

Deco Pour as a service, is providing this specification to the specifier; and it is intended for use only as a guideline for preparing the appropriate project specifications for this project. Delete headings not used (such as inclusion of dye) and re-number remaining used headings to be numerically correct.

SECTION 03 35 10
POLISHED CONCRETE FINISHING

PART 1 GENERAL

1.011 SUMMARY

- A. Section Includes: This Section specifies [Dyed and] polished concrete.
- B. Related Sections:

Specifier Note: Include in this Article only those sections that directly affect the work of this section. Do not include Division 00 or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 and Division 01 sections to some degree.

- 1. Section [03 01 30 Maintenance of Cast-in-Place Concrete].
- 2. Section [03 30 00 Cast-in-Place Concrete].
- 3. Section [07 91 16 Joint Fillers].

1.012 REFERENCES

A. American Concrete Institute (ACI):

- 1. ACI 302.1R Guide for Concrete Floor and Slab Construction.

B. ASTM International:

- 1. ASTM C309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- 2. ASTM C171 Standard Specification for Sheet Materials for Curing Concrete.
- 3. ASTM C779 Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces

C. Reunion Internationale des Laboratoires D'Essais et de Recherches sur les Matériaux et les Constructions (RILEM):

- 1. Rilem Test Method 11.4 Standard Measurement of Reduction of Moisture Penetration Through Horizontal Concrete Surfaces.

D. National Floor Safety Institute (NFSI):

- 1. NFSI Test Method 101-A Standard for Evaluating High-Traction Flooring Materials, Coatings, and Finishes.

1.013 SYSTEM DESCRIPTION

A. Performance Requirements: Provide polished flooring that has been selected, manufactured and installed to achieve the following:

- 1. Abrasion Resistance: ASTM C779, Method A, high resistance, no more than 0.008 inch (0.20 mm) wear in 30 minutes.
- 2. Reflectivity: Increase of 35% as determined by standard gloss meter.
- 3. Waterproof Properties: Rilem Test Method 11.4, 70% or greater reduction in absorption.
- 4. High Traction Rating: NFSI 101-A, non-slip properties.

B. Design Requirements:

Specifier Note: Article below summarizes minimum performance requirements of existing concrete floor prior to receiving floor finishing and polishing process. Retain or delete article below to suit project requirements and specifiers practice (integrated with 03 30 00 Cast-in-Place Concrete section).

- 1. Hardened Concrete Properties:
 - a. Minimum Concrete Compressive Strength: 3500 psi (24 MPa).
 - b. Normal Weight Concrete: No lightweight aggregate.

- c. Non-air entrained.
- 2. Placement Properties:
 - a. Natural concrete slump of 4 1/2 inches - 5 inches (114 - 127 mm). Admixtures may be used.
 - b. Flatness Requirements:
 - 1) Overall FF 50.
 - 2) Local FF 35.
- 3. Hard-Steel Troweled (3 passes) Concrete: No burn marks. Finish to ACI 302.1R, Class 5 floor.
- 4. Curing Options:
 - a. Membrane forming curing compounds (ASTM C309, Type 1, Class B, all resin, dissipating cure).
 - 1) Acrylic curing and sealing compounds not recommended.
 - b. Sheet membrane (ASTM C171); polyethylene film not recommended.
 - c. Damp Curing: Seven day cure.

1.014 ACTION SUBMITTALS

- A. General: Submit listed action submittals in accordance with Contract Conditions and Section 01 33 00 - Submittal Procedures.
- B. Shop Drawings: Indicate information on shop drawings as follows:
 - 1. Typical layout including dimensions and floor grinding schedule.
 - 2. Plan view of floor and joint pattern layout.
 - 3. Areas to receive colored surface treatment.
 - 4. Hardener, sealer, densifier in notes.
- C. Product Data: Submit product data for specified products.
 - 1. Material Safety Data Sheets (MSDS).
 - 2. Preparation and concrete grinding procedures.
 - 3. Colored Concrete Surface, Dye Selection Guides.

1.015 INFORMATION SUBMITTALS

- A. Quality Assurance:
 - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties as cited in 1.03 Performance Requirements.
 - 2. Certificates:
 - a. Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
 - b. Letter of certification from the National Floor Safety Institute confirming the system has been tested and passed phase Two Level of certification when tested by Method 101-A.
 - c. Current contractor's certificate signed by manufacturer declaring contractor as a currently approved installer of polishing system.
 - 3. Manufacturer's Instructions: Manufacturer's installation instructions.

1.016 CLOSEOUT SUBMITTALS

- A. Warranty: Submit warranty documents specified.
- B. Operation and Maintenance Data: Submit operation and maintenance data for installed products in accordance with Section 01 78 00 - Closeout Submittals.
 - 1. Include:
 - a. Manufacturer's instructions on maintenance renewal of applied treatments.
 - b. Protocols and product specifications for joint filing, crack repair and/or surface repair.

1.017 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project for a minimum of 3 years and 5 like projects. The experienced installer must be actively involved on-site on a daily basis.
 - 2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction and approving application method.

B. General Contractor Site Requirements.

1. It is the General Contractor's requirement to provide adequate lighting for safe operation of equipment, water availability within 100 feet of floor to be polished, 220 3 phase and single phase power, and waste disposal facilities.

C. Mock-Ups:

1. Construct mock-ups in accordance with Section 01 45 00 - Quality Control.

Specifier Note: Edit paragraph below to specifying mock-up size.

2. Mock-Up Size: 100 ft² (9.3 m²) sample panel at jobsite at location as directed under conditions accurately reflecting those that will exist during actual placement.
3. Mock-up will be used to judge workmanship, concrete substrate preparation, operation of equipment, material application, color selection and shine.
4. Allow 24hours for inspection of mock-up before proceeding with work.
5. When accepted, mock-up will demonstrate minimum standard of quality required for this work. Approved mock-up may [Not] remain as part of finished work.

D. Pre-installation Meetings: Conduct a pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section 01 31 19 - Project Meetings. Review the following:

1. Environmental requirements.
2. Scheduling and phasing of work.
3. Coordinating with other work and personnel.
4. Protection of adjacent surfaces.
5. Surface preparation.
6. Repair of defects and defective work prior to installation.
7. Cleaning.
8. Installation of polished floor finishes.
9. Application of liquid hardener, densifier.
10. Protection of finished surfaces after installation.

1.018 DELIVERY, STORAGE & HANDLING

A. General: Comply with 01 61 00 - Common Product Requirements.

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery:

1. Deliver materials in manufacturer's original packaging with identification labels and seals intact.

D. Storage and Protection:

1. Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
2. Protect concrete slab.
 - a. Protect from petroleum stains during construction.
 - b. Diaper hydraulic power equipment.
 - c. Restrict vehicular parking.
 - d. Restrict use of pipe cutting machinery.
 - e. Restrict placement of reinforcing steel on slab.
 - f. Restrict use of acids or acidic detergents on slab.
 - g. Any remedial work required due to damage created by general contractor or their sub-contractors will be billed at time and materials.

E. Waste Management and Disposal:

1. Separate waste materials for Reuse And/Or Recycling in accordance with Section 01 74 19 - Construction Waste Management and Disposal.
2. Remove from site and dispose of packaging materials at appropriate recycling facilities.

1.019 PROJECT AMBIENT CONDITIONS

A. Installation Location: Comply with manufacturer's written recommendations.

1.0110 SEQUENCING

A. Sequence With Other Work: Comply with manufacturer's written recommendations for sequencing construction operations.

1.0111 WARRANTY

A. Project Warranty: Refer to Contract Conditions for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and does not limit, other rights Owner may have under Contract Documents.

C. Warranty: Commencing on date of acceptance by [Owner] [Architect] [Consultant].

1.0112 MAINTENANCE

A. Comply with manufacturer's written instructions to maintain installed product.

MANUFACTURERS

B. Ensure manufacturer has minimum 4 years experience in manufacturing components similar to or exceeding requirements of project.

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

1.0113 Polished Concrete Finishing Products

A. Densifier: To be compatible with Concrete Dyes

1. Contact: Deco Pour, 13614 SR 9 SE, Snohomish, WA 98296, www.decopour.com, 360-668-2218.
2. Hardener, Sealer, Densifier: Proprietary, water based, odorless liquid, VOC compliant, environmentally safe chemical hardening solution leaving no surface film.
 - a. Acceptable Material: Contact Deco Pour
3. Concrete Dyes: Fast-drying, acetone-free concrete dye, packaged in premeasured units ready for application; formulated for application to polished cementitious surfaces.
 - a. Acceptable Material: Deco-Pour Water-based Translucent Dyes For Polished Concrete.
4. Finish: Standard [High gloss (HG-1), 1500 grit], or optional [Medium gloss (MG-2), 800 grit] [Very high gloss (VGH-3), 3000 grit] [_____].

Specifier Note: Deco-Pour Water-based Translucent Dyes for Polished Concrete are available in 11 standard colors, and an available Tint Kit. These Dyes can be combined to create an unlimited number of color variations. For color selection, refer to the Deco Pour color chart that can be found on their website, www.decopour.com.

5. Specified Deco Pour Dye Color(s).

1.0114 SOURCE QUALITY CONTROL

A. Ensure concrete finishing components and materials are from single manufacturer.

1.0115 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

PART 2 EXECUTION

1.021 MANUFACTURERS INSTRUCTIONS

A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions.

1.022 EXAMINATION

A. Site Verification of Conditions:

1. Verify that concrete substrate conditions, which have been previously installed under other sections or contracts, are acceptable for product installation in accordance with manufacturer's instructions prior to installation of concrete finishing materials.

B. Verify Concrete Slab Performance Requirements:

1. Verify concrete is cured to 28 day with 3500 psi (24 MPa) strength. (3500 psi should be minimum psi)
2. Verify concrete surfaces received a hard steel-trowel finish (3 passes) during placement. (Do Not Burn)

1.023 PREPARATION

- A. Ensure surfaces are clean and free of dirt and other foreign matter harmful to performance of concrete finishing materials.
- B. Examine surface to determine soundness of concrete for polishing.
- C. General Contractor to remove surface contamination.

1.024 INSTALLATION

Specifier Note: Coordinate installation with the manufacturer's written installation details and instructions.

A. Floor Surface Polishing and Treatment:

1. Provide polished concrete floor treatment in entirety of slab indicated by drawings. Provide consistent finish in all contiguous areas.
2. Complete floor finish a minimum of 10 days prior to installation of fixtures and accessories.
3. Diamond polish concrete floor surfaces with power grinder / polisher and diamonds specifically manufactured for concrete and terrazzo polishing. Sequence with coarse to fine grit. Start with metal-based diamond matrix to remove all laitance and irregularities in concrete floor. Depending on flatness of floor achieved at finishing, beginning step will generally be between 60-80 metals, then proceeding with 120 metals, 50 resins, 100 resins, 200 resins, (Dye prior to this step) 400 resins on up to designated finished polish level. Apply densifier following final polishing stage. **Note:** Clarity and shine are not the same. Clarity of the floor is achieved during the first two grinding levels and any skipping of steps, or starting too high in the grinding process, will result in poor clarity.
 - a. Expose aggregate in concrete surface only as determined by approved mock-up.
 - b. All concrete surfaces shall be as uniform in appearance as possible. **Note:** If floor is not level, and specification does not dictate flattening of floor, irregular exposure of aggregate may occur, and is not indicative of polisher's error.
4. Dyed Concrete (option- remove if not adding dye to floor): **Note: If applying dye, apply following the 200 grit resin diamonds, and prior to completing polishing steps and densifying.**
 - a. Locate demarcation line between dyed surfaces and other finishes. Protect other finishes from possible dye contamination.
 - b. Polish concrete through 200 grit resin diamonds.
 - c. Apply dyes to polished concrete surface per Deco Pour recommendations.
 - d. Allow dye to dry.
 - e. Complete succession of polishing steps, then clean floor prior to densifying.
5. Apply FGS Hardener Plus, Hardener, Densifier As Follows:
 - a. First coat at 250 ft²/gal (6.25 m²/L).
 - b. Second coat at 350 ft²/gal (8.75 m²/L).
 - c. Follow manufacturer's recommendations for drying time between successive coats.
6. Remove defects and re-polish defective areas.
7. Finish edges of floor finish adjoining other materials in a clean and sharp manner.

1.025 ADJUSTMENTS

- A. Polish to higher gloss those areas not meeting specified gloss levels per mock-up.

1.026 FINAL CLEANING

- A. Do cleanup in accordance with Section 01 74 00 - Cleaning and Waste Management
- B. Mechanically scrub treated floors for seven days with soft to medium pads with approved cleaning solution.
- C. Upon completion, General Contractor must remove surplus and excess materials, rubbish, tools and equipment.

1.027 PROTECTION

Specifier Note: Coordinate the following Article with Section 01 76 00 - Protecting Installed Construction.

- A. General Contractor is responsible for protecting floor, prior to and following installation, from damage in accordance with Section 01 76 00 - Protecting Installed Construction.
- B. Protect with EZ Cover™ by McTech Corp., or comparable product. Tape all seams of blanket. **DO NOT APPLY TAPE DIRECTLY TO FLOOR AS ADHESIVE IN TAPE CAN ETCH FINISHED FLOOR.**
 1. Contact: Phone: (866) 913-8363; website: www.ezform.net.

1.028 SCHEDULE