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Oakhurst Dairy – New Milk Cooler**SECTION 09625 - CHEMICAL-RESISTANT BRICK FLOORING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes
  - 1. Chemical resistant brick flooring on slabs on grade.
  - 2. Expansion, control, and isolation joints.

**1.2 REFERENCES**

- A. Reference Standards:
  - 1. ASTM C267, Standard Test Method for Chemical Resistance of Mortars.
  - 2. ASTM C279, Specification for Chemical - Resistant Masonry Units.
  - 3. ASTM C395, Specification for Chemical - Resistant Resin Mortars.
  - 4. ASTM C399, Recommended Practice for Use of Chemical - Resistant Resin Mortars.
  - 5. ASTM C410, Standard Specification for Industrial Floor Tile.
  - 6. ASTM C413, Standard Test Method for Absorption of Chemical - Resistant Mortars, Grouts, and Monolithic Surfacing.
  - 7. ASTM C658, Standard Specification for Chemical - Resistant Grouts.
  - 8. ASTM C723, Standard Practice for Chemical - Resistant Resin Grouts for Brick or Tile.
  - 9. ASTM D87, Test for Melting Point of Petroleum Wax.
  - 10. ASTM D4263, Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
  - 11. ACI 303 R, Guide to Cast-in-Place Architectural Concrete Practice.

**1.3 SCOPE**

- A. Use for brick floor in CIP Room on concrete slab on grade.

**1.4 SYSTEM DESCRIPTION**

- A. Description of System: The system consists of Chemical Resistant Brick set in chemical resistant Chemester Mortar over a continuous waterproofing membrane, with chemical resistant joints. Isolation and control joints are packed and sealed.

**1.5 SUBMITTALS**

- A. Product Data: Submit two copies of the manufacturer's installation instructions prior to delivery to the project site, including any published literature on substrate construction and surface preparation.

**1.6 QUALITY ASSURANCE**

- A. Qualifications:
  - 1. Manufacturer: The membrane, joint, and bed material shall be furnished by the same manufacturer.
  - 2. Testing Agency: Physical and chemical tests may be performed by a nationally recognized testing laboratory. The testing facilities of the manufacturer of the products complies with this requirement.

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**Oakhurst Dairy – New Milk Cooler**

3. Contractor: The contractor shall demonstrate that their application personnel have a minimum of five (5) years successful experience installing the products specified in this section similar in design and extent to those indicated for this project.
- B. Certifications:
1. Chemical Resistant Brick: The brick manufacturer shall certify that the brick meet the requirements of this specification.
  2. Mortar & Grout: The manufacturer shall certify that the products have been tested in accordance with the requirements of this specification and that the materials supplied are of the same type, quality and composition as those that were tested.

**1.7 DELIVERY, STORAGE AND HANDLING**

- A. Packing and Shipping: Materials shall be delivered to the site in the manufacturer's original unbroken packages or containers labeled with the manufacturer's name and brand.
- B. Storage and Protection:
1. Materials shall be stored in dry locations in a manner that will prevent damage from water, dampness, sunlight, or temperature extremes.
  2. Immediately before use and not less than 24 hours, store the materials in the area where they will be used at temperatures between 65°F (18°C) and 85°F (30°C). Materials must be 65°F (18°C) before use.
- C. Handling: Wax may be applied to the face of the brick either by the manufacturer or the installer. After the coating of paraffin wax has been applied to the face of the brick handle and store in a manner that will keep the wax off the sides and backs. They may be stacked, after waxing, back to back or waxed face to waxed face but never waxed surface to unwaxed surface.

**1.8 PROJECT CONDITIONS**

- A. Environmental Requirements:
1. During installation maintain the temperature so the slab is at least 60°F (18°C) or above but does not exceed 85°F (30°C). The room temperature shall not exceed 100°F (30°C) during the installation.
  2. Observe the manufacturer's safety instructions including those pertaining to ventilation.
  3. Illuminate the work area during the installation at the same level as will be available at final inspection.

**1.9 SEQUENCING AND SCHEDULING**

- A. The manufacturer of the grout and mortar materials and/or engineer must approve any penetration of the tile floor before or after installation.
- B. Install grounds, anchors, plugs, hangers, bucks, electrical and mechanical work in or under the floor prior to beginning the installation.
- C. The installation shall not begin until the concrete curb is cured and dry as determined by "The Plastic Sheet Method".

**PART 2 - PRODUCTS****2.1 MATERIALS**

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**Oakhurst Dairy – New Milk Cooler**

- A. Chemical Resistant Brick: Brick shall be low-absorption, floor brick, conforming to ASTM 279, Type H, except absorption shall not exceed 6%, Type II, vertical fiber, Red Shale units, 8" long by 4" wide by 1-3/8" thick by Belden Brick Company, Sugarcreek, OH.
- B. Waterproofing Membrane: manufactured by Atlas Minerals & Chemicals, Inc., Mertztown, PA, PH: 800-523-8269:
  - 1. Atlastic 40
  - 2. Barrier coat: Ampvar Primer
- C. Expansion and Control Joint materials manufactured by Atlas Minerals & Chemicals, Inc., Mertztown, PA, PH: 800-523-8269:
  - 1. Backer Rod: Ethafoam Rod.
  - 2. Sealant: Ureklad E-Joint Sealant.
- D. Mortar and Grout manufactured by Atlas Minerals & Chemicals, Inc.:
  - 1. Chemester Mortar for setting brick, floor joints, and cove base.
- E. Wax: Wax for coating face surface of brick prior to installation shall be hot applied, tasteless, odorless, fully refined petroleum paraffin wax with a melting point 112°F to 115°F when tested in accordance with ASTM D87. Wax shall contain less than 0.5% oil.

**2.2 MIXING**

- A. Mix materials in accordance with manufacturer's written instructions.

**PART 3 - EXECUTION****3.1 EXAMINATION**

- A. Examine the surfaces for:
  - 1. Defects that will adversely affect the execution and quality of the work. Do not proceed with installation until unsatisfactory conditions are corrected.
  - 2. The concrete curb and existing subfloor shall be inspected for variation from a true plane. The variation shall not exceed 1/8" under a 10' straight edge. The surface must be clean and hard with no laitance, chalking, ridges or depressions. The plane of the slab must meet the above tolerances after acid washing or abrasive blasting to remove defects.

**3.1 PREPARATION**

- A. Protection:
  - 1. The concrete slab shall be protected from contamination.
  - 2. The floor area shall be kept from traffic, liquids, and dirt while the work is in progress.
  - 3. No work shall be permitted overhead during the installation and until the joints are cured hard.
- B. Preparation:
  - 1. After the concrete has dried, sweep it clean of dust, dirt, and remove any other contamination.
  - 2. Concrete must be clean, dry and neutral and have a medium profile in accordance with ACI Standard 303 R before installation begins.

**3.2 INSTALLATION**

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**Oakhurst Dairy – New Milk Cooler**

- A. Waterproofing membrane must be installed over a clean, dry substrate, according to the manufacturer's instructions. Membrane shall completely cove all floor surfaces, with the membrane extending up behind base. Membrane shall be flashed over the drain flanges with care to insure that the weep openings in the drain flange remain open.
- B. Mixing of chemical-resistant setting mortar and grout shall be performed in accordance with the manufacturer's written instructions. Installation shall be done by bricklayers method.
- C. Prior to installation coat the face surface of the brick with a continuous film of paraffin wax. The wax may be hot applied at the factory or in the field. No wax is permitted on sides or backs and such units shall be rejected and not installed.
- D. Spread freshly mixed Chemester Mortar as a continuous setting bed using a 3/16" x 1/4" V-notch trowel, to an area that can be installed during the open life of the mortar. Set brick in the freshly spread mortar to yield a 3/32" average bed thickness. After setting mortar has taken initial set, place temporary plastic, wood, or other suitable strips into the joints where expansion construction will ultimately be installed. After the setting mortar is cured hard, mix and install Chemester Grout in floor joints and Chemester Mortar in cove base according to the manufacturer's instructions.
- E. Expansion Joints: Remove the temporary spacer strips from the expansion joints. Pack the joint with foam rod. Apply primer where required and seal with expansion sealant.

**3.3 FIELD QUALITY CONTROL**

- A. A representative of the mortar/grout manufacturer shall be at the jobsite for the start of the installation. He shall also follow-up with periodic jobsite visits to assure the quality of the installation.

**3.4 CLEANING**

- A. After the joints are cured, remove wax and residue using steam. **INSURE THAT WAX DOES NOT ENTER THE FLOOR DRAINS.**
- B. Point voids that become apparent after cleaning. Voids that become apparent during the course of the installation and prior to cleaning shall be pointed upon discovery. Freshly mixed material shall be used for the pointing. When pointing joints after the brick have been steam cleaned, the face of the brick shall be left clean. This may be accomplished by masking or other suitable technique.

**3.5 PROTECTION**

- A. Protect finished floor from damage by suitable placement of building paper and plank runways for necessary foot traffic, movement of building materials, movement of equipment, and the work of other trades.

END OF SECTION 09625