



ENGINEERED POLYMER  
SYSTEMS, LLC

**Brute-Top Urethane Concrete Flowable (UCF)**

Brute-Top UCF is a urethane concrete industrial flooring system developed for areas that have exposure to higher temperatures, thermal shock and impact. The UCF formulation allows the material to either be trowel or pin-rake applied and immediately back rolled with a spiked roller. The UCF can be applied without a saturation silica broadcast yielding a smooth finish. The smooth finish will have reduced impact resistance compared to the saturation broadcast system and will be slippery when wet. The addition of a saturation silica broadcast will increase the temperature resistance as well as the impact resistance plus providing increased slip resistance. When a saturation broadcast is installed the surface should be sealed with Brute-Top Urethane Concrete Lock Coat (UCLC) or Brute-Chem Epoxy Novolac Flexible High Temperature (ENFHT). The smooth finish was developed to do areas when non-skid is not essential and ease of cleaning is required (such as under equipment or in dusty areas).

The Brute-Top UCF was formulated to provide

- Application without a primer.
- Smooth or rough non-skid finish.
- Rapid cure with excellent chemical resistance.
- Use of color pack to pigment system (beige, grey, red)

The Brute-Top UCF will yellow from UV exposure as will the Brute-Chem ENFHT topcoat. The UCF is typically installed from 3/16" to 5/16" (5-8 mm) and will handle temperatures ranging from 10° to 200°F (-12° to 93°C).

**TYPICAL PROPERTIES**

Components	UC Polyol	UC Isocyanate
Viscosity (70°F)	50-100 cps	60-90 cps
Flash Point	<290F(143C)	397F (203C)
Weight per gallon	8.1 lb/gal	10.2 lb/gal
VOC mixed	<0.4 lb/gal (47.6 g/l)	

**Mixed Components**

	50°F	70°F	90°F
Working time (min)	16-18	10-12	8-10
Drying time (hours)			
Set to touch	8-10	5-6	3-4
Floor installation temperature limits	10F to 90F (-12C to 32C)(minimum to max)		
	Consult Engineered Polymer Systems for other temperatures.		

**Typical Physical Properties UCF**

Compressive Strength ASTM C579-A		
16 hours	3,417 psi	23.9 MPa
24 hours	4,431 psi	31.0 MPa
72 hours	5,468 psi	38.2 MPa
7 days	6,250 psi	43.7 MPa
28 days	7,057 psi	49.3 MPa
Abrasion Resistance ASTM D4060 = 10 mgs (CS17 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-Top UCF is supplied in kit form. The polyol is available in one gallon cans and five gallon pails. ALWAYS PREMIX THE 5 GALLON PAILS PRIOR TO POURING OFF MATERIAL. The isocyanate is available in one gallon cans, 5 gallon pails and 55 gallon drums.

The mix ratio is one gallon (3.8 L) of polyol to one gallon (3.8 L) of isocyanate to one half pint (0.24 L) of colorant and one 50 pound (22.7 KG) bag of blended aggregate.

## ESTIMATING MATERIALS

Brute-Top UCF is typically applied with a trowel or pin rake and back-rolled immediately with a spike roller. The yield per unit will depend on the application thickness. When applied at 3/16" (5 mm) the typical yield will be 41 SF (3.9 SM) per mix.

## APPLICATION INSTRUCTIONS

**Surface Preparation** – Shot blasting and scarifying are the preferred methods on concrete. The concrete should be blasted to a rough finish similar to a 10 grit sand paper finish.

Any oils or contaminants must be removed prior to installation. Keys should be cut around objects embedded in the floor and around the perimeter.

**Mixing** – The materials are packaged either in drum kits, bulk 5 gallon 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 pail can marked Brute-Top UC Polyol and after premixing the polyol pour off one gallon of polyol. Open the UC Isocyanate and pour off one gallon. Open the can of UC colorant and pour off one-half pint. Have everything ready to go for installation and mixing as the working time is short.
- Pour the one gallon of UC Polyol into an empty, clean 5 gallon pail and then add the one gallon UC Isocyanate and half pint UC Colorant to the pail. Mix for a minimum of one minute with a jiffy type mixer then immediately add the UCF aggregate and mix for a minimum of two minutes with the jiffy type mixer ensuring that the aggregate is completely wet out.

Immediately transport the material to the installation site and follow instructions for placement of material.

- 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 material out onto the floor and level with a trowel or pin rake. Then immediately back roll with a spike squeegee. If a saturation broadcast is being done immediately broadcast the sand until saturation.
- It is best to pour the freshly mixed material into a wet edge when installing. This will help minimize any changes in level or appearance from color variations.

### **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.

### **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 concern 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.

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