

SECTION 03360- CONCRETE FINISHES SPECIALIZED TERR-CON FLOORING SYSTEM

PART 1-GENERAL

1.01 SUMMARY

- A. This section includes the following:
 - 1. Standard placement of concrete and Terr-Con Aggregate
 - 2. Grinding of Aggregate/Concrete and Sealing
 - 3. Applying liquid hardener, and polishing concrete to specified finish level.
 - 4. Applying Joint Filler

- B. Related Work:
 - 1. Section 03300 Cast-in-Place Concrete
 - 2. Section 03390 Concrete Hardening/Sealing
 - 3. Section 07920 Joint filler
 - 4. Section 09410 Portland Cement Terrazzo

1.02 REFERENCES

- A. American Society for Testing and Materials:
 - 1. ASTM-C779, Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces
 - 2. ASTM C805, Impact Strength
 - 3. ASTM G23-81, Ultraviolet Light and Water Spray
 - 4. ASTM 1028, Co-Efficient of Friction
 - 5. ASTM C150 type 1, 11 Portland cement conformity, depending on soil conditions
 - 6. ASTM C33 Aggregate conformity

- B. American Concrete Institute
 - 1. ACI 302, 1R-89 Guide for Concrete Floor and Slab Construction

- C. Other Test:
 - 1. Reflectivity

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01600-Product Requirements

1. Provide submittal information within 35 calendar days after the contractor has received owner's notice to proceed

B. Product data:

- 1.. Submit special concrete finishes manufacturer's specifications, test date and other data required for each type of manufactured material and product indicated.
2. Submit special concrete describing products to be provided, giving Manufacturer's name product name and product line number for the specified material proposed to be provided under this section.
3. Submit special concrete finishes technical data sheet giving descriptive data, curing time and application requirements.
4. Submit special finishes manufacturer's installation instructions.
5. Follow all special concrete finishes published manufacturer's installation instructions.

1.04 QUALITY ASSURANCE;

A. Certified Terr-Con Representatives

1. No exceptions or substitutions allowed. Contact LPL Enterprises, Inc. at TEL:585-723-0054
2. Certified applicators only.
 - a. Use only factory approved and recommended machinery and supplies from LPL Enterprises, Inc.

B. Samples

1. Supply samples of completed finish to demonstrate color variation, surface finish, and standard workmanship.
2. Notify Architect or Owner Representative when samples are completed.
3. Obtain approval from Architect or Owner Representative in advance to starting construction.

C. Protection of Concrete Surfaces During Construction

1. No satisfactory acidic or chemical cleaning procedure is available to remove stains from the concrete surface. Prevention is essential:
 - a. All hydraulic powered equipment must be diapered to avoid staining on the

Concrete.

- b. No trade will park vehicles on the slab. If necessary to complete their scope of work, drop cloths need to be placed under vehicles at all times.
- c. No pipe cutting machines will be used on the slabs.
- d. Steel will not be placed on slabs to avoid rust staining.

D. Pre-installation Conference

- 1. Conduct Section "Project management and Coordination" Pre-Construction Conference to include Architect, Owner's Representative, General Contractor, Certified Applicator, Product Representatives to establish guidelines and Expectations for finished work.(timetable, concrete finish, specs. etc)

E. Concrete mixture shall be 3000 PSI or higher, non air entrained.

- 1. Any admixtures, plasticizers, slag, fly ash, or anything taking the place of Portland- based cement should be kept to a minimum 480 lbs cement
- 2. The cement should be Portland Cement , Type 1 or 11, conforming to ASTM C150
- 3. Wet cures are the best but, if this cannot be done, use a membrane cure only. Do not use a densifier /hardener type material due to grinding of the floor after 6 days.
- 4. All mix designs must be approved by LPL Enterprises, Inc. Send all mix designs to LPL Enterprises, Inc.
- 5 . Engineer and LPL Enterprises, Inc. shall determine saw cut grids

1.05 DELIVERY,STORAGE AND HANDLING

- A. Deliver materials in original packages sealed with Terr-Con stamps.
- B. Store materials to comply with Terr-Con written instructions to prevent Deterioration from moisture or any other detrimental effects.
- C. Dispense special concrete finish material from factory numbered and sealed containers. Maintain record of container numbers.
- D. Color loads for integral color should never be smaller than 3 cubic yards.
- E. Use one 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.
- F. Wash out all drums before loading. Keep slumps consistent. Minimize driver-added water

1.06 PROJECT CONDITIONS

A. Environmental limitations:

1. Comply with Terr-Con written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting topping performance.
2. Final polish to take place 28 days with supervision of a certified Terr-Con Representative.

B. Close areas to traffic during floor application and after application, for time period recommended in writing by manufacturer.

1.07 ALL TERR-CON APPLICATIONS

A. Certified installers and Representatives must follow the guidelines of the Terr-Con technical information see 03360 from LPL Enterprises, Inc. No substitutions will be allowed.

PART-2 PRODUCTS

2.01 MATERIALS AND MANUFACTURERS

A.. Hardener and Sealer Agent

1. Retro-Plate 99, manufactured by Advanced Floor Products, Inc.

P.O.Box 50533,Provo,Utah 84605,801-812-3420

a. Performance Criteria:

i. Abrasion Resistance: ASTM C779-Up to 400% increase in abrasion resistance.

ii. Impact Strength: ASTM C805-Up to 21% increase impact strength.

iii. Ultra Violet Light and Water Spray: ASTM G23-81-No adverse effect to ultra violet and water spray.

iv. Co-efficient of Friction: ASTM 1028-all levels of finish exceed OSHA and ADA recommendations.

v. Reflectivity: Up to 30% increase in reflectivity.

2. No substitutions allowed

C. Terr-Con Aggregate application to be purchased and supplied by certified Terr-Con Representative 585-723-0054/585-509-0736

1.No Substitutions Allowed.

D. Joint Filler

1. A 100% 2 part,1:1 ratio non-staining Polyurea shall be used for all joints.

2. Joint Filler application should be deferred as long as possible.

A. minimum of a 90-day slab cure in ambient temperatures is advisable to allow for maximum slab shrinkage and joint widening.

3. Joints must be filled at 1 ½” for a standard 6” slab.

a. Performance Criteria:

i. Must reach a Shore A hardness of 75-80 (ASTM D2240)

ii. Tensile Strength ASTM D 412- 620psi

iii. Can set rapidly & consistently in applications ranging from -40 F to 130F

iv. Elongation-minimum of 460-500 %

2.02 ACCESSORIES

a. Retro Plate Abrasive Disc/or equivalent provided by Advanced Floor Products Inc. P.O. Box 50533, Provo, UT 84605 (801) 812-3420

1. Use size of Abrasive Grit Disc as recommended by the manufacturer.

2. Use application equipment as recommended by the manufacturer.

B. Water source.

PART-3 EXECUTION

3.01 ACCEPTABLE INSTALLERS

- A. Submit certification letter stating that the Retro-Plate applicator was certified by Advanced Floor Products prior the project bid date.
- B. Application concrete slab and placement of the Terr-Con chips must be installed by Terr-Con Certified Applicator

3.02 WARRANTY

- a. Submit a 10-year product warranty no later than 45 days after completion of installation of Terr-Con Flooring System

3.03 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Examine areas and conditions under which Retro-Plate application shall be performed for conditions that will adversely affect execution, performance, or quality of the system application.
 - 2. Correct conditions detrimental to timely and proper execution of Work,.
 - 3. Do not proceed until unsatisfactory conditions have been corrected.
 - 4. Commencement of installation constitutes acceptance of conditions and responsibility for satisfactory performance..

3.04 PREPARATION

- A. Verify slab profile requirements in Division 3 Section Cast in Place Concrete.
- B. Prior to placing of concrete in conjunction with placement of Terr-Con Stone General Contractor is responsible for keeping concrete clean prior to, during and following all substrate Terr -Con applications.
- C. Protection:
 - 1. Take precautionary measures to prevent fire hazards and spontaneous combustion. Remove empty containers from Site.
 - 2. Place cotton waste, cloths and hazardous materials in containers and remove from site daily.
 - 3. Provide drop cloths, shields, and other protective equipment.
 - 4. Protect elements surrounding work of this section from damage or disfiguration
 - 5. As work proceeds, promptly remove spilled, splashed, or splattered materials from surfaces.
- D. Surface Preparation of Sealer:

1. General Requirements:
 - a. Prior to application of Retro-Plate, surface shall be prepared to receive material in compliance with manufacturer's recommendations and specifications.
 - b. Clean surfaces of residual deposits of grease, oil, dirt, and other foreign matter, immediately prior to application.

3.05 APPLICATION

- A. Apply in strict accordance with Terr-Con Specifications for application utilizing recommended equipment.
- B. Follow recommended Terr-Con Flooring Procedures
- C. Applications Must Be Installed by Terr-Con Certified Applicators.
- D. Application of Retro Plate
 1. After 28 days, apply Retro-Plate in compliance with manufacturer's instructions and using application method best suited for obtaining the desired uniform sheen and finish.
 2. Employ only application equipment that is clean, properly adjusted, and in good working order, and of type recommended by Advanced Floor Products.
 3. Concrete must be in place a minimum of 28 days before application can begin.
 4. Application is to take place at least ten days prior to racking and other in-store Accessory installation, thus providing a complete, uninhibited concrete slab for application.
 5. Only certified applicators will be used; therefore, complete application procedures are not necessary within this specification.
 6. Provide the finish level desired by the owner or architect. Level 1 (Satin), Level 2(semi-gloss) Level 3 (Gloss)
- E. Achieve water repellency, hardening, dust proofing, and abrasion resistance of the surfaces without changing the natural appearance of the concrete, except for the sheen.

3.06 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service:
 1. The Terr-Con & Retro Plate representative shall be available to provide on-site service, technical assistance, and guidance for application of Terr-Con and Retro-Plate as needed.

3.07 CLEANING

- A. At completion of day's work, remove from Site rubbish and accumulated materials.
- B. Leave storage area clean and in same condition indicated for equivalent spaces in Project.

3.08 PROTECTION

- a. Protect finished work in accordance with manufacturer's recommendations.

END OF SPECIFICATION