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S.239 – SPECIFICATION: Flake Broadcast Epoxy and Polyaspartic Floor Coating
CSI Division 09 – Finishes: 096566, 096700, 099600
Revised: 7.25.11

Part 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

1.2 SUMMARY

A. This section includes resinous flooring systems with epoxy, polyaspartic and blended vinyl color chips.

1. Application method: Epoxy and polyaspartic flooring with full broadcast blended chip as shown on the drawings and in schedules.

B. Related sections include the following:

1. Cast-in-Place Concrete (Section 03300)
2. See Paragraph 1.7 B Condition of New Concrete

1.3 SYSTEM DESCRIPTION

A. The work shall consist of preparation of the substrate, the furnishing and application of a 100% solids epoxy floor coating system with a single broadcast of blended color chip, followed by high solids polyaspartic protective topcoat. The system shall have the color and texture as specified by the Owner. It shall be applied to the properly prepared area (s) as defined in the plans strictly in accordance with the Elite Crete Systems recommendations.

1.4 SUBMITTALS

A. Product Data: Insert the manufacturers Product literature including installation procedures.

B. Manufacturers Material Safety Data Sheet (MSDS)

C. Samples: A 6” square sample of the proposed system including a representative thickness with owners desired texture and finish.

1.5 QUALITY ASSURANCE

A. The Manufacturer shall have a minimum of 10 years experience in the production, sales and technical support of epoxy industrial flooring and related materials.

B. The Applicator shall have been approved and certified by the flooring system manufacturer in all phases of surface preparation and application of the product specified.

C. No requests for substitutions shall be considered that would change the generic type of the system specified.

D. The specified system shall be in compliance with the requirements of the United States Department of Agriculture (USDA).

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E. A pre-installation conference shall be held between the applicator, General Contractor and the Owner to review and clarify this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

1.6 PRODUCT DELIVERY AND STORAGE

A. Packing and Shipping

B. All components of the system shall be delivered to the site in the manufacturers packaging, clearly identified with the product type and batch number.

C. Storage and Protection

D. The applicator shall be provided with a storage area for all components and related materials. The storage area shall be between 60 F and maximum of 90 F, dry and out of direct sunlight in accordance with Elite Crete Systems recommendations and relevant health and safety regulations.

E. Copies of the Material Safety Data Sheet (MSDS) for all components shall be kept on site for review by all personnel involved in the project.

F. Waste Disposal

1. The applicator shall be provided with adequate waste disposal facilities for non-hazardous waste generated during the installation of the system.

1.7 PROJECT CONDITIONS

A. Site Requirements

1. Application shall proceed when air, material and substrate temperatures are between 60 F and 90 F, providing the substrate temperature is above the dew point. If this condition cannot be met, contact Elite Crete Systems for recommendations.
2. The relative humidity shall be less than 85% and the surface temperature shall be at least 5 degrees above the dew point.
3. The Applicator shall ensure that the adequate ventilation is available for the work area.
4. The applicator shall be supplied with adequate lightning during the preparation and installation process.

B. Conditions of New Concrete to be coated with the Elite Crete Systems Flake Broadcast Epoxy Coating.

1. The concrete shall be moisture cured for a minimum of 7 days and have fully cured a minimum of 28 days in accordance with ACI-308 standard, prior to the application of the coating system pending moisture tests.
2. New concrete shall have a flat rubbed finish or <u>at most</u> a light steel trowel finish, (an hard steel trowel finish is not desirable).
3. Cure and Seal agents for concrete should not be used.
4. All concrete surfaces on grade shall be constructed with a working vapor barrier under the slab to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety requirements

1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of the application.
2. “No Smoking” signs shall be posted at the entrances of the work area.
3. Non- related personnel in the work area shall be kept to a minimum.
4. The Owner shall be responsible to keep all traffic off the work area during the application and cure of the system.

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1.8 WARRANTY

A. Elite Crete Systems warrants that the material shipped to the buyers at the time of shipment shall be free from manufacturing defects and perform to Elite Crete Systems published literature if used in accordance with Elite Crete Systems prescribed procedures.
B. Elite Crete Systems total liability with respect to this warrantee is strictly limited to the value of the material purchase.

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PART 2- PRODUCTS

2.1 FLOORING

A. Elite Crete Systems products used for the Flake Broadcast Polyaspartic Coating 2.0.
   1. System Materials
      a. Primer – E100-VB5™ Epoxy Vapor barrier (if determined as needed during testing)
      b. Base coat – E100-PT4™ Pigmented FAST SET Epoxy
      c. Vinyl flakes
      d. Top coat – SPARTIC-ALL RM™ – Clear Polyaspartic Coating

2.2 MANUFACTURER

A. Elite Crete Systems, Inc., 1061 Transport Drive, Valparaiso, IN 46383 USA
   Phone: 1+219-465-7671, FAX: 1+219-531-0898
B. Manufacturer of approved system shall be single source and made in the USA.

2.3 PRODUCT REQUIREMENTS

A. Primer	E100-VB5™ Epoxy Vapor Barrier
1. Percent solids	58% solids
2. VOC	0%
3. Bond Strength ASTM D 4541	Substrate failure > 450 psi)
4. Hardness ASTM 2370	n/a
B. Base Coat	E100-PT4™ Pigmented Epoxy - Fast Set
1. Percent solids	100%
2. VOC	0%
3. Compressive Strength ASTM D 695	9,500 psi
4. Tensile Strength ASTM D 638 7 Day	7,700 psi
5. Elongation at break ASTM D 638	6.00%
6. Flexural Strength - (ASTM D 790) 7 Days	4,500 psi
7. Shore D Hardness ASTM D 2240	83 (7 days)
C. Top Coat	SPARTIC-ALL RM™ – Clear Polyaspartic Coating
1. Percent solids	75
2. VOC	122 g/l
3. Compressive Strength ASTM D 645	73° F 8 hour 7,300 psi 1 day 11,200 psi 7 days 14,100 psi
4. Tensile Strength ASTM D 638 7 Day	Tensile Strength – 7,100 psi Elongation at Break – 9.2%
5. Flexural Properties - (ASTM D 790) 7 Days	Flexural Strength - 11,100 psi
6. Shore D Hardness ASTM D 2240	86 (7 days)

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PART 3 – SUBSTRATE EXAMINATION

3.1 Examination

A. Applicator and owner or his representative examine substrates, areas and conditions for compliance with requirements for maximum moisture content (7%) by means of calcium chloride test or vapor test. Review installation tolerances or other factors that may affect flooring performance.
B. Verify that the substrate(s) and conditions are satisfactory for flooring installation and comply with manufacturers requirements for a successful installation.

3.2 PREPARATION

A. General
1. New and Existing concrete surfaces shall be free from oil, grease, curing compounds, weak or deteriorated concrete, all laitance and other foreign matter that may affect bond including bituminous products.
2. Moisture testing: Perform anhydrous calcium chloride test ASTM F 1869-98, first three tests in the first 1000 sq. ft. and 1 test for every 1000 sq. ft. after that.
2a. The successful test result is the concrete will not have a vapor drive exceeding 3 lbs./1000 sq. ft./24 hours.
2b. If the vapor drive exceeds 3 lbs. in 24 hours, then the owner and or his engineer shall be notified and advised of additional cost to install a vapor mitigation system that has been approved by the manufacturer or other means to lower to an acceptable limit.

B. There shall be no standing water or moisture visible on the surface at time of application.
1. Mechanical Surface Preparation
1a. Steel shot blast the surface removing the laitance to achieve a sound hard surface to receive the primer and or coating.
1b. Edges and other surfaces that cannot be reached by shot blasting, use a mechanical grinder, or other abrader.
1c. The finished profile shall have all paint, other toppings and hardened concrete, including a burnished power troweled smooth surface REMOVED. The finished profile shall conform to the International Concrete Repair Institute (ICRI) CSP-3 profile or better.
1d. All terminations at doorways or around drains shall have a ¼" x ¼" cut known as a 'key' to provide a smooth professional transition.
1e. Non moving cracks shall be chiseled out and filled according to manufacturer's recommendations.
1f. All moving cracks and Joints shall be filled according to manufacturer's recommendation's.
1g. All spalled or worn areas shall be chipped out and repaired according to the manufacturer's recommendations.

3.3 APPLICATION

1. General: Apply components of resinous flooring system according to manufacturer's written instructions to provide a uniform, monolithic wearing surface of thickness indicated. Finished floor thickness to be 35 to 43 mils.

A. Primer (Vapor Barrier Epoxy - if determined as needed during testing)
1. mix primer according to the manufacturer's instructions.
2. The primer shall be applied by flat squeegee and back roll with a non linting roller at 200-250 sq. ft. per gallon to yield a dry film thickness not to exceed 4-5 mils. Allow to cure.

B. Base Coat
1. Mix coating according to manufacturer's instructions
2. Apply first coat with flat squeegee @ 100 sq. ft per gallon and back roll with a non linting roller per gallon.

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C. Vinyl Flake
    1. Broadcast selected flake by mechanical method according to manufacturer's written instructions.
    2. Broadcast flakes to rejection ensuring that surface is covered uniformly and allow to become tack free, approximately 3.0 hours at substrate temperature of 73°.
    3. Remove unattached vinyl chip, lightly sand surface and vacuum clean.

D. Top Coat
    1. Mix top coat according to manufacturers instructions
    2. Apply top coat with a flat squeegee @ 125 to 150 sq. ft. per gallon and back roll with a non linting roller. Allow to cure.
    3. Allow to cure 12 hours depending upon temperature before opening to traffic.

3.4 CLEAN UP

A. remove masking tape and all rubbish from area, clean any over sprayed material.