

MASTER TEXT ONLY

SECTION 03 3511 CONCRETE FLOOR FINISHES

<<<<< UPDATE NOTES

PART 1 GENERAL

2.01 SECTION INCLUDES

- A. Surface treatments for concrete floors and slabs.

2.02 RELATED REQUIREMENTS

- A. Section **03 3000 - Cast-in-Place Concrete**: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.
- B. Section **03 3000 - Cast-in-Place Concrete**: Curing compounds that also function as sealers.
- C. Section **03 3523 - Exposed Aggregate Concrete Finishing**.
- D. Section **09 6566 - Resilient Athletic Flooring**: Fluid-applied athletic flooring.
- E. Section **09 6623 - Resinous Matrix Terrazzo Flooring**.
- F. Section **09 6700 - Fluid-Applied Flooring**.
- G. Section **09 6714 - Resilient Urethane Flooring**.
- H. Section **09 9600 - High-Performance Coatings**.

2.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with concrete floor placement and concrete floor curing.

2.04 SUBMITTALS

- A. See Section **01 3000 - Administrative Requirements**, for submittal procedures.
- B. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.
- C. Maintenance Data: Provide data on maintenance and renewal of applied finishes.

2.05 MOCK-UP

- A. For coatings, construct mock-up area under conditions similar to those that will exist during application, with coatings applied.
- B. Mock-Up Size: <<**10 feet (3 m)**>> feet (m)>> square.
- C. Locate <<**where directed; as indicated on drawings; or** >>.
- D. Mock-up <<**may; may not; or** >> remain as part of the work.

2.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's sealed packaging, including application instructions.

2.07 FIELD CONDITIONS

- A. Maintain light level equivalent to a minimum <<**200 W; or** >> light source at <<**8 feet (2.5 m)**>> feet (m)>> above the floor surface over each <<**20 foot (6 m)**>> foot (m)>> square area of floor being finished.
- B. Do not finish floors until interior heating system is operational.
- C. Maintain ambient temperature of <<**50 degrees F (10 degrees C)**>> degrees F (degrees C)>> minimum.

PART 2 PRODUCTS

3.01 CONCRETE FLOOR FINISH APPLICATIONS

- A. Unless otherwise indicated, all concrete floors are to be finished using <<**liquid densifier/hardener; dry shake hardener; penetrating sealer; high gloss sealer; slip**>>

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resistant coating; polyaspartic aliphatic polyurea coating; polished concrete finish; or _____>>.

- B. Liquid Densifier/Hardener:
 - 1. Use at following locations: _____.
- C. Dry Shake Hardener:
 - 1. Use at following locations: _____.
- D. Concrete Stain:
 - 1. Use at following locations: _____.
- E. Penetrating Clear Sealer:
 - 1. Use at following locations: _____.
- F. High Gloss Clear Sealer:
 - 1. Use at following locations: _____.
- G. Slip Resistant Coating: High gloss clear sealer with plastic aggregate.
 - 1. Use at following locations: _____.
- H. Polyaspartic Aliphatic Polyurea Coating:
 - 1. Use at following locations: _____.
- I. Polished Finish:
 - 1. Use at following locations: _____.

3.02 SURFACE TREATMENTS

- A. Troweling Aid, Densifier and Curing Agent: Liquid reactive colloidal silica-based topical treatment, spray-applied to wet concrete and floated or troweled into the surface.
 - 1. Product:
 - a. Solomon Colors<<***Solomon Colors Lythic Day1***>>; _____; **or None - N/A**>>; www.solomoncolors.com/sle.
 - b. _____.
 - c. _____.
 - d. Substitutions: <<***See Section 01 6000 - Product Requirements; or Not permitted***>>.

3.03 DENSIFIERS AND HARDENERS

- A. Liquid Densifier/Hardener: Penetrating chemical compound that reacts with concrete, filling the pores and dustproofing; for application to concrete <<***prior to; or after***>> set.
 - 1. Composition: <<***Sodium silicate; Lithium silicate; or _____***>>.
 - 2. Products:
 - a. ARDEX Engineered Cements; ARDEX PC-Finish: www.ardexamericas.com.
 - b. ARDEX Engineered Cements; ARDEX PC-50: www.ardexamericas.com.
 - c. BASF Construction Chemicals-Building Systems<<***_____***>>; **or None - N/A**>>; www.buildingsystems.basf.com.
 - d. Concrete Sealers USA<<***_____***>>; **or None - N/A**>>; www.concretesealersusa.com.
 - e. Dayton Superior Corporation; Penetra-Hard® Densifier: www.daytonsuperior.com.
 - f. Dayton Superior Corporation; Penetra-Hard® Guard: www.daytonsuperior.com.
 - g. Dayton Superior Corporation; Densifier J13: www.daytonsuperior.com.
 - h. Dayton Superior Corporation; Sure Hard® Densifier J17: www.daytonsuperior.com.
 - i. Euclid Chemical Company; EUCOSIL: www.euclidchemical.com.
 - j. Euclid Chemical Company; EUCO DIAMOND HARD: www.euclidchemical.com.
 - k. Euclid Chemical Company; ULTRASIL LI+: www.euclidchemical.com.
 - l. Kaufman Products Inc; Silicure: www.kaufmanproducts.net.
 - m. Kaufman Products Inc; SureHard: www.kaufmanproducts.net.
 - n. Kaufman Products Inc; SureHard LS: www.kaufmanproducts.net.
 - o. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc; SEAL HARD: www.lmcc.com.

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- p. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc; LiON HARD: www.lmcc.com.
 - q. L.M. Scofield Company; SCOFIELDae Formula One99 Lithium Densifier MP: www.scofield.com.
 - r. Nox-Crete Products Group; Duro-Nox: www.nox-crete.com.
 - s. Nox-Crete Products Group; Duro-Nox LS: www.nox-crete.com.
 - t. Nox-Crete Products Group; Duro-Nox LSC: www.nox-crete.com.
 - u. PROSOCO, Inc; Consolideck LS/CS: www.prosoco.com/consolideck/sle.
 - v. PROSOCO, Inc; Consolideck LS: www.prosoco.com/consolideck/sle.
 - w. PROSOCO, Inc; ColorHard used with Consolideck LS or LS/C: www.prosoco.com/consolideck/sle.
 - x. SpecChem, LLC; Cure Hard: www.specchemllc.com/sle.
 - y. SpecChem, LLC; LithSeal SC: www.specchemllc.com/sle.
 - z. SpecChem, LLC; SpecHard: www.specchemllc.com/sle.
 - aa. W.R. Meadows, Inc; Med-Cure: www.wrmeadows.com/sle.
 - ab. W.R. Meadows, Inc; Liqui-Hard: www.wrmeadows.com/sle.
 - ac. W.R. Meadows, Inc; Liqui-Hard Ultra: www.wrmeadows.com/sle.
 - ad. _____.
 - ae. _____.
 - af. Substitutions: <<**See Section 01 6000 - Product Requirements; or Not permitted**>>.
- B. Dry Shake Hardener: Premixed dry powder for spreading on and working into concrete surface prior to set.
- 1. Composition: Non-metallic aggregate.
 - 2. Composition: Non-oxidizing metallic aggregate.
 - 3. Composition: Metallic, aluminum oxide (emery) aggregate.
 - 4. Composition: Metallic, iron aggregate.
 - 5. Color(s): As selected by **Architect** from manufacturer's <<**standard; full; custom; or _____**>> range.
 - 6. Color(s): <<**As indicated on drawings; As scheduled; or _____**>>.
 - 7. Products:
 - a. BASF Construction Chemicals-Building Systems<<_____; **or None - N/A**>>: www.buildingsystems.basf.com.
 - b. BRICKFORM<< **BRICKFORM Color Hardener**; _____; **or None - N/A**>>: www.brickform.com/sle.
 - c. Dayton Superior Corporation; Emery Tuff: www.daytonsuperior.com.
 - d. Dayton Superior Corporation; Quartz Tuff: www.daytonsuperior.com.
 - e. Dayton Superior Corporation; Ferro Tuff: www.daytonsuperior.com.
 - f. Euclid Chemical Company; EUCO-PLATE HD: www.euclidchemical.com.
 - g. Euclid Chemical Company; DIAMOND PLATE: www.euclidchemical.com.
 - h. Euclid Chemical Company; SURFLEX: www.euclidchemical.com.
 - i. Euclid Chemical Company; SURFLEX TR: www.euclidchemical.com.
 - j. Kaufman Products Inc; Tycron: www.kaufmanproducts.net.
 - k. Kaufman Products Inc; Tycron EM: www.kaufmanproducts.net.
 - l. Kaufman Products Inc; Tycron Met: www.kaufmanproducts.net.
 - m. Kaufman Products Inc; Tycron Met 200: www.kaufmanproducts.net.
 - n. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc; EMERYPLATE FF: www.lmcc.com.
 - o. L.M. Scofield Company<< **LITHOCHROME® Color Hardener**; _____; **or None - N/A**>>: www.scofield.com.
 - p. SpecChem, LLC; Quartz Floor Hardener: www.specchemllc.com/sle.
 - q. _____.
 - r. _____.

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- s. Substitutions: <<See Section 01 6000 - Product Requirements; or Not permitted>>.

3.04 COATINGS

- A. Concrete Floor Topping with Aggregate: Pre-mixed blend of Portland cement, hardeners and emery/corundum.
1. Product:
 - a. Dayton Superior Corporation; Emery Tuff Top: www.daytonsuperior.com.
 - b. Euclid Chemical Company; SURFLEX E: www.euclidchemical.com.
 - c. Euclid Chemical Company; EUCOFLOOR E: www.euclidchemical.com.
 - d. _____.
 - e. _____.
 - f. Substitutions: <<See Section 01 6000 - Product Requirements; or Not permitted>>.
- B. Concrete Stain or Dye: Translucent, penetrating compound for interior or exterior use; must be finished with a topical sealer.
1. Composition: <<**Acid-based, chemically reactive; Non-volatile acid based, chemically reactive; Polymer based, chemically reactive; Water-based, non-reactive; Solvent-based, non-reactive; or _____**>>.
 2. Number of Coats: Minimum of <<**one; two; or _____**>>.
 3. VOC: <<**100 g/L or less; 50 g/L or less; Zero; or _____**>>.
 4. Primary Color: _____ <<**, in a formulation to match approved mock-up; full strength; diluted with water, at a ratio of _____ to _____; diluted with manufacturer's recommended product at a ratio of _____ to _____; blended with secondary color, at a rate of _____ to _____; _____; or None - N/A**>>.
 5. Secondary Color: _____ <<**, applied after primary color has completely dried; _____; or None - N/A**>><<**, in a formulation to match approved mock-up; full strength; diluted with water, at a ratio of _____ to _____; diluted with manufacturer's recommended product at a ratio of _____ to _____; _____; or None - N/A**>>.
 6. Application:
 - a. Primary Color: <<**Spray applied; Brush applied; or _____**>>.
 - b. Secondary Color: <<**Spray applied; Brush applied; Mop applied; Sponge applied; By method(s) to match approved mock-up; or _____**>>.
 7. Products:
 - a. BRICKFORM; BRICKFORM Blush-Tone Acid Stain: www.brickform.com/sle.
 - b. BRICKFORM; BRICKFORM E-Stain: www.brickform.com/sle.
 - c. BRICKFORM; BRICKFORM ARTesian Stain: www.brickform.com/sle.
 - d. Euclid Chemical Company; STAIN-CRETE: www.euclidchemical.com.
 - e. Euclid Chemical Company; STONE ESSENCE: www.euclidchemical.com.
 - f. Euclid Chemical Company; VIBRA-STAIN: www.euclidchemical.com.
 - g. L.M. Scofield Company; LITHOCHROME Tintura Concrete Stain: www.scofield.com.
 - h. PROSOCO, Inc; GemTone Stain: www.prosoco.com/consolideck/sle.
 - i. _____.
 - j. _____.
 - k. Substitutions: <<See Section 01 6000 - Product Requirements; or Not permitted>>.
- C. High Gloss Clear Coating: Transparent, non-yellowing, <<**water-based; solvent-based; or water- or solvent-based**>> coating.
1. Composition: Acrylic polymer-based.
 2. Nonvolatile Content: <<**35 percent; 25 percent; 20 percent; 15 percent; or _____**>>, minimum, when measured by volume.
 3. Products:

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- a. BRICKFORM<< **BRICKFORM Gem-Seal 100 VOC**; **BRICKFORM Gem-Seal 400 VOC**; **BRICKFORM Gem-Seal 700 VOC**; **BRICKFORM Poly-Seal 100 VOC**; **BRICKFORM Poly-Seal 400 VOC**; _____; **or None - N/A**>>: www.brickform.com/sle.
 - b. Concrete Sealers USA<< _____; **or None - N/A**>>: www.concretesealersusa.com.
 - c. Dayton Superior Corporation; AggreGloss® J25: www.daytonsuperior.com.
 - d. Dayton Superior Corporation; Tuf Seal® J35: www.daytonsuperior.com.
 - e. Dayton Superior Corporation; Ultra Seal EF: www.daytonsuperior.com.
 - f. Dayton Superior Corporation; PENTRA-HARD® GUARD: www.daytonsuperior.com.
 - g. Euclid Chemical Company; ULTRAGUARD: www.euclidchemical.com.
 - h. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc<< _____; **or None - N/A**>>: www.lmcc.com.
 - i. PROSOCO, Inc; LSGuard: www.prosoco.com/consolideck/sle.
 - j. The QUIKRETE Companies<< **QUIKRETE® Concrete & Masonry High Gloss Sealer**; _____; **or None - N/A**>>: www.quikrete.com.
 - k. SpecChem, LLC; Aqua Shine: www.specchemllc.com/sle.
 - l. SpecChem, LLC; Crystal Shine: www.specchemllc.com/sle.
 - m. SpecChem, LLC; Deco Shine Plus: www.specchemllc.com/sle.
 - n. W.R. Meadows, Inc; Deck-O-Grip W/B (slip-resistant): www.wrmeadows.com/sle.
 - o. W.R. Meadows, Inc; Decra-Seal W/B: www.wrmeadows.com/sle.
 - p. _____.
 - q. _____.
 - r. Substitutions: <<**See Section 01 6000 - Product Requirements; or Not permitted**>>.
- D. Low Gloss Clear Coating: Transparent, non-yellowing, <<**water-based; solvent-based; or water- or solvent-based**>> coating.
1. Composition: Acrylic polymer-based.
 2. Nonvolatile Content: <<**25 percent; 20 percent; 15 percent; or ____**>>, minimum, when measured by volume.
 3. Products:
 - a. Concrete Sealers USA<< _____; **or None - N/A**>>: www.concretesealersusa.com.
 - b. _____.
 - c. _____.
 - d. Substitutions: <<**See Section 01 6000 - Product Requirements; or Not permitted**>>.
- E. Colored Coating: Pigmented coating recommended by manufacturer for finishing concrete floors and slabs.
1. Type: Polyaspartic aliphatic polyurea; two-component, fast-curing.
 2. Type: High solids acrylic; one-component; fast-curing.
 3. Type: High solids epoxy; two-component.
 4. Type: High solids aliphatic polyurethane; two-component.
 5. Gloss: <<**High gloss; Satin; Matte; or ____**>>.
 6. Color(s): As selected by **Architect** from manufacturer's <<**standard; full; custom; or ____**>> range.
 7. Color(s): <<**As indicated on drawings; As scheduled; or ____**>>.
 8. Products:
 - a. ARDEX Engineered Cements<< _____; **or None - N/A**>>: www.ardexamericas.com.
 - b. BASF Construction Chemicals-Building Systems<< _____; **or None - N/A**>>: www.buildingsystems.basf.com.
 - c. Dayton Superior Corporation; Spec Cote 100: www.daytonsuperior.com.
 - d. Dayton Superior Corporation; Spec Cote 100 CR: www.daytonsuperior.com.
 - e. Dayton Superior Corporation; Spec Cote WB: www.daytonsuperior.com.
 - f. Dayton Superior Corporation; Spec Cote Urethane: www.daytonsuperior.com.
 - g. Euclid Chemical Company; CONCRETE STAIN SEALER: www.euclidchemical.com.

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- h. Euclid Chemical Company; EUCOTHANE: www.euclidchemical.com.
 - i. Euclid Chemical Company; DURALTEX: www.euclidchemical.com.
 - j. HP Spartacote, Inc<<_____; **or None - N/A**>>: www.hpspartacote.com.
 - k. Kaufman Products Inc; SurePoxy HiBild: www.kaufmanproducts.net.
 - l. Kaufman Products Inc; SurePoxy Protective Coating WD: www.kaufmanproducts.net.
 - m. Kaufman Products Inc; K PRO CRS: www.kaufmanproducts.net.
 - n. SpecChem, LLC; Surface Shine Gray: www.specchemllc.com/sle.
 - o. _____.
 - p. _____.
 - q. Substitutions: <<**See Section 01 6000 - Product Requirements; or Not permitted**>>.
- F. Penetrating Sealer: Transparent, non-yellowing, <<**water-based; solvent-based; or water- or solvent-based**>> coating.
- 1. Composition: <<**Siliconate; Silane; Siloxane; or _____**>>.
 - 2. Products:
 - a. Concrete Sealers USA<<_____; **or None - N/A**>>: www.concretesealersusa.com.
 - b. _____.
 - c. _____.
 - d. Substitutions: <<**See Section 01 6000 - Product Requirements; or Not permitted**>>.
- G. Plastic Aggregate: Finely ground polymer for addition to coatings for slip resistance.
- 1. Products:
 - a. Dayton Superior Corporation; Grip Aid: www.daytonsuperior.com.
 - b. Euclid Chemical Company; EUCO GRIP: www.euclidchemical.com.
 - c. SpecChem, LLC; Surface Grip: www.specchemllc.com/sle.
 - d. W.R. Meadows, Inc; Sure-Step: www.wrmeadows.com/sle.
 - e. _____.
 - f. _____.
 - g. Substitutions: <<**See Section 01 6000 - Product Requirements; or Not permitted**>>.
- H. Natural Aggregate: Finely ground stone for addition to coatings for slip resistance.
- 1. Products:
 - a. Dayton Superior Corporation; Emery Non-Slip: www.daytonsuperior.com.
 - b. _____.
 - c. _____.
 - d. Substitutions: <<**See Section 01 6000 - Product Requirements; or Not permitted**>>.

3.05 POLISHED CONCRETE SYSTEM

- A. Polished Concrete System: Materials, equipment, and procedures designed and furnished by a single manufacturer to produce dense polished concrete of the specified sheen.
- 1. Acceptable Systems:
 - a. ARDEX Engineered Cements<<_____; **or None - N/A**>>: www.ardexamericas.com.
 - b. Euclid Chemical Company; DOUBLE DIAMOND POLISHED CONCRETE FLOOR SYSTEMS: www.euclidchemical.com.
 - c. L&M Construction Chemicals, Inc., a subsidiary of Laticrete International, Inc<< **FGS Permashine Concrete Polishing System**; _____; **or None - N/A**>>: www.lmcc.com.
 - d. L.M. Scofield Company; SCOFIELD Formula One Ground & Polished Concrete Systems<< **SCOFIELD® Formula One™ Lithium Densifier MP**; **SCOFIELD® Formula One™ SG Densifier**; **SCOFIELD® Formula One™ K Densifier**; _____; **or None - N/A**>><< **SCOFIELD® Formula One™ Finish Coat**; **SCOFIELD®**

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- Formula One™ Guard-W;; SCOFIELD® Formula One™ Guard-S Concentrate;; _____; or None - N/A>>*: www.scofield.com.
- e. PROSOCO, Inc; Consolideck Polished Concrete System:
www.prosoco.com/consolideck/sle.
- f. W.R. Meadows, Inc; Induroshine<< *and Bellatrix Concrete Enhancer; _____; or None - N/A>>*: www.wrmeadows.com/sle.
- g. _____.
- h. _____.
- i. Substitutions: <<*See Section 01 6000 - Product Requirements; or Not permitted>>*.

PART 3 EXECUTION

4.01 EXAMINATION

- A. Verify that floor surfaces are acceptable to receive the work of this section.
- B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

4.02 GENERAL

- A. Apply materials in accordance with manufacturer's instructions.

4.03 COATING APPLICATION

- A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.
- B. Verify that water vapor emission from concrete and relative humidity in concrete are within limits established by coating manufacturer.
- C. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.
- D. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.

4.04 CONCRETE POLISHING

- A. Execute using materials, equipment, and procedures specified by manufacturer, using manufacturer approved installer.
- Final Polished Sheen: <<*Satin finish; Semigloss finish; High-gloss finish; or _____>>*; other sheens are included as comparison to illustrate required sheen; final sheen is before addition of any sealer or coating, regardless of whether that is also specified or not.
 - Satin Finish: Reflecting images from side lighting.
 - Semi-Gloss Finish: Reflecting overhead and side images from <<*35 to 45 feet (10 to 14 meters); _____ feet (_____ meters)>>* away.
 - High Gloss Finish: Finish that looks wet and shows mirror-like reflections of side and overhead images.
- B. Protect finished surface as required and as recommended by manufacturer of polishing system.

END OF SECTION