

**SECTION 03 53 00**  
**CONCRETE TOPPING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:
  - 1. Provide Self-leveling Portland cement and underlayment for placement over existing concrete and tile substrate.

**1.3 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site to discuss scheduling as required to coordinate removal work with installation of topping and all necessary slab preparation.

**1.4 ACTION SUBMITTALS**

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

**1.5 INFORMATIONAL SUBMITTALS**

- A. Product Test Reports: For each concrete floor topping, for tests performed by a qualified testing agency.
- B. Field quality-control test reports.

**1.6 REFERENCES**

- A. ASTM C 109: Compressive strength of hydraulic mortars.
- B. ASTM C 191: Setting time of hydraulic cement.
- C. ASTM C 1059: Standard specifications for latex agents for bonding fresh to hardened concrete.

**1.7 MOCKUPS**

- A. Mockups: Place concrete floor topping mockups to demonstrate typical joints, surface finish, bonding, texture, tolerances, and standard of workmanship.
  - 1. Build mockups approximately 100 sq. ft. (9.3 sq. m) in the location indicated or, if not indicated, as directed by VAMC COR.

2. If Architect and VAMC COR determines that mockups do not meet requirements, demolish and remove them from the site and cast others until mockups are approved.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion and if approved by VA COR.

#### **1.8 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, mixing with other components, and application.
- B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.

#### **1.9 FIELD CONDITIONS**

- A. Environmental Limitations: Comply with manufacturer's written instructions for substrate testing procedures, substrate temperature and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting concrete floor topping performance.
  1. Place concrete floor topping only when ambient temperature and temperature of base slabs are between 50 and 86 deg F (10 and 30 deg C), or as recommended by manufacturer.
- B. Close areas to traffic during topping application and, after application, for time period recommended in writing by manufacturer.

### **PART 2 - PRODUCTS**

#### **2.1 CONCRETE FLOOR TOPPINGS**

- A. Self-leveling, Portland cement based, self finishing, one component underlayment designed for taper (feathered) edge installation. Comply with the following:
  1. Performance and Physical Properties at 73 degrees F and 50 percent relative humidity:
    - a. Working time, ASTM C 191: 20-40 minutes.
    - b. Compressive Strength, ASTM C 109 Modified: 1800 psi (12.4 MPa) @ 24 hours, 4000 psi (27.6 MPa) @ 7 days, 5500 psi (37.9 MPa) @ 28 days.

- c. Slant Shear Bond Strength, ASTM C 1059: Exceeds 1250 psi (8.6 MPa) @ 28 days.
- d. Walk On Time: 2-4 hours maximum.
- e. Tensile Bond Strength, ASTM C 1059: 300 psi (2.1 MPa) @ 7 days, 400 psi (2.8 MPa) @ 28 days.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine substrates, with Installer present, for conditions affecting performance of the Work.
- B. Verify that base slabs are visibly dry and free of moisture. Test for capillary moisture by the plastic sheet method according to ASTM D 4263.
- C. Proceed with application only after unsatisfactory conditions have been corrected.

#### **3.2 PREPARATION**

- A. Existing Concrete: Remove existing surface treatments and deteriorated and unsound concrete. Mechanically abrade base slabs to produce a heavily scarified surface profile with an amplitude of 1/4 inch (6 mm).
  - 1. Prepare and clean existing base slabs according to concrete floor topping manufacturer's written instructions. Fill voids, cracks, and cavities in base slabs.
  - 2. Mechanically remove contaminants from existing concrete that might impair bond of floor topping.
  - 3. Saw cut contraction and construction joints in existing concrete to a depth of 1/2 inch (13 mm) and fill with semi-rigid joint filler.
- B. Clean the concrete slab or floor of all dirt, dust, oil, grease, paint and water-soluble material.
- C. Fill any deep holes or depressions to existing floor elevation less than 1 inch with non-shrink grout; comply with manufacturer's printed instructions. Allow filled areas to cure before pouring floor re-surfacer.

- D. Fill any deep holes or depressions to existing floor elevation greater than 1 inch with 4000 psi concrete; comply with manufacturer's printed instructions. Allow filled areas to cure before pouring floor re-surfacer.
- E. Seal all perimeter openings to prevent leakage. These dams should be able to retain re-surfacer material at a height greater than the finish floor elevation.
- F. Prime the clean dry floor surface with bonding agent as per manufacturer's instructions.

### **3.3 FLOOR TOPPING APPLICATION**

- A. Start floor topping application in presence of manufacturer's technical representative.
- B. Existing Concrete: Apply epoxy-bonding adhesive, mixed according to manufacturer's written instructions, and scrub into dry base slabs to a thickness of 1/16 to 1/8 inch (1.6 to 3 mm), without puddling. Place floor topping while adhesive is still tacky.
- C. Place concrete floor topping continuously in a single layer, tamping and consolidating to achieve tight contact with bonding surface. Do not permit cold joints or seams to develop within pour strip.

- 1. Screed surface with a straightedge and strike off to correct elevations.

- 2. Slope surfaces uniformly where indicated. Maintain surfaces not scheduled to slope to drain at a levelness tolerance not greater than 4.7 mm in 3048 mm (3/16 inch in 10 feet).

- 3. Begin initial floating, using bull floats to form a uniform and open-textured surface plane free of humps or hollows.

- D. Finishing: as in accordance with manufacturer's instructions.

### **3.4 PROTECTING AND CURING**

- A. General: Protect freshly placed concrete floor topping from premature drying and excessive cold or hot temperatures.

### **3.5 REPAIR**

- A. Defective Topping: Repair and patch defective concrete floor topping areas, including areas that have not bonded to concrete substrate.

**3.6      CLEANING**

- A.    Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

**--- END OF SECTION 03 53 00 ---**