

**UTEK EP-F Flooring System**

**Section- \_\_\_\_\_**

**Part 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplemental Conditions and Division 1 Specification sections apply to work of this section.

**1.02 WORK INCLUDED**

- A. Provide materials, labor and equipment required to prepare designated floor area and install flooring as shown on the drawings.
- B. Related Work:
  - 1. Section 03300: Concrete Work, for concrete substrate.
  - 2. Section \_\_\_\_\_ : Plumbing, drains.
  - 3. Section 07000: Sealants, silicone sanitary and USDA sealants.

**1.03 QUALITY ASSURANCE**

- A. Manufacturer: Obtain all flooring materials required for this Section from a single source.
- B. Contractor: Shall have a minimum of 5 years experience in the installation of seamless flooring and be approved in writing by the specified manufacturer.
- C. Provide a 10 x 10 on site installation of each system included in the specification including cove base to serve as the standard for installation for the project.

**1.04 SUBMITTALS**

- A. Related MSDS
- B. Manufacturer's standard single source warranty in accordance with Section 1.06 WARRANTY.
- C. Six inch samples of all flooring finishes required in this specification.

**1.05 WARRANTY**

Furnish manufacturer's written warranty on seamless flooring for period of two years after installation, as part of the complete system.

**1.06 DELIVERY, HANDLING AND STORAGE**

- A. Deliver materials in manufacturer's undamaged containers, clearly marked with the following:
  - 1. Product Name
  - 2. Manufacturer's Name
  - 3. Resin or Hardener Designation
  - 4. Mix Ratio of Resin and Hardener

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- B. Handle materials in a safe and proper manner to avoid damage or spill.
- C. Inspect direct jobsite deliveries to verify correct material and quantities are received in good condition.
- D. Replace, at no cost to the owner, materials that are found to be defective in manufacturing or damaged in transit, handling or storage.
- E. Store materials per manufacturer's instructions and as follows.
  - 1. Seals and labels shall be intact and legible.
  - 2. Temperature of storage area shall be maintained between 40°F and 80°F.
  - 3. Do not use materials which have been stored for a longer period of time than the manufacturer's maximum recommended shelf life.

#### 1.07 JOB SITE CONDITIONS

- A. Pre-Installation conference shall be required with General Contractor, Owners Representative, Flooring Contractor and/or Manufacturer's Representative to review the following:
  - 1. Evaluate slab conditions and extent of repairs necessary for Contractor to begin normal preparation and installation of seamless flooring.
  - 2. Evaluate detail conditions at all penetrations, terminations, perimeter and drain locations. Detail problems shall be documented and resolved prior to floor installation..
  - 3. Review job site conditions, including temperature, power, and lighting. Such problems shall be documented and resolved prior to floor installation.
- B. Protect surrounding substrate and surfaces as well as in place equipment from damage during surface preparation and system installation.
- C. All drains must be working and set at the proper elevation (1/8" above slab).
- D. General Contractor shall provide adequate ventilation by use of fans or other devices.
- E. General Contractor shall maintain lighting at final end use levels during the installation.
- F. General contractor shall ensure that leaks from pipes and other sources are corrected prior to floor installation.
- G. General Contractor shall provide minimum substrate and ambient temperature of 45°F and relative humidity below 75% during floor installation and until final acceptance.

#### 1.08 CURING, CLEAN UP AND PROTECTION

- A. Cure final floor system in accordance with manufacturer's recommendations.
- B. Clean up work area, removing all equipment, materials and trash.
- C. General contractor shall provide temporary protection from construction traffic and other trades prior to final acceptance by the owner.

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### Part 2 - PRODUCTS

#### 2.01 Materials

##### A. Systems Overview

Basis-of-design Products: LSP U-TEK EP-F flooring system is used as the basis of design. The system shall follow the existing contour of the slab. The overall system thickness shall be 3/16" thick and consist of a urethane cement initial coat and shall have an epoxy flake decorative upper work surface with integral cove base. The final seal shall be Chemical Resistant Epoxy and have a mild pebbled surface texture.

##### B. The system shall have the following properties:

- Compressive Strength: 10,000psi
- Tensile Strength: 750 psi
- Impact resistance: No impression @ 160 ft lb
- Water Absorption: <0.1%
- Abrasion Resistance: 20 – 30 mg. loss
  - CS-17 wheel, 1000 cycles
- Adhesion: Concrete failure
- Application Temp: 65 -80 degrees F, 77 % humidity
- Cure time: 3 days work; 5 days chemical resistance
- Chemical resistance when subjected to chemicals used in the facility.

##### C. System Characteristics:

1. Color and Pattern: match architects samples
2. Surface: medium skid resistance
3. Overall thickness: 3/16"

##### D. System Elements:

- 1, Base Coat: Urethane Cement
2. Body coat: Epoxy Broadcast
- 3) Seal Coat: Chemical Resistant Epoxy
- 4) Aggregate: ¼" flakes
- 5) Cove Height: 4 inch integral cove

##### E. Accessories:

- a. Zinc Cove termination strip
- b. Apply 5.6 oz. fiberglass tape to all cracks over 1/8" wide
- c. Install key way in concrete at all non-verticle termination points

##### F. Chemical Resistance

Chemical Resistance Chart (The following is a generic listing of chemical resistance and may not be accurate for all commercial solutions. We recommend testing of the specific chemicals to verify resistance.)

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Chemical Resistance Guide		
Chemical Environment	% Concentration	Maximum temp (°F) for continued use
Acetic Acid	Up tp 25	200
Acetic Acid	50	170
Acetic Acid	75	140
Acetic Acid, Glacial	100	Not Recommended
Acetone	10	100 (Intermittent Spills only)
Acetone	100	Not Recommended
Acid Cleaner - 31% hydrochloric acid	50	70
Calcium Bisulfite	All	170
Calcium Carbonate	All	150
Calcium Chlorate	All	200
Calcium Chloride	All	200
Calcium Hydroxide	15	150
Calcium Hydroxide	25	190
Calcium Hydroxide	100	190
Chlorine Dioxide	All	140
Chlorine Dioxide, wet	Saturated	170
Chlorine Water	Saturated	170
Chloroform	100	Not Recommended
Chromic Acid	up to 20	140
Chromic Acid	30	Not Recommended
Citric Acid	All	200
Deionized Water	100	170
Deminerilized Water	100	170
Detergents, Organic, ph12	100	140
Detergents, Sulfonated	All	200
Ethyl Alcohol	All	80
Ethyl Acetate		Not Recommended
Ethylene Glycol	All	200
Formaldehyde	All	120
Glycerine	100	200
Glycolic Acid (Hydroxy acetic)	70	90
Hydrochloric Acid	up to 20	200
Hydrochloric Acid	37	170
Hydrochloric Acid, fumes		200
Iodine, Crystals		140
Iodine, Vapors		140
Isopropyl Alcohol	All	110
Magnesium Carbonate	All	170
Magnesium Chloride	All	200
Magnesium Hydroxide	100	200
Methyl Alcohol	100	Not Recommended
Methylene Chloride	100	Not Recommended
Muriatic Acid	100	200
Nitric Acid	5	140

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Nitric Acid	20	110
Nitric Acid	40	Not Recommended
Nitric Acid, fumes		170
Phosphoric Acid	85	200
Phosphoric Acid	100	200
Sodium Chloride, pH10.5, Cl2Sat'd	Saturated	190
Sodium Chloride, pH 3.5	Saturated	170
Sodium Cyanide	All	200
Sodium Hydroxide	50	180
Sulfuric Acid	93	Not Recommended
Sulfuric Acid: Phosphoric Acid	10:20	170
Toluene	100	70

The system shall have the minimum chemical resistance to the following Commercial Compounds:

Effect after 7 days emersion (NE=no effect, SE= slight surface etching)

<b>Formulator: Pharmacal Research Labs</b>	
<b>Compound</b>	<b>Results</b>
Clout	NE
PRL-18	SE
PRL-18	SE
PH Control	SE
Urid	NE
Uri-Solv	NE
Clidox-S-Activator	NE
Clidox-S-Base	NE
Clidox-S Mixed (1:5:1	NE

<b>Formulator: Steris</b>	
<b>Compound</b>	<b>Results</b>
TBO	NE
PRLCage KLenz 100	NE
PRLCage KLenz 200	NE
PRLCage KLenz 220	NE

<b>Formulator: Duron</b>	
<b>Compound</b>	<b>Results</b>
Xylene	NE

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#### Part 3 - EXECUTION

##### 3.01 Surface Preparation

- A. Prepare concrete to "open" surface pores by means of mechanical grinding, removing contaminants and bond breaking substances, including but not limited to dust, latencies, curing compounds, coatings, sealers, oil and grease. Mechanically remove delaminated or deteriorated concrete by scabbing or chipping hammers. Areas to be patched shall be saw cut to minimum 1/2" depth at perimeters and keyed to existing concrete. If a coating exists, remove it to expose bare concrete.
- B. Apply flooring layers as per manufacturers instructions.

##### 3.02 CLEANING AND PROTECTION

- A. Cleaning: Remove all debris resulting from the flooring installation during the progress of the work.
- B. Protection: General contractor shall provide protection from other trades prior to final acceptance by owner.