



ENGINEERED POLYMER
SYSTEMS, LLC

Brute-Coat Epoxy Multi-Purpose (EMP)

Brute-Coat EMP is a high solids, low VOC epoxy coating that is formulated for multiple uses. The Brute-Coat EMP offers excellent wear ability, high gloss, good gloss retention, good chemical resistance and impact resistance. It can be applied clear or pigmented.

The Brute-Coat EMP was formulated to be used as a

- Primer and epoxy topcoat system.
- Primer for sand filled resurfacer and liquids for the sand filled resurfacer typically filled 7.5:1 with silica sand.
- Primer and broadcast liquids when a saturation broadcast system either with silica sand, color quartz or vinyl chips are being utilized.

The EMP hardener / resin system has fair resistance to UV exposure but it will yellow from UV exposure. For the best protection against UV exposure a coat of pigmented Brute-Coat Urethane High Solids (UHS) or a coat of Brute-Coat Urethane High Solids UV Resistant (UHS UV) clear should be applied.

A problem typically seen with slower curing epoxy primers and topcoats is out gassing or the forming of pinholes in the coating. The EMP system has been formulated to cure faster to help minimize this out gassing and make it possible for contractors to get back on the floor sooner providing shorter downtime.

TYPICAL PROPERTIES

Components EMP Resin EMP Hardener

Viscosity (70°F)	900-1,000 cps	60-90 cps
Flash Point	>300°F	>255°F
Weight per gallon	9.3	8.1
	(Pounds / gallon)	
VOC	clear 42 g/l,	pigmented 48 g/l

Mixed Components - EMP Hardener

	50°F	70°F	90°F
Working time (min)	30-40	20 - 25	15-20
Drying time (hours)			
Set to touch	12-14	7-8	5-6
Maximum recoat	36 hr	30 hr	24 hr
Floor installation temperature limits	50°F - 90°F (minimum to maximum)		
	Consult Engineered Polymer Systems for other temperatures.		

Physical Properties

Compressive Strength ASTM C579-A

EMP Resin and Hardener only

	Clear	Pigmented
16 hours	5,200 psi	3,854 psi
24 hours	6,900 psi	4,603 psi
72 hours	10,486 psi	7,602 psi
7 days	12,115 psi	10,186 psi

Abrasion Resistance

59 mgs.	61 mgs.
(CS 17 wheels 1000 gram weight, 1000 cycles)	

Water absorption ASTM C-413	<0.1 %
Flammability ASTM D-635	-self extinguishing
Adhesion to concrete	>400 psi

PACKAGING

Brute-Coat EMP is supplied in kit form. The resin / hardener are available in drums (mix ratio of 2:1 resin to hardener by volume), full 5 gallon pails or in prepackaged units with 2 gallons of resin in a 5 gallon pail and one gallon of hardener.

A typical mix consists of 2 gallons of resin, 1 gallon of hardener and if pigmented one pint of colorant.

Refer to product bulletin EMP Mortar System for mixing details on making a silica sand filled resurfacer.

ESTIMATING MATERIALS

Brute-Coat EMP is typically applied with a squeegee and back-rolled. When applied as a primer over prepared concrete the material typically goes down at 8 mils or 200 SF per gallon or 600 SF per 3 gallon mix.

Brute-Coat EMP can be applied at thicknesses ranging from 6 mils to 20 mils depending on the requirements of the job.

APPLICATION INSTRUCTIONS

Concrete should be tested for moisture transmission prior to installing any materials. Contact Engineered Polymer Systems for specific testing methods and ranges prior to installing these materials.

Surface Preparation – Shot blasting or diamond grinding are the preferred methods on concrete. The concrete should be blasted or ground to a 10 to 20 grit sand paper finish. Any oils or contaminants must be removed prior to installation.

Mixing – The materials are packaged either in drum kits or prepackaged units. Contact Engineered Polymer Systems for detailed instructions on how to pour off drums. The prepackaged units should be mixed as follows:

- Open the 5 gallon can marked Brute-Coat EMP Resin, open the 1 gallon can marked Brute-Coat EMP Hardener and pour into the 5 gallon pail. If colorant is required turn on the jiffy type mixer and add the colorant to vortex of the mixer as it is running. Mix for 2-3 minutes.

- Temperature affects the pot life and working time of the materials. The higher the temperature the shorter the working time. Do not mix more materials than can be installed with-in the pot life period.

Placement of Materials

- Immediately pour the mixed material on to the concrete floor or previously coated floor and squeegee out the materials at the desired application thickness. The coating should then be back rolled with a chemical resistant roller cover to level the primer and eliminate any pudding.
- In some colors a variance of colors can be seen when the coating is being applied. It is recommended to not roll back into coating that has been setting for several minutes as a color change may be seen after the coating has cured.
- It is always necessary to pour the freshly mixed coating into a wet edge when squeegeeing to minimize any color variance. Do not run the squeegee edge completely down or a color change may be visible.

Clean-up

Any mixing and application equipment should be cleaned up immediately upon completion of the job. Typically xylene is used to clean all the equipment.

Humidity and Dew Point

The Brute-Coat EMP can be affected by high humidity. With most epoxy curing agents if the humidity and dew point are within a certain range a sweat out can occur.

Condensation can occur on the surface of concrete or epoxy when the substrate is below the dew point. This condensation can cause a film of moisture to form on the substrate interfering with adhesion or causing a blush. Check dew point temperatures prior to applying any materials. Any hazing of the film or greasy feeling may indicate a blush contact Engineered Polymer Systems prior to proceeding.

Disposal

All materials should be disposed of in accordance with all Federal, State or Local regulations. Consult with EPA for regulations in your area.

Liability if any shall be to supply replacement materials. The modification of any materials not outlined in this technical bulletin nullifies the warranty unless prior written permission is given.

STORAGE / SHELF LIFE

All materials should be stored in original – unopened containers in an enclosed building out of direct sunlight. Ideally the materials should be between 60 – 80°F for 24 hours prior to installation. Installation of materials at temperatures outside of this range may make them difficult to install. The shelf life in unopened containers is a minimum of one year and typically much longer. Consult Engineered Polymer Systems if you have any concerns about materials.

SAFETY

CAUTION – READ MATERIAL SAFETY DATA SHEETS BEFORE USING ALL PRODUCTS.

Follow recommendations for ventilation. Avoid contact with eyes or skin. Contact with skin requires washing with soap and water, eye contact requires immediately flushing / consult physician. If clothes become contaminated remove and wash prior to wearing.

These materials are for industrial use only.

WARRANTY / DISCLAIMER

All statements and recommendations are based on experience we believe to be reliable. The use or application of these products is beyond the control of Engineered Polymer Systems and therefore Engineered Polymer Systems does not make any warranty expressed or implied, as to results or hazards from its use. The suitability, risk and liability whatsoever of this product for any intended use shall be solely up to the user.