

SECTION 03 35 43

Formatted Specification for the ULTRAFLOOR[®] ARDEX[®] DIAMATIC[®] Polished Concrete System (No Color)

PART I – GENERAL

1.01 SUMMARY

- A. This is the recommended specification for ULTRAFLOOR[®] ARDEX[®] DIAMATIC[®] Polished Concrete System
- B. Complete installation details are provided in the ARDEX and DIAMATIC Technical Brochures available at www.ardex.com and www.diamaticusa.com.

1.02 SECTION INCLUDES

- A. Products and procedures for the installation of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System using a multi-step dry mechanical process and accessories indicated, specified or required to complete system and achieve specified finish:
 - a. DIAMATIC Mechanical Diamond Grinding and Polishing Equipment
 - b. ULTRAFLOOR ARDEX DIAMATIC Concrete Repair and Topping Materials
 - c. ULTRAFLOOR ARDEX DIAMATIC Concrete Treatment Chemicals
- B. Products and procedures for the initial and long term maintenance of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System.
- C. All equipment, diamond products, concrete repair and topping materials, crack and joint treatments and chemicals are specified by DIAMATIC Management Services, DIAMATIC AND ARDEX.

1.03 SUBMITTALS

- A. Product Data: Submit Manufacturer's technical literature for each product indicated, specified or required. Include manufacturer's technical data, application instructions, recommendations and MSDS.
- B. Installer Qualifications: Data for company, principal personnel, experience, and training. Provide a letter documenting installer's accreditation and certification compliance, as specified under quality assurance.
- C. Test Reports: Provide field quality control sheen gloss reading and static coefficient of friction test results conducted as specified and recorded on floor plan diagram confirming compliance with specified performance criteria.
- D. Warranty: Provide manufacturer's warranty of ULTRAFLOOR System materials, contractor workmanship and finish standards.

- E. Maintenance Data: Provide manufacturer's instructions for maintenance of installed work, including methods and frequency recommended for maintaining optimum condition under intended use. These instructions should contain precautions against cleaning products and methods, which may be detrimental to finishes and performance.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System consists of a process and products engineered and manufactured by ARDEX and DIAMATIC. Any substitutions are not permitted and void warranty.
- B. Installer Qualifications:
 - a. Installer must be experienced and factory-trained in the installation of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System, including the use of DIAMATIC equipment and diamond abrasives, and ARDEX DIAMATIC concrete preparation, joint treatment and chemical hardening and finishing materials.
 - b. Installer must be experienced in performing specified work similar in design, products and scope of this project, with a documented track record of successful, in-service performance and with sufficient production capabilities, facilities and personnel to produce specified work.
 - c. A factory-trained, competent supervisor must be maintained on site during all times during which specified work is performed.
 - d. Installer must provide written documentation from the manufacturer confirming the Installer's accreditation and training from both ARDEX and DIAMATIC on installation of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System and related equipment and processes.
- C. Mock-Up: Before performing the work in this section, an adequate number of on-site mock-ups of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System representative of specified process, surface, finish, color and joint design/treatments must be installed for review and approval. These mock-ups should be installed using the same Installer personnel who will perform work. Approved mock-ups may become part of completed work, if undisturbed at time of substantial completion.
- D. Static Coefficient of Friction: A reading of not less than 0.5 for level floor surfaces shall be achieved and documented, as determined by certified an NFSI walkway auditor using the NFSI 101-A quality control test.
- E. Test Reports: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Owner and/or Architect. All test data shall be recorded and submitted upon completion of job.
 - a. Section 03 30 00, Cast-In-Place Concrete
 - b. ASTM E1155, Standard Test Method for Determining Floor Flatness and Levelness using the F number system
 - c. ASTM E430, Standard Test Method for Measurement of Gloss of High-Gloss Surfaces by Abridged Goniophotometry

- d. ASTM G23-81 Standard Test Method for Ultraviolet Light and Water Spray Resistance
 - e. ACI 302.1R-04 Guide for Concrete Floor and Slab Construction
- F. Pre-Installation Conference: Prior to the installation of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System, an on-site conference shall be conducted to review specification requirements.
- a. Required attendees include the Owner, Architect, General Contractor, ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System Subcontractor, ARDEX Representative and DIAMATIC Representative.
 - b. The minimum agenda shall include:
 - i. Tour of work area, inspection and discussion of preparation of substrate and other pre-Installation conditions and issues.
 - ii. Review of System requirements, including drawings, specifications and other contract documents.
 - iii. Review of required submittals and completion status.
 - iv. Review and finalization of installation schedule, and verification of availability of required materials, trained Installer personnel, equipment and facilities to execute specification and avoid delays.
 - v. Review of required inspection, testing, certification and material usage accounting procedures.
 - vi. Review of methods and procedures for installation, including manufacturer's written instructions.
 - vii. Review of governing regulations and requirements for insurance, certifications, inspection and testing, if applicable.
 - viii. Review of temporary protection requirements during and after installation.
 - ix. Review of cleaning procedures during and after installation.
 - x. Documentation proceedings, including corrective measures or actions required, and provision of a written copy of record to each participant.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in original containers, bearing manufacturer's labels indicating brand name and directions for storage, factory numbered and sealed until ready for installation.
- B. Maintain records of product container numbers.
- C. Store all materials in a dry, climate-controlled environment at a minimum of 55°F (13°C) and maximum of 85°F (29°C).

1.06 SITE CONDITIONS

- A. Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation and other conditions affecting the floor finish.
- B. Close areas to traffic during and after ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System application for a time period recommended by the manufacturer.
- C. Inspect the existing substrate and document unsatisfactory conditions in writing. Verify that surfaces and site conditions are ready to receive work. Correct unacceptable conditions prior to installation of System. Commencement of work constitutes acceptance of substrate conditions.
- D. Existing concrete must be cured for a sufficient time period recommended by DIAMATIC and ARDEX before the application can begin.
- E. Where new or existing concrete is not within specified tolerances, install the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System Concrete Repair and Topping Materials at the required thickness to achieve tolerances. Comply with tolerance requirements in Section 03 30 00.
- F. Protect existing concrete and the new ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System from contamination by petroleum, oil, hydraulic fluid, acid and acidic detergents, paint and other liquid dripping from trades and equipment working over these substrates. If construction equipment must be used on these substrates, diaper all components that may drip fluids.
- G. Prohibit the placement and storage of construction materials over new ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System, to include ferrous metals and steel members.
- H. Prohibit vehicle parking and pipe cutting operations over existing concrete and the new ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System.
- I. Moisture Vapor and Alkalinity Testing
 - 1. Test existing concrete floors for alkalinity/pH, according to method indicated in ASTM F710. Acceptable results: pH between 9 and 10.
 - 2. Test existing concrete for moisture vapor transmission according to methods indicated in ASTM F1869. Acceptable results: not more than 5 pounds per 1,000 square feet in 24 hours.
 - 3. Test existing concrete for relative humidity using in situ probes according to ASTM F2170. Acceptable results: not more than 80%.

1.07 LIST OF MANUFACTURERS

- A. ARDEX Engineered Cements: www.ARDEX.com; 1-888-512-7339
400 ARDEX Park Drive Aliquippa, PA. 15001
- B. DIAMATIC USA; www.DIAMATICusa.com; 1-866-295-5512
5220 Gaines Street, San Diego, CA. 92110
- C. No substitutions permitted.

- 1. Note: In some cases, and only with DIAMATIC's approval, burnishing, grinding and polishing machines may be substituted, provided that the specified DIAMATIC abrasives and blades can still be used.

PART 2 – PRODUCTS

2.01 SYSTEM INTEGRITY

- A. The ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System is an engineered and integrated complete installation system requiring strict adherence to all specified installation processes, equipment, diamond abrasives, concrete preparation, joint treatment and chemicals to achieve the intended result. Any substitutions from the specified products and/or processes will void the system warranty.

2.01 MATERIALS

A. DIAMATIC EQUIPMENT

- 1. DIAMATIC Micro Polisher - Burnishers: Specific weight and RPM are required to reach temperature of 100°F for application of FLOR-FINISH.
- 2. DIAMATIC BMG-780 or BMG-735: Planetary Grinder and Polisher, Large Platform: 32" planetary floor polisher. Head pressure of 600 lbs.
- 3. DIAMATIC BMG580PRO: Planetary Grinder and Polisher Medium Platform: 27" planetary floor polisher for smaller and intermediate areas.
- 4. DIAMATIC BMG435PRO: Planetary Grinder and Polisher Small Platform: 17" planetary floor polisher for small areas.
- 5. DIAMATIC 5" Low Speed Grinder: Hand Held Polishing Tool: 5" hand floor polisher for edges with variable speed control range of 500 – 2200 RPM.
- 6. DIAMATIC 180EC: Walk Behind Edging grinder/polisher.
- 7. Vacuums: Dust Collection must be designed for filtering of concrete dust. Minimum air speed of 300 CFM for Large and Medium Platform equipment.
- 8. DIAMATIC BDC1324, BDC317P, BDC3140P, 6-54DC.
- 9. Crack Chaser: 7" Crack Vac with dolly or hand held 5" grinder with .375" thick/VCut diamond.
- 10. DIAMATIC Crack Vac or 5" high-speed grinder.

11. DIAMATIC Condor Applicator (densifier and polymer application, also for maintenance).
12. Blastrac/DIAMATIC ride on and walk behind floor scrapers with beveled steel scraper blades of various widths for removal of floor coverings.
13. DIAMATIC BMC335 Shaver: Self-propelled shaver/leveler for slab surface demolition and leveling.
14. Power generator capable of supplying a minimum output of 30kw and up, and 480 Volt three phase power.
15. DIAMATIC Diamond Abrasives and Blades
 - i. Metal Bonded Diamonds – 18/20, 30/40 Grit of soft, medium and hard bonded metal.
 - a. **Note:** Concrete has hardness levels of soft, medium and hard. The hardness of the concrete will determine the required hardness of the metal bonded diamonds:
 1. Hard Concrete: Soft metal bonded diamonds
 2. Medium Concrete: Medium metal bonded diamonds
 3. Soft Concrete: Hard metal bonded diamonds
 - ii. Transitional Diamonds, Ceramic Bonded - #0 Grit.
 - iii. Resin Bonded Diamonds - 200, 400, 800, 1500 Grit.
 - iv. FLOR-GRIT Diamond Impregnated Pads - 800, 1500, 3000 Grit.
 - v. Metal Bonded Diamond blades 1/8" to 3/4" (3 mm to 18 mm) thick.

B. ULTRAFLOAR ARDEX DIAMATIC CONCRETE TREATMENT CHEMICALS

1. ARDEX DIAMATIC FLOR-SIL™ Lithium Densifier for standard concrete and terrazzo surfaces
2. ARDEX DIAMATIC FLOR-FINISH Stain and Wear Protection Treatment (high-gloss)
3. DIAMATIC FLOR Maintainer™ Gloss, Stain and Wear Protection Routine Maintenance Treatment

C. ARDEX CRACK AND JOINT TREATMENT MATERIALS

1. For complete installation instructions and required tools, please refer to the individual ARDEX Technical Brochures available for each product.
2. ARDEX ARDIBOND AP™ Fast-Setting, All-Purpose Repair Epoxy
3. ARDEX ARDISEAL™ RAPID PLUS Semi-Rigid Joint Sealant
4. ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack and Joint Repair

D. ARDEX DIAMATIC ULTRAFLOOR CONCRETE REPAIR AND TOPPING MATERIALS

1. For complete installation instructions and required tools, please refer to the individual ARDEX Technical Brochures available for each product.
2. For polishing instructions, please refer to the individual ULTRAFLOOR ARDEX DIAMATIC specifications for each component.
3. Where a self-leveling topping material is needed for interior application prior to polishing, ARDEX DIAMA-TOP Polished Concrete Topping shall be installed (Gray or White).
4. Any pinholes that need to be filled shall be filled with ARDEX DIAMA-FILL™ Filling Compound for Polished Concrete, Concrete Terrazzo and Other Cementitious Wear Surfaces (Medium Gray, Beige, White or Black) applied at the appropriate time during the polishing process.
5. Where a thin coat interior or exterior smoothing application is required prior to polishing, ARDEX DIAMA-COAT™ Concrete Coating (gray) **or** ARDEX DIAMA-COAT FINE™ Concrete Coating shall be installed (white or gray)
6. Where a micro-finish is required for interior application prior to polishing, ARDEX DIAMA-SKIN™ Polished Concrete Finish shall be installed (white or gray)
7. Where interior or exterior patching is required prior to polishing, ARDEX DIAMA-PATCH™ Concrete Patch shall be installed.
8. Where less than 1/8" width crack repair is required prior to polishing, ARDEX ARDI-FIX shall be installed.
9. Where greater than 1/8" width crack repair is required prior to polishing, ARDEX ARDI-BOND AP shall be installed.
10. Where concrete control joints are required to be repaired prior to polishing, ARDEX ARDI-SEAL RAPID PLUS shall be installed.

E. DIAMATIC PROTECTION MATERIALS

1. To prevent minor damage from light trade traffic during build out of site, DIAMATIC PRIMO-COVER Protective Floor Covering or DIAMATIC ECONO-COVER Protective Floor Covering for the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System shall be installed.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Inspect all concrete substrates and conditions under which the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System to be installed.
- B. Verify that all surfaces and site conditions are ready to receive work; document and correct conditions detrimental to timely and proper installation of work. Beginning work constitutes acceptance of substrate condition.

- C. Verify that existing concrete has cured a minimum of 28 days and meets finish and surface profile requirements in Division 03 Section "Cast-In-Place Concrete," before installing the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System.
- D. Conduct pre-installation conference, per Section 1.3 F.

3.02 PREPARATION

A. DEMOLITION

1. Clear surfaces of any debris and construction materials.
2. If a generator is not provided by the Installer, power connections for the equipment of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System shall be located and prepared by general contractor.
3. Using the appropriate mechanical means and methods, remove existing floor coverings and coatings, including but not limited to carpet VCT, ceramic tile and grout, wood, epoxy/ urethane, quartz, mastic, adhesives, paint or other non-concrete floor materials.
 - i. **Note:** The mechanical removal of resilient flooring, backing, lining felt, cutback and other adhesives can be hazardous, as certain materials may contain asbestos or crystalline silica. Do not sand, dry sweep, dry scrape, drill, saw, bead blast, grind, mechanically chip or pulverize these materials, as harmful dust may result. Inhalation of this dust may cause asbestosis or other bodily harm. Please consult the adhesive manufacturer, the Resilient Floor Covering Institute (www.rfci.com) and all applicable government agencies for rules and regulations concerning the handling and removal asbestos-containing materials.
 - ii. Prevent any damage to concrete slab surface during demolition from chipping hammers. Existing flooring should be removed mechanically with walk-behind or ride-on scraping equipment.
4. Prepare the existing concrete mechanically via scarification, shot blasting or other means, including diamond grinding by using aggressive, metal bonded DIAMATIC Polycrystalline diamonds (18/20 Grit or 30/40 Grit), to remove all contaminants and provide a sound concrete surface free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil and other contaminants.
5. Chemical preparation of the substrate is NOT acceptable, including but not limited to acid etching, sweeping compounds, solvents and adhesive removers.
6. Suppress dust during demolition with the use of dust collection equipment using HEPA/concrete filtration devices to reduce or eliminate airborne concrete and substrate dust.
7. Where existing concrete is cracked, damaged, spalled, not within specified tolerance, or contains unacceptable levels of alkalinity or moisture vapor, the Installer of the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System will evaluate conditions and proceed with appropriate ULTRAFLOOR System components.

B. CONCRETE REPAIR

1. Cracks (Indoor/Outdoor)

- i. Crack repair shall be completed after the first metal bond diamond grind and floor cleaning.
 1. Cracks to be repaired in the concrete surface shall be crack chased out on a high-speed angle grinder to a minimum depth of 3/8" and made to eliminate any feathered edges.
 2. The edges of the crack may be taped or coated with ARDEX DIAMATIC FLOR-SIL to eliminate possible staining from repair material.
 3. Clean out any dust or debris and then apply ARDEX ARDIBOND AP or ARDEX ARDIFIX to fill the crack chased areas. Read and follow ARDEX ARDIBOND AP or ARDEX ARDIFIX detailed instructions as outlined in the Technical Data Sheet.
 4. All crack filling material shall be overfilled. Immediately after application of ARDEX ARDIBOND AP or ARDEX ARDIFIX, silica sand or the concrete grindings may be broadcast to rejection over the crack repair material. The silica or floor grindings will reduce the visibility of the repaired crack and take on a similar color and appearance to surrounding concrete when stained.
- ii. Cracks smaller than 1/8" can be left as a part of the finished concrete, unless otherwise specified. Cracks shall be vacuumed to remove all loose debris and dirt.
- iii. **OR** Cracks smaller than 1/8" can be filled with ARDEX ARDIFIX.
- iv. Cracks greater than 1/8" shall be filled with ARDEX ARDIBOND AP.
- v. Cracks shall be overfilled and broadcast to refusal with play sand or concrete shavings, and shall be subsequently ground down to the level of the concrete surface.
- vi. All crack filling material shall installed and allowed to cure in strict accordance with the manufacturer's recommendations before proceeding with the next step in the ULTRAFLOOR process.

C. Spalls (Indoor/Outdoor)

1. Spall repair to be completed after the first metal bond diamond grind and floor cleaning, or prior to the beginning of the ULTRAFLOOR process installation.
2. For complete installation details for spall repair materials, please refer to the ARDEX Technical Brochure.
3. For polishing instructions, please refer to the individual ULTRAFLOOR ARDEX DIAMATIC specifications for each component.

4. Spalls up to 4" (10 cm) wide and 1" (2.5 cm) deep shall be filled with ARDEX DIAMA-PATCH. Allow a minimum of 16 to 24 hours drying time prior to beginning the ULTRAFLOOR polishing process.
5. **OR** Spalls up to 4" (10 cm) wide and 1" (2.5 cm) deep can be filled with ARDEX ARDIBOND AP or ARDEX ARDIFIX. Overfill all applications and broadcast sand or concrete grindings to refusal so that they may be ground down to match the level of the concrete surface after dry time.
6. Spalls greater than 4" (10 cm) wide and 1" (2.5 cm) deep shall be filled with ARDEX DIAMA-PATCH. Allow a minimum of 16 to 24 hours drying time prior to beginning the ULTRAFLOOR polishing process.

D. Large Area Concrete Repair (Indoor)

1. Where large area concrete repair is needed, ARDEX DIAMA-TOP shall be used in accordance with the information presented in the ARDEX Technical Brochure. For polishing instructions, please refer to the ARDEX DIAMA-TOP component specification.

E. Joint Fill (Indoor/Outdoor)

1. All joint fill materials shall be installed in accordance with the written recommendations provided in the ARDEX Technical Brochures.
2. If the joint filling will occur after the polishing process, apply ARDEX DIAMATIC FLOR- SIL or ARDEX DIAMATIC FLOR-HARD, tape, or soap to the edge of the concrete to keep the joint filler from staining the concrete.
3. Prior to filling joints, repair badly spalled joint edges per ACI 302.1R-04.
 - i. Grind the outside edges of all spalls to eliminate any feathered edges and make sure that the minimum depth of the spall is $\frac{1}{2}$ ". Mechanically prepare the joint area, and chip out any concrete less than $\frac{1}{2}$ " in depth.
 - ii. Apply ARDEX ARDIBOND AP or ARDEX ARDIFIX to the spalled area using a putty knife to reform the edges and surface to the original shape.
4. Once the spalled areas are repaired, the entire joint and spall areas shall be filled with ARDEX ARDIBOND AP. Once cured, saw cut the joint to the original dimensions, and then clean the joint and fill with ARDEX ARDISEAL RAPID PLUS.
5. Slightly overfill the joint with enough material to shave flush with the concrete. If the level of the joint filler sinks down, immediately add enough product to over fill the joint. Shave the joint filler flush with the concrete with a shaving tool with a sharp blade. ARDISEAL RAPID PLUS can be shaved in 30 to 40 minutes at 70°F (21°C).
6. Remove all tape and/or soap from the surface around the joint.
7. MicroPolish the surface with appropriate grit DIAMATIC FLOR-GRIT pad.

3.02 GLOSS ATTAINMENT (ASTM E430)

- A. Gloss readings are not to be obtained through the use of any microfilming products, sealers, coatings, enhancers or as the result of resin transfer from resin bond abrasives.
- B. Readings shall be taken not less than 10' (3 m) on center in field areas and within 1' (0.3 m) of floor area perimeters. In no case shall a reading be below 2% of specified minimum sheen:
 - 1. Level A Sheen – Low Gloss reading of 30 to 40.
 - 2. Level B Sheen – Medium Gloss reading of 41 to 60.
 - 3. Level C Sheen – High Gloss reading of 61 or higher.
- C. For instructions on achieving gloss levels, refer to the appropriate sub-section of section 3.06 below.

3.04 POLISHING

- A. Use the grinding and polishing steps outlines below to achieve the desired gloss level. Please note that when grinding and polishing a cross hatch pattern should be used.
- B. Low Gloss
 - 1. GRIND/POLISH #1: 30/40 Grit Metal Bonded Diamonds.
 - 2. Broom and vacuum the floor to remove all residual dust.
 - 3. Concrete Repair Installation, as necessary.
 - 4. If required, apply ARDEX DIAMA-FILL to concrete surface:
 - i. Inspect concrete after the initial metal bond grind to determine if there are superficial pinholes.
 - ii. For surfaces with a large number of pinholes, mix and apply a thin fill coat of ARDEX DIAMA-FILL to a properly cleaned surface after the initial metal bond grind.
 - iii. Select the ARDEX DIAMA-FILL product from the medium gray, beige white or black color options that best match the existing concrete color.
 - iv. Allow to dry for 16-24 hours before continuing to the next polishing step.
 - 5. GRIND/POLISH #2: #0 Transitional Diamonds, Ceramic Bonded.
 - 6. Broom and vacuum the floor to remove all residual dust.
 - 7. GRIND/POLISH #3: 200 Grit Resin Bonded Diamonds.
 - 8. Broom and vacuum the floor to remove all residual dust.
 - 9. Apply ARDEX DIAMATIC FLOR-SIL per application instructions at a rate of 400 square feet per gallon (Actual rates may vary due to concrete porosity).

10. Allow ARDEX DIAMATIC FLOR-SIL to dry before continuing on to the next step.
11. GRIND/POLISH #4: 400 Resin Bonded Diamonds.
12. Broom and vacuum the floor to remove all residual dust.
13. MICROPOLISH/BURNISH #1: FLOR-GRIT 800 Diamond Impregnated Pad
14. Dry mop the floor clean to remove all debris.
15. Apply ARDEX DIAMATIC FLOR-FINISH per application instructions at a rate of 2,000 square feet per gallon (Actual rates may vary due to concrete porosity).
16. Allow to dry a minimum of 15 minutes.
17. MICROPOLISH/BURNISH #2: FLOR-GRIT 1500 Diamond Impregnated Pad.
18. Dry mop the floor clean to remove all debris.
19. Apply ARDEX DIAMATIC FLOR-FINISH per application instructions at a rate of 2,500 square feet per gallon (Actual rates may vary due to concrete porosity).
20. Allow to dry a minimum of 15 minutes.
21. MICROPOLISH/BURNISH #3: FLOR-GRIT 3000 Diamond Impregnated Pad.

B. Medium Gloss

1. GRIND/POLISH #1: 30/40 Grit Metal Bonded Diamonds.
2. Broom and vacuum the floor to remove all residual dust.
3. Concrete Repair Installation, as necessary.
4. If required, apply ARDEX DIAMA-FILL to concrete surface:
 - v. Inspect concrete after the initial metal bond grind to determine if there are superficial pinholes.
 - vi. For surfaces with a large number of pinholes, mix and apply a thin fill coat of ARDEX DIAMA-FILL to a properly cleaned surface after the initial metal bond grind.
 - vii. Select the ARDEX DIAMA-FILL product from the medium gray, beige white or black color options that best match the existing concrete color.
 - viii. Allow to dry for 16-24 hours before continuing to the next polishing step.
5. GRIND/POLISH #2: #0 Transitional Diamonds, Ceramic Bonded.
6. Broom and vacuum the floor to remove all residual dust.
7. GRIND/POLISH #3: 200 Grit Resin Bonded Diamonds.
8. Broom and vacuum the floor to remove all residual dust.

9. Apply ARDEX DIAMATIC FLOR-SIL per application instructions at a rate of 400 square feet per gallon (Actual rates may vary due to concrete porosity).
10. Allow ARDEX DIAMATIC FLOR-SIL to dry before continuing on to the next step.
11. GRIND/POLISH #4: 400 Resin Bonded Diamonds.
12. Broom and vacuum the floor to remove all residual dust.
13. GRIND/POLISH #5: 800 Resin Bonded Diamonds.
14. Broom and vacuum the floor to remove all residual dust.
15. MICROPOLISH/BURNISH #1: FLOR-GRIT 800 Diamond Impregnated Pad
16. Dry mop the floor clean to remove all debris.
17. Apply ARDEX DIAMATIC FLOR-FINISH per application instructions at a rate of 2,000 square feet per gallon (Actual rates may vary due to concrete porosity).
18. Allow to dry a minimum of 15 minutes.
19. MICROPOLISH/BURNISH #2: FLOR-GRIT 1500 Diamond Impregnated Pad.
20. Dry mop the floor clean to remove all debris.
21. Apply ARDEX DIAMATIC FLOR-FINISH per application instructions at a rate of 2,500 square feet per gallon (Actual rates may vary due to concrete porosity).
22. Allow to dry a minimum of 15 minutes.
23. MICROPOLISH/BURNISH #3: FLOR-GRIT 3000 Diamond Impregnated Pad.

D. High Gloss

1. GRIND/POLISH #1: 30/40 Grit Metal Bonded Diamonds.
2. Broom and vacuum the floor to remove all residual dust.
3. Concrete Repair Installation, as necessary.
4. If required, apply ARDEX DIAMA-FILL to concrete surface:
 - ix. Inspect concrete after the initial metal bond grind to determine if there are superficial pinholes.
 - x. For surfaces with a large number of pinholes, mix and apply a thin fill coat of ARDEX DIAMA-FILL to a properly cleaned surface after the initial metal bond grind.
 - xi. Select the ARDEX DIAMA-FILL product from the medium gray, beige white or black color options that best match the existing concrete color.
 - xii. Allow to dry for 16-24 hours before continuing to the next polishing step.

5. GRIND/POLISH #2: #0 Transitional Diamonds, Ceramic Bonded.
6. Broom and vacuum the floor to remove all residual dust.
7. GRIND/POLISH #3: 200 Grit Resin Bonded Diamonds.
8. Broom and vacuum the floor to remove all residual dust.
9. Apply ARDEX DIAMATIC FLOR-SIL per application instructions at a rate of 400 square feet per gallon (Actual rates may vary due to concrete porosity).
10. Allow ARDEX DIAMATIC FLOR-SIL to dry before continuing on to the next step.
11. GRIND/POLISH #4: 400 Resin Bonded Diamonds.
12. Broom and vacuum the floor to remove all residual dust.
13. GRIND/POLISH #5: 800 Resin Bonded Diamonds.
14. Broom and vacuum the floor to remove all residual dust.
15. GRIND/POLISH #6: 1500 Resin Bonded Diamonds.
16. Broom and vacuum the floor to remove all residual dust.
17. MICROPOLISH/BURNISH #1: FLOR-GRIT 800 Diamond Impregnated Pad
18. Dry mop the floor clean to remove all debris.
19. Apply ARDEX DIAMATIC FLOR-FINISH per application instructions at a rate of 2,000 square feet per gallon (Actual rates may vary due to concrete porosity).
20. Allow to dry a minimum of 15 minutes.
21. MICROPOLISH/BURNISH #2: FLOR-GRIT 1500 Diamond Impregnated Pad.
22. Dry mop the floor clean to remove all debris.
23. Apply ARDEX DIAMATIC FLOR-FINISH per application instructions at a rate of 2,500 square feet per gallon (Actual rates may vary due to concrete porosity).
24. Allow to dry a minimum of 15 minutes.
25. MICROPOLISH/BURNISH #3: FLOR-GRIT 3000 Diamond Impregnated Pad.

3.05 EDGES

- A. Where desired, polished edge work of ARDEX DIAMA-TOP shall be done with a 5" or 7" DIAMATIC Hand Held or Walk Behind polishing tool. The edge polishing process will match the corresponding steps outlined above for the desired gloss level, and each edge polishing step shall be done immediately after the matching main polishing step.
- B. For polishing standard concrete edges, please refer to the main specification.
- C. NOTE: All grinding and polishing completed with grinder/polisher equipment connected to a dust collector.

3.06 ACCEPTANCE

- A. Remove all installation materials and any foreign materials resulting from the installation, from the site.
- B. Clean adjacent surfaces and materials.
- C. Perform post job walk to ensure that the ULTRAFLOOR ARDEX Concrete System has been completed per the process spec.
- D. Take pictures of final product for documentation and submittal, if requested or required.

3.07 PROTECTION

- A. Prevent any spills or stains from coming into contact with the floor. Clean any spills that may occur as quickly as possible.
- B. **Avoid moisture for 72 hours after installation.** Don't permit standing water for this period or place any protective plastic sheeting, rubber matting, rugs or furniture that can prevent proper drying, thereby trapping moisture, which can result in a cloudy effect on the floor.
- C. Light pedestrian use only in the 24 hours after installation. Normal traffic recommended 14 days after completion of ULTRAFLOOR ARDEX DIAMATIC Concrete Topping System.
- D. Protect the finished ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System from continuing construction and build out as needed by installing the DIAMATIC PRIMO-COVER Protective Floor Covering or DIAMATIC ECONO-COVER Protective Floor Covering.
 - 1. The installation of the DIAMATIC Protective Covering must be approved by the Installer and General Contractor of the ULTRAFLOOR installation.
 - 2. If the DIAMATIC Protective Cover is damaged during use, then that section must be cut out and replaced to maintain the integrity of the protective covering.
 - 3. The DIAMATIC Protective Cover can be removed after build out is complete.

3.08 ONGOING MAINTENANCE

- A. **IMPORTANT NOTICE:** Maintaining the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System and adherence to a recommended cleaning schedule will help the floor hold its mechanically polished gloss longer and greatly reduces the absorption of spilled liquids. The treated concrete floor is easily maintained by regular cleaning with the Maintenance/Post Cleaning procedure, accompanied by Micro-Polishing.
- B. Newly Installed ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System
 - 1. **Restrict water cleaning for 72 hours after installation of ULTRAFLOOR.** Use only a dry mop to clean. Avoid putting mats or covering treated surface to allow coating to fully cure out.
 - 2. **DO NOT USE** cleaners that are acidic or that have citrus (de-limonene) or Butyl compounds. Although the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System is chemical and stain resistant, the application of these high acid cleaners may etch the surface and cause a residual stain. Regular maintenance and cleaning will help prolong surface shine.

C. Daily Maintenance and Cleaning

1. Once the system is fully cured out (min. 72 hours), routinely sweep, dry mop and wash with neutral pH cleaners or water using a mechanical auto scrubber with vacuum to pick up any residual standing water.
2. DO NOT USE cleaners that are acidic or that have citrus (de-limonene) or Butyl compounds. Although the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System is chemical and stain resistant, the application of these high acid cleaners may etch the surface and cause a residual stain. Regular maintenance and cleaning will help prolong surface shine.

D. Bi-Monthly or Monthly Cleaning (dependent upon floor wear and traffic)

1. Follow the daily maintenance process.
2. Apply DIAMATIC FLOR-MAINTAINER diluted with parts water using a DIAMATIC CONDOR APPLICATOR or microfiber pad at a coverage rate of 8000 to 10000 square feet per gallon.
3. Burnish/MicroPolish with DIAMATIC FLOR-GRIT 3000 diamond impregnated pad.
4. Dry mop to remove any debris.
5. DO NOT USE cleaners that are acidic or that have citrus (de-limonene) or Butyl compounds. Although the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System is chemical and stain resistant, the application of these high acid cleaners may etch the surface and cause a residual stain. Regular maintenance and cleaning will help prolong surface shine.

E. ULTRAFLOOR Rejuvenation (recommended application every 1 to 2 years depending upon floor wear and traffic)

1. Follow the daily maintenance process.
2. Application of ARDEX DIAMATIC FLOR-FINISH applied with Condor applicator or microfiber pads. Follow manufacture application instructions.
3. Burnish/MicroPolish with DIAMATIC FLOR-GRIT 3000 diamond impregnated pad.
4. Dry mop to remove any debris.
5. DO NOT USE cleaners that are acidic or that have citrus (de-limonene) or Butyl compounds. Although the ULTRAFLOOR ARDEX DIAMATIC Polished Concrete System is chemical and stain resistant, the application of these high acid cleaners may etch the surface and cause a residual stain. Regular maintenance and cleaning will help prolong surface shine.

END OF SECTION