

Florock Seamless Flooring Systems

Architectural Specification – Florothane CR ESD

Electrostatic Dissipative Chemical Resistant Urethane (E.S.D. C.R.U.)

Part 1: General

1.01 System Description

- A. Roller-applied 100% solids, penetrating epoxy primer, followed by an optional 100% solids epoxy midcoat and sealed with two finish coats of chemical resistant ESD urethane.
- B. This system shall be applied to the prepared substrate(s) as defined by the plans strictly in accordance with the manufacturer's recommendations.
- C. Optional slip-resistant properties shall be achieved by broadcasting #36 or #60 white Aluminum Oxide granules into the first wet urethane coat and back-rolled into place.

1.02 Submittals

- A. Product Data
 - 1. Current edition of manufacturer's product literature including physical data, chemical resistance, surface preparation, and application instructions.
- B. Samples
 - 1. A hard sample of the proposed system shall be submitted to represent the finished floor.
- C. Warranty
 - 1. Manufacturer's standard warranty
 - 2. Applicator's standard warranty

1.03 Quality Assurance

- A. Qualifications
 - 1. The manufacturer shall have a minimum of ten (10) years' experience in the production, sales, and technical support of polymer-based floor coatings.
 - 2. The applicator shall have a minimum of three (3) years' documented experience in the application of polymer floor coatings to concrete floors and be approved by Florock.
 - 3. Proposed suppliers shall provide certification that they have ten (10) years' experience in the production of polymer floor coatings and be required to meet all provisions of this specification, as well as provide evidence of compatibility among product components to the satisfaction of the Architect.

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B. Pre-Bid Conference

1. A pre-bid conference should be held among prospective applicators and the Architect to review surface preparation, application, clean-up procedures, and design issues.

C. Packing and Shipping

1. All materials are to be delivered to the job site in the manufacturer's original packaging. The product code and other identification marks should be clearly marked and visible.

D. Storage and Protection

1. All material is to be stored in a cool, dry place out of the direct sunlight and away from any ignition sources. The applicator should refer to the manufacturer's literature and Material Safety Data Sheets for more information.
2. Material Safety Data Sheets are to be kept on site and made readily available for all personnel.
3. Keep containers sealed and ready for use.

1.04 Project Conditions

A. Environmental Requirements

1. Optimum air and substrate temperature for product application is between 55° F (13° C) and 95° F (35° C). For temperatures outside of this range, consult the manufacturer for product application suggestions.
2. Verify that the work environment is properly equipped with vapor barriers and perimeter drains.
3. Maintain proper lighting throughout the work environment; the lighting should be comparable to the final lighting level of the space.
4. Store and dispose of any waste in accordance with regulations of local authorities.

B. Safety Requirements

1. "No Smoking" signs shall be posted throughout the work area prior to application.
2. The owner shall be responsible for removing any foodstuffs from the work area.
3. Open flames, spark producing tools/items, and ignition sources shall be removed from the work area prior to application.
4. Only work-related personnel shall be allowed within the work area.

1.05 Warranty

A. Coordination

1. The manufacturer offers a full, one-year warranty against defects in materials. Warranties concerning the installation of the material are solely the responsibility of the applicator.

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Part 2: Products

2.01 Manufacturer

- A. Crawford Laboratories, Inc.
4165 South Emerald Avenue
Chicago, IL 60609
Phone: (773) 376-7132; (800) 356-7625
Fax: (773) 376-0945
<http://www.florock.net>

2.02 Materials

- A. Primer
 - 1. The primer shall be a 100% reactive, epoxy-based, penetrating primer that exhibits chemical resistance: Floropoxy 4700 Epoxy Primer.
- B. Optional Midcoat
 - 1. The Midcoat shall consist of chemical resistant, self-leveling 100% solids Floropoxy System 4805.
- C. Topcoats
 - 1. The topcoat shall be Florock Florothane CR ESD, color-stable, chemical resistant urethane, exhibiting excellent chemical and electrostatic-dissipative properties. Two coats shall be applied. Optional skid-resistance shall be achieved by using Aluminum Oxide, Shark skin or glass beads.

2.03 Properties

- A. The coating system should meet the following physical and chemical resistant properties:

Cured System Properties

<u>Chemical Properties</u>	<u>Florothane CRU</u>
Gloss, 60 Degree, ASTM E97	58
Sward, ASTM D2134	56
Elongation, ASTM D2370	7%
Taber Abrasion, ASTM D4060	50-60 mg
Adhesion (5 = Perfect), ASTM D3359	5
Tensile Strength, ASTM C2370	8,700 psi
Shore Hardness , ASTM D2240	85
Water Absorption, ASTM C413	200 inch lbs.
Indentation, MIL-D-3134	No Indentation
Electrical Resistance EOS ESD 7.1 2020.2007	1 mega ohm to 1 giga ohm 1 mega ohm to 35 mega ohm

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Chemical Resistant Properties

<u>Reagent Tested, ASTM D3363</u>	<u>Florothane CR</u>
Skydrol	Excellent/No Unit Change
Brake Fluid	Excellent/No Unit Change
MEK	Excellent/No Unit Change
JP-4 Jet Fuel	Excellent/No Unit Change
Ammonia	Excellent/No Unit Change
Acetone	Excellent/No Unit Change
Sodium Hydroxide 50%	Excellent/No Unit Change
Phosphoric Acid 50%	Excellent/No Unit Change
Sodium Chloride 20%	Excellent/No Unit Change
Citric Acid 10%	Excellent/No Unit Change
Sulfuric Acid 10%	Excellent/No Unit Change
Sulfuric Acid 25%	Excellent/No Unit Change
Nitric Acid 10%	Excellent/No Unit Change
Hydrochloric Acid 10%	Excellent/No Unit Change
Acetic Acid 10%	Good/1-2 Units Change
Sugar 10%	Excellent/No Unit Change
Lactic Acid 10%	Excellent/No Unit Change
1-1-1 Trichloroethane	Excellent/No Unit Change
Xylene	Excellent/No Unit Change
Toluene	Excellent/No Unit Change
Mineral Spirits	Excellent/No Unit Change
MIBK	Excellent/No Unit Change, Stains
Tincture of Iodine	Good/1-2 Units Change, Stains
AFFF	Excellent/No Unit Change

Part 3: Execution

3.01 Inspection

A. General

1. Examine the areas and conditions where the Florothane CR ESD floor is to be installed and notify the Architect of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected by the contractor in a manner acceptable to the Architect.

3.02 Preparation

A. General

1. Consult the manufacturer's recommendations for concrete substrate preparation before proceeding.

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B. Patching and Joint Preparation

1. Before application, the floor shall be examined for spalls, pits, holes, cracks, non-functional joints, etc. These must be treated after preparation and before application with the suitable Florock products. For functional or expansion joints, these shall be treated with 100% solids elastomeric resin having a minimum elongation of 150%, Florock System 6500.

C. Concrete Surfaces

1. Shot-blast, diamond grind or power scarify as required to obtain clean, open, porous concrete. Remove sufficient material to provide a sound surface, free of laitance, glaze, efflorescence, and any bond-inhibiting curing compounds or form release agents. Remove grease, oil, and other penetrating contaminants. Repair damaged and deteriorated concrete to acceptable condition; leave surface free of dust, dirt, laitance, and efflorescence.

D. Materials

1. Mix components when required, and prepare materials according to flooring system manufacturer's instructions.

3.03 Application

A. General

1. The system shall be installed in the order described below:
 - a. Substrate Preparation
 - b. Priming
 - c. Optional Midcoat
 - d. Topcoats and Optional Skid-Resistant Grit Applications
2. Concrete surfaces on grade shall have been constructed with a vapor barrier to help protect against the effects of vapor transmission and possible delamination of the system. Refer to manufacturer's concrete preparation instructions for additional recommendations.
3. The surface should be dry prior to application of any of the aforementioned steps. Furthermore, the substrate shall always be kept clean, dry, and free of any contaminants.
4. The handling and mixture of any material associated with the installation of the system shall be in accordance with the manufacturer's recommendations and approved by the Architect.
5. The system shall follow the contours of the substrate unless otherwise specified by the Architect.
6. A neat finish with well defined boundaries and straight edges shall be provided by the applicator.

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- B. Priming
 - 1. All areas considered for the application shall be primed with the manufacturer's primer to seal and penetrate the substrate in preparation for applying the basecoat and grout coats.
 - 2. Porous concrete substrates may require additional applications of primer.
 - C. Basecoat
 - 1. The basecoat shall consist of the manufacturer's approved epoxy basecoat to seal the surface and give the floor impact resistance.
 - D. Topcoats and Skid-Resistant Grit
 - 1. The topcoat(s) and Skid-Resistant Aggregate shall be consistent with the manufacturer's recommended chemical resistant urethane and optional aggregate for skid-resistance.
- A. No traffic or equipment shall be permitted on the floor during the curing period.
 - B. Ground tape to be installed prior to topcoat application.

3.04 Field Quality Control

- A. Tests & Inspection
 - 1. The following tests shall be performed by the applicator and recorded during application to submit to the Architect:
 - a. Temperature during installation
 - 1. Air
 - 2. Substrate
 - 3. Dew Point

3.05 Cleaning

- A. Disposal
 - 1. Properly remove and dispose of any excess materials.

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