

**SeamTek® Type 4
Epoxy Full Flake Flooring System
Section 09700**

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. Floor Thickness Verification: At the Architect, Engineer's or Owner's direction and under his supervision, take _____ random cores, through system to substrate, prior to applying final seal coat, to verify proper floor thickness.
 - 1. Repair cored areas to match surrounding surface prior to applying final seal coat.
 - 2. Remove and replace areas with less than specified thickness, in a manner that does not effect aesthetics or integrity of overall floor.

1.04 SUBMITTALS

- A. Submit three 12" X 12" system samples with the bid for purposes of chemical resistance testing. The end user has the option to conduct on site chemical resistance testing "in their hands" to assure that the submitted system is acceptable for use in their environment. The end user reserves the right to refuse any bidder whose samples do not meet with their approvals as a result of these tests.
- B. Manufacturer's standard single source warranty in accordance with Section 1.06 WARRANTY.
- C. Manufacturer's standard color charts for color selection.

1.05 JOB SITE MOCK-UP:

- A. 10' X 10' SF minimum job site mock-up must be installed to establish a standard for site installation quality. The same crew shall install the mock up and the floor job installation. Mock up shall be installed and finished with application of topcoats and skid resistance, for approval by architect and/or owner's representative.

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1.06 WARRANTY

Furnish manufacturer's written warranty on seamless flooring for period of two years after installation, warranting against loss of bond and wear through to concrete substrate (through normal wear and use) exclusive of substrate moisture related problems. Warranty shall be single source from the manufacturer, including material and labor.

1.07 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
- 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 60°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.

1.08 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. Test concrete sub-floors using the Calcium Chloride test method to verify that slab moisture vapor transmission rate does not exceed manufacturer's recommendations.
 - 4. The Flooring Contractor shall provide an add option cost as part of the bid for the treatment of substrate moisture vapor transmission in the event the substrate exceeds manufacturers recommendations. Slab testing shall be performed immediately prior to floor installation so as to achieve the nearest real time conditions. Any slab developing readings of 3 pounds of water per 24 hours per 1000 square feet or greater by ASTM F-1869-98 shall receive Integral Concrete Waterproofing which shall be compatible with flooring and approved by the Flooring Manufacturer. Waterproofing shall be installed by a contractor that is certified by the manufacturer of the waterproofing material. The waterproofing system must have a materials and labor warranty of at least

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5 years against the loss of bond due to substrate moisture vapor transmission if initial readings are above 3 pounds. The moisture proofing product shall be certified as compatible with the flooring material manufacturer.

5. 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.
- D. Job area shall be free of other trades during floor installation, and for a period of 48 hours upon completion.
- E. General Contractor shall provide adequate ventilation by use of fans or other devices.
- F. General Contractor shall maintain lighting at final end use levels during the installation.
- G. General contractor shall ensure that leaks from pipes and other sources are corrected prior to floor installation.
- H. General Contractor shall provide minimum substrate temperature of 60°F ambient temperatures between 65 and 80° F with relative humidity below 75% during floor installation and until final acceptance.

1.09 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.

Part 2 - PRODUCTS

2.01 MATERIALS:

- A. Systems Overview:
For the basis of comparrison SeamTek® Type 4 is selected. System shall be sealed with Chemical Resistant Epoxy resin. System shall have a textured finish surface. All epoxy resins shall be 100% solids for low odor and job-site safety during installation. Aggregate to be decorative flake blends to be selected by the Architect. System shall have the following properties:

Compressive Strength	ASTM C-579	10,000 psi
Tensile Strength	ASTM C-307	3,100 psi
Flexural Strength	ASTM C-580	4,000 psi
Flexural Modulus	ASTM C-580	2.5 X 10 ⁵

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

E	-	Excellent (up to 7 days)
G	-	Good (up to 24 hrs.)

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Chemical Exposure	SS NR Chemical Resistant Epoxy	- - Chemical Exposure	Splash & Spill with immediate removal Not Recommended	Chemical Resistant Epoxy
Acetic Acid 10 %	SS		Maleic acid, < 40%	NR
Acetic Acid 50 %	SS		Maleic acid, > 40%	NR
Acetic Acid, glacial	NR		Methanol	SS
Acetone	SS		Methyl ethyl ketone (MEK)	SS
Acrylonitrile	NR		Methyl isobutyl Ketone (MIBK)	SS
Aluminum Chloride	E		Methylene chloride	NR
Aluminum Nitrate	E		Mineral spirits	E
Ammon. Hydroxide, 28%	SS		Motor oil	E
Aniline	NR		Nitric acid, 10%	E
Benzene	SS		Nitric acid, 30%	SS
Benzoic acid	NR		Oleic acid	E
Butyl acetate, 10%	NR		Oxalic acid, 10%	G
Butyric acid, 10%	G		Perchloric acid, 30%	NR
Calcium chloride, 30%	E		Perchloroethylene	NR
Calcium hypochlorite, 20%	E		Phenol, > 10%	SS
Chlorine, Wet and dry	SS		Phenol, > 10%	NR
Chromic acid, 10%	SS		Phosphoric Acid, 50%	E
Citric acid, 10%	E		Phosphoric acid, 85%	SS
Clorox, full strength	SS		Picric acid	NR
Cresylic acid	NR		Potassium hydroxide	E
Diacetone alcohol	NR		Potassium permanganate, 25%	SS
Diethyl Phthalate	E		Silver nitrate, 10%	SS
Ether	NR		Skydrol A500	E
Ethyl Acetate	NR		Sodium hydroxide, 10%	E
Ethyl alcohol, 95%	SS		Sodium hydroxide, 50%	E
Ethylene dichloride, 10%	NR		Sodium hypochlorite, 15%	SS
Ethylene glycol	E		Sodium hypochlorite, 50%	NR
Formaldehyde, 37%	SS		Sulfuric acid, 10%	E
Formic acid, < 10%	SS		Sulfuric acid, 30%	E
Formic acid, >10%	SS		Sulfuric acid, up to 98%	SS
Gasoline	E		Tannic acid	G
Glycerin	E		Tartaric acid	G
Hydraulic Fluid	E		Toluene	SS
Hydrochloric acid, 10%	E		Triacetin	G
Hydrochloric acid, 37%	G		Trichloroethane	G
Hydrofluoric acid	NR		Trichloroethylene	G
Hydrogen peroxide, 6%	SS		Trisodium phosphate	E
Isopropyl alcohol	SS		Turpentine	G
JP Jet Fuel	E		Urea	E
Lactic acid, < 20%	E		Urine	E

C. Integral Concrete Waterproofing (ICW):

In accordance with Job Site Conditions Section 1.08, A, 3) test all concrete slabs scheduled to receive seamless flooring using the Calcium Chloride test method (ASTM F

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1869-98) to determine if moisture vapor transmission rates are within limits acceptable to the manufacturer and provide a separate ADD line item in the bid.

Part 3 - EXECUTION

3.01 Surface Preparation

- A. **For New or Exposed Concrete Slabs:** Prepare concrete to "open" surface pores by means of vacuum-blasting, removing contaminants and bond breaking substances, including but not limited to dust, latencies, curing compounds, coatings, sealers, oil and grease. In circumstances approved by the manufacturer, mechanical abrasion by means such as terrazzo grinding will be acceptable. Oil and grease not removed by vacuum-blasting shall be chemically removed. 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. (For thorough instructions regarding preparation of concrete and non-concrete substrate, consult LSP "Instruction for Surface Preparations".)

-or-

For Renovation Projects Where an Original Resinous Floor Remains: Assure that the existing floor is bound tightly to the substrate by performing preliminary "pull tests". Assure that the existing floor and substrate are dry and exhibit no signs of previous moisture problems. Remove loose and deteriorating flooring to expose sound substrate and patch back to original elevation prior to prep of the remaining surface. Thoroughly prepare the remaining floor using terrazzo grinding or another prep procedure approved by the manufacturer.

3.02 APPLICATION

- A. Apply new flooring components required for the system in accordance with the statements in System Overview above and handle materials per manufacturer's installation instructions, including mixing and application. Terminate at edge of expansion joints, or as designated by Design Professional. Install a 4" integral cove base on walls unless otherwise indicated on drawings.
- B. Cure resinous materials in compliance with manufacturer's directions.

3.03 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.