solid (no VOCs, no solvent).

Uroflex™ has been designed to specifically protect, seal, and outperform in environments, whether immersed or non-immersed, which are susceptible to movement, corrosive exposure, microbial and chemical attack, joint infiltration, vibration and impact, while being tolerant to high levels of moisture and humidity during application.

Uroflex™ is a urethane-modified-epoxy (UME) coating, incorporating novolac resin for enhanced chemical resistance and crosslinking. It possesses the superior adhesion, tolerance and strength of an epoxy, combined with the flexibility (38% elongation), gloss, UV tolerance, and impact resistance of a urethane- combined as one technology.

Because Uroflex™ can be applied by brush, roller, or spray; it provides applicators tremendous usability options and ease of application. It is self-priming and it ties back into itself indefinitely.

Typical Uses

Uroflex™ has been proven in many aggressive enclosed, immersive, and partially opened environments. Uroflex™ performs in areas subject to chemical attack. Ideally suited as a protective coating/lining solution for:

- Collection and treatment structures, tanks, pipes, stations, manholes, etc.
- Joint sealing
- Seamless and sealed coating & lining
- Protection against corrosion for steel, concrete, wood and other substrates
- Other industrial lining and coating applications

Features

- “Green” - 100% solids, no VOCs
- Excellent chemical resistance
- Good abrasion resistance
- Self-priming
- Medium-to-high build
- Flexible
- Formulated resilience
- High impact strength
- Surface tolerant
- Cold temperature performance
- U.V. tolerant
- Self-leveling
- High gloss finish
- Easy to apply by roller, brush or spray
- 1:1 mix ratio by volume

Film Thickness

Uroflex™ can be a single coat or multiple coat system.

Uroflex™ can be applied onto a cementitious surface at 15 mils (minimum) to 25 mils (maximum by roller/brush) or 65 mils (maximum by spray) per coat at 77F. For a total coating thickness exceeding 25 mils (by roller/brush) or 65 mils (by spray), multiple coats are necessary.

Uroflex™ can be applied onto a metallic surface at 8 mils (minimum) to 15 mils (maximum by roller/brush) or 25 mils (maximum by spray) per coat at 77F. For a total coating thickness exceeding 15 mils (by roller/brush) or 25 mils (by spray), multiple coats are necessary.

Note: Uroflex™ has self-leveling properties and will pull back from profile peaks and settle into the valleys as it levels; therefore, if the substrate has peaks, take precautions as edge retention may prove challenging.

Theoretical Coverage

Uroflex™ is a 100% solid coating that will not shrink.

The theoretical coverage properties between wet film thickness (WFT) and dry film thickness (DFT) are the same. Eighty (80) square feet (sq.ft.) per gallon (gal.) at 20 mils thick. Actual coverage will depend on surface conditions, irregularities, and surface profile.



Surface Preparation

The success of any coating application is directly proportional to the completeness of the substrate preparation and the care the application crew puts into the application. Surface must be clean and sound. Remove all dust, contaminants, grease, curing compounds, rust, impregnation, waxes, foreign particles, and disintegrated materials from the surface, in order to achieve a clean and profiled surface.

Concrete: Prepare the concrete by abrasive blasting, high pressure water cleaning, and/or approved mechanical method to achieve clean, sound, and profiled concrete. Prepare concrete in accordance with SSPC-SP 13/NACE No. 6, "Surface Preparation of Concrete;" with an ICRI CSP profile of 3-5. Although priming is not required, in some cases when suspecting excessive moisture vapor transmission (MVT), out-gassing, or other impediments - an Epoxytec recommended primer may be considered.

Steel: Before preparing steel, please inspect and remove oil, grease, or other contaminants - "Solvent Cleaning" (SSPC-SP1) may be required. Remove all sharp peaks, including weld spatter. Abrasive blasting (or other approved mechanical methods) must be used in order to achieve a clean surface with a minimum profile of 3 mils. Stripe coat all edges and peaks with an Epoxytec recommended primer. To prevent flash rusting, consider the use of an Epoxytec recommended primer.

Wood: Remove all grease, oil, dirt or other foreign matter by solvent or detergent washing. Prepare wood surface by abrasive sanding and washing (allow to dry and prime using an Epoxytec recommended primer).

Application Method

Mix 1-to-1 by volume and be aware of pot life (higher temperature and mass accelerates pot life). Options: Brush, rollers, squeegee, airless/air-assisted airless, and/or plural component spray airless/air-assisted airless equipment. Heated lines and guns could be used, but not required.

When possible, Epoxytec recommends Uroflex™ as a two-coat system.

NOTE: If spraying, Epoxytec recommends at minimal the use of a .023" orifice spray tip or greater, 64:1 ratio spray pump or greater, 3/8" hoses, with 1/4" whip. Other options available: Epoxytec EZ-Spray System (disposable cartridge spraying).

Thinning

Epoxytec does not advise thinning Uroflex™; pinholing due to solvent addition could be a result.

Safety

Consult Material Safety Data Sheet (MSDS) for all material safety information.

Storage & Handling

- Shelf life: 12 months, sealed. Store in a dry area away from direct sunlight. The material should be conditioned to between 75° F and 90° F before use.

Packaging & Color

- | | |
|---------------------------------------|--|
| 100 Gallon Kit (drums) | Item# UME38-D-R (red)
Item# UME38-D-T (tan) |
| 10 Gallon Kit (pails) | Item# UME38-G10-R (red)
Item# UME38-G10-T (tan) |
| 4 Gallon Kit (pails) | Item# UME38-G4-R (red)
Item# UME38-G4-T (tan) |
| 1,500mL Dual Cartridges
(Box of 5) | Item# UME38-B1500-R (red)
Item# UME38-B1500-T (tan) |
| 600mL Dual Cartridges
(Box of 12) | Item# UME38-B600-R (red)
Item# UME38-B600-T (tan) |

Technical Properties

Finish		Gloss
Mix Ratio		1 to 1 (by volume)
Type		Urethane-modified-epoxy (proprietary hybrid novolac polymer blend)
Solids by Volume	ASTM D2697	100%
Solvent (VOC)	ASTM D3960	none
Flash Point	ASTM D3278	255 F
Pot Life		25 min. (25 C / 200 g mass)
Viscosity (A Component)	ASTM D2196	27,500 cps @ 25 C
Viscosity (B Component)	ASTM D2196	1,800 cps @ 25 C
Viscosity (A & B Mixed)	ASTM D2196	17,200 cps @ 25 C
Adhesion Strength (concrete, dry)	ASTM D4541 CIGMAT CT-2/3	substrate failure
Adhesion Strength (concrete/brick, wet)	CIGMAT CT-2/3	substrate failure
Adhesion Strength (steel)	ASTM D4541	2,000 psi
Potable Drinking Water	ANSI/NSF-61	conforms
Water Absorption	ASTM D1653	< 0.1 g/sq.m.
Acid Exposure (pH 1, H2SO4)	CIGMAT CT-1	passed
Hydrogen sulfide (H ₂ S)		800 ppm
Tensile Strength	ASTM D638	5,873 psi
Flexural Modulus	ASTM D790	58,200 psi
Flexural Strength	ASTM D790	8,339 psi
Compressive Strength	ASTM D695	7,225 psi
Hardness, Shore D	ASTM D2240	70
Elongation	ASTM D2370	38%
Return-to-service (6-8 pH)		48 hours (20 C)
Complete Cure		72 hours (20 C)
Operational Temperature		40F - 120F
Temperature Exposure (dry)		0F - 160F
Temperature Exposure (wet)		0F - 140F
Recoat Time		2 hr. (25 C)– no max.

* Epoxytec Uroflex™ passes ASTM D2512 / D4809-02863 test for Oxygen compatibility.

** Approved by the Bureau of Petroleum Storage Systems for containment (EQ#-793)



Important! Although the technical details and recommendations contained in this data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical applications; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product. The sole liability of Epoxytec for any claims out of the manufacturer's use of sale of its products shall be for the buyer's purchase price.