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FLUID-APPLIED FLOORING

PART 1 – GENERAL

1.1 PURPOSE
- A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS
- **A. X**

1.3 SECTION INCLUDES
- A. Multi component fluid-applied epoxy mortar and epoxy sealer flooring system and base.

1.4 RELATED REQUIREMENTS
- A. Division 01 – Volatile Organic Compound (VOC) Content Restrictions.

1.5 REFERENCE STANDARDS
- A. ASTM C307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings.
- B. ASTM C413 - Standard Test Method for Absorption of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
- C. ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
- D. ASTM C580 - Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
- E. ASTM F1679 - Standard Test Method for Using a Variable Incidence Tribometer (VIT).

1.6 SUBMITTALS
- A. See Division 01 for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available; and _____.
- C. Samples: Submit two samples, _____ by _____ inch in size illustrating color and pattern for each floor material for each color specified.
- D. Manufacturer's Installation Instructions: Indicate special procedures.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.

1.7 QUALITY ASSURANCE
- A. Applicator Qualifications: Company specializing in performing work of this section with minimum five years' experience.
- B. Supervisor Qualifications: Trained by product manufacturer, under direct full time supervision of manufacturer's own foreman.

1.8 DELIVERY, STORAGE, AND HANDLING
- A. Store resin materials in a dry, secure area.
- B. Store materials for three days prior to installation in area of installation to achieve temperature stability.

1.9 FIELD CONDITIONS
- A. Maintain minimum temperature in storage area of 55 degrees F.
- B. Store materials in area of installation for minimum period of 24 hours prior to installation.
- C. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after

installation of materials.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Resinous Flooring Epoxy Mortar and Epoxy Sealer:
   1. Basis of Design - Stonehard, Stonclad GS/GS4.
   2. Thickness: Nominal 3/16" thick system comprised of a penetrating, moisture tolerant, two-component epoxy primer, a high performance, three-component mortar consisting of epoxy resin, curing agent and selected, graded aggregates blended with inorganic pigments and a two-component, 100% solids, general service, epoxy coating.
   3. System Characteristics:
      a. Color and Pattern: As selected by Architect.
      b. Wearing Surface: Light texture to be selected from manufacturers standards
      c. Integral Cove Base: Refer to detail drawings.
      d. Overall System Thickness: 3/16”/5mm
      e. Integral Cove Base: Refer to Drawings
   4. System Components: Manufacturer's standard components that are compatible with each other and as follows.
      a. Body Coat(s):
         1) Material Basis: Stonclad GS
         2) Resin: Epoxy
         3) Delete first subparagraph below if unnecessary.
         4) Formulation Description: Three component epoxy mortar.
         5) Application Method: Trowel
         6) Thickness of Coats 3/16”
         7) Number of Coats: (1)
   5. Topcoats:
      a. Material Basis: StonkoteGS4
      b. Resin: Epoxy
      c. Formulation Description: 2 component epoxy.
      d. Color: As selected by Architect.
      e. Finish: Semi-gloss
      f. Number of Coats: 1
      g. Texture: As selected by Architect.

B. Resinous Epoxy Mortar and Novolac based, Bisphenol F Epoxy Sealer:
   1. Basis of Design - Stonehard, Stonclad GS/HT4.
   2. Thickness: Nominal 3/16" thick system comprised of a penetrating, moisture tolerant, two-component epoxy primer, a high performance, three-component mortar consisting of epoxy resin, curing agent and selected, graded aggregates blended with inorganic pigments and a two-component, 100% solids, novolac based, bisphenol F epoxy coating.
   3. System Characteristics:
      a. Color and Pattern: As selected by Architect.
      b. Wearing Surface: Light texture to be selected from manufacturers standards
      c. Integral Cove Base: Refer to Drawings.
      d. Overall System Thickness: 3/16”/5mm
   4. System Components: Manufacturer's standard components compatible with each other.
      a. Body Coat(s):
         1) Material Basis: Stonclad GS
         2) Resin: Epoxy
         3) Formulation Description: Three component epoxy mortar.
         4) Application Method: Trowel
            (a) Thickness of Coats 3/16”
            (b) Number of Coats: 1
      b. Topcoat(s):
         1) Material Basis: StonkoteHT4
         2) Resin: Epoxy

3) Formulation Description: 2 component epoxy
4) Color: As selected by Architect.
5) Finish: Semi-gloss
6) Number of Coats: 1
7) Texture: As selected by Architect.

C. Resinous Polyurea/Urethane Hybrid:
1. Basis of Design: Stonehard, Stonchem 441.
2. Thickness: 30 mils.
3. Finish: As selected by Architect.

D. Primer: Type recommended by manufacturer for substrate and body coats indicated. Formulation Description: Stonhard Standard Primer.

E. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

F. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated, Stonflex MP7.

2.2 ACCESSORIES

A. Divider Strips: Extruded rigid PVC, 1/16 inch thick, height to match flooring thickness, with anchoring features; color as selected.

B. Base Caps, and Separator Strips: Match divider strips, with projecting base of 1/8 inch.

C. Cant Strips: Molded of flooring resin material.

D. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.

E. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of materials to sub-floor surfaces.

D. Verify that concrete sub-floor surfaces are ready for flooring installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by flooring materials manufacturer.

3.2 PREPARATION

A. Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with sub-floor filler.

B. Mechanically prepare substrates as follows:
1. Mechanically prepare with the use of Diamond grinding equipment to provide surface sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring. Or,
2. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.

D. Vacuum clean substrate.

E. Apply primer to surfaces required by flooring manufacturer.

3.3 INSTALLATION - STRIPS

A. Accurately saw cut substrate to install divider strips.

B. Install strips straight and level to locations indicated.

3.4 INSTALLATION – FLOORING

A. Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.

1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
    a. Apply joint sealant to comply with manufacturer's written recommendations.

B. Mix and apply primer over properly prepared substrate with strict adherence to manufacturer's installation procedures and coverage rates
C. Body coat: Mix base material according to manufacturer's recommended procedures. Uniformly spread mixed material over previously primed substrate using manufacturer's installation tool.
D. Sealer Coat: mix and apply sealer coat in accordance with manufacturers written application instructions.

3.5 TERMINATIONS

A. Chase edges to “lock” the coating system into the concrete substrate along lines of termination.
B. Penetration Treatment: Lap and seal coating onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement.
C. Trenches: Continue coating system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks.
D. Treat floor drains by chasing the coating to lock in place at point of termination.

3.6 JOINTS AND CRACKS

A. Treat control joints to bridge potential cracks and to maintain monolithic protection.
B. Treat cold joints and construction joints to bridge potential cracks and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.
C. Discontinue floor coating system at vertical and horizontal contraction and expansion joints by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

3.7 FIELD QUALITY CONTROL

A. Material Sampling: Owner may at any time and any numbers of times during resinous flooring application require material samples for testing for compliance with requirements.
    1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
    2. Owner’s Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
    3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.8 CLEANING, PROTECTING, AND CURING

A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 18 hours.
B. Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. General Contractor is responsible for protection and cleaning of surfaces after final coats.
C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

END OF SECTION