

SECTION 03 54 16
CONCRETE UNDERLAYMENT

PART- GENERAL

1.01 SUMMARY

- A. Work Included: The Work of this Section includes, but is not necessarily limited to, all material, labor, tools and equipment necessary for or incidental to the installation of cementitious floor topping as indicated on the drawings and specified herein.
1. Latex modified lightweight concrete floor fill.
 2. Floor primers and accessories.
 3. Fill holes in existing deck with structural repair and prepare existing substrate.

1.02 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to Divisions 0 and 1 of these Specifications.
- B. Related Work:
1. Section 02 41 00 - Demolition
 2. Section 02 82 11 - Traditional Asbestos Abatement
 3. Section 07 92 00 - Joint Sealants
 4. Section 09 30 13 - Ceramic/Porcelain Tiling
 5. Section 09 65 19 - Resilient Tile Flooring
 6. Section 09 66 00 - Seamless Resin Floor System
 7. Section 09 67 00 - Multi-Layered Waterproof Floor Surfacing System

1.03 OBVIOUS WORK

- A. Any work, even though not shown or specified, that is an integral part of, or is obviously necessary for completion of the Work of this Section, shall be considered as a part of this Contract.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: A firm which has specialized in installation of the specified underlayments, toppings and patching materials for not less than 3 years, and which is acceptable to the manufacturer of floor finish materials.
- B. Source of Materials: Obtain each kind of material from a single source.

1.05 SUBMITTALS

- A. Product Data: Submit 6 copies of data for all proprietary materials and items.
- B. Samples: Submit samples of each material, including names, sources, and descriptions.
- C. Laboratory Test Reports: Submit laboratory test reports.
- D. Materials Certificates: Provide materials certificates in lieu of materials laboratory test reports when permitted by the Architect, and signed by Manufacturer and Contractor, certifying that each material complies with, or exceeds, specified requirements.

WARD 3D PHYSICAL THERAPY RENOVATION

06-08M

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1.06 PROJECT CONDITIONS

- A. Maintain environmental conditions and protect work before, during, and after installation to comply with manufacturer's printed recommendations.
- B. Maintain temperatures at not less than 50 deg F in areas designated to receive fill material, during and after installation, unless otherwise required by manufacturer's instructions.

PART - PRODUCTS

2.01 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide products as indicated.
- B. These specifications are based on products manufactured by Ardex. Equivalent products of other manufacturers will be considered.
- C. Acceptable Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ardex
 - 2. Sonneborn
 - 3. Mapei

2.02 MATERIALS

- A. Engineered Cement: Provide "Ardex K-15" as manufactured by Ardex, Inc., or equivalent with a 3 day compressive strength of not less than 3000 psi, and with a 28 day compressive strength of not less than 4000 psi per ASTM C 109.
 - 1. This material is not to be used as an exposed wear surface.
 - 2. Follow manufacturer's instructions for installation on indicated substrates.
 - 3. Provide recommended aggregate for thicknesses greater than 1-1/2 inches.
 - 4. Material shall be self-leveling when poured or pumped.
 - 5. Material shall allow thickness range from featheredge to 3" in one pour.
- B. Water: Potable, free from impurities.
- C. Primer: Manufacturer's standard floor primer.
- D. Product must be cementitious based. Gypsum based underlayments are strictly prohibited.

2.03 MIX DESIGN

- A. General: Mix proportions and methods shall be in strict compliance with the manufacturer's recommendations.
- B. Mix materials in a high-speed mixing device for not less than two minutes.
 - 1. Mixing devices: Provide mechanical mixer for mixing topping material with water at project site. Equip mixer with a suitable water-measuring device.
 - 2. Use only mixers which are capable of mixing cement and water into a uniform mix.

PART 3 - EXECUTION

3.01 CONDITION OF SURFACES

- A. Substrate Surfaces: Remove dirt, loose material, oil, grease, paint or other contaminants, leaving a clean structurally sound substrate surface that complies with manufacturer's requirements.
- B. Leak Prevention: Fill cracks, seams, and voids of substrate with a quick setting patching compound as recommended by fill manufacturer to prevent leakage of fill materials where leakage could occur.
 - 1. Cap all abandoned floor drains, pipes, conduit, and other potential leak sources with approved material.
 - 2. Patch all holes in existing gypsum deck system with a non-combustible structural patch to support floor loads. Repair system may consist of corrugated metal deck, sheet steel and/or metal lath with fill, depending on existing conditions. Submit system to Architect for approval.
- C. Primer: Apply primer, as recommended by fill manufacturer, in compliance with the manufacturer's directions.
 - 1. Porosity of substrate may require multiple coats of primer; comply with manufacturer's recommendations.

3.02 PLACING

- A. Apply materials to comply with the manufacturer's instructions.
 - 1. Application: Place lightweight concrete fill product over properly prepared substrates. Spread underlayment material to a smooth, level surface. Place fill material as continuously as possible until application is complete, so that no fill material slurry is placed against fill material which has obtained its initial set.

3.03 DRYING

- A. This Contractor shall provide continuous ventilation and adequate heat to rapidly remove moisture from the area until the fill material product is dry. This Contractor shall provide mechanical ventilation if necessary.
- B. To test for dryness, tape a 24-inch by 24-inch section of plastic to the surface of the underlayment. After 48 to 72 hours, if no condensation occurs, the underlayment shall be considered dry. Perform dryness test 7 days after pour, and each day thereafter until dryness test proves successful.
- C. Coordinate moisture tests with all specified floor finishes. Floor finishes shall not be applied until moisture test results are approved by cementitious underlayment manufacturer and flooring manufacturer.

3.04 PERFORMANCE

- A. Failure of materials to bond to substrates (as indicated by a hollow sound when tapped), or disintegration or other failure of underlayment to perform in accordance with product data, will be considered failure of materials and workmanship. Repair or replace materials in areas of such failures.

3.05 PROTECTION

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- A. Protection: During construction, place temporary protections, as recommended by the manufacturer, to protect systems from construction traffic and similar loads.
- B. Maintain protections in place until such time as finish floor material is installed.
- C. Protect existing casework, fixed furniture, and millwork designated to remain from damage and soiling.

END OF SECTION