

SECTION 03 54 00

CAST UNDERLAYMENT

Platform FP™

Platform Performance Flooring Systems

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cementitious, latex-modified, trowel-applied underlayment for smoothing and patching interior substrates, including concrete with relative humidity up to 100%, prior to installation of floor coverings.
2. Platform P360 primer.
3. Platform EMS epoxy moisture mitigation solution, where required by floor covering specifications.

B. Related Requirements:

1. Section 03 54 16 – Hydraulic Cement Underlayment.
2. Section 09 05 61.13 Moisture Vapor Emission Control.
2. Division 09 Sections for floor finishes installed over underlayment specified in this Section.

1.2 REFERENCES

A. ASTM International (ASTM):

1. ASTM F1869 – Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
2. ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes.
3. ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

1.3 SUBMITTALS

A. Action Submittals:

1. Product Data: Manufacturer's technical data sheets (TDS) for each product specified, including storage, handling, and installation requirements.

B. Informational Submittals:

1. Safety Data Sheets (SDS) for each product specified.
2. Manufacturer's written installation instructions.
3. Job-Specific Warranty: Sample copy of specified warranty.
4. Installer's qualification data.

1.4 QUALITY ASSURANCE

- #### A. Manufacturer Qualifications:
- Product shall be manufactured by an established manufacturer specializing in the production of cementitious flooring underlayments and patching materials. Gypsum products are not suitable substitutions.

B. Installer Qualifications:

1. Installer shall have sufficient experience performing work similar in material and scope to that required for this Project.
 2. Installer shall be a certified International Standards and Training Alliance (INSTALL) applicator, or approved equal. See www.installfloors.org for additional information.
 3. Installation shall comply with all manufacturer technical documents and applicable safety and site-condition recommendations, and with rules and regulations of the project jurisdiction. Consult SDS for further handling recommendations.
- C. Mock-Up / Test Application: Where substrate suitability or bond is uncertain, install a test application in an inconspicuous area to verify substrate preparation, primer selection, and product performance prior to proceeding with general installation.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened packaging, labeled with product identification, manufacturer, batch number, and shelf life.
- B. Store in a dry location between 50 and 90°F (10 and 32.2°C), out of direct sunlight. Protect and store all materials off the ground.
- C. Acclimate material to a minimum of 50°F prior to mixing.
- D. Use material within 12 months of the manufacture date.

1.6 FIELD CONDITIONS

- A. Maintain ambient air and substrate temperatures between 50 and 90°F (10 and 32.2°C) during installation and for 2 hours thereafter.
- B. Maintain temperature above 32°F (0°C) for 72 hours after installation.
- C. Concrete surface temperature must be at least 5°F (3°C) above the dew point prior to application.

1.7 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's written warranty against defects of materials for a period of one (1) year, commencing on the date of substantial completion of the Project.
- B. Extended Warranty: Ten (10)-year and twenty-five (25)-year system warranties are available. Contact Platform Performance Flooring Systems at info@platformperformance.com for eligibility requirements.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Platform Performance Flooring Systems, 2926 Chester Avenue, Cleveland, OH 44114; 877-514-5336; www.platformperformance.com.
- B. Basis-of-Design Product: Platform FPTM Cast Underlayment. Platform FP is considered by the manufacturer to conform to the requirements of this Section.
- C. Substitutions: Submit requests no less than 30 days prior to bid, together with independent laboratory test reports demonstrating compliance with all performance requirements of this Section.

2.2 CAST UNDERLAYMENT MATERIALS

- A. Cement-Based Cast Underlayment: Latex-modified, fine-textured, trowel-applied, rapid-drying cementitious underlayment for interior use; moisture resistant, including concrete with relative humidity up to 100%.
- B. Performance Requirements:

Property	Requirement / Test Method
Placement Time	15 minutes
Final Setting Time	30 – 45 minutes
Compressive Strength	> 4,000 psi at 28 days

- C. Physical Properties:

Property	Value
Packaging	4 × 10 lb (4.54 kg) bags per case
Coverage (10 lb bag)	Up to 300 sq. ft. at feather; approx. 16.5 sq. ft. @ 1/4"; approx. 33 sq. ft. @ 1/8"
Mix Ratio (Water)	Up to 2.5 qts. water per 10 lb bag, or 2 parts powder to 1 part water by volume
Application Thickness	Feather edge to 1/2" (12.7 mm)
Shelf Life	12 months from manufacture date, unopened

2.3 PRIMER

- A. Platform P360 Primer: Premium alkali-resistant, high-solids, dilutable, rapid-drying, single-component, interior acrylic copolymer.
 - 1. VOC Content: < 0.5 mg/m³ per certified CDPH VOC emissions testing.

2.4 MOISTURE VAPOR MITIGATION SYSTEM (WHERE REQUIRED)

- A. Platform EMS: Two-part, 100 percent solids epoxy moisture vapor mitigation system for control of vapor emissions in concrete; effective barrier to moisture up to 100 percent relative humidity (ASTM F2170) and/or 25 lbs. MVER (ASTM F1869). Low viscosity allows fast, easy installation over concrete.
- B. Platform EMS utilizes advanced epoxy resin systems (Benzyl Alcohol and Nonylphenol free), is VOC compliant, and is resistant to high-pH concrete subject to high moisture content (RH). Complies with ASTM F3010 when tested per ASTM E96 at 12 mils thickness.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates for soundness, cleanliness, and suitability prior to installation. Do not proceed until unsatisfactory conditions have been corrected.
- B. Verify substrates are solid, sound, clean, dry, and free of ongoing moisture intrusion.
- C. Compatibility: Product is compatible with concrete, masonry, wood, ceramic tile, terrazzo, properly prepared residue of cutback and non-water-soluble adhesive, and epoxy moisture vapor membranes free of amine blush.
- D. Limitations:
 - 1. For use in dry, interior applications only.
 - 2. Apply only when substrate and ambient temperatures are between 50 and 90°F (10 and 32°C).
 - 3. Not suitable for use over luan, plastic, fiberglass, particle board, sheet vinyl, presswood, OSB, or woods not APA (exterior) rated and subject to movement or swelling.
 - 4. Not for use directly over gypsum substrates without first priming with Platform P360. Refer to manufacturer's line of gypsum patch and repair materials, or consult technical services, where patching over gypsum is required.
 - 5. Installation shall conform to applicable local, state, and federal building codes.

3.2 PREPARATION

- A. General: Remove all contaminants, including oil, grease, laitance, curing compounds, sealers, adhesive residues, and other bond-breaking substances. Do not use solvents, acids, or chemical adhesive removers to prepare the substrate.
- B. Joints and Cracks: Honor all moving joints. Complete crack and substrate repairs prior to installation; moving cracks or joints filled with Platform FP may reflect through the finished floor. Consult a structural engineer regarding required joint and crack repairs prior to installation.
- C. Substrate-Specific Preparation:
 - 1. Concrete Substrates: Verify concrete is sound, stable, clean, and free of bond-breaking materials (silicates, curing compounds, laitance, dirt). Mechanically remove weak surfaces and contaminants to sound concrete. Priming is not required. Apply from feather edge to 1/2" in depth.
 - 2. Wood Substrates: Suitable for skim-coating well-bonded (screwed and glued), APA-rated, exterior-grade wood floors free of deflection. Wood floors shall be a minimum of 3/4" thick, comply with L/360 deflection criteria, and meet local building codes. No primer required. Do not install over OSB, chipboard, Masonite, or non-APA-rated and/or non-dimensionally stable materials subject to swelling or movement.
 - 3. Adhesive Residue: Scrape non-soluble adhesives to a well-bonded residue. Mechanically remove water-soluble and pressure-sensitive adhesives to the substrate. Verify adhesive type prior to mechanical removal to prevent introducing asbestos-containing materials into the environment; comply with all local, state, and federal requirements for removal and disposal of asbestos-containing adhesive or flooring materials. Test to confirm existing adhesive will not bleed through to new adhesive or finished flooring. Where concrete beneath adhesive is weak or poorly bonded, remove to well-bonded, sound, clean substrate.
 - 4. Gypsum Substrates: Not recommended for use over gypsum floors without first priming with Platform P360. For a feather-finish patching material compatible with gypsum substrates, refer to Platform GP or White Skimcoat.

5. Quarry and Ceramic Tile: Strip waxes or sealers from the tile surface. Abrade to a dull finish and remove dust by vacuum. Consider use of Platform P360 primer for additional bond.
 6. Vinyl Flooring: Suitable as an embossing patch over non-cushioned vinyl flooring that is well-bonded, dry, clean, and free of bond-breaking materials (wax, coatings, laitance, dirt). Priming is not required, but Platform P360 may be considered for additional bond.
- D. Moisture Testing: Test concrete substrates in accordance with ASTM F1869 (calcium chloride) or ASTM F2170 (in-situ relative humidity). Where substrate moisture exceeds finish-flooring limits, install Platform EMS epoxy moisture mitigation solution per manufacturer's TDS. Platform FP may also be utilized prior to the installation of Platform EMS. If necessary, small irregularities should be properly patched to help maintain the required film thickness of Platform EMS.
- E. Priming: Where required by substrate type, apply Platform P360 primer per manufacturer's TDS. Select dilution and application method based on substrate porosity, as follows:

Porosity	Dilution	Coverage
Porous Surface	2:1 (Water : Primer)	650 - 1,000 sq. ft per gal.; apply by soft-tip broom. Based on porosity of surface.
Non-Porous Surface	No Dilution	550 - 650 sq. ft per gal.; apply by roller

1. Allow primer to dry fully before proceeding. Reapply primer if dried more than 48 hours prior to underlayment application.
2. Protect primed surface from airborne and trafficking debris prior to application.

3.3 MIXING

- A. Add up to 2.5 quarts of cool, clean, potable water per 10 lb bag of Platform FP, or mix by volume at a ratio of 2 parts powder to 1 part water.
- B. Mix using a drill and mixing paddle until thoroughly homogeneous and lump-free; smaller quantities may be mixed by hand. Overwatering and/or under-mixing will result in difficult placement and reduced ultimate compressive strength.
- C. Add designated water to a clean mixing vessel, then add powder and mix mechanically until homogeneous and lump-free. Mix no more material than can be placed within 10 to 15 minutes. Material may be retempered by remixing with a drill and mixing paddle to extend usable life; do not add additional water.
- D. Place material immediately after mixing.

3.4 APPLICATION

- A. Verify ambient and substrate temperatures are between 50 and 90°F (10 and 32.2°C) before beginning application.
- B. Using a clean trowel, place material across the substrate surface. No minimum thickness is required. For deeper areas, allow the initial coat to firmly set before building additional layers.
- C. Apply Platform FP from a true feather edge up to 1/2" (12.7 mm) in depth over large areas.
- D. Once dry, sand material as needed to remove placement imperfections prior to installation of floor covering.

3.5 CURING

- A. Platform FP is self-drying. Do not wet cure or apply curing or sealing compounds.

- B. Depth of placement and ambient conditions (temperature and humidity) affect dry time; material is typically dry in 15 to 45 minutes depending on thickness and conditions. Floor-covering adhesive may be applied once the surface can be troweled without disturbance.
- C. Maintain ambient temperature between 50 and 90°F (10 and 32.2°C) throughout the curing period. Direct sunlight, heat, or forced airflow can affect working and drying time.

3.6 FIELD QUALITY CONTROL

- A. Verify substrate flatness and smoothness comply with the requirements of the specified floor covering prior to installation of finish flooring.
- B. Notify manufacturer's technical representative of any substrate or site condition inconsistent with this Section prior to proceeding.

3.7 PROTECTION

- A. Where necessary, protect the installation from trade traffic in accordance with manufacturer's written instructions.
- B. Maintain temperature greater than 32°F (0°C) for 72 hours after placement.

END OF SECTION 03 54 00