



**PLANILEVEL 560**  
**High-Compressive-Strength, Open-Environment-Rated, Self-Leveling Underlayment**

**SECTION 03 54 00**  
**CAST UNDERLAYMENT**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Products for maintenance of concrete, including the following:
  - 1. Self-leveling cementitious underlayment.

**1.2 RELATED SECTIONS**

- A. Section 03 30 00 - Cast-in-Place Concrete.

**1.3 REFERENCES**

- A. ASTM International:
  - 1. ASTM C349 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using Portions of Prisms Broken in Flexure).

**1.4 SUBMITTALS**

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Verification Samples: For each finish product specified, two samples, minimum size 6" (150 mm) square representing actual product, color and patterns.

**1.5 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Minimum 5 years' experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 years' experience installing similar products.

**1.6 PRE-INSTALLATION MEETINGS**

- A. Convene at least two weeks prior to starting work of this section.

**1.7 DELIVERY, STORAGE AND HANDLING**

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

**1.8 PROJECT CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.



## 1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

## PART 2 PRODUCTS

## 2.1 MANUFACTURERS

- A. Product Performance:
- |                                  |  |
|----------------------------------|--|
| Compressive strength – ASTM C349 | 4 hours > 1,740 psi (12 MPa)<br>28 days > 5,600 psi (38.6 MPa) |
| Flexural strength – ASTM C348    | 28 days ≥ 1,160 psi (8 MPa)                                    |
| Color                            | Light gray   |
- B. Acceptable Manufacturer:
- MAPEI North America  
1144 E. Newport Center Dr.; Deerfield Beach, FL 33442  
Toll-Free for CRS Technical Services: Tel. 888-365-0614  
Email: [CRS@mapei.com](mailto:CRS@mapei.com)  
Web: [www.mapei.com](http://www.mapei.com)
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
- D. Substitutions: Not permitted.

## 2.2 SELF-LEVELING CEMENTITIOUS UNDERLAYMENTS.

- A. Advanced Hydraulic Cement-Based, Self-Leveling Compound for Fast-Track Underlayment Applications: Packaged, dry mix for leveling concrete.
1. Product: Subject to compliance with requirements, provide MAPEI Corporation; PlaniLevel 560.
  2. Compressive Strength: Not less than 5,600 psi (38.6 MPa) within twenty-eight days when tested according to ASTM C349.

## 2.3 MISCELLANEOUS MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I, II or III unless otherwise indicated.
- B. Water: Potable.

## 2.4 MIXES

- A. General: Mix products in clean containers according to manufacturer's written instructions.
1. Do not add water, thinners or additives unless recommended by manufacturer.
  2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovels or trowels as units of measure.

Do not mix more materials than can be used within time limits recommended by manufacturer.  
Discard materials that have begun to set.



## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Properly prepared concrete at least 7 days old.
- B. Properly installed, primed and intact epoxy moisture barriers over concrete substrates.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### **3.2 PREPARATION**

- A. All substrates must be structurally sound, dry, solid and stable.
- B. Substrate should be clean and free of dust, dirt, oil, grease, paint, curing agents, concrete sealers, loosely bonded toppings, loose particles, old adhesive residues, and any other substance or condition that may prevent or reduce adhesion.
- C. Concrete surfaces must be mechanically profiled and prepared by shotblasting, sandblasting, water-jetting, scarifying, diamond grinding or other engineered-approved methods to an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #3. Prime the properly profiled surface with any MAPEI primer used according to its respective Technical Data Sheet.
- D. For concrete surfaces that are smooth or cannot be mechanically profiled, as well as for intact epoxy moisture barriers, prime the surface with an appropriate 100%-solids MAPEI epoxy primer with a sand broadcast.

Refer to the MAPEI reference guide "Surface-Preparation Requirements for Self-Leveling Underlayments" for details.

### **3.3 MIXING**

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

#### General mixing:

- A. Pour 4.4 to 4.6 U.S. qts. (4,16 to 4,35 L) of clean, potable water into a clean pail. The water-to-powder mixing ratio must remain consistent. For best results, the water temperature should be about 73°F (23°C). Do not overwater.
- B. Begin mixing while adding 50 lbs. (22.7 kg) of PlaniLevel™ 560 powder into the premeasured water. Mix for 1 to 2 minutes with a high-speed drill and an oval paddle mixer until the mix reaches a lump-free, homogeneous consistency.
- C. Do not overmix. Overmixing and moving the paddle up and down during the mixing process could trap air, shorten the pot life or cause pinholing during the application and curing process.

#### Pump mixing:

- A. PlaniLevel 560 can be mechanically mixed at a ratio of 4.4 to 4.6 U.S. qts. (4,16 to 4,35 L) of water per 50 lbs. (22,7 kg) of powder. Use a continuous mixer and pump (with at least 140 ft. [42,7 m] of hose) or a batch mixer and pump (with at least 110 ft. [33,5 m] of hose). Adhere to the pump manufacturer's specifications. Mixer and pump must be in good working condition, and periodic cleaning of pumping equipment is required per manufacturer's instructions. Be sure to pressure-test the rotor and stator pump before mixing.
- B. To ensure a suitable mix and flow, test the mixed material from the pump hose's end in a small area before general application.



### 3.4 INSTALLATION

Read all installation instructions thoroughly before installation.

- A. Use plastic sheeting to temporarily cover window and door openings, thereby helping to prevent drafts and protecting areas from direct sunlight.
- B. Make sure that the substrate and ambient room temperatures are between 40°F and 90°F (4°C and 32°C) before application. Refer to ACI cold-weather application guidelines in cool conditions, and refer to ACI hot-weather application guidelines for temperatures above 85°F (29°C).
- C. In large applications, allow for indirect air circulation to dissipate humidity created by leveler application. Temperature must be maintained at this range for at least 72 hours after the installation of PlaniLevel 560.
- D. Set the width of the pour at a distance that is ideal for maintaining a flowable wet edge throughout placement. Quickly pour or pump PlaniLevel 560 onto the properly prepared and primed surface in a ribbon pattern. If a flowable wet edge cannot be maintained, reduce the width of the pour.
- E. Shortly after placing PlaniLevel 560, spread the material with a gauge rake. After achieving the desired depth, use a smoother to obtain an even surface. To avoid air entrapment, do not overwork the material.

### 3.5 CURING AND PROTECTION

- A. PlaniLevel 560 is self-curing; do not use a damp-curing method or curing-and-sealing compounds.
- B. Avoid walking over the installed surface for at least 3 hours after installation, depending upon temperature and humidity conditions.
- C. Protect PlaniLevel 560 from direct rain for at least 6 hours after installation, and from freezing temperatures for at least 3 days after installation.
- D. Do not expose PlaniLevel 560 to rolling dynamic loads, such as forklifts or scissor lifts, for at least 48 hours after installation.

END OF SECTION