**SECTION 096723 – RESINOUS FLOORING**

# PLEXI*CHIP*

**SEAMLESS DECORATIVE FLAKE/CHIP EPOXY FLOORING SYSTEM**

## PART 1 - GENERAL

### 1.1 SUMMARY

A. This section includes the following:

1. Seamless chip/flake epoxy flooring system, 1/16$^{th}$ inch thick, 100 percent solids epoxy, as scheduled.
2. Floor Preparation and Protection.

### 1.2 RELATED SECTIONS

A. Related Sections include the following:

1. Division 7, Section 079200 "Joint Sealants"- refer to for joint sealants installed in the epoxy flooring system.
2. Division 3, Section 033000 "Cast-In-Place Concrete"- for concrete slab surfaces.
3. Division 3, Section 033900 "Concrete Curing" – for concrete slab surfaces.

### 1.3 SUBMITTALS

A. System Data:

1. Submit manufacturer's specifications on cured system and individual components of the epoxy flooring system, including physical properties and performance properties and tests described in part 2.01 B, and submit Material Safety Data Sheets.
2. Each individual component of the system will be evaluated on the basis of these standards.
3. Manufacturer's standard color chart shall also be submitted, and must afford the owner color selection from at least twelve (12) standard colors and custom color matching shall be available upon request.

B. LEED Submittals:

1. Product Data for credit IEQ4.2 for liquid applied flooring components, documentation including printed statement of VOC content.
2. Product Data for Credit MR 4.1 and for products used to repair and maintain existing buildings, documentation detailing building reuse properties.
3. Product Data for Credit MR 4.2 for products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.

C. Samples:

1. The contractor shall submit a 6" x 6" cured system sample, applied to a rigid backing which the contractor has made for verification purposes and finish texture approval.

### 1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. Obtain the epoxy flooring system materials from a single manufacturer with a minimum of five (5) years verifiable experience providing materials in the type specified in this section.

B. Contractor's Qualifications:

1. Installation must be performed by a manufacturer certified contractor with skilled mechanics not having less than three (3) years satisfactory experience in the installation of the type of system as specified in this section, and must be certified in writing by the manufacturer of the specified epoxy flooring system.

## 1.5 FIRE RATINGS

A. Flooring shall be "self-extinguishing" when tested in accordance with ASTM-D-635-72, and shall have "extent of burning" not to exceed 0.25 inch per minute when tested in accordance with same standard.

## 1.6 DELIVERY, STORAGE AND HANDLING.

A. Primary flooring system materials shall be delivered in the manufacturer's undamaged, unopened containers. Each container shall be clearly marked with the following:
   1. Product name(s) and/or Number(s)
   2. Manufacturer's name
   3. Component designation (A, B, etc.)
   4. Product Mix Ratio
   5. Health and Safety Information
   6. Infotrac Emergency Response Information

B. Provide equipment and personnel to handle the materials by methods which prevent damage.

C. The contractor shall promptly inspect direct jobsite material deliveries to assure than quantities are correct, comply with requirements and are not damaged.

D. The contractor shall be responsible for materials furnished by him, and he shall replace, at his own expense, such materials that are found to be defective in manufacture or that have become damaged in transit, handling or storage.

E. Store material(s) in accordance with manufacturer's instructions, with seals and labels intact and legible. Maintain temperatures within the required range. Do not use materials that exceed the manufacturer's maximum recommended shelf life.

## 1.7 PROJECT CONDITIONS

A. The contractor should visit the jobsite prior to beginning the installation of the epoxy flooring system to evaluate substrate condition, including substrate moisture content, and the extent of repairs required, if any. Concrete substrates shall be tested to verify that the moisture content of the substrate does not exceed the epoxy flooring system's manufacturer's recommendations.

B. The contractor should exercise care during surface preparation and system installation to protect surrounding substrates and surfaces, as well as in-place equipment. The contractor shall prepare the substrate to remove laitance and open the surface. This shall be achieved by brush grit blasting (depending on the hardness of the concrete). Surface profile achieved shall be similar to medium grit sandpaper and free from bond-inhibiting contaminants. Costs incurred that are associated with damage from negligence or inadequate protection shall be the sole responsibility of the contractor.

C. Each drain in the installation area must be working and raised or lowered to the actual finished elevation of the epoxy flooring system.

D. System must be protected by the General Contractor, or as a separate bid item, by the installing contractor until it is inspected and turned over to the owner.

E. The minimum slab temperature must be conditioned to 50°F-70°F before commencing installation, during installation, and for at least 72 hours after installation is complete. The slab temperature must be at least 5°F above the dew point during installation.

F. Maintain lighting at a minimum uniform level of 50 or more foot-candles in areas where the epoxy flooring system is being installed. Permanent lighting shall be in place and working during the installation. If permanent lighting is not in place, simulate permanent lighting conditions during the epoxy flooring installation.

G. Leaks from pipes and other sources must be corrected prior to the installation of the epoxy flooring system.

H. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation of epoxy flooring system only after substrates have a maximum of 5 lb. of water p/1,000 sq. ft. in 72 hours (or as approved by manufacturer) or 75% RH maximum when using ASTM F 2170 Relative Humidity testing using in situ probes.

## 1.8 WARRANTY

A. The contractor and the manufacturer shall furnish a standard guarantee of the epoxy flooring system for a period for 3 years after installation. The labor and material guarantee shall include loss of bond and wear-through to the concrete substrate from normal use.

B. Not included in the warranty are damage due to structural design deficiencies including, but not limited to, slab cracking from lateral, vertical or rotational movement, and gouging or other damage due to fork lifts, other equipment, delamination caused by vapor transmission, Acts of God, or other elements beyond the scope of protection of this system nor causes not related to the system materials. In case of a warranty claim, the owner will notify the manufacturer and contractor in writing within 30 days of the first appearance of problems covered under this warranty. The owner will provide free and unencumbered access to the area during normal working hours for warranty rework. Property protection is also the owner's responsibility. Remedy is limited to direct repair of the epoxy flooring system.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURER INFORMATION

A. Plexi-Chemie Inc.
606 Lane Avenue North, Suite #6, Jacksonville, FL 32254
Phone: (904) 693-8800
Fax: (904) 693-8700

## 2.2 FLOORING SYSTEM INFORMATION

A. Plexi*Chip* Decorative Flake/Chip Epoxy Flooring System, minimum 1/16$^{th}$ inch thickness.

1. System Breakdown:
   a. Primer coat: Plexi*Glaze* #4 100% solids water clear epoxy coating
   b. Second coat: Plexi*Glaze* IFF pigmented epoxy coating with Plexi-Chemie SL powder
   c. Broadcast chip aggregate: Plexi*Chip*
   d. Third coat: Plexi*Glaze* #4 100% solids water clear epoxy coating
   e. Broadcast chip aggregate: Plexi*Chip*
   f. Fourth coat: Plexi*Glaze* #4 100% solids water clear epoxy coating
   g. Top coat: Plexi*Crest* P polyester urethane

2. Patching/Caulking: use Plexi*Flex* Caulk or Plexi*Patch* QC.

3. Optional: Type "L" Zinc divider strip

## 2.3 FLOORING SYSTEM PROPERTIES

Typical [physical properties at 70°F (unless otherwise noted):

| | |
|---|---|
| **Color** | 16 Standard Pre-Blended Chip Colors<br>Custom color matching is available upon request |
| **VOC**<br>(Volatile Organic Content) | Less than 50 grams per liter |
| **Hardness @ 24 hours, Shore D**<br>ASTM D2240 | 75-80 |
| **Compressive strength**<br>ASTM D695 | 16,500 psi |
| **Tensile Strength**<br>ASTM C638 | 6,000 psi |
| **Flexural Strength**<br>ASTM C580 | 10,000 psi |
| **Abrasion Resistance**<br>ASTM D4060 | 30 mg max loss |
| **Flammability**<br>ASTM C580 | Self-extinguishing<br>Over concrete |

## PART 3- EXECUTION

### 3.1 PREPARATION

A. Surface Preparation
   1. Surfaces receiving the epoxy flooring system should perform proper surface preparation and cleaning procedures before installing the epoxy flooring system. Substrate should be clean, sound and dry before application.
   2. Surfaces receiving the epoxy floorings system should be shot-blasted and/or diamond ground.
   3. Substrate should be free of oil, grease, curing compounds, dust particles and dirt.
   4. Do not apply to slabs on grade unless a heavy un-ruptured vapor barrier has been installed under the slab. Do not thin materials.

### 3.2 SYSTEM APLICATION

A. General
   1. Apply each component of the 1/16$^{th}$ inch decorative chip/flake epoxy flooring system in compliance with manufacturer's written installation instructions and strictly adhere to mixing and installation methods, recoat windows, cure times and environmental restrictions. The epoxy flooring system is to be installed directly over non-moving control joints and cracks which have been treated with semi-rigid Plexi*Flex* Epoxy Caulk or Plexi*Patch* QC and the epoxy flooring system will terminate at the edge of isolation and expansion joints as designated by the Architect, Engineer or design Professional. Integral cove base shall be installed where scheduled in the drawings @ 4, 6, 8 or 12 inches high.

   2. Control Joints/Construction Joints: Provide Plexi*Flex* Caulk or Plexi*Patch* QC.

   3. Isolation/Expansion and other joints subject to movement: Honor all Expansion/Isolation Joints, where movement is designed in the substrate.

   4. **OPTIONAL:** Provide Type "L" Zinc divider strip typical at all doorway thresholds as well as top and bottom edges of integral cove base.

### 3.3 CURING, CLEANING AND PROTECTION

A. Cure the epoxy flooring system materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of the installation and prior to completion of the curing process.

B. Protect the epoxy flooring system from damage and wear during other phases of the construction operation, using temporary coverings as recommended by the manufacturer, if required. Remove temporary covering just prior to final inspection.

C. Clean the epoxy flooring system just prior to final inspection, using materials and procedures suitable to the system manufacturer.

D. Some cleaners will affect the color, gloss or texture of an epoxy floor surface. To determine how a cleaner will perform, Plexi-Chemie recommends that you first test each cleaner, in a small area, utilizing your cleaning technique. This precaution will demonstrate the effect of your cleaner and technique. If no deleterious effects are observed, continue with the procedure. If deleterious effects do occur, modify the cleaning material and/or procedure. For recommendations regarding the types of cleaners, contact Plexi-Chemie, Inc..

END OF SECTION 096723