SECTION 035416 - HYDRAULIC CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cement-based and calcium aluminate based, polymer-modified, self-leveling underlayment for interior finish flooring.

1.2 COORDINATION

A. Coordinate cement-based underlayment with requirements of finish flooring products, including adhesives, specified in Division 09 Sections.

1. Before installing surface sealers, if recommended by underlayment manufacturer, verify compatibility with finish flooring installation adhesives.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include plans indicating substrates, locations, and average depths of underlayment based on survey of substrate conditions.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Installer who is approved by manufacturer and factory trained for application of underlayment products required for this Project.

B. Product Compatibility: Manufacturers of underlayment and floor covering systems certify in writing that products are compatible.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.

1. Place hydraulic-cement-based underlayments only when ambient temperature and temperature of substrates are between 50 and 80 deg F.

PART 2 - PRODUCTS

2.1 HYDRAULIC-CEMENT-BASED UNDERLAYMENTS

A. Underlayment: Portland cement-or calcium aluminate based, polymer-modified, products complying with ASTM C 1708/C 1708M and that can be applied in thicknesses required for conditions indicated and that can be tapered to a maximum height of 1/8-inch at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150/C 150M, Portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.
2. Compressive Strength:

    a. Self-Leveling Grade: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.
    b. Trowel Grade: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.

B. Manufacturers and Products: One of the following:

1. Ardex, Inc.

    a. Self-Leveling: K-15 Self-Leveling Underlayment Concrete.
    b. Trowel Grade: Feather Finish or SD-P Instant Patch.

2. Hi-Tech; MB10.
3. Mapei; Novaplan 2 Plus.
4. Uzin; NC 150, 170 or 172.

C. Water: Potable and at a temperature of not more than 70 deg F.

D. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

E. Surface Sealer: Designed to reduce porosity as recommended by manufacturer for type of floor covering to be applied to underlayment.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Use a 10 foot straightedge to check floor flatness.

B. Mark with a pencil areas where flatness tolerances exceed 1/8 inch over a 10 foot span.

C. Examine substrates, with Installer present, for conditions affecting performance of underlayment including substrate moisture content. Begin underlayment application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare and clean substrates indicated to receive underlayment according to manufacturer’s written instructions. Provide clean, dry, neutral-pH substrate for underlayment application.

1. Treat nonmoving substrate cracks with a crack filler or elastomeric compound in accordance with the manufacturer's written instructions.

B. Concrete Substrates: Mechanically remove laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, existing flooring adhesive residues, existing paint droppings, and other contaminants that might impair underlayment bond according to the underlayment manufacturer's written instructions.

C. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

3.3 APPLICATION

A. General: Mix and apply underlayment components according to manufacturer's written instructions.

1. Coordinate application of components, including primer, to provide optimum underlayment-to-substrate and intercoat adhesion.

B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

C. Apply underlayment to produce uniform, surface that is completely flat at areas indicated to receive self leveling type underlayment.

1. Flatness Tolerance: Do not exceed 1/4 inch over a 10 foot span.
2. Maximum Height of Ridges: 1/16 inch.
3. Apply a final layer without aggregate if required to produce smooth surface.
4. Feather edges as required for smooth transitions to adjacent floor elevations.

D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during application and curing processes.

E. Do not install finish flooring over underlayment until after time period recommended by underlayment manufacturer.

F. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.4 PROTECTION

A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION