



Engineered Polymers International, LLC

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EP QS-450-UW EPOXY

CODE: QS-450-UW

PRODUCT DESCRIPTION:

EP QS-450-UW Epoxy, “Powered by Reactamine® Technology”, is a two component 100% solids, no VOC modified epoxy. This versatile new generation epoxy displays low blush, fast cure times, and excellent adhesion characteristics. **EP QS-450-UW** can be used as a surface tolerant primer or as a final coat, and will cure in a variety of harsh situations including high humidity and wet, damp surfaces. **EP QS-450-UW** can be applied at temperatures ranging from 40° F to 120° F. This environmentally friendly epoxy displays excellent chemical resistance, water insensitivity, and UV resistance. **EP QS-450-UW** will provide a glossy smooth finish when fully cured. Aggregate can be broadcast into this self-leveling material to provide a non-skid surface. **EP QS-450-UW** emits virtually no odors and can be applied indoors with minimal disturbance contributed to high VOC levels found in most epoxies and polyurethanes. **EP QS-450-UW** was designed to cure on damp or wet surfaces due to the unique and special hardener.

PRIMARY APPLICATIONS:

EP QS-450-UW adheres well to several substrates including concrete, steel, and wood. Some typical uses include:

- CHEMICAL RESISTANT SECONDARY CONTAINMENT
- OFFSHORE PLATFORMS
- MAINTENANCE FACILITIES
- PRIMER FOR MOST POLYUREAS/POLYURETHANES
- USDA AND FDA ACCEPTABLE COATING
- INDUSTRIAL FLOORING
- TANK COATING
- UNDERWATER APPLICATIONS

AVAILABLE COLORS:

- LIGHT GRAY, DARK GRAY
- CUSTOM TINTED ON REQUEST

TYPICAL PHYSICAL PROPERTIES:

Tensile Strength (PSI)	ASTM D638	8881
Elongation (%)	ASTM D638	28.0
Flexural Modulus, PSI	ASTM D638	485,000
Heat Deflection, Temp °C	ASTM D648	63
Izod Impact, Ft-lbs/in Notch	ASTM D628	700
Hardness (Shore D)	ASTM D2240	70 D
Flexural Strength, PSI	ASTM D790	12,672
Flashpoint (°F)	ASTM Pensky-Martin	>200
Taber Abrasion (mg loss) CS18 WHEEL 1 kg per 1000 cycles	ASTM D4060	80
Viscosity Resin	CPS	1500
Viscosity Hardner	CPS	100

Typical Processing Properties:

Gel Time (75°F)	minutes	20
Tack Free Time (75°F)	hours	2.5
Open to Foot Traffic	hours	6.0
Volume Ration	A:B	1:2
Weight Ratio	A:B	60/100

ADHESION RESULTS:

ASTM D-4541 Elcometer

Concrete (No Primer)	concrete failure	>300 psi
Steel (No Primer)	substrate failure	>1500 psi
Wood (No Primer)	delamination	250 psi

INSTALLATION RECOMMENDATIONS:

EP QS-450-UW adheres well to several sound substrates including concrete, steel, and wood. All surfaces should be free of loose particles, rust, voids, and spalls. It is recommended that this product be applied in a multi-directional (north, south, east and west) motion to help ensure proper coating thickness. Chloride, moisture, and pH levels should be checked prior to application. Always agitate the resin side prior to application.

CONCRETE:

Old Concrete – Sandblasting, shot blasting or water blasting is highly recommended to remove surface contaminants. Any oils or fats must be removed prior to product application. Acid etching may be required (followed by a thorough rinsing) to open the pores of the concrete to accept a primer coat. It may be necessary to squeegee a thin coat of *EP QS-450-UW* to avoid pin holing and fill voids. This will help ensure a smooth coating. A 6 –15 mil coating of epoxy is generally recommended depending on chemical resistance and abrasion issues.

New Concrete – The concrete should be allowed to cure for a minimum of 30 days. Shot -blasting, sand blasting or acid etching (15% muriatic acid / 85% H₂O) is required to remove the surface lattice that appeared during the curing process. A light coat of *EP QS-450-UW* should be applied to reduce outgassing (contact the manufacturer for specific recommendations). A 3-20 mil coat of epoxy is generally recommended depending on chemical resistance and abrasion issues.

WOOD:

EP QS-450-UW may be applied to wood substrates after sanding or abrading. A 3-6 mil coat of epoxy is generally recommended depending on chemical resistance issues.

CARBON STEEL AND ALUMINUM:

The steel must be prepared to a “near white metal,” equivalent to SSPC 10 or NACE 2. For immersion service, a 3-mil blast profile is recommended. A 2-mil blast profile is generally accepted. A 3-20 mil coat of epoxy is generally recommended depending on chemical resistance issues.

SUBSTRATE REPAIRS:

All spalls and cracks should be repaired to ICRI standards. Expansion joints should be honored. Horizontal control joints can be filled with **EP JS Joint Seal (EPJS)** prior to the application of *EP QS-450-UW*.

PRIMER REQUIREMENTS:

EP QS-450-UW is self-priming.

MIXING INSTRUCTIONS:

Thoroughly mix the “Resin” component using a jiffy mixer and drill for a minimum of 3 minutes to place the pigmentation evenly in solution (not required for clear coats). Pour according to correct volume ratios into a disposable container and mix with jiffy mixer for 2 minutes. Immediately apply mixed product to the floor and begin application.

APPLICATION NOTES:

When applying a smooth floor, it is recommended to first apply a tight squeegee coat of *EP QS-450-UW* to fill voids and bugholes. Contact the product manufacturer for application recommendations. It is also recommended to mix several small batches at a time due to the fast reactivity. The manufacturer recommends no more than two-gallon batches per application. Rollers should be replaced on an hourly basis.

REPAIRS AND MAINTENANCE:

Small repairs to cuts in the coating can be made with *EP QS-450-UW*. This material can be caulked or brushed on the surface after scuffing. Re-spraying on *EP QS-450-UW* (after 12 hours of initial application) generally requires the use of a primer or sanding to achieve optimum adhesion.

CLEAN-UP/DISPOSAL:

Cured product may be disposed of without restriction. The un-cured hardener and resin portions should be mixed together and disposed of in a normal manner.

SAFETY AND HANDLING:

MSDS will be mailed immediately upon receipt of a purchase order or upon request. All personnel should read and understand the safety recommendations. All body parts should be covered and activated charcoal respirators (forced air is preferable) are necessary for safe application of this product. Keep un-cured product away from children at all times.

LIMITATIONS:

The chemical resistance chart should be consulted prior to any application.

SHELF LIFE AND STORAGE:

Six months in factory delivered unopened drums. Keep away from extreme heat, cold, and moisture. Maintain at a proper storage temperature of 60°F - 80°F.

PACKAGING:

- 5 gal pails
- 52 gal drums
- 260 gal totes

SHIPPING INFORMATION:

EP QS-450-UW can ship via commercial truck lines. The “Hardner” and “Resin” side is a non-regulated product.

WARRANTY:

The technical data and any other printed information furnished by **Engineered Polymers, International, LLC** is true and accurate to the best of our knowledge. *EP QS-450-UW* conforms to in-house quality control procedures and should be considered free of defects. Due to the wide range of applications of this product, it is impossible to assume responsibility for any errors in regard to application, coverage, workmanship, over-spray or injuries resulting from the use of *EP QS-450-UW*. **Engineered Polymers, International, LLC** makes no warranty, expressed or implied, of its products and shall not be liable for indirect or consequential damage in any event.

Chemical Resistance:

<u>Chemical</u>	<u>Result (25°C)</u>
Acetic Acid (100%)	R
Acetone	R
Ammonium Hydroxide (50%)	R
Brake-Fluid (310g/l)	R
Brine-Saturated H ₂ O (310g/l)	R
Gasoline	R
Hydrochloric Acid (50%)	R
MEK	R
Methanol	R
Muriatic Acid (10%)	R
NaCl / H ₂ O (10%)	R
Nitric Acid (20%)	RC
Potassium Hydroxide (10%)	R
Potassium Hydroxide (20%)	R, Dis
Sodium Hydroxide (50%)	R, Dis
Sodium Hypochlorite (10%)	R
Sodium Bicarbonate	R
Sugar / H ₂ O	R
Sulfuric Acid (10%)	R
Sulfuric Acid (>50%)	R
Toluene	Contact EPI
Water	R
Xylene	RC

R= Recommended Little or no visible damage
RC= Recommended Conditional Some effect, swelling
 Discoloration
C= Conditional Crackling, wash down within
 1 hour of spillage to avoid effects

NR = Not Recommended
Dis= Discoloration Only

COVERAGE CALCULATIONS:

Coverage Rates/Gallon:

<u>Coating Thickness:</u>	<u>Sq.Ft/Gal</u>
16 mils	102