

Paragraph Specification: Please use the below specification language for projects requiring specifications directly on drawings. Areas highlighted in yellow [] require selection

- Maintenance of Polished Concrete Finish: Clean, seal and revitalize pre-existing polished concrete floors with Lythic products manufactured by Solomon Colors. Install products in accordance with written requirements to produce a Level [select option – [1][2][3][4] Gloss and Aggregate Exposure [A][B][C][D], as defined by American Society of Concrete Contractors (CPC), using the following materials:
 - **Lytic Cleaner:** Water-based, Colloidal silica blended surfactant used as a cleaner, cutting aid and silica dust reducer.
 - **Lytic Densifier & XL:** Odorless, non-hazardous, colloidal silicate for penetration into porous and non-pours substrates to harden and densify substrates.
 - **Lytic Protector:** Colloidal silicate-based stain repellent for enhancing surface protection for colored and natural concrete floor surfaces.
 - Provide any additional products required to produce required finish.
 - Installer shall provide a minimum of ten (10) gallons of Lythic Cleaner and daily maintenance instructions to Owner, upon occupancy.

SECTION 03 35 43

POLISHED CONCRETE FINISH

- **GENERAL**

1.1 RELATED DOUCMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

- **SECTION INCLUDES**

- Cleaning and rehabilitation of previously installed concrete polished floors.
 - [Dyed and] Polished concrete finish.
 - Aggregate Exposure Level [A] [B] [C] [D]
 - Gloss Appearance [1] [2] [3] [4]
- Related Sections:
 - Division 01: Administrative, procedural, and temporary work requirements.

- **REFERENCES**

- American National Standards Institute (ANSI) B101.3 -Test Method for Measuring Wet DCOF of Common Hard Surface Floor Materials.
- ASTM International:
 - E430 - Standard Test Methods for Measurement of Gloss of High-Gloss Surfaces by Abridged Goniophotometry.
 - D523 - Standard Test Method for Specular Gloss
 - C1028 - Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.

- American Society of Concrete Contractors (CPC):
 - Definitions.
 - Aggregate Exposure Chart.
 - Finished Gloss Chart.

- SUBMITTALS
 - Submittals for Review:
 - Product Data: Manufacturer's technical data for each material.
 - Quality Control Submittals:
 - Applicator qualifications, including list of previous projects and certification issued by material manufacturer.
 - Sustainable Design Submittals:
 - [Regional Materials]
 - [Low-Emitting Materials]

- QUALITY ASSURANCE
 - Installer Qualifications:
 - Minimum five (5) years documented experience in work of this Section.
 - Certified, approved and accepted by manufacturer.
 - Mockup:
 - Size: Minimum 50 square feet.
 - Install specified materials for approval.
 - Locate in areas subjected to direct and indirect sunlight during review.
 - Approved mockup may remain as part of the Work when approved by Architect.
 - Pre-Installation Conference:
 - Convene four (4) weeks prior to beginning work of this scope.
 - Attendance: [Owner] [Architect] [Contractor] [Construction Manager,] and Installer.
 - Review and discuss:
 - Interior environmental requirements.
 - Joint treatment and color.
 - Patching of cracks and slab imperfections.
 - [Review the use of color dye, when approved for use.]
 - Approved aggregate exposure and gloss.
 - Staging and sequencing.
 - Protection of completed work and adjacent surfaces.
 - Coefficient of Friction: Range of 0.35 to 0.45 under wet conditions when tested to ANSI B101.3 upon completion of work.

- PROJECT CONDITIONS
 - Protect concrete surfaces from the following prior to and after application process:
 - Prohibit paint markings on floor surfaces and contaminating substrate.
 - Prohibit vehicular traffic and pipe cutting operations in, around and above substrate.
 - Prohibit storage of wood, metal, plastic, or materials to staining to substrate.

- Prohibit ferrous metals storage, pallets, chemical cleaning and other contaminants.
 - Prevent liquid drippings, sprinkler discharge and sprinkler testing on substrate.
 - Protect floor surfaces during painting and overhead work.
 - Diaper hydraulic lines of equipment that must enter work space.
- Install when room temperatures are maintained at 50 and 90 degrees F.
 - Ventilate areas to promote proper curing of materials.
- MAINTENANCE
 - Extra Material: Installer shall provide a minimum of ten (10) gallons of cleaning solution with maintenance instructions to Owner upon occupancy.
 - [Coordinate with Division 1, Section 01 83 00 Operations and Maintenance.]
- PRODUCTS
- MANUFACTURERS
 - Source Limitations: Obtain materials from a single source manufacturer, from one of the following:
 - Solomon Colors (www.lythic.com)
 - [_____].
 - Substitutions: [Under provisions of Division 01.] [Not permitted.] [No Known Equal]
- MATERIALS
 - Surface Cleaner: Product used to minimize concrete surface scratches and silica dust reducer during process.
 - Specified Product: Lythic Cleaner by Solomon Colors
 - Material Type: Water-based, Colloidal silica blended surfactant.
 - VOC Content: 0.5 grams per liter.
 - e. pH Level: Maximum of 10.0pH and non-hazardous waste per EPA.
 - B. Hardener and Densifier: Hardening of pours and non-pours concrete substrates
 - Specified Product: Lythic Densifier & XL by Solomon Colors
 - a. Type: Odorless, non-hazardous, colloidal silicate-based
 - b. Particle Size: Range of 3 to 60 nanometer
 - c. Abrasion Resistance: 60% improvement per ASTM C1353 and ASTM C779
 - d. UV Resistance: 100%, no degradation or yellowing per ASTM G154.
 - e. VOC Content: less than 50 grams per liter
 - f. pH Level: Maximum of 10.0pH and non-hazardous waste per EPA.
 - C. Color Dye: Interior colorant for penetrating concrete and other cementitious substrates.
 - 1. Specified Product: Pro-Dye by Solomon Colors
 - a. Material Type: Fast drying, liquid formulation.
 - b. VOC Content: less than 99 grams per liter.
 - D. Protector: Increase gloss readings, color enhancer, and improved slip resistance.
 - 1. Specified Product: Lythic Protector
 - a. Material Type: Colloidal silicate-based, breathable, stain resistant
 - b. VOC Content: less than 0.5 grams per liter
 - c. pH Level: Maximum of 10.0pH and non-hazardous waste per EPA.
 - E. Silica Protector: Silica-polymer-dispersion for improved resistance to stains, acids and liquid penetration of

polished floor.

1. Specified Product: Lythic SPD Protector
 - a. Material Type: Two-component polymer, with nano-sized colloidal silica
 - b. VOC Content: 100 grams per liter
 - c. pH Level: Maximum of 10.0pH and non-hazardous waste per EPA.
- F. Water Repellent: Water-based, non-film forming water and oil repellent to protect and preserve floor surface
 1. Specified Product: Stealth Seal by Solomon Colors
 - a. Material Type: Fluorinated based, UV resistant, non-yellowing
 - b. VOC Content: less than 20 grams per liter.
- E. Joint Treatment: Manufacturers recommend material.

• **EXECUTION**

• **EXAMINATION**

- Examine substrate prior to installation to determine conditions and correct irregularities, contamination and damage in accordance with manufacturers recommendations.
- Variations in substrate texture and color that will affect the final appearance should be corrected.
- Do not begin installation until unsatisfactory conditions are resolved. Installation deems acceptance of on site conditions.

• **PREPARATION**

- Clean surfaces of debris and contaminates in accordance with manufactures requirements.
- Repair substrate to maintain uniform floor appearance.
- Vacuum and remove contamination to prevent floor damage during process.
- Protect surrounding surfaces from application process and immediately clean overspray from metal, glass and painted surfaces.
- Prepare joints and clean in accordance with manufactures requirements.

• **INSTALLATION**

- Final polished concrete finish is determined by approval of mock-up. Verify Architects approval for polishing concrete color, gloss and aggregate exposure. Proceed with process in accordance with manufacturers recommendations and ensure minimal scratches upon completion of work.
- Process and definitions for aggregate exposure and finished gloss are defined by Concrete Polishing Council (CPC) published information and the following:

Aggregate Exposure Chart

Class	Name	Approximate Surface Cut Depth	Appearance When Finished
A	Cream	Very little	Very little aggregate exposure
B	Fine Aggregate	1/16 inch	Fine aggregate exposure with minor or no aggregate at random locations.

B	Fine Aggregate (Salt and pepper finish)	1/16 inch	Fine aggregate exposure with minor or no aggregate at random locations.
C	Medium Aggregate	1/8 inch	Medium aggregate exposure with little or no large aggregate exposure at random locations.
D	High Aggregate	1/4 inch	Large aggregate with little or no fine aggregate exposure.

Finished Gloss Chart

Level	Grit	Reflective Sheen Level	Minimum # of Abrasive Passes	Appearance When Finished	Gloss Reading before sealer per ASTM E430
1	100	None to Very Low	4	Flat. Floor has little if any reflectivity	None
2	100 to 400	Low to Medium	5	Satin or matte appearance with or without slight diffused reflection.	40 - 49
3	400 to 800	Polished	6	Semi-polished. Objects being reflected are not quite sharp and crisp, but can be easily identified.	50 - 59
4	800+	Highly-Polished	7	Highly polished. Objects being reflected are sharp and crisp, with mirror-like clarity.	60 – 80+

- Mechanically clean concrete surface using cleaner to minimize scratches and silica dust in accordance with manufacturers recommendations.
 - Continue until aggregate exposure is achieved.
- Treat surface imperfections to maintain uniform work appearance and match adjacent surfaces.
 - Color differences between concrete surface and treated surface imperfections are not to be noticeable when viewed from 10 feet away under Owner occupied lighting conditions.
- Apply concrete color dye, when approved for use by Architect.
 - Apply colloidal silicate-based protector to protect and enhance color.
- Continue with process and apply hardener and densifier in accordance with manufacturers requirements.
- Apply silica-based two-component protector to maintain a uniform floor appearance.
- Apply water repellent and buff as required to achieve maximum performance.
- SEALING AND WATER REPELLANT
 - Apply sealer to ensure uniform coverage and burnish as recommend by manufacturer to achieve maximum performance.
- FIELD QUALITY CONTROL
 - Measure slip resistance using BOT-3000 slip-tester; ensure compliance with slip resistance rating of 0.60 dry and greater than 0.60 wet per ASTM 1028.

- Test surfaces for specified gloss reading in accordance with ASTM E430.
- PROTECTION
 - Close areas to traffic until materials have cured.
 - Protect completed work with manufacturer approved, non-staining protective coverings.

END OF SECTION