

SECTION 09780

SEAMLESS AGGREGATE-FILLED EPOXY FLOORING FOR COMMERCIAL KITCHENS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Moisture vapor emission testing.
 - 2. Surface preparation.
 - 3. Installation of waterproofing membrane (if required).
 - 4. Furnishing and installation of seamless aggregate-filled epoxy flooring.

1.02 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete:
 - 1. Concrete slabs on or below grade shall be installed over an effective moisture vapor barrier.
 - 2. Concrete slabs shall be cured 30 days, be structurally sound and have a steel trowel finish.
 - 3. Surface shall be well sloped to drains, straight and level with the permissible degree of tolerance of 1/4" in 10'-0" in any direction.
 - 4. No curing compounds or surface contaminants shall be used in placing new concrete.

1.03 SUBMITTALS

- A. Submit manufacturer's product data, literature and brochures.
- B. Submit manufacturer's samples showing color choices and texture.
- C. Prior to commencing work, installer shall prepare two 6" x 6" samples of the resinous flooring chosen for the project showing actual color, thickness and texture. These samples shall serve as a basis for comparison through the duration of the work.

1.04 QUALITY ASSURANCE

- A. All resin material used in the aggregate-filled epoxy flooring system shall be manufactured by a single manufacturer to ensure compatibility and proper bonding.
- B. Applicator shall be approved by the manufacturer and shall have a minimum of 3 years experience in installing seamless epoxy floors.

1.05 DELIVERY, STORAGE AND HANDLING

- A. All material shall be delivered to the job site in unopened containers clearly labeled by the manufacturer and stored in a dry location at a minimum of 65 degrees F.

1.06 WARRANTY

- A. Manufacturer shall guarantee that his materials are free from defects and comply with his published specifications.
- B. Applicator shall warranty against faulty workmanship for a period of 3 years from substantial completion of the project.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Resin materials and graded slurry filler aggregate: Arizona Polymer Flooring, Glendale, Arizona.
- B. Broadcast Aggregate:
 - 1. 3M
 - 2. Gordon Sand
 - 3. Other suitable manufacturer.
- C. Elastomeric Caulking Compound:
 - 1. Vulkem
 - 2. SIKA
 - 3. Sonneborn

2.02 MATERIALS

- A. Seamless flooring system to consist of 100 percent solids chemical and heat resistant epoxy resin binder, graded fine silica fillers, and 20-30 mesh quartz or Monterey type sand. All materials shall meet the performance requirements specified herein.

2.03 SYSTEM DESCRIPTION

- A. Flooring system to be a minimum 3/16" thick with color and texture to match the sample chosen.
- B. Cured resin binder shall meet the following minimum requirements:
 - 1. Compressive strength, psi (ASTM D-695): 13,780
 - 2. Tensile strength, psi (ASTM D-638): 8,590
 - 3. Flexural strength (ASTM D-790): 13,945
 - 4. Hardness, Shore D (ASTM D-2240): 86
 - 5. Bond strength to concrete (ACI 503.4-2,3.2) Concrete fails before loss of bond.
 - 6. USDA approval: Approved
- C. Chemical Resistance: (ASTM D-1308 7 day exposure) Unaffected by the following:
 - 1. 15% Acetic Acid
 - 2. 50% Citric Acid
 - 3. Calcium Chloride
 - 4. Cola Syrup
 - 5. 50% Lactic Acid
 - 6. Oleic Acid
 - 7. 85% Phosphoric Acid
 - 8. Potassium Chloride
 - 9. 50% Sodium Hydroxide
 - 10. 50% Sulphuric Acid
 - 11. Toluene
 - 12. Urea

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions:
 - 1. Inspect surfaces to receive epoxy flooring.
 - 2. Conduct calcium chloride moisture vapor emission testing according to the recommendations of The Vaprecision Company, Newport Beach, CA. If test reading is above three pounds, consult Arizona Polymer Flooring before proceeding.
 - 3. Before starting work, report in writing to the Architect any unsatisfactory conditions.
 - 4. Application of any material shall signify that surfaces have been inspected and are satisfactory.

3.02 SURFACE PREPARATION

- A. Surfaces to receive flooring system shall be abraded to a minimum of 5 mil profile using shot blasting or acid etching. If acid etching is used, it shall be done in strict accordance with the manufacturer's written instructions. Etching shall be accomplished using a mechanical scrubber with an aggressive "nylogrit" type brush.
- B. Fill all cracks, holes and joints with Epoxy 300 Flex Paste prior to application of flooring system. True expansion joints shall be marked for sawcutting after installation of the flooring system.

3.03 INSTALLATION

- A. Allow sufficient time for the installation of the flooring system. At no time shall the speed of project completion be allowed to detrimentally effect the application.
- B. Provide sufficient light, power, heat and working conditions to permit proper application of the materials. Substrate temperature shall be at a minimum of 50°F during application and for 48 hours thereafter.
- C. If waterproofing is required, apply elastomeric Polyurethane 300 according to manufacturer's instructions to achieve a 40 mil membrane.
- D. Install coved base if required to a thickness of 1/8-inch to 1/4-inch. Cove shall be 4 inches to 6 inches high with a 3/4-inch to 1-inch radius and terminated with a metal or plastic edge strip. Cove shall be reasonably smooth and uniform in appearance to provide an easily cleaned surface. The seam between the coved base and wall shall be sealed with an elastomeric polyurethane caulking.
- E. Flooring system shall be installed using a single or double slurry broadcast method to achieve the specified thickness.
 - 1. Slurry shall consist of Epoxy 600 and APF Slurry Filler. For each gallon of liquid resin, 7-10 pounds of slurry filler must be added.
 - 2. In areas under ovens where constant temperatures over 150 degrees F. are anticipated, Epoxy 600 shall be replaced with Epoxy Novolac 800.
 - 3. Broadcast aggregate shall be incorporated into the uncured slurry to the point of refusal.
 - 4. Top coat material shall be Epoxy 600 applied to entire surface except fry-line area. Texture in all traffic areas shall be slip-resistant.
 - 5. Top coat in fry-line area shall be a 60 mil self-leveling slurry. Slurry shall consist of 2 parts Epoxy Novolac 800 and one part aggregate. If slip-resistance is required, immediately after slurry has been placed, broadcast aggregate and continue to roll area until the desired texture is reached.

- F. Areas of the floor or trench drains that are exposed to hot water or soups shall receive a thermal shock-resistant system.
 - 1. Areas subject to thermal shock must be shotblasted or scarified to achieve a minimum 20 mil profile.
 - 2. Prime surface with clear Epoxy 600. Do not leave puddles. Before primer cures, install an epoxy mortar consisting of 5-6 parts graded trowel aggregate to 1 part Epoxy Novolac 800. Mortar shall be a minimum of 1/2" thick. After mortar has set firm, top coat with one coat of Epoxy Novolac 800 applied at 75-100 sq. ft. per gallon.
- G. If the floor has been installed over true expansion joints, sawcut through the finished floor and caulk the joint with elastomeric polyurethane caulk.

3.04 FIELD QUALITY CONTROL

- A. Installer shall monitor the thickness of the system as the work progresses. Areas found not to meet the required thickness shall receive additional material until specified thickness is attained.

3.05 PROTECTION

- A. Keep installation areas free from traffic and other trades during the application procedure and cure time.

END OF SECTION