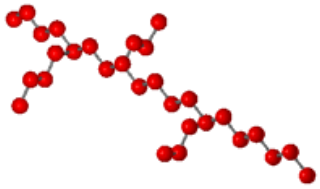

ENGINEERED POLYMER SYSTEMS, LLC

Brute-Coat Urethane High Solids (UHS)

Brute-Coat UHS is a high solids moisture cured urethane coating that offers many options. It can be applied clear or pigmented with no filler leaving a high gloss smooth finish, glass beads can be added to provide non-slip, better abrasion resistance with high gloss or aluminum oxide can be added to provide the highest abrasion resistance. The addition of more aluminum oxide will provide a satin finish while adding less will give a gloss finish.

There are two options for the UHS catalyst. The normal catalyst – UHS Catalyst – is typically used in pigmented systems. If a clear system is being utilized and yellowing of coatings beneath the urethane is a concern the UV retarder catalyst should be used – UHS UV Retarder Catalyst.

The Brute-Coat UHS must be applied to a primed or coated floor. For the best adhesion the basecoat should be applied with-in 24 hours and be sanded with an abrasive buffing disc typically carborundum 180 grit. This material offers excellent adhesion to substrates treated as above, excellent abrasion resistance, excellent wetting properties, excellent stain and chemical resistance making it an excellent choice for all applications where urethane topcoats are being installed.

Brute-Coat UHS offers advantages over traditional solvent-borne urethane topcoats. The Brute Coat UHS is 90% solids, minimal to no odor and cures fast allowing reduced turn around times. The Brute-Coat UHS must be applied no thicker than 4 mils. No puddles can be left as the material will gas and create a foam like appearance if thicker films are installed.

TYPICAL PROPERTIES

Components	Isocyanate	Catalyst
Viscosity (70°F)	500-800 cps	5-10 cps
Flash Point	>200°F	>185°F
Weight per gallon (Pounds / gallon)	9.5	8.1
VOC	Clear	97.6 g/l
	Pigmented	96.4 g/l

Mixed Components

	50°F	70°F	90°F
Working time (min)	30-40	20 - 30	15-20
Drying time (hours)			
Set to touch	8-12	6-8	4-5

Maximum recoat must be buffed

Floor installation temperature limits

50°F – 90°F (minimum to maximum)

Consult EPS for other temperatures.

Physical Properties

Taber Abrasion Resistance ASTM D4060

20 mgs. Wgt loss No fillers

18 mgs. Wgt loss Glass beads added

10 mgs. Wgt loss Aluminum oxide added

(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 UHS is supplied in kit form. The catalyst is packaged in quarts, gallon cans or 5 gallon pails. The isocyanate is either packaged in 1 gallon cans or 5 gallon pails. The mix ratio for liquids is 5.0:1 (isocyanate:

catalyst) or 4.0:1 (isocyanate:UV Retarder catalyst) by volume.

A typical mix consists of 0.20 gallons of catalyst and 1.0 gallon of isocyanate. When a colorant is required a pint of Brute-Coat Colorant is added to the above mix. Glass beads can be added at varying ratios typically ½ pint. Aluminum oxide powder is added at varying rates typically 1 quart to ½ gallon.

ESTIMATING MATERIALS

Brute-Coat UHS is bucket rolled only if the glass beads or aluminum oxide powder is added. If it is being applied without any filler it can be squeegeed and back rolled with a chemical resistant roller cover.

Coverage is typically calculated at 4 wet mils. One clear mix without fillers is 1.20 gallons theoretically covering 480 square feet and one pigmented mix without fillers is 1.325 gallons theoretically covering 531 square feet.

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. The Brute-Coat UHS must be applied to a freshly primed or coated substrate.

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 1 gallon can marked Isocyanate and pour into a 5 gallon pail. Open the quart can marked catalyst and pour into the 5 gallon pail then mix for 2-3 minutes. If colorant is required turn on the jiffy type mixer and add the colorant to vortex of the mixer as it is running. If fillers are being added add them into the vortex of the mixer and 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

- No fillers - Immediately pour the mixed material on to the concrete floor and squeegee out the materials at maximum of 4 wet mils if no fillers are being added. The coating should then be back rolled with a chemical resistant roller cover to level the primer and eliminate any pudding. CARE SHOULD BE TAKEN TO NOT LEAVE ANY PUDDLES.
- With fillers – Immediately split the bucket into several buckets to be applied by dipping the roller into the pail. A 1-gallon lid with holes punched in it can be placed in the bottom of the pails. This keeps the rollers from touching the bottom of the pails where fillers will settle. Care should be taken to leave puddles or drip marks as they will cure differently.
- Buckets should be switched after several mixes as the material will begin to set up and make it more difficult to roll.

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 UHS is a moisture cure urethane. Do not install when humidity is below 30% or higher than 90% without contacting Engineered Polymer Systems. 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.

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.

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.