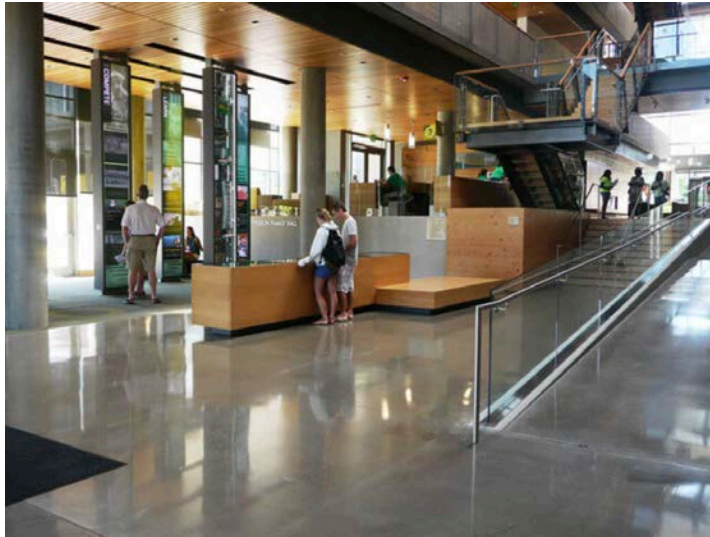


This section includes editing notes to assist the user in editing the section to suit project requirements.



SECTION 03 35 43

POLISHED CONCRETE FINISH

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Polished concrete finish in accordance with specified requirements to produce:
 - a. Aggregate Exposure [A] [B] [C]
 - b. Concrete Appearance [1] [2] [3] [4]
 - c. [] Dye Colorant
- B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. American National Standards Institute (www.ansi.org)
1. B101.3 -Test Method for Measuring Wet DCOF of Common Hard Surface Floor Materials.
- B. ASTM International (www.astm.org)
1. D4039 – Standard Test method for Reflection Haze of High-Gloss Surfaces
 2. D523 – Standard Test Method for Specular Gloss
 3. D5767 – Standard Test method for Instrumental Measurement of Distinctness-of-Image (DOI) Glass of Coated Surfaces
- C. Terminology: Concrete Polishing Council's glossary (www.asconline.org)
1. Definitions.
 2. Aggregate Exposure Chart.
 3. Concrete Appearance Chart.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Product Data: Manufacturer's descriptive data for the following:
 - a. Cleaner
 - b. Densifier
 - c. Protector
 - d. [Dye color chart]
 - e. Maintenance Instructions

- B. Quality Control Submittals:
 - 1. Manufacturer's approval of applicator certificate.
 - 2. Pre-concrete finishing conference meeting notes.
 - 3. Post-installation testing results:
 - a. ASTM D5767 Distinctness-of-Image, percentage
 - b. ASTM D523 – Standard Test Method for Specular Gloss

- C. Sustainable Design Submittals:
 - 1. Low-Emitting per California Department Public Health Standard Method, Section 01350

1.4 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Minimum 5 years documented experience in work of this Section.
 - 2. Accepted by Manufacturer.

- B. Manufacturer:
 - 1. Minimum 5 years documented experience in producing concrete materials.
 - 2. Materials meet third party compliance with Low-Emitting per California Department Public Health Standard Method, Section 01350.

- C. Pre-Concrete Finishing Conference
 - 1. Schedule: Two (2) weeks prior to pouring cast-in-place concrete
 - 2. Attendance: [Concrete installer, polishing installer and batch plant]
 - 3. Record the proceeding in the form of minutes of meeting.
 - 4. Review and discuss:
 - a. Floor flatness (FF and FL) requirements
 - 1. FF 45/ FL 35 – very flat
 - 2. FF 60/ FL 40 – super flat
 - b. Selected aggregate exposure and appearance requirements.

- E. Mock- Up Approval Conference
 - 1. Schedule: Four (4) weeks prior to installation
 - 2. Size: 100 square feet
 - 3. Location: Area subjected to direct and indirect sunlight
 - 4. Attendance: [Owner, Architect, polishing installer] [Construction Manager,]
 - 5. Review and discuss installed mock-up and the following for approval:
 - a. Interior environmental requirements.
 - b. Review submittal samples.
 - c. Review aggregate exposure and appearance requirements.
 - d. ASTM D5767 Distinctness-of-Image requirements
 - e. ASTM D4039 Reflection Haze of High-Gloss Surfaces requirements
 - f. Staging and sequencing.
 - g. Protection of completed work.
 - 6. Mockup may remain as part of the Work when approved by Architect.

1.5 PROJECT CONDITIONS

- A. Prohibit concrete surfaces from the following prior to and after application process:
 - 1. Vehicular traffic and pipe cutting operations in, around and above surfaces
 - 2. Storage of wood, ferrous metals, plastic, or any other materials to prevent damage
 - 3. Liquid drippings, sprinkler discharge and sprinkler testing on surfaces.
 - 4. Chemical storage, acids and acidic detergents
 - 5. Prevent painting over surfaces without 100% floor protection from overspray.
 - 6. Diaper all hydraulic lines of equipment that must enter polished floor spaces.
- B. Maintain interior room conditions of 50 and 90 degrees F.
- C. Ventilate areas to promote proper curing of components.
- D. Restrict trade traffic from work areas during and after application process.

1.6 MAINTENANCE

- A. Deliver 1-gallon of cleaner and maintenance instructions to Owner at substantial completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Lythic by Solomon Colors (www.lythic.com)
 - 2. MirrorCrete (www.floorseal.com)
 - 3. SpecTru Systems
- B. Substitutions: No substitutions. **[Under provisions of Division 01.]**

2.2 MATERIALS

- A. Surface Cleaner:
 - 1. Source: Water-based, colloidal silica blended surfactant, silica dust reducer
Lytic Cleaner by Solomon Colors.
 - 2. VOC Content: CPDH, LEED v4 Compliant
 - 3. pH Level: 10.5pH, non-hazardous waste per EPA requirements.
- B. Dye Colorant:
 - 1. Source: Translucent, liquid color dye
Pro-Dye by Solomon Colors
 - 2. VOC Content: CPDH, LEED v4 Compliant
- C. Hardener and Densifier:
 - 1. Source: Water-based, colloidal silica, odorless, penetrating hardener
Lytic Densifier & XL by Lythic
 - 2. VOC Content: 0 grams per liter
 - 3. pH level: 10.5pH or less, non-hazardous waste per EPA requirements.
- D. Protector:
 - 1. Source: Water-based, penetrating film forming protector, colloidal-silica co-polymer acrylic
Protector by Lythic
 - 2. VOC Content: CPDH, LEED v4 Compliant
 - 3. pH level: 10.5pH or less, non-hazardous waste per EPA requirements.

2.3 ACCESSORIES

- A. Crack and Joint Treatment: Polyurea-based joint filler by one of the following:
 - 1. Metzger McGuire www.metzgermcguire.com
 - 2. SealBoss www.sealboss.com
 - 3. VersaFlex www.versaflex.com

- B. Spall, Surface Defect and Resin Grout Material: Epoxy- Polyurea-based material by one of the following:
 - 1. Quick Mender by VersaFlex www.versaflex.com
 - 2. TX3 by Hi-Tech Systems www.hitechpolyurea.com
 - 3. Match Patch Pro www.matchpatchpro.com
- C. Cementitious Grout: Unsanded, fast curing, hydraulic cement-based floor material by one of the following:
 - 1. CTS RapidSet Skim Coat www.ctscements.com
- D. Temporary Protection: Seamless, spill, stain and water-resistant sheeting.
 - 1. Ramboard www.ramboard.com
 - 2. Skudo Commercial Mat System www.skudousa.com

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrate with installer present for conditions affecting work performance of finish.
- B. Installation deems acceptance of on site conditions.

3.2 PREPARATION

- A. Clean concrete surface of contaminants and repair imperfections to match adjacent surfaces.
- B. Protect equipment and previously installed finished from process.
- C. Verify mock-up has been approved prior to starting work.

3.3 APPLICATION

- A. Provide gloss and aggregate exposure requirements in accordance to Concrete Polishing Council terminology.
- B. **[Apply dye colorant in accordance with manufacturers instructions]**
- C. Apply spall, surface defect, crack and joint treatment and grout material to achieve a uniform surface appearance.
- D. Perform required process to achieve approved aggregate exposure and appearance in accordance with the following: [\(see next page\)](#)

3.3 / D. / 1. Aggregate Exposure Chart

Aggregate Exposure Chart		
Class	Name	Surface Exposure, %
A	Cream Fines	85 – 95% Cement Fines 5 – 15% Fine Aggregates
B	Fine Aggregate	85 – 95% Fine Aggregates 5 – 15% Blend of Cement Fines and Coarse Aggregates
C	Coarse Aggregate	80 - 90% Coarse Aggregate 10 - 20% Blend of Cement Fines and Fine Aggregates
<p>Aggregate exposure class denotes the surface exposure after grinding and polishing operations. The density, size and distribution of the aggregates at the surface depends on the concrete mix design and placing and finishing operations. Floor flatness at the time of grinding and polishing operations is an important consideration in selecting the appropriate aggregate exposure class. Surface exposure percentages are based on visual observation of the overall area of the polished floor.</p>		

3.3 / D. / 2. Appearance Chart

Appearance Chart				
Level	Name	Reflective Clarity	Image Clarity Value, % ASTM D5767, D4039	Haze Index ASTM D4039
1	Flat (Ground)	Images of objects being reflected have a flat appearance.	0 - 9	< 10
2	Satin (Honed)	Images of objects being reflected have a matte appearance.	10 - 39	
3	Polished	Images of objects being reflected do not have a sharp and crisp appearance but can easily identified.	40 - 69	

4	Highly Polished	Images of objects being reflected have a sharp and crisp as appearance as would be seen in a near-mirror like reflection. May require grouting.	70 - 100	
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E. Protector:

1. Apply in accordance with manufacturers instructions.
2. Burnish to produce maximum appearance and protection properties.

3.4 FIELD QUALITY CONTROL

- A. Measure slip resistance in accordance with ANSI B101.3 -Test Method for Measuring Wet Dynamic Coefficient of Friction (DCOF) of Common Hard Surface Floor Materials.
1. Results of [high traction] [0.50] [dry] [wet] in accordance with Americans with Disabilities Act (ADA) and Occupational Safety and Health Administration (OSHA).
- B. Final Floor Testing:
1. Perform five (5) of the following surface tests at various locations:
 - a. ASTM D5767 Distinctness-of-Image
 - b. ASTM D523 – Standard Test Method for Specular Gloss
 2. Do not proceed with sealer and water repellent application until floors pass testing.
 3. Final floors to be smooth with no scratches in polish finish during inspection prior to sealer and water
- C. Allow floors to cure for 24 hours and install protective coverings to prevent contamination, stains and damage.

3.5 PROTECTION

- A. Allow floors to dry and cover with manufacturer approved non-staining, temporary protection.

END OF SECTION