

SECTION 03542

CONCRETE PATCHING AND FLOOR UNDERLAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing the following:
 - 1. Patching of spalling concrete in existing exit Stairs A & B with "Concrete Patch".
 - 2. Refinishing of existing exit Stairs A & B with "Concrete Dressing".
 - 3. Sealing of existing exit Stairs A & B with "Concrete Guard".
 - 4. Patching of holes deeper than 1-1/2-inches at all existing interior floors with "Concrete Underlayment".
 - 5. Installation of self-leveling concrete floor underlayment at all interior floors - "Self-Leveling Underlayment".
- B. Related Sections:
 - 1. Cast-in-place concrete is specified in Section 03300.

1.02 QUALITY ASSURANCE

- A. Manufacturer: Regularly providing patching and underlayment materials of types specified or approved for not less than 5-years.
- B. Installer: Approved by patching and underlayment manufacturer using approved equipment.

1.03 ENVIRONMENTAL REQUIREMENTS

- A. Maintain a temperature above 50-degrees F. until subfloor surface has stabilized.
- B. Provide continuous heat and mechanical ventilation until patching and underlayment is dry.
- C. Follow manufacturer's additional requirements.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

- A. Concrete Patch: Ardex, Inc. "Ardex CP Concrete Patch" or approved equal.
- B. Concrete Dressing: Ardex, Inc. "Ardex CD" or approved equal.
- C. Concrete Guard: Ardex, Inc. "Ardex CG Concrete Guard" or approved equal.
- D. Concrete Underlayment: Ardex, Inc. "Ardex SD-P Self-Drying, Fast Setting Concrete Underlayment" or approved equal.
- E. Self-Leveling Concrete Underlayment: Ardex, Inc. "Ardex K-15 Self-Leveling Underlayment Concrete" or approved equal.

2.02 MATERIALS

- A. Concrete Patch: Trowel-grade cementitious topping for filling and repairing areas of concrete. Engineered with portland cement and select high-performance polymers to bond to concrete surfaces.
- B. Concrete Dressing: Cement-based, polymer-modified concrete resurfacing material.
- C. Concrete Guard: High-performance, high solids acrylic concrete sealer, quick drying, non-flammable, UV stable.

- D. Concrete Underlayment: Portland cement-based, self-drying, fast setting, trowelable patch for smoothing and repairing concrete surfaces. Underlayment shall have a minimum compressive strength of 4,200-psi at 28-days. Underlayment shall be able to be installed from featheredge to 1-inch and up to 3-inches with aggregate. Minimum thickness shall be 1/8-inch.
- E. Self-Leveling Underlayment: Cement-based self-leveling underlayment. Underlayment shall have a minimum compressive strength of 4,000-psi at 28-days. Self-leveling underlayment shall be able to be installed from featheredge to any thickness in one pour.
 - 1. Aggregate: Well-graded, washed gravel for use when underlayment is installed over 1-1/2-inch thick; size of aggregate as recommended by manufacturer.
- F. Water: Clean and potable.
- G. Primer: As recommended by patching and underlayment manufacturer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Surfaces to receive patching and underlayment shall be solid, clean and properly primed.
- B. Concrete shall be clean and free of oil, grease, dirt, curing compounds, and other items that may act as bond breakers. Mechanically clean if required using shot-blasting; acid etching is not acceptable.
- C. Where required, grind high spots in concrete subfloors as recommended by manufacturer.
- D. Non-porous surfaces such as tile shall be clean and free of wax and sealers.
- E. Mix materials in accordance with manufacturer's recommendations.

3.02 INSTALLATION

- A. Concrete Patch:
 - 1. Install using standard concrete practices.
 - 2. Place a scratch coat of the material onto an area of concrete using a steel trowel first while applying enough pressure to ensure good compound-to-concrete contact.
 - 3. Using a wood or magnesium float, apply the material in the area to be repaired.
 - 4. If required, use a straightedge to screed the surface to match existing elevations.
 - 5. After material takes an initial set, use a steel trowel to finish.
 - 6. Maintain a wet edge to minimize natural color variations.
 - 7. For applications thicker than 1/2-inch, mix with washed and well-graded 1/8 – 1/4 inch pea gravel. Do not use sand.
- B. Concrete Dressing:
 - 1. Install using traditional concrete repair techniques.
 - 2. Use the least amount of material possible to obtain complete coverage over the concrete surface. For maximum coverage, use the flat trowel application technique and then broom-finish.
 - 3. Work in areas small enough so that the newly applied surface can receive a broom finish without being walked on. Apply broom finish before the dressing takes a firm set. Maintain a wet edge to minimize natural color variations.
 - 4. On vertical surfaces, trowel, brush or spray the dressing using a hopper gun directly onto the prepared areas. Smooth or brush the material to the desired finish.
 - 5. If the substrate is porous scratch coat or use a smool notched trowel to apply an initial layer of material

into the surface and immediately re-coat the same area with fresh material and apply finish.

- C. Concrete Guard:
 - 1. Apply in two thin coats allowing 2- to 4-hours between coats depending upon atmospheric conditions. When spraying, backroll to prevent puddling.
 - 2. Allow to cure a minimum of 24-hours before permitting normal traffic and a minimum of 72-hours before permitting heavy traffic.
- D. Concrete Underlayment:
 - 1. Apply with a wood or magnesium float to obtain a solid mechanical bond.
 - 2. Allow the patch to take a set and finish the surface using a steel trowel.
 - 3. For areas requiring a thickness greater than 1-inch, mix underlayment with well-graded 1/8 – ¼ inch pea gravel. Do not use sand.
- E. Self-Leveling Underlayment:
 - 1. Fill non-moving joints with concrete underlayment.
 - 2. Apply primer in accordance with manufacturer's recommendations. Do not leave any bare spots and remove puddles and excess primer. Do not apply underlayment until primer is dry.
 - 3. Pour or pump self-leveling liquid underlayment and spread in place. Comply with manufacturer's instructions.
 - 4. Prohibit foot traffic until underlayment is dry.

3.03 COMPLETION

- A. When complete, underlayment shall be finished to a reasonably smooth and uniform condition, and be free from pin holes, gouges, cuts, and other damage or defects.
- B. Transition between finish surfaces of underlayment and adjacent existing flooring shall be free from offsets.

END OF SECTION