AIA Specification

Broadcast Parking Garage System

Part 1 – General

1.01 Work Included

A. All work to be provided in this section shall include material, labor, and equipment necessary to furnish the complete installation of a Epoxy Parking Garage System, as specified in documents for this project and/or the finish schedules contained in the drawings; including but not limited to the following:

1. Surface preparation
2. Concrete repairs/patching [as needed]
3. Joint filling/sealing [if applicable]
4. Installation of the an Epoxy Parking Garage System

1.02 Related Work

A. New Concrete (If Applicable)

1. Concrete shall be allowed to cure (the minimum period required for the product specified) for a minimum of 28 days.
2. Concrete Slab-on-grade or below-grade construction shall be installed over an effective moisture vapor barrier beneath the slab (refer to Part 2 – Supplemental of this section).
3 Placed concrete should be moisture cured.
4. No curing compounds or similar surface contaminants, which would impede the adhesion of the resinous flooring system to the substrate, shall be used for curing the placed concrete.
5. Concrete shall be sloped to drains according to the requirements of the specific project or shall meet ACI-301 guidelines for placing and finishing concrete, and noted in drawings and/or specifications.

B. Old Concrete with Coating (If Applicable)

1. The preferred method of placing an Epoxy Garage System is directly to clean concrete; however, in some instances it may not be practical or cost effect for the end user.
2. If the election is to go over an old coating, the contractor shall perform ACI 503 Adhesion test or a Simple Cup test method over the prepared surface to insure proper adhesion of the old coating to the concrete and the new coating to the old coating. If the new coating is not removed then the warranty will be adjusted.

1.03 Quality Assurance

A. All component/material(s) used for the installation of this Epoxy Garage System must be furnished by the same manufacturer (Thermal-Chem Corporation 2550 Edgington St. Franklin Park, IL 60131) in order to ensure optimum adhesion to the substrate and compatibility of the integral components. This shall include all patching and vapor barrier resins (if required), base coat, and topcoat resins.

B. Enlist a contractor experienced in the installation of an Epoxy Garage system, approved writing by the manufacturer, and who can perform within the scope of work required to complete the contract for this section of the project.

1.04 Warranty

A. Joint written warranty shall be provided for this project for a period of one (1) year from the date of completion of the floor installation. The written warranty shall cover the material(s) as provided by the manufacturer to install the floor system and the contractor shall warranty the workmanship and labor to install the floor system. 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. Thermal-Chem and the contractor shall have no other liability with respect there to, including without limitation, liability for incidental or consequential damages.
C. 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 claim repairs.

1.05 Submittals

Submit the following in accordance with the provisions and conditions listed in Division 1 and/or in compliance with other documents or conditions as outlined in the specifications for this project.

A. Submit current manufacturer's technical data and literature for an Epoxy Garage System Flooring System as specified in this section.
B. Submit the color chart for the specified product/system and/or a cured physical sample of the selected system color as approved by the Architect or Owner.

1.06 Material Delivery, Handling and Storage

A. Primary system materials shall be delivered in the manufacturers undamaged and unopened containers. Each container shall be clearly marked with the following:

Product name(s) and number
Manufacturer's name
Component designation (A, B, etc.)
Product Mix Ratio
Health and Safety Information

B. The contractor shall promptly inspect direct jobsite material deliveries to assure that quantities are correct, comply with requirements and are not damaged.
C. All materials (including the broadcast aggregate) (if applicable) shall be stored in a dry location at a minimum temperature of 65 degrees F (12.8 degrees C).

1.07 Job Conditions

A. The contractor shall visit the jobsite prior to system installation of the Epoxy Garage System to evaluate substrate condition, including substrate transmission, quality and severity of

cracking and the extent of repairs needed. Substrate imperfections should be repaired only after mechanical preparation of the substrate. Surface preparation reveals most imperfections requiring repair. Concrete substrates shall be tested to verify that the moisture vapor transmission of the substrate does not exceed the manufacturers' recommendations. Cost associated with repair, joint filling, and remediation of the concrete slab to produce a smooth surface are within the scope of this specification and will be the responsibility of the installing contractor.
B. The contractor should exercise care during surface preparation and system installation to protect surrounding substrates and surfaces, as well as in-place equipment. (Unless an agreement between the contractor, manufacturer and end user agrees to go over an old coating) The contractor shall prepare the surface by removing all existing coatings down to clean sound concrete. Shot blasting or diamond grinding shall achieve this.
C. 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.
D. The minimum slab temperature must be conditioned to 40 degrees F before starting installation, during installation, and for at least 72 hours after installation is complete.
E. Maintain lighting at a minimum uniform level of 50 or more foot candles in areas where the Epoxy Garage System is being installed.
F. Leaks from pipes and other sourced must be corrected prior to the installation of the coating system.

Part 2 – Products

2.01 Materials

System Overview

A. The Epoxy Garage System shall consists of:
1. Base Coat – Product No. 309 FlexGard T applied at 90 sq. ft. per gallon.
2. Broadcast selected aggregate to refusal
3. Second Coat – Product No. 309 FlexGard T. applied at 40 to 80 sq. ft. per gallon depending upon the size of aggregate selected.(Optional)
4. Broadcast selected aggregate to refusal (Optional)
5. Top Coat – Product No. 309 FlexGard T. applied at 40 to 80 sq. ft. per gallon depending upon the size of aggregate selected.
6. Second Top Coat – Product No. 1057 DecoFinish E57 pigmented applied at 300 sq. ft. per gallon (Optional and only used if UV stability is required)
7. Joint Filler – Product No 108 FlexGard J pigmented epoxy for filling joints.

B. Physical Properties:

Color	To be Selected
Solids	100% Epoxies
VOC	Compliant - Urethane
Cure Time	Dry to touch: 5 - 6 hours Recoat: 7 – 24 hours Auto Traffic: >24 hours
Hardness, Shore D ASTM D 2240	76 – 82
Elongation ASTM D 638	30% to 40%
Tensile Strength ASTM D 638	2,000 psi min

Compressive Strength ASTM C 579	5,000 psi
Flexural Strength ASTM C 580	2,000 psi
Adhesion ACI 503R	250 psi (100% concrete failure)
Abrasion Resistance ASTM D 4060, CS – 17 Wheel, 1000 cycles	40 mgs loss
Flammability	Self-extinguishing over concrete

ASTN C = Mortar system
ASTM D = Resin only

Part 3 – Execution

3.01 Surface Preparation

A. Create a surface profile with a steel shot blast machine and/or dust-free diamond grinder for surfaces and edges.
B. Verify that surface is dry and perfectly clean, free of all oil, grease, detergent film, sealers and /or curing compounds.
C. Thoroughly rout and vacuum all non-moving cracks and surface deviations, then fill with patching compound comprised of 100% solids epoxy and aggregate.
D. Key in all drains, grind or build up edges between joints to a point of equal height
E. Saw cut to a depth of ¼" around all areas to be patched and chip out deteriorated concrete down to clean sound concrete, prime and patch with Thermal-Chem product No. 726 ArmorPrime and Thermal-Chem Grout and Patch Sand #A-100.

3.02 Installation

A. Apply each component of the Epoxy Garage System in compliance with manufacturer's written installation instructions and strictly adhere to mixing and installation methods, recoat windows, cure times and environmental restrictions.
B. Base Coat: Apply the base coat of #309 FlexGard T epoxy resin at 90 sq. ft. per gallon.
C. Broadcast Aggregate evenly at approximately ½ lb. per square foot.
D. Topcoat: Apply a topcoat of #309 FlexGard T at 40 to 80 sq. ft. per gallon depending upon the size of the selected aggregate.
E. If a second broadcast system is selected, repeat C & D then apply the topcoat.
F. Control Joints: Honor all Control Joints. Resaw to clean out control joints then fill all joints with #108 FlexGard J pigmented flexible epoxy resin upon completion of the coating.

3.03 Curing, Cleaning and Protection

A. Cure the Epoxy Garage 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 Garage System from damage and wear during other phases of the construction operation, using temporary coverings if required. Remove temporary covering just prior to final inspection.

C. Clean the Epoxy Garage System just prior to final inspection, using materials and procedure suitable to the system manufacturer.
D. Some cleaners will affect the color, gloss or texture of your polymer floor surfaces. To determine how the cleaner will perform, first test each cleaner, in a small area, utilizing your cleaning technique. If no deleterious effects are observed, continue with the procedure. For recommendations regarding types of cleaners, contact the system manufacturer.