UC-6003

Urethane Mortar Self-Leveling System
3 Component Product

Technical Data Sheet

APPLICATION
UC 6003 is typically installed at 100 mils thickness.

SUGGESTED USES
UC 6003 is formulated specifically for the food and beverage industry. It offers ideal use in “can’t dry” environments, areas subject to thermal cycling, and floors that will see high impact and hot water dumping. UC 6003 provides thermal shock protection against temperatures up to 220F. UC 6003 is a semi-rigid mortar and moves with the thermally induced expansion and contraction of concrete substrates. UC 6003 maintains superior chemical resistance to strong oxidizing agents, organic acids and aromatic solvents.

ADVANTAGES
- Available in a neutral base with on site color pack tinting
- Virtually odorless
- Formulated free of phthalate plasticizers
- High chemical resistance
- Rapid cure (hours, not days)
- Moisture vapor tolerant
- Excellent impact and abrasion resistance
- Seals concrete, protecting against dirt and spills
- Resists staining and major chemical spills of cleaning and industrial chemicals
- Complies with VOC regulations for Industrial Maintenance Coatings in the OTC and CA
- Wide service temperature range (-100F-212F boiling water or steam)
- Cure time can be reduced by UC-Accelerator in cold application temperatures
- Can be applied to 7 to 14-day old concrete

STORAGE
Materials should be stored in original un-opened containers indoors between 65°F (18°C) and 90°F (32°C) and at or below 50% RH. Protect liquids from freezing.

SHELF LIFE: Un-opened containers 1 year from date of manufacture.

PACKAGING KIT:
- 1 gallon Part A in 5-gallon Pail
- 1 gallon Part B in 1-gallon pail
- 1 x 36.53-pound bags Part C
- Part D CBT color pack
- **0.58 cu.ft. kit / 28 sq. ft. @ 100 mils**

OPTIONS:
To fill deeply spalled area, or to re-slope the concrete substrate, a suitable fast setting concrete mortar can be installed prior to the UC 6003. The repair concrete mortar will need to be shot blasted the following day prior to installing the UC 6003. Contact Coating & Binding Technology for other approved sources.

Traction: Suitable angular aggregate can broadcast into wet mortar and then lock coated with an approved topcoat.

It is highly recommended when applying UC 6003 mortar to broadcast the wet mortar with either a neutral silica sand or decorative colored quartz aggregate and topcoat with either a pigmented lock coat or a clear approved epoxy or urethane. This will render the surface more consistent in color and texture.

LIMITATIONS:
Substrates: UC 6003 must be applied to a properly prepared, clean concrete substrate.

Contamination and surface defects (fisheyes): If contaminates of oils, silicones, mold release agents and/or others are present, UC 6003 may fisheye or crawl away from the surface. Surface contaminates should be removed with a suitable detergent prior to application. UC 6003 will amber over time from UV exposure. Do not apply material directly to metallic substrates, elastomeric membranes, FRP, or asphaltic materials without first consulting CBT.

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MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	≥215 °F (102°C)
Volume Solids (incl. Part C)	ASTM D2369	95%
Mixed Viscosity (resin only)	ASTM D2196	400-700 cPs
VOC-Volatile Organic Compound	ASTM D3960	0 g/l

CURED PROPERTIES*

Properties	Test Method	Results
Abrasion Resistance Taber CS-17 mg loss/1000 cycles/1000g mass	ASTM D4060	110 mg
Coefficient of Friction - COF James Test	ASTM D2047	0.65
Tensile Strength	ASTM C307	960 psi
Compressive Strength	ASTM C579A	6,700 psi
Flexural Strength	ASTM C580	2,100 psi
Adhesion to Concrete	ASTM D4541	350 psi concrete failure
Density	ASTM C905	16.44 lbs. gal
Impact	ASTM D2794	>160 in. lbs.
Thermal Coefficient of Linear Expansion	ASTM C531	1.6 x 10^{-5} in/in/°F

*Properties and results are based on laboratory testing at 72°F (22°C) %50 RH, theoretical calculations and estimates. Typical properties, as stated, are to be considered as representative of current production and should not be treated as specifications

**Based on spot testing of the clear coating after 14 days of cure. Pigmented versions may see reduced chemical resistance and staining.

Legend:

- E- Excellent (Not Effected) - Recommended
- G-Good (Limited Negative Effect) - Short Term Exposure
- F-Fair (Moderate Negative Effect) - Not recommended
- P-Poor (Unsatisfactory) - No Resistance to Exposure

CHEMICAL RESISTANCE**:

Protect UC-LM	1 Day	7 Days
ACIDS, INORGANIC		
10% Hydrochloric	E	E
30% Hydrochloric	F	P
10% Nitric	E	E
50% Phosphoric	G	F
37% Sulfuric	E	E
ACIDS, ORGANIC		
10% Acetic	G	F
10 % Citric	E	G
Oleic	E	E
ALKALIES		
10% Ammonium Hydroxide	E	E
50% Sodium Hydroxide	E	E
SOLVENTS		
Ethylene Glycol	G	G
Isopropanol	E	E
Methanol	P	P
d-Limonene	E	E
Jet Fuel	E	E
Gasoline	G	F
Mineral Spirits	E	E
Xylene	E	G
Methylene Chloride	P	P
MEK	P	P
PMA	G	G
MISCELLANEOUS		
20% Ammonium Nitrate	E	E
Brake Fluid	E	E
Bleach	E	E
Motor Oil	E	E
Skydrol®500B	E	E
Skydrol®LD4	E	E
20% Sodium Chloride	E	E
10% TSP	E	E

INSPECTION AND APPLICATION:
Caution! Follow all precautions and instructions prior to installation.

CHECK THE SUBSTRATE CONCRETE: Substrate concrete must be free of curing membrane, silicate surface hardener, paint, or sealer and be structurally sound. If you suspect the concrete has been treated or sealed, prepare substrate for complete removal of treatment.

MOISTURE: Moisture and moisture vapor transmission rates are dynamic in nature and may change over time. Initial testing does not guarantee future results. If the relative humidity of the concrete substrate is over 99% (using ASTM F2170), Protective Industrial Polymers must be consulted and issue a written moisture mitigation recommendation prior to product use.

EXCLUSION: Testing for moisture is important, however it does not guarantee against future problems. If there is no vapor barrier or the vapor barrier is damaged, this too can contribute to floor failure. Contamination to concrete from oils, chemicals, excessive salts or Alkali Silica Reaction (ASR) may also contribute to floor failure. CHECK THE TEMPERATURE AND HUMIDITY: During the application and cure of the coating, the substrate temperature, material temperature and room conditions should be maintained between 65°F (18°C) and 90°F (32°C). Relative Humidity (RH) should be limited to 30-80%. DO NOT apply coatings unless the floor temperature is more than five degree over the dew point.

APPLICATION EQUIPMENT:
- Protective equipment and clothing as called for in the SDS (Safety Data Sheet)
- "KOL Mixal" electric powered mortar mixer (Model M-61-BM 1HP)
- Screed Rake/ Cam Rake
- Hand Trowel or Drill motor mixer with mud mix blade
- Porcupine roller/Loop roller/ 1/4 " Mohair roller
- Surface grinders
- Vacuum equipment

PREPARATION: Surface dirt, grease, oil and contaminates must be removed by detergent scrubbing and rinsing with clean (clear) water. Concrete Scarification or Heavy Shot Blasting (bare concrete) is the recommended method of surface preparation.

JOINTS: Construction joints may need to be re-built and re-cut and then filled with semi-rigid joint filler. Isolation or expansion joints must be filled with a flexible material designed for expansion and should not be coated over. All construction/control joints in the concrete must be honored (IE: Re-cut and filled in the mortar). Control joints must be filled with a semi-rigid joint compound such as JF-Epoxy or JF-Polyurea.

BARE CONCRETE APPLICATION: UC 6003 Mortar MUST BE APPLIED OVER bare and well-prepared concrete. Under most conditions a primer is not required or recommend.

Existing Epoxy or Overlay: It is highly recommended that the existing overlay be shot-blasted or diamond ground, primed with an epoxy primer and saturated with silica sand before applying a new layer of UC 6003.

MIXING: Working time including mixing is limited to 15-20 minutes. Surface will harden and become unworkable after 20-25 minutes. Mix equipment and tools will need to be cleaned multiple times during the application to keep materials from setting up prematurely.

Mix Instructions for UC 6003: If a Color Pack (Part D) is being used, empty Color Pack (Part D) into Part A and mix 1 minute or until Color Pack (Part D) is homogenized evenly in the Part A. If no Color Pack (Part D) is being used, mix Part A for 30 seconds. Once Part A is mixed, add Part B to Part A and mix 1 minute. After Part A and Part B are mixed, add Part C one bag at a time. Once both bags are mixed in, mix for 2 minutes until homogenized.

CBT UC Accelerator: To hasten cure in colder temperatures or tight time schedules and to shorten the recoat time of epoxy topcoats, the addition of CBT UC Accelerator is recommended.

Application Instructions for UC 6003: Apply UC 6003 at a thickness of 100 mils to the floor surface using a screed rake, cam rake, hand trowel or screed box. Trowel the wet mortar to compact and even the material, and then use a looped roller to further even the material and working liquids to the surface. Broadcast any optional top aggregate while mortar is wet.

CURING (DRYING): Allow the mortar to cure (dry) for a minimum 4-8 hours after application at 75°F (24°C) and 50% RH. Sweep off excess quartz broadcast. Only open the floor to light traffic after sufficient cure, allow more time for low temperatures and higher humidity or for heavier traffic. Full coating properties may take up to 24 hour to 3 days to develop.

TOPCOATING (Epoxy)

Application of a high solids epoxy topcoat direct to a smooth Urethane Concrete is not a recommended practice due to reasons of inferior thermal shock, adhesion, and reduced moisture vapor transmission properties. Only apply high solids epoxy topcoats atop Urethane Concrete that has been fully broadcasted with silica sand.

Within the first 24 hours of placement, Urethane concrete is still in reaction, slowly releasing water vapor and CO2 gas. These can cause bubbles to form and get trapped in an epoxy topcoat causing an unsightly bubbled surface. To reduce or eliminate these gas bubbles, the addition of a minimum of 3 oz. UC Accelerator to the UC-LM mixture greatly reduces gas and consequently bubbling. Allow the floor to cure for a minimum of 16 hours before application of epoxy topcoats. Without the accelerator, a minimum of 24 hours cure time is required.

TECHNICAL SUPPORT: For application questions, please contact your salesman or CBT technical service at 913-278-0327

DISPOSAL: Dispose in accordance with federal, state, and local regulations.

READ SDS (SAFETY DATA SHEET) FOR SAFETY AND PRECAUTIONS. USE PRODUCT AS DIRECTED. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

MAINTENANCE GUIDELINES

Allow floor coating to cure at least one week before cleaning by mechanical means (IE: sweeper, scrubber, disc buffer).

CARE: Increased life of the floor will be seen with proper maintenance and will help maintain a fresh appearance of your new CBT floor. Regularly sweep to avoid ground in dirt and grit which can quickly dull the finish, decreasing the life of the coating. Spills should be removed quickly as certain chemicals may stain and can permanently damage the finish. Only soft nylon brushes or white pads should be used on your new floor coating. Premature loss of gloss can be caused by hard abrasive bristle Polypropylene (Tynex®) brushes.

CAUTION: Heavy objects dragged across the surface will scratch all floor coatings. Avoid gouging or scratching the surface. Pointed items or heavy items dropped on the floor may cause chipping or concrete pop out damage. Plasticizer migration from rubber tires can permanently stain the floor coating. If a rubber tire is planned to set on the floor for a long period of time, place a piece of acrylic sheet between the tire and the floor to prevent tire staining. Rubber burns from quick stops and starts from lift trucks can heat the coating to its softening point causing permanent damage and marking.

REPAIR: CLEAN UP Be sure to use absorbent material as you flush the area with water. Dispose of said material and unused resin in accordance with local, state and federal disposal regulations. If there is uncured material, it can be removed with an approved solvent or chemical such as Natural Clean. Cured material can only be removed mechanically.

WARRANTY

CBT warrants for a period of one (1) year that its products will be free of manufacturing defects and will be in conformity with published specifications when handled, stored, mixed, and applied in accordance with recommendations of CBT. If any product fails to meet this warranty, the liability of CBT will be limited to replacement of any non-conforming material if written notice containing full details of the non-conformity is given to CBT within (1) one year of delivery of materials. CBT may in its discretion refund the price received by CBT in lieu of replacing the material. CBT does not authorize anyone on its behalf to make any written or oral statements which in any way alter CBT's warranty or installation and storage information or instructions in its product literature or on its packaging labels. CBT reserves the right to inspect the non-conforming material prior to replacement. CBT MAKES NO WARRANTIES, IMPLIED OR OTHERWISE, AS TO THE MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES OF ITS PRODUCTS AND EXCLUDES AND DISCLAIMS THE SAME, INCLUDING, WITHOUT LIMITATION, FAILURE OF THE PRODUCT DUE TO ACTS OF GOD, FLOODING, EXTREME OR ABNORMAL TEMPERATURES, HUMIDITY AND MOSITURE, STRUCTURAL CONDITIONS, SITE PREPARATION AND CONDITIONS, ACCIDENTS, DAMAGE CAUSED BY INSTALLATION OF MACHINERY, EQUIPMENT OR FIXTURES WITHOUT ADEQUATE FLOOR PROTECTION OR WITHOUT ADEQUATE TIME FOR CURING, FAILURE TO COMPLY WITH CONDITIONS OF USAGE, VANDALISM, NEGLIGENT OR INTENTIONAL ACTS OF THIRD PARTIES OR OTHER CASUALTIES.