**ARCHITECTURAL GUIDE SPECIFICATION**

M**aster** F**ormat** S**ection** 096700– Fluid-Applied Flooring

KEY CONTAIN SLT FLOORING SYSTEM

**CHEMICAL RESISTANT NOVOLAC EPOXY SYSTEM**

**125 MILS**

PART 1 - GENERAL

**1.01 SUMMARY**

Furnish all necessary materials, labor and equipment required to prepare substrate and install Chemical Resistant Epoxy Flooring System.

**1.02 RELATED WORK**

All drawings and general provisions of contract including General and Special Conditions.

**1.03 QUALITY ASSURANCE**

A. Manufacturer's Qualifications

1. Obtain primary Chemical Resistant Epoxy Flooring System materials including primers, resins, hardening agents, specially blended aggregates, and finish coats from a single manufacturer providing materials of the type specified in this section. Provide unblended aggregates, solvents and other secondary materials from a source recommended by the manufacturer of primary materials.

2. The Chemical Resistant Epoxy Flooring System manufacturer shall provide a representative who will advise the applicator on the proper techniques of mixing and applying the Chemical Resistant Epoxy Flooring System.

3. Installer to verify locations of all joints requiring a soft sealant and/or epoxy joint material. Follow recommendations of material manufacture for treatment of all joints, expansion joints, and cracks.

4. Installer must be acceptable to manufacturer.

B. Applicator Qualifications

Installation shall be performed by an applicator with not less than three years of satisfactory experience in the application of the type of system as specified in this section and shall be approved by the manufacturer of the Chemical Resistant Epoxy Flooring System.

**1.04 WARRANTY**

A. Contractor to guarantee work under this Section to be free from defects of material and installation for the duration of the warranty period. Defects occurring during warranty period shall be repaired, in a manner satisfactory to the Owner and the Architect, at no additional cost to the Owner.

1. Warranty Period: One (1) Year.

B. Not included are damage due to blistering or loss of adhesion due to moisture vapor transmission through the slab, Acts of God or other elements beyond the scope of protection of this system.

C. In case of a warranty claim, the owner will notify the manufacturer and applicator in writing within 30 days of the first appearance of any problems which are covered under this warranty and will provide free access to the area during normal working hours. Property protection is also the owner's responsibility. Remedy is limited to direct repair of the Chemical Resistant Epoxy Flooring System.

**1.05 SUBMITTALS**

A. Product Data

Submit manufacturer's specifications on specific products of the Chemical Resistant Epoxy Flooring System and an overall system description, with installation instructions. Manufacturer's standard color charts shall also be submitted. Furnish three (3) sets of this information.

B. The applicator shall submit a 6"X6" system sample for verification purposes and finish texture approval and color.

**1.06 MATERIAL DELIVERY, HANDLING AND STORAGE**

A. Primary system materials shall be delivered in the manufacturer's undamaged, unopened containers. Each container shall be clearly marked with the following:

1. Product name

2. Manufacturer's name

3. Component designation (A or B, etc.)

4. Mixing ratio of component mixture

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

C. The applicator shall promptly inspect all direct job site deliveries to assure that quantities are correct and that materials comply with requirements and are not damaged.

D. Store materials in accordance with manufacturer's instructions, with seals and labels intact and legible. Maintain temperatures within the required range. Do not use materials that have been stored for a longer period of time than the manufacturer's maximum recommended shelf life.

**1.07 PROJECT CONDITIONS**

A. Maintain the ambient room and the floor temperatures at 60 degrees Fahrenheit, or above, for a period extending from 72 hours before, during and after floor installation. Concrete to receive lining shall have cured for at least 28 days and shall have been free of water for at least 7 days. For exterior concrete, apply materials when temperature is decreasing to minimize concrete outgassing.

B. Dew Point: Substrate temperature must be minimum of 5 degrees above dew point prior to, during or up to 24 hours after application of lining system.

C. Illumination: Apply lining system only where a minimum of 30 footcandles exist when measured 3 feet from surface.

D. Advise other trades of fixtures and fittings not to be installed until lining is cured and protected.

**1.08 PROTECTION**

A. Protect adjacent surfaces not scheduled to receive the lining by masking, or by other means, to maintain these surfaces free of the lining material.

B. Provide adequate ventilation and fire protection at all mixing and placing operations. Prohibit smoking or use of spark or flame producing devices within 50 feet of any mixing or placing operation.

C. Provide polyethylene or rubber gloves or protective creams for all workmen engaged in applying products containing epoxy or urethane.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

A. System Overview

1. The system shall be **Key Contain SLT Flooring System** consisting of **Key #502 Primer/Low Modulus Binder**, **Key #630 100% Solids Novolac Chemical Resistant Epoxy Resin**, **Key #633 100% Solids Novolac Chemical Resistant Epoxy Resin**, and necessary filler powder and broadcast aggregates. This system shall be applied over a clean, properly prepared substrate.

2. Prior to system application, all joints and cracks are to be treated with manufacturer’s semi-flexible epoxy and/or rigid epoxy filler as described in the execution section.

3. The finished lining system shall be a minimum 125 mils in thickness, dense and nonporous.

B. The rigid epoxy to be used for crack treatment shall be Key #502, Key #715, Key #730, or other epoxy approved by Manufacturer. The semi-flexible epoxy to be used as filler for exposed control joints shall be Key #783 Joint Filler, or other filler recommended by manufacturer.

**PART 3 - EXECUTION**

## 3.01 PREPARATION

A. Obtain Architect's approval of mock-up before installing Chemical Resistant Epoxy Flooring System; see QUALITY ASSURANCE in **PART 1.**

B. Preparation of Surface:

1. Inspect surfaces to receive lining and verify that condition is smooth and free from conditions that will adversely affect execution, permanence, or quality of work.

a. Remove all projections, all debris detrimental to flooring system, and dirt, oil contaminates, grease, and surface coatings affecting bond.

2. Notify Architect in writing prior to commencing work of any conditions deemed unsatisfactory for the installation; installation of flooring materials is understood as acceptance of the substrate as satisfactory.

3. Concrete: The General Contractor shall be responsible for hiring an independent testing service to test for moisture content and moisture vapor emission rate; install no flooring over concrete until the concrete has been cured and is sufficiently dry to achieve permanent bond with flooring as determined by material manufacturer's recommended bond and moisture tests.

a. Effectively remove concrete laitance by steel shot blasting or other method approved by Chemical Resistant Epoxy Flooring System manufacturer. No silicate hardeners shall be used.

b. Concrete slab shall have an efficient puncture-resistant reinforced moisture vapor barrier 10-15 mils thick minimum directly under the concrete slab (for slab on grade). Do not use vapor barrier manufactured with recycled material. Testing must be done to verify that the moisture vapor emission rate of the slab does not exceed that as recommended by the manufacturer at time of installation of the flooring or at any future date. Moisture vapor emission and moisture content testing must conform with the requirements of ASTM F-1869-11 (Calcium Chloride Test) and ASTM F-2170-11 (Relative Humidity Probe Test). If test results show excessive levels of moisture content or vapor emission rate for any individual test, apply manufacturer’s recommended moisture vapor emission control system Key Epocon SL.

B. Cracks larger than 1/16” shall be routed and filled with Key #502, Key #715, or Key #730 Crack Filler, reinforced with fiberglass cloth and/or treated with flexible membrane as recommended by manufacturer. Exposed control joints (non-expansion joints) shall be filled with Key Epoxy Joint Filler #783 or other filler recommended by manufacturer. Control joints that are to be covered with the Chemical Resistant Epoxy Flooring System shall be filled with the same resin used to fill cracks, reinforced with fiberglass cloth and/or treated with flexible membrane as recommended by manufacturer.

**3.02 APPLICATION**

A. General

Apply each component of the Chemical Resistant Epoxy Flooring System in compliance with manufacturer's installation instructions including mixing and application methods, recoat windows, cure times and environmental restrictions. If the system is to be applied directly over all non-expansion joints, the joints shall have been treated as previously described. Material applied over expansion joints or control joints material is subject to cracking due to movement in the joint.

B. Cracks and Non-Expansion Joints

1. Cracks less than 1/16" wide after surface preparation shall be filled with neat, rigid epoxy, Key #502, Key #715, or Key #730, mixed and applied as recommended by the manufacturer's printed instructions. All treated cracks are to be sanded prior to applying primer. Exposed control joints (non-expansion joints) shall be filled with Key Epoxy Joint Filler #783 or other filler recommended by manufacturer. Control joints that are to be covered with the Chemical Resistant Epoxy Flooring System shall be filled with the same resin used to fill cracks, reinforced with fiberglass cloth and/or treated with flexible membrane as recommended by manufacturer.

2. Cracks larger than 1/16” shall be routed and filled with Key #502, Key #715, or Key #730 Crack Filler, reinforced with fiberglass cloth and/or treated with flexible membrane as recommended by manufacturer.

3. Significant bug holes and irregularities should be patched with epoxy paste as recommended by manufacturer.

C. Epoxy Primer

Apply Key #502 epoxy primer by squeegee and back roll at the rate of 200-250 square feet per gallon to thoroughly wet surface but taking care not to "pond" the material.

D. Basecoat Application

1. Apply slurry basecoat using Key #630 Novolac Epoxy mixed with Key Self-Leveling Filler. Apply at 20-25 square feet per gallon of mixed slurry or a minimum of 65 mils. Immediately backroll with spiny roller, followed with broadcasting to excess of 30 mesh silica into surface of wet epoxy. Allow to cure. Sweep and vacuum loose sand.

 E. Topcoat Application

1. Apply 1 or more coats of Key #633 Novolac Epoxy over the sand texture following manufacturer’s recommendations for mixing, application method and coverage rates. Allow each coat to cure tack-free before applying subsequent topcoat(s), if necessary. Additional coats may be necessary to match approved sample or mock-up. Allow to cure following manufacturer’s recommendations.

F. Obtain architect’s or engineer's approval of the system just after completion of the final coat, prior to completion of curing.

**3.03 CURING AND PROTECTION**

A. Cure Chemical Resistant Epoxy Flooring System materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of the application and prior to completion of the curing process.

B. Apply temporary protection until Chemical Resistant Epoxy Flooring System is fully cured, if exposed to traffic or adverse weather conditions. The General Contractor shall protect the finished system from the time that the sub-contractor completes the work.

**END OF SECTION**