

PART 1 – GENERAL

1. Concrete Specifications

1.1 Mix Design

- Concrete Mixture shall be non-air entrained and 3500 PSI or higher.
- Any admixtures, plasticizers, slag, fly ash or anything taking the place of Portland-based cement shall be kept to a minimum.
- The cement shall be Portland Cement Type I conforming to ASTM C 150.
- Maintain concrete temperature below 85 degrees. Keep concrete cool and moist as long as possible. Decrease the rate of hydration and drying to minimize cracking.
- Wet cures are most suitable, but if this cannot be achieved, use a penetrating, dissipating or wax based cure and seal.
- Architect must approve all mix designs. Please send all approved mix designs to Polished Maintenance.
- Color loads for integral color should never be smaller than 3 cubic yards.
- Use same source for cement, aggregates and pozzolans throughout the job. Monitor and control incoming material consistency. Do not use calcium chloride-based admixtures. Non-chloride admixtures may be used.
- Wash out all drums before loading. Keep slumps consistent with a maximum of 4. Minimize driver added water maintaining a .45 water content ratio.
- Place concrete to achieve as true and smooth a top surface as possible. Mounds or dips are not acceptable. GC shall control overall flatness and levelness, including on sloping areas to within tolerances permitted by specification – ASTM E1155
- Slab shall be protected from indentation and footprints during pour and curing.
- Concrete surfaces that are to be polished require three steel-trowel passes during placement.

1.2 Flatness and Levelness

- Finish Concrete shall have a minimum of Floor Flatness rating of at least 40.
- Finish Concrete shall have a minimum of Floor Levelness rating of at least 30.

1.3 Completing the Diamond Polishing Application

- Concrete shall be cured to a minimum of 28 days before Diamond Polishing.
- Application shall take place prior to fixture and trim installation and/or substantial completion.
- Finished Concrete area should be closed off to traffic during Diamond Polishing.

P**LISHED**

MAINTENANCE

2. Polishing

- 2.1. 50-grit metal bond diamonds are used in a wet process to clean and smooth the concrete
- 2.2. 100-grit metal and 100-grit resin diamonds are used to create a uniform scratch pattern
- 2.3. The concrete is cleaned with Winter Blue Cleaner.
- 2.4. The concrete is dry polished to the level of gloss ordered by the client using the appropriate 400-grit, 800-grit, 1500-grit and 3000-grit resin bond diamonds.
- 2.5. All edges will be polished around the perimeter, support beams and all recessed areas in the floor to within ½ an inch.
- 2.6. Drains and other sloped areas will be hand tooled to blend with the main floor.

3. Densifier

- 3.1. A penetrating concrete densifier/hardener is applied to the floor at 400 sq. ft. per gallon. The densifier is a proprietary blend of silicates and other components in a water-based solution. It chemically reacts with calcium hydroxide and calcium carbonate to form strong, durable calcium silicate hydrate (CSH).
- 3.2. Densifier is applied prior to 200-resin grind
- 3.3. The densifier offers the following benefits:
 - Provides a dustproof surface
 - Hardens the concrete by as much as 25%
 - Improves abrasion resistance
 - Improves reflectivity

4. Coloring the Concrete Floor

- 4.1. Color is added to the floor in a two or three step process. After the 100-grit polishing step and after the 200-grit polishing grind.

5. Apply Penetrating Stain Resistant Sealer

- 5.1. Apply a thin even coat.
- 5.2. Sealer should be applied in multiple applications with sufficient material applied so that the surface remains wet for a few minutes before penetration into the concrete.
- 5.3. Puddles should be broomed out thoroughly until they completely penetrate into the surface.
- 5.4. Allow thorough drying from 12-24 hours depending on temperature and relative humidity.
- 5.5. The floor must be burnished with a high-speed burnisher or floor-buffing machine equipped with a diamond pad to remove excess Finish Coat from the surface.



PART 2 – MATERIALS / EQUIPMENT

1. Materials

- 1.1. Lithium Densifier
- 1.2. Ameripolish Concrete Dye
- 1.3. Two-part Flexible Epoxy Joint Filler
- 1.4. Penetrating Chemical Resistant Sealer

2. Equipment

- 2.1. Bobcats and Half-ton grinders are used for maximum pressure for superior grinding.
- 2.2. Edgers are used to grind close to walls, columns, doors, etc.
- 2.3. Hand grinders are used for corners, drains, sloped areas and detail work.
- 2.4. Vacuums are used to keep dust to a minimum.

PART 3 – EXECUTION

1. Inspection

- 1.1. Verify condition of interior concrete to be polished.
- 1.2. Confirm concrete has cured for 28 or more days.
- 1.3. Accept or reject concrete for polishing.
- 1.4. Polish, color and seal concrete.

2. Preparation

- 2.1. Protect adjacent surfaces and walls from the concrete polishing procedure.
- 2.2. If present, remove coatings such as epoxy, adhesives, paint, etc.
- 2.3. Metal bond diamonds are used in a wet process to create a uniform scratch pattern and remove:
 - Construction debris
 - Tire marks
 - Floor slab imperfections removable through grinding.
- 2.4. Continue smoothing the concrete floor with successively finer grits
- 2.5. Densify the concrete

3. Polishing

- 3.1. Begin polishing floor with 50-grit diamonds.
- 3.2. Color the concrete.
- 3.3. Perform final polishing grits.
- 3.4. Apply penetrating chemical resistant sealer.