V1 Date: 08122020

SECTION 09 67 26-EPOXY FLOORING
DUR-A-GLAZE GRIND AND SEAL FLOOR SYSTEM WITH URETHANE TOPCOAT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes the following:

1. Epoxy flooring system as shown on the drawings and in schedules.

B. Related sections include the following:

1. Cast-in-Place Concrete, section 03 30 00
2. Concrete Curing, section 03 39 00

1.3 SYSTEM DESCRIPTION

A. The work shall consist of preparation of the substrate, the furnishing and application of an epoxy based multi roller applied flooring system and urethane topcoat. The system shall have the color and texture as specified by the Owner with a nominal thickness of 30 mils. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.
B. Cove base (if required) to be applied where noted on plans and per manufacturers standard details unless otherwise noted.

1.4 SUBMITTALS

A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.
B. Manufacturer’s Safety Data Sheet (SDS) for each product being used.
C. Samples: A 3 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system.

1.5 QUALITY ASSURANCE

A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.
B. The Applicator shall have been approved 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 specified System.
D. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.
E. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.
F. System shall be in compliance with the Indoor Air Quality requirements of California Section 01350 as verified by a qualified independent testing laboratory.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping

1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

B. Storage and Protection

1. The Applicator shall be provided with a storage area for all components. The area shall be between 60 F and 80 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
2. Copies of Safety Data Sheets (SDS) for all components shall be kept on site for review by the Engineer or other personnel.

C. Waste Disposal

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

1.7 PROJECT CONDITIONS

A. Site Requirements

1. Application may proceed while air, material and substrate temperatures are between 60 F and 80 F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
2. The relative humidity in the specific location of the application shall be less than 80 % and the surface temperature shall be at least 5 F above the dew point.
3. The Applicator shall ensure that adequate ventilation is available for the work area.
4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of new concrete to be coated with epoxy material.

1. Concrete shall be moisture cured for a minimum of 7 days and have fully cured a minimum of twenty eight days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary nor desirable).
3. Sealers and curing agents should not to be used.
4. Concrete surfaces on grade shall have been constructed with a vapor barrier 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 application.
2. "No Smoking" signs shall be posted at the entrances to the work area.
3. The Owner shall be responsible for the removal of foodstuffs from the work area.
4. Non-related personnel in the work area shall be kept to a minimum.

1.8 WARRANTY

A. Dur-A-Flex, Inc. warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to Dur-A-Flex, Inc. published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.

B. Dur-A-Flex, Inc. liability with respect to this warranty is strictly limited to the value of the material purchase.

PART 2 – PRODUCTS

2.1 FLOORING

A. Dur-A-Flex, Inc, GRIND AND SEAL Epoxy-Based seamless flooring system.
   1. System Materials:
      a. Primer: Dur-A-Flex, Inc, Dur-A-Glaze #4 resin and hardener.
      b. Body Coat: (optional) Dur-A-Flex, Inc, Dur-A-Glaze #4 resin and hardener
      c. Topcoat: Dur-A-Flex, Inc. Armor Top resin, hardener with Dur-A-Grip

   2. Patch Materials
      a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Dur-A-Glaze #4 Cove Rez.
      b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Dur-A-Crete.

2.2 MANUFACTURER

A. Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802
B. Manufacturer of Approved System shall be single source and made in the USA.

2.3 INSTALLER

A. Northwest Floor Care, Inc. 2920 Malmo Drive, Arlington Heights, IL 60005, Phone (847) 640-0390, Fax: (847) 640-1050 Contact: Jim Muzzillo Jr., email: jmuzzillojr@northwestfloor.com

2.3 PRODUCT REQUIREMENTS

A.	Primer	Dur-A-Glaze #4
1.	Percent Solids	100 %
2.	VOC	0 g/L
3.	Compressive Strength, ASTM D 695	17,500 psi
4.	Tensile Strength, ASTM D 638	2,100 psi
5.	Flexural Strength, ASTM D 790	5,100 psi
6.	Abrasion Resistance, ASTM D 4060	
	C-10 Wheel, 1,000 gm load, 1,000 cycles	29 mg loss
7.	Flame Spread/NFPA-101, ASTM E 84	Class A
8.	Impact Resistance MIL D-24613	0.0007 inches, no cracking or delamination
9.	Water Absorption. MIL D-24613	Nil
10.	Potlife @ 70 F	20 minutes

A.	Body Coat (optional)	Dur-A-Glaze #4
1.	Percent Solids	100 %
2.	VOC	0 g/L
3.	Compressive Strength, ASTM D 695	17,500 psi
4.	Tensile Strength, ASTM D 638	2,100 psi
5.	Flexural Strength, ASTM D 790	5,100 psi
6.	Abrasion Resistance, ASTM D 4060	
	C-10 Wheel, 1,000 gm load, 1,000 cycles	29 mg loss
7.	Flame Spread/NFPA-101, ASTM E 84	Class A
8.	Impact Resistance MIL D-24613	0.0007 inches, no cracking or delamination
9.	Water Absorption. MIL D-24613	Nil
10.	Potlife @ 70 F	20 minutes

B.	Topcoat	Armor Top
1.	Percent Solids	95 %
2.	VOC	0 g/L
3.	Tensile Strength, ASTM D 2370	7,000 psi
4.	Adhesion, ASTM 4541	Substrate Failure

5.	Hardness, ASTM D 3363		4H
6.	60^0 Gloss ASTM D 523		70 (gloss finish)
7.	Abrasion Resistance, ASTM D4060	Gloss	Satin
	CS 17 wheel (1,000 g load) 1,000 cycles	10	12 mg loss
8.	Pot Life, 70 F, 50% RH		2 Hours
9.	Full Chemical Resistance		7 days

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.

1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.2 PREPARATION

A. General

1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products.
2. Moisture Testing: Perform tests recommended by manufacturer and as follows.

. a. Perform relative humidity test using is situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.

b. If the relative humidity exceeds 75% then Dur-A-Flex, Inc Dur-A-Glaze MVP Primer moisture mitigation system must be installed prior to resinous flooring installation. Slab-on grade substrates without a vapor barrier may also require the moisture mitigation system.

3. There shall be no visible moisture present on the surface at the time of application of the system. Compressed oil-free air and/or a light passing of a propane torch may be used to dry the substrate.
4. Mechanical surface preparation

a. Grind all surfaces to receive flooring system with a mobile, dust recycling machine (Diamatic, Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 2 as described by the International Concrete Repair Institute followed by additional grinding with 80-150 grit to a desired finish..

b. Floor areas inaccessible to the mobile machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.

c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.

d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.

5. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.

3.3 APPLICATION

A. General

1. The system shall be applied in four distinct steps as listed below:
   a. Substrate preparation
   b. Priming
   c. Body coat application (optional)
   d. Topcoat application
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.

4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Primer
1. The primer shall be applied as specified by the Architect.
2. The primer shall be comprised of two components, a resin, and hardener as supplied by the Manufacturer and mixed in the ratio of 2 parts resin to 1 part hardener per the manufacturer's instructions.
3. The primer shall be applied over horizontal surfaces using a flat squeegee and spread at the rate of 300 sf/gal. to yield a dry film thickness of 5 mils
4. Allow material to fully cure.

B. Body Coat (optional)
1. The body coat shall be applied as specified by the Architect.
2. The body coat shall be comprised of two components, a resin, and hardener as supplied by the Manufacturer and mixed in the ratio of 2 parts resin to 1 part hardener per the manufacturer's instructions.
3. The primer shall be applied over horizontal surfaces using a flat squeegee and spread at the rate of 300 sf/gal. to yield a dry film thickness of 5 mils
4. Allow material to fully cure.

C. Topcoat
1. The topcoat of Armor Top shall be roller applied per manufacturer's spread rate of 625 sf/kit (gloss finish) or 750 sf/kit (satin finish) to yield a dry film thickness of 3 mils.
2. The topcoat shall be comprised of a liquid resin, hardener and Dur-A-Grip that is mixed per the manufacturer's instructions.
3. The finish floor will have a nominal thickness of 8-13 mils.

3.4 FIELD QUALITY CONTROL

A. Tests, Inspection

1. The following tests shall be conducted by the Applicator:
   a. Temperature
      1. Air, substrate temperatures and, if applicable, dew point.
   b. Coverage Rates
      1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.5 CLEANING AND PROTECTION

A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.