



Item# UME38 Revised: 4/5/2010

Urethane-Modified-Epoxy (UME) Coating

Description

Epoxytec Uroflex™ is a unique, two component, 100% solid urethane-modified-epoxy (UME) hybrid coating and/or 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 in 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 nonimmersed, which are susceptible to movement, corrosive exposure, microbial and chemical attack, joint infiltration, vibration, impact, while being tolerant to high levels of moisture and humidity during application.

Uroflex™ is a urethane-modified-epoxy (UME) coating. What this means is that 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 and ease of application. It is self-priming, so there is no concern for logistical primer timing 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:

- Sewer collection and treatment structures, tanks, pipes, stations, manholes, etc.
(ultra-high hydrogen sulfide [H₂S] resistance [+600ppm] and resistant to sulfuric byproduct)
- Joint sealing
- Seamless and sealed coating & lining
- Protection against corrosion for steel and concrete, and other substrates

Features

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

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. 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 10 mils (minimum) to 15 mils (maximum by roller/brush) or 40 mils (maximum by spray) per coat. For a total coating thickness exceeding 15 mils (by roller/brush) or 40 mils (by spray), multiple coats are necessary.

Theoretical Coverage

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

Therefore, 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."

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. 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 necessary.

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.

Thinning

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

Storage & Handling

- Shelf life: 12 months, sealed.
- Storage: Store in a dry area away from direct sunlight. The material should be conditioned to between 75° F and 95° F before use.

Safety

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

Packaging & Color

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| ▪ 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		Proprietary hybrid polymer (urethane-modified-epoxy)
Solids by Volume	ASTM D2697	100%
Solvent (VOC)	ASTM D3960	none
Flash Point	ASTM D3278	255 F
Pot Life		1 hr (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, H ₂ SO ₄)	CIGMAT CT-1	passed
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%
Complete Cure		18 hours (25 C)
Operational Temperature		40F - 100F
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.



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