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

1.3. Completing the Diamond Polishing Application

- Concrete shall be cured 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 to traffic during Diamond Polishing.

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 & 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 200-grit polishing step and after the 400-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 black stripping pad to remove excess Finish Coat from the surface.

## PART 2 – MATERIALS / EQUIPMENT

1. Materials
   1.1. Eagle One Densifier
   1.2. Ameripolish Concrete Dye
   1.3. Two part Flexible Epoxy Joint Filler
   1.4. Preferred Penetrating Chemical Resistant Sealer
2. Equipment
   2.1. Bobcats and Half-ton grinders are used for maximum pressure for superior polishing
   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 be 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 100-grit diamonds
   3.2. Color the concrete
   3.3. Perform final polishing grits
   3.4. Apply Preferred Penetrating Chemical Resistant Sealer