

SECTION 09 67 23

RESINOUS FLOORING AND COATINGS

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\*\* NOTE TO SPECIFIER \*\* Crossfield Products Corporation; resinous flooring.
This section is based on the products of Crossfield Products Corporation, which is located at:
3000 E. Harcourt Street
Rancho Dominguez, CA 90221
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[[Click Here](http://www.arcat.com/arcatcos/cos40/arc40623.html)] for additional information.
Scientifically superior and performance proven, Dex-O-Tex flooring, waterproofing, coatings, and surfacing systems provide long-term protection, durability, and aesthetic appeal.
Since 1938, Crossfield Products Corp., headquartered in the greater Los Angeles, California, area they projects. Our Dex-O-Tex and Dex-O-Tex Marine products offer a full line of waterproof deck coverings, specialty fluid-applied flooring, coatings, wall coatings, and decorative finishes for commercial, industrial, and residential environments.
No matter how demanding your environment, Dex-O-Tex has a flooring or surfacing product designed to meet your needs.

1. GENERAL
	1. SECTION INCLUDES
		1. Epoxy Flooring and Coatings.
			1. Conductive, troweled epoxy flooring. (Conductive Cheminert K)
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required. Concrete should be either water cured or cured using curing compounds in compliance with ASTM C 309 or ASTM C 1315 only. Other types of curing compounds including sodium silicate are generally not acceptable. Concrete should be cured for a minimum of 28 days and exhibit a MVER of 3 lbs / 24 hrs. / 1000 sq ft, or a minimum of 3 days if coated with negative side moisture vapor barrier VaporControl Primer 1P. On grade floors should have functioning vapor retarder beneath slab.

* + 1. Section 03 30 00 - Cast-in-Place Concrete
		2. Section (03 54 00) - Cementitious Flooring Underlayment.
		3. Section (03 01 30) - Concrete Patching and Resurfacing.
		4. Section (07 14 00) - Fluid-Applied Waterproofing
		5. Section (07 14 00) - Fluid-Applied Waterproofing.
		6. Section (07 27 19) - Plastic Sheet Air Barriers
		7. Section (07 26 00) - Vapor Resistive Barriers.
		8. Section (09 61 36) - Static-Resistant Flooring Treatment
		9. Section (09 61 00) - Vapor Control for Flooring.
		10. Section (09 77 30) - Sanitary Wall Finishes.

\*\* NOTE TO SPECIFIER \*\* Floor drains, clean outs, etc. should be of the "floor flange" type as manufactured for use with composition floors by most major drain manufacturers.

* + 1. Section (22 40 00) - Plumbing Fixtures and Equipment.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Standard Test Method International (ASTM):
			1. ASTM C307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings.
			2. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
			3. ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
			4. ASTM C580 - Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
			5. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
			6. ASTM D2240 - Standard Test Method for Rubber Property-Durometer Hardness.
			7. ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
			8. ASDTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
			9. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
			10. ASTM F1679 - Standard Test Method for Using a Variable Incidence Tribometer (VIT).
			11. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
			12. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes1
			13. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
		2. American Concrete Institute (ACI):
			1. ACI 503.1 - Standard Specification for Bonding Hardened Concrete, Steel, Wood, Brick, and Other Materials to Hardened Concrete with a Multi-Component Epoxy Adhesive.
			2. ACI 503.R - Use of Epoxy Compounds with Concrete.
		3. American National Standards Institute (ANSI):
			1. ANSI A1264 - American National Standard for the Provision of Slip Resistance on Walking/Working Surfaces.
			2. ANSI/ESD S 6.1 - For The Protection of Electrostatic Discharge Susceptible Items - Grounding.
		4. International Concrete Repair Institute (ICRI):
			1. ICRI - 310.25 Selecting and Specifying Concrete Surface Preparation.
		5. National fire Protection Association (NFPA):
			1. NFPA 56A - Standard for the Use of Inhalation Anesthetics.
		6. Society of Protective Coatings (SSPC):
			1. SSPC - Monitoring and Controlling Ambient Condition During Coating operations.
			2. SSPC TU-10 - Procedures For Applying Thick Film Coatings and Surfacings Over Concrete Floors.
			3. SSPC TR-5 - Design, Installation, and Maintenance of Protective Polymer Flooring Systems for Concrete.
			4. SSPC TECHNOLOGY GUIDE NO. 10 - Guide to Specifying Coatings Conforming to Volatile Organic Compound (VOC) Content Requirements.
			5. SSPC-SP 13/NACE No. 6 - Surface Preparation of Concrete.
		7. United States Defense Standard (MIL):
			1. MIL-D-3134 - Deck Covering Materials.
			2. MIL-PRF-3135 - Performance Specification: Deck Covering Underlay Materials.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
		3. Verification Samples: For products specified, two samples, 6 inches (150 mm) square representing actual product, color, texture and patterns.
		4. Shop Drawings: Details of materials, construction and finish. Include relationship with adjacent construction.
		5. Contractor Certification: Manufacturer letter certifying installer is properly trained in application of materials being installed, and is acceptable to materials manufacturer
		6. Guarantee Certification: Letter from the primary materials manufacture certifying that the manufacturer will issue a joint installer manufacturer guarantee with the installing contractor..
		7. Certification: CA Department of Public Health 01350 Method for Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with ISO certification and a minimum ten years documented experience.
		2. Installer Qualifications: Specializes in installations to that required for Project with five years' experience. Engage an SSPC Concrete Coatings Inspector certified to perform inspections on Project. Installer will be acceptable to materials manufacturer.
		3. Source Limitations: Each product type from single manufacturer ensuring uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if project or quality warrant expense. The following is one example of how a mock-up might be specified. When deciding on extent of mock-up, consider the different types of work on the project. Delete if not required.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Pre-installation Meetings: Coordinate work of this Section, with related work.
			1. Attendance: Subcontractor performing work and manufacturers and fabricators involved, or affected by, installation. Coordinate installations that precede or follow.
			2. Agenda: Review progress of construction activities and preparations for the particular activity under consideration. Agenda shall include schedule, drain and floor sink interface, detailing, door thresholds, responsibilities, critical path items, and approvals.
			3. Record, agreements, and disagreements, and corrective measures and actions.
			4. Reporting: Distribute minutes to each party present and others requiring information.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Deliver materials in original packages and containers with unbroken seals and bearing manufacturer's labels with date of manufacture and production lot number. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
		3. When practical stage materials in area of Work 48 hours prior to beginning of Work.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, surface temperature, material temperature and ventilation) within limits recommended by manufacturer during installation and cure. Do not install under conditions outside manufacturer's recommended limits.
		2. Restrict access to Work area except installing contractor and site supervision during preparation, installation and cure period.
		3. Lighting: Permanent lighting shall be in place prior to flooring installation.
	4. WARRANTY
		1. Manufacturer's Warranty: Manufacturer's standard limited warranty for the specified term.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer:
			1. Address: Crossfield Products Corporation, which is located at: 3000 E. Harcourt Street; Rancho Dominguez, CA 90221; ASD Phone: 310-886-9100; Fax: 310-886-9119; Email: info@dexotex.com; Web: www.dexotex.com.
			2. Address: Crossfield Products Corporation, which is located at: 140 Valley Road; Roselle Park, NJ 07204; ASD Phone: 908-245-2800; Fax: 908-245-0659; Email: info@dexotex.com; Web: www.dexotex.com.
			3. Address: Crossfield Products Corporation, which is located at: 128 Industrial Drive, Cibolo, TX 78108; ASD Phone: 210-888-0449; Email: info@dexotex.com; Web: www.dexotex.com.
		2. Requests for substitutions must be submitted two weeks prior to bid date. Substitution request received after will not be considered. Request will be considered per Section 01 60 00 - Product Requirements.
	2. EPOXY FLOORING AND COATINGS
		1. Conductive, Troweled Epoxy Flooring:
			1. Basis of Design: Dex-O-Tex Conductive Cheminert K by Crossfield Products.
			2. Physical Properties:
				1. Electrical Conductivity: Complies with the Following: NFPA 56, NFPA 99, US Army AMCR 385-100, and US Army NAVSEA OP-5: Complies.
				2. Electrical Transmission, Point-to-Point / Point-to-Ground: 2.5E4 to 1E6 ohms.
				3. Compressive Strength (ASTM D695): 21,600 psi (149 MPa).
				4. Surface Hardness (ASTM D2240) 82 Durometer "D".
				5. Tensile Strength (ASTM D638): 6,680 psi (46.1 MPa).
				6. Tensile Elongation (ASTM D638): 5.9 percent.
				7. Flexural Strength (ASTM D790): 12,200 psi (84.1 MPa).
				8. Modulus of Elasticity (ASTM D790): 4.1 x 10E4.
				9. Adhesion (ASTM D4541): 400 psi (2.76 MPa), 100 percent failure in concrete.
				10. Abrasion Resistance (ASTM D4060): 0.04 gr.
				11. Microbial Resistance (ASTM G21): Passes, Rating 1.
				12. Chemical Resistance (Federal Standard 406, Method 7011):

Acetic Acid: No effect.

ASTM No. 3 Oil: No effect.

Distilled Water: No effect.

Ethanol: No effect.

Hydrochloric Acid, 10 percent: No effect.

Industrial Detergent, 0.025 percent: No effect.

Isopropyl Alcohol: No effect.

Lard: No effect.

Mineral Oil: No effect.

Sulfuric Acid, 30 percent: No effect.

* + - 1. Thickness: 3/16 to 1/4 inch (5 to 6 mm).
			2. Electrical Grounding and Strapping Points with Conductive Tape per ANSI/ESD S 6.1: Grounding, specified by Electrical Engineer and connected by an electrician in appropriate Division 26 specifications.
			3. Colors: As indicated on Drawings.
			4. Vapor Control Primer Membrane: Type recommended by flooring manufacturer for type of service and floor condition indicated.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin preparation and installation until substrates are properly constructed and inspected complying with ACI 311.4R-05 Guide for Concrete Inspection. The General Contractor is to correct non-conformities if defects are discovered. Repair per ACI 546.R-04. Turn over work in broom clean condition free of debris and foreign matter.
		2. If substrate preparation is responsibility of another contractor, inspect per ACI 311.4R-05 Guide for Concrete Inspection by a certified SSPC CCI inspector. If preparation is not satisfactory or if surface is contaminated, notify Architect in writing. Do not proceed with the installation before the deficiencies have been satisfactorily corrected.
		3. Perform moisture testing per ASTM F1869 and F2170. Document results per this specification. If MVER or RH exceeds manufactures recommend level for specified product. Apply vapor control primer before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to commencement of the preparation and installation.
		2. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under project conditions.
		3. Concrete Surfaces: Shot-blast, or diamond grind per SSPC SP-13/NACE 6. Remove material to provide a sound surface free of laitance, glaze, efflorescence, bond inhibiting curing compounds or form release agents. Remove grease, oil, and other penetrating contaminates. Repair damaged and deteriorated concrete to acceptable condition per ACI 546.R-04. Produce a surface profile equal to ICRI 310.25 CPS 2, CPS 3, or CPS 4. Leave surface free of dust, dirt, laitance, and efflorescence.
		4. Verify the substrate has proper levelness and flatness, or slope for drainage. If proper levelness and flatness, or slope for drainage is not in the substrate notify the Architect and General Contractor immediately. Do not proceed with flooring installation until the conditions are corrected.
		5. Verify proper surface profile per ICRI 310.25 CSP coupons. Perform water break test and tape dust cleanliness test per ISO 8502-3 to determine surface is acceptable to proceed.
	3. INSTALLATION
		1. Apply Flooring System components according to manufacturer's written instructions. Produce a uniform, monolithic wearing surface of thickness, color and texture indicated.
			1. Coordinate application of components. Provide optimum adhesion of coatings to substrate, and optimum intercoat adhesion.
			2. Cure coatings per manufacturer's written instructions. Prevent contamination during application and curing processes.
			3. Expansion, Isolation and Control Joint Treatment: At substrate expansion, isolation and control joints, comply with resinous flooring manufacturer's written instructions.
			4. Contractor shall keep daily logs recording the work performed and environmental conditions as required by the materials manufacturer.
		2. Vapor Control Primer Membrane: Apply over prepared substrate at required spreading rate.
		3. Divider and Control Joint Strips:
			1. Place divider strips in accordance with patterns detailed in the drawings.
			2. Place control joint strips at all control joint locations.
			3. Set strips into epoxy adhesive without voids present below the strips.
		4. Have a licensed electrician ground the flooring with approved connectors at designated locations
		5. Screeded body coat into place. Trowel surface to a compact:even finish. Apply in thickness indicated. Hand or power trowel..
		6. Grout Coat: Apply type recommended by resinous flooring manufacturer, to fill voids in final body coat surface.
		7. Apply conductive topcoat at a rate of 125 square feet per gallon.
		8. Test the floor at 500Volts for electrical conductivity point to point and point to ground.
	4. CLEANING AND PROTECTION
		1. Clean products after 96 hours cure in accordance with the manufacturer's recommendations.
		2. Prohibit foot and wheel traffic over flooring for 24 hours. Light foot traffic is acceptable after 24 hours. Normal traffic after 48 hours.
		3. Do not expose to harsh chemicals until full 7 days cure.
		4. Touch-up, repair or replace damaged products before Substantial Completion.
		5. Provide floor protection acceptable to the materials manufacturer.

END OF SECTION