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Oakhurst Dairy – New Milk Cooler**SECTION 09671 - RESINOUS FLOORING****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes the following:
  - 1. General-use epoxy-resin flooring.
- B. Related Sections include the following:
  - 1. Division 3 Section "Cast-in-Place Concrete" for concrete substrates to receive resinous flooring.

**1.3 SUBMITTALS**

- A. Product Data: For each type of product specified. Include manufacturer's technical data, installation instructions, and recommendations for each resinous flooring component required.
- B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors, textures, and patterns available for each resinous flooring system indicated.
- C. Samples for Verification: Of each resinous flooring system required, 6 inches square, applied by Installer for this Project to a rigid backing, in color, texture, and finish indicated. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.
- D. Product Schedule: Use designations indicated in the Resinous Flooring Schedule and room designations indicated on Drawings in product schedule.
- E. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
- F. Material Test Reports: From a qualified independent testing agency indicating and interpreting test results of the resinous flooring's reaction to chemicals and other reagents and substantiating compliance with requirements.
- G. Material Certificates: In lieu of material test reports, when permitted by Engineer, signed by manufacturers certifying that materials furnished comply with requirements.
- H. Maintenance Data: For resinous flooring to include in the maintenance manuals specified in Division 1.

**1.4 QUALITY ASSURANCE**

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- A. Installer Qualifications: Engage an experienced installer (applicator) who has specialized in installing resinous flooring similar in material, design, and extent to that indicated for this Project and who is acceptable to resinous flooring manufacturer.
  - 1. Engage an installer who employs only persons trained and approved by resinous flooring manufacturer for installing resinous flooring systems specified.
  - 2. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to install resinous flooring systems specified.
- B. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, and sealing or finish coats, through one source from a single manufacturer. Provide secondary materials including patching and fill material, joint sealant, and repair materials of type and from source recommended by manufacturer of primary materials.
- C. Field Samples: On floor area selected by Engineer, provide full-thickness resinous flooring system samples that are at least 48 inches square to demonstrate texture, color, thickness, chemical resistance, cleanability, and other features of each resinous flooring system required. Simulate finished lighting conditions for review of in-place field samples.
  - 1. If field samples are unacceptable, make adjustments to comply with requirements and apply additional samples until field samples are approved.
  - 2. After field samples are approved, these surfaces will be used to evaluate resinous flooring.
  - 3. Obtain Engineer's approval of field samples before applying resinous flooring.
  - 4. Final approval of colors will be from field samples, not samples submitted for verification.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.
- B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

**1.6 PROJECT CONDITIONS**

- A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring installation.
- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring installation.
- C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

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- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated in the Resinous Flooring Schedule at the end of Part 3.

**2.2 MATERIALS**

- A. Resinous Flooring: Resinous floor surfacing system consisting of primer; body coat(s) including resin, hardener, aggregates, and colorants, if any; and sealing or finish coat(s). Comply with requirements indicated in the Resinous Flooring Schedule.
- B. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.
- C. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated.

**PART 3 - EXECUTION****3.1 PREPARATION**

- A. General: Prepare and clean substrate according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral substrate for resinous flooring application.
- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.
1. Comply with ASTM C 811 requirements, unless manufacturer's written instructions are more stringent.
  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.
  3. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
- C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
- D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
- E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations.

**3.2 APPLICATION**

- A. General: 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.

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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. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. Apply reinforcing membrane to substrate cracks.
- D. Apply self-leveling slurry body coat(s) in thickness indicated.
  1. Broadcast aggregates and, after resin is cured, remove excess aggregates to provide surface texture indicated.
- E. Apply troweled or screeded body coat(s) in thickness indicated. Hand or power trowel and grout to fill voids. When cured, sand to remove trowel marks and roughness.
- F. Integral Cove Base: Apply cove base mix to wall surfaces at locations indicated. Round internal and external corners. Install cove base according to manufacturer's written instructions and details including taping, mixing, priming, troweling, sanding, and topcoating of cove base.
- G. Apply sealing or finish coat(s), including grout coat, if any, of type recommended by resinous flooring manufacturer to produce finish indicated. Apply in number of coats and at spreading rates recommended in writing by manufacturer.

**3.3 FIELD QUALITY CONTROL**

- A. Core Sampling: At the direction of Owner and at locations designated by Owner, take 1 core sample per 1000 sq. ft. of resinous flooring, or portion of, to verify thickness. For each sample that fails to comply with requirements, take 2 additional samples. Repair damage caused by coring and correct deficiencies at no additional cost to Owner.
- B. Material Sampling: Owner may at any time and any number of times during 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 and sealed, and certified in presence of Contractor.
  2. 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 installed 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.

**3.4 CLEANING AND PROTECTING**

- A. Protect resinous flooring from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by resinous flooring manufacturer.

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- B. Clean resinous flooring not more than 4 days before dates scheduled for inspections intended to establish date of Substantial Completion in each Project area. Use cleaning materials and procedures recommended in writing by resinous flooring manufacturer.

**3.5 RESINOUS FLOORING SCHEDULE**

- A. Resinous Flooring RF-1: As per room finish schedule, provide resinous flooring system complying with the following:
1. Products: Available products include the following:
    - a) "STONESHEILD SLT" as manufactured by Stonehard Inc. USA.
    - b) "CERAMIC CARPET" as manufactured by General Polymers, Inc.
  2. Color and Pattern: As selected by Owner from manufacturer's full range of colors and patterns produced for resinous flooring complying with requirements indicated.
  3. Total Thickness of Body Coat(s): 1/8 inch.
  4. System Thickness: 1/8 inch.
  5. Wearing Surface: Antislip.
  6. Base: None.
  7. Components: Provide manufacturer's standard components complying with requirements, unless otherwise indicated. Provide the following optional components:
    - a) Primer.
    - b) Chemical-resistant sealing or finish coat(s).
  8. Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to standard test methods indicated:
    - a) Compressive Strength: 9000 psi minimum per ASTM C 579.
    - b) Tensile Strength: 1,600 psi minimum per ASTM D 638.
    - c) Flexural Strength: 4,500 psi minimum per ASTM D 790.
    - d) Water Absorption: 0.1% maximum per ASTM C 413.
    - e) Impact Resistance: No chipping, cracking, or delamination and not more than 1/16-inch permanent indentation per MIL-D-3134.
    - f) Resistance to Elevated Temperature: No slip or flow of more than 1/16 inch per MIL-D-3134.
    - g) Abrasion Resistance: 0.1 grams maximum weight loss per ASTM D 4060.
    - h) Flammability: Self-extinguishing per ASTM D 635.
    - i) Hardness: 65-70 minimum, Shore D per ASTM D 2240.
    - j) Bond Strength: 325 psi, 100 percent concrete failure per ACI 503R.
  9. Chemical Resistance: As indicated by system designation and components indicated above

END OF SECTION 09671