

# LEVELINE® 15

PREMIUM, CALCIUM ALUMINATE, CEMENT-BASED, SELF-LEVELING UNDERLAYMENT

## DESCRIPTION

LEVELINE® 15 is a premium, Calcium Aluminate, cement-based, interior, self-leveling underlayment. Its long working time, low shrinkage and superior leveling properties make it the ideal product for many demanding interior applications.

## APPLICATIONS

May be used as a light duty wear surface with an appropriate sealer, such as PENESEAL FH™.

For applications to other substrates, contact Penetron Specialty Products Technical Services.

NOTE: It is the responsibility of the installer/applicator to ensure the suitability of the product for its intended use.

## ADVANTAGES

Ideal for barrel mixing or pumping applications.

Can be installed from a tapered edge to 2" (5 cm) neat and up to 5" (12.7 cm) when extended with aggregate.

Maintains healing and pour merging properties for up to 20 minutes.

Fast return to service; walkable in just 1-2 hours.

Accepts common floor coverings, installed with water based adhesive, in as little as 12 hours.

Can be installed over 5-day-old Green concrete.

High early strength - 3000 psi in just 4 hours.

Will not contribute to the growth of mold or mildew.

No dangerous emissions or irritating fumes.

Environmentally friendly.

Can or may add LEED eligibility, see appropriate LEED contributions document.

Lower alkali binder system creates an alkali barrier system from the underlying concrete when installed at  $\geq 1/4"$  (6 mm) thick. This protects organic adhesives and coatings from alkali decomposition and secondary VOC emissions up to 90% Rh (water of convenience).

## TECHNICAL DATA

### Compressive strength (ASTM C109):

4 Hours	3000 psi (20.7 MPa)
1 Day	4500 psi (31.0 MPa)
28 Days	5500 psi (37.9 MPa)

### Flexural strength (ASTM C348):

28 Days	>1100 psi (7.6 MPa)
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### Tensile strength (ASTM C190):

28 Days	>570 psi (3.9 MPa)
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### Flammability (ASTM E84):

Flame Spread	-0-
Fuel Contribution	-0-
Smoke Development	-0-

### Approximate coverage (Yield) per 50-lb (22.7-kg) bag:

1/4" (6 mm)	25 sq ft (2.3 m <sup>2</sup> )
3/8" (10 mm)	18.75 sq ft (1.74 m <sup>2</sup> )
1/2" (13 mm)	12.5 sq ft (1.16 m <sup>2</sup> )

### Installed weight:

1/4" (6 mm)	2.08 lb per sq ft (10.2 kg per m <sup>2</sup> )
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### Application temperature range:

50°-95°F (10°-35°C)

NOTE: Above 85°F (29°C) use ACI Hot-Weather Application Guidelines

### Set (ASTM C191; 70°F (21°C), 50% RH):

Flow time	20 minutes
Final set	60 minutes

### Accepts coverings (70°F (21°C), 50% RH):

Thinset ceramic tile	4 hours
Water-based adhesives	12 hours
Epoxy/Urethane adhesives	16 hours
Epoxy coatings up to 20 mils	24 hours
Epoxy coatings over 20 mils	3-5 days

NOTE: Cooler temps, inadequate ventilation and higher humidity can extend drying times.

## STORAGE / SHELF LIFE

6 months from manufacture date, in unopened container. Always keep in cool/dry place unexposed to sunlight.

## PACKAGING

50-lb (22.7-kg) bags / 50 bags per pallet; 2000-lb (907-kg) Super Sacks.

## QUALITY CONTROL: The Fail-Safe System

Due to the many variables that can affect consistency and flow in all leveling products, it is recommended that the Penetron SP Fail-Safe system be incorporated when mixing the LEVELINE® 15.

Please obtain a Fail-Safe kit from your Penetron representative prior to mixing.

- To ensure proper consistency and performance, the flow of the material using the Fail-Safe ring should never exceed 11.5 inches (29 cm).
- As a baseline, mix a 2-bag batch. For each bag, start with 4.25 qt (4 l) of water per bag, holding 0.5 qt (0.47 l)/bag in reserve.
- Mix to a smooth lump free consistency and check flow with the Fail-Safe ring. If more flow is desired, slowly add reserve water until the desired flow is achieved, never to exceed 11.5 inches (29 cm) of flow or the water to exceed 4.75 qt (4 l) per bag.
- Determine the water required to get the desired flow and monitor batches using the Fail-Safe method, making adjustments as necessary to achieve the desired flow, not to exceed 11.5 inches (29 cm).
- For pumping installations, the mixed material at the end of the hose should produce the same result as the baseline test.

## DIRECTIONS FOR USE

### Surface preparation:

**NOTE:** LEVELINE® 15 is not a vapor barrier. Test per ASTM F1869 for Moisture Vapor Emission Rate (MVER) and ASTM F2170 for RH. If the substrate exceeds 8 lb (3.6 kg) MVER or 95% RH or the readings exceed those of a coating, adhesive or flooring manufacturer's product that will be applied (whichever is stricter), use VB 225™.

**All surfaces:** Using foam tape or caulking, isolate at all perimeters, sharp corners such as column bases, pedestals, supports etc. Surfaces must be clean, sound, dry, 50°F (10°C) and free of oil, gypsum compounds, wax, grease, sealers, curing compounds, urethane, paint, asphalt, loose surface material or any contaminate that will act as a bond breaker. Never use acid or mastic removers on any surface to which a Penetron flooring product will be applied.

**Concrete:** Weak surfaces, must be cleaned down to solid sound concrete by mechanical means such as chipping, shot-blasting, grinding or scarifying. Apply a 1/4" (0.6 cm) minimum of LEVELINE® 15.

**Non-porous:** Substrate must be sound and fully bonded. Shot-blast ceramic and Quarry tile substrates. Grind or shot-blast Terrazzo and epoxy coatings; remove all dust prior to priming.

**Wood:** Prepare by sanding down to clean bare wood. Secure loose boards with deck screws and fill open seams with SURFIX™ FEP. Subfloors must be minimum 3/4" (2 cm) solid hardwood, untreated, APA rated, tongue & groove, Type 1, exterior grade, plywood, OSB or equal. The subfloor must be free of deflection (minimum L/360), considering both live and dead loads. Use an approved anti-fracture membrane over LEVELINE® 15 in areas where Ceramic Tile or Stone are being installed. After priming, install flat diamond expanded metal lath, weighing 3.4 lb/yd<sup>2</sup> (1.8 kg/m<sup>2</sup>), over the entire area, overlap seams 1 inch (1 cm) and fasten every 6 inches (15 cm). Be sure to keep the application of LEVELINE® 15 within the 24 hours open time of

the PRIMER STX 100™ coat. Apply a 3/8" (1 cm) minimum of LEVELINE® 15.

**Metal:** Contact your Penetron Representative for specific recommendations for application over metal.

**Adhesive residue:** LEVELINE® 15 can be installed over thin (translucent), sound, non-water soluble adhesive residues that are free of tack and well bonded to the substrate. The adhesive Cutback needs to be prepared using the wet scrape method, as outlined in the Resilient Floor Covering Institute booklet "Recommended Work Practices for the Removal of Resilient Floor Coverings." Remove all patching materials below the adhesive and avoid applications where heat or excessive moisture will soften or degrade the adhesive.

### Priming:

**Concrete:** Dilute PRIMER STX 50™ or PRIMER STX 100™ 1:1 with clean water and apply evenly using a nylon push broom with exploded tips. Do a thin coat and work into surface; leave no bare spots or puddles. Broom out puddles that may form while primer is drying (minimum 2 hours, maximum 24 hours). On very porous concrete, do an initial primer application diluted 3:1 water to PRIMER STX 50™ or PRIMER STX 100™ in the same manner. Allow to dry (minimum 1 hour) before applying 1:1.

**Non-porous, Wood & Adhesive Residue:** Apply one coat of undiluted PRIMER STX 100™ using a 3/8" nap roller. Apply a thin film, leave no puddles or bare spots. Allow primer to dry (minimum 2 hours, maximum 24 hours).

**1:1:1 priming option:** Mix equal parts by volume of PRIMER STX100™, water and LEVELINE® 15. While continuously mixing to maintain a homogenous consistency, pour onto substrate and brush (open bristle push broom) out as thin as possible leaving no thick build-ups.

**Metal:** Contact your Penetron Representative for specific priming recommendations.

### Mixing:

**Concrete, non-porous & adhesive residue:** Mix 2-bag batches

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of LEVELINE® 15. For each bag, add between 4.25 quarts (4 liters) to a maximum 4.75 quarts (4.5 liters) of clean cold water into a mixing drum. Then, add bags of LEVELINE® 15 while mixing at full speed with a mixing wand attached to a heavy duty 1/2" drill (min. 850 rpm). Mix for 2 minutes or until lump free. Add NO additional water and keep the mixing wand immersed in the material to avoid entraining excess air. Please refer to the QUALITY CONTROL: The Fail-Safe System section (on top of Page 2) for proper consistency and water addition level.

**Wood, metal & concrete applications < 1/4" (0.6 cm):** The addition of ACRYLIC BONDCRETE is required to increase the resiliency of LEVELINE® 15 for applications over wood and metal. Mix in the same manner, but for each bag of LEVELINE® 15, combine 1 quart (0.95 l) ACRYLIC BONDCRETE and between 4.0 (3.8 l) quarts to a maximum 4.5 quarts (4.3 l) of clean cold water, observing the same maximum flow of 11.5" (29 cm), as described in the DIRECTIONS FOR USE above.

## Installation:

**Barrel mix:** Pour the blended LEVELINE® 15 on the floor immediately and disperse with a gauge rake followed by finishing with a smoother. Plastic athletic type cleats should be worn when using the smoother to avoid leaving marks. LEVELINE® 15 will maintain its workability and healing for up to 20 minutes.

**Pumping:** Deep placements and large projects are more efficiently installed with the use of a pump. Contact your Penetron Representative for instructions, recommended pumping procedures and approved equipment.

## Extension:

Contact your Penetron Representative for project specific extension instructions.

## Curing:

- Protect from excessive drying due to temperature, air movement and direct sunlight.
- The use of damp curing or the use of curing compounds is not recommended.
- Turn off all forced air ventilation and radiant heating systems whenever possible for up to 24 hours after installation.

## APPLICATION TOOLS

Mixing drum, mixing paddle, depth gage spreader, surface smoother, 1/2" heavy duty drill (min. 850 rpm).

## CLEAN UP

Clean with water immediately after use prior to materials hardening.

## SPECIAL CONSIDERATIONS

- Penetron recommends installing a test area, ensuring suitability of LEVELINE® 15 for intended use. During application and for first 24 hours, prevent excessive air movement but maintain adequate ventilation and protect material from direct sunlight. These variables can cause uneven curing patterns, a false set, and cracking. LEVELINE® 15 is self-curing; no wet curing methods or cure and seals should be used.

- Substrate must have a minimum direct tensile bond test reading of 72 psi per ASTM C1583.
- Do not install over gypsum underlayment – contact your Penetron Representative for specific recommendations over gypsum underlayments.
- Expansion and isolation joints must be reflected through LEVELINE® 15.

## JOB MOCKUPS

The manufacturer requires that when its Penetron Specialty Products are used in any application or as part of any system that includes other manufacturers' products, the contractor and/or design professional shall test all the system components collectively for compatibility, performance and long-term intended use in accordance with pertinent and accepted industry standards prior to any construction. Written documentation of the tests performed shall be satisfactory to the design professional and contractor. Test results must include the means and methods of application, products used, project specific conditions being addressed, and standardized tests performed for each proposed system or variation.

## SAFE HANDLING INFORMATION

Wear suitable protective clothing, eyewear and gloves. Avoid prolonged or repeated contact with skin. Wear respiratory equipment, do not breath in dust. This product, when discarded or disposed of, is not listed as a hazardous waste in federal regulations. Dispose in a landfill in accordance with local regulations. For additional information regarding material handling, personal protective equipment, first aid and emergency procedures, refer to the product Safety Data Sheets (SDS) that can be found on our website, [penetransp.com](http://penetransp.com). KEEP OUT OF REACH OF CHILDREN

**WARRANTY:** PENETRON SPECIALTY PRODUCTS INC. warrants that the products manufactured by it shall be free from material defects and will conform to formulation standards and contain all components in their proper proportion. Should any of the products be proven defective, the liability to PENETRON SPECIALTY PRODUCTS INC. shall be limited to replacement of the material proven to be defective and shall in no case be liable otherwise or for incidental or consequential damages. PENETRON SPECIALTY PRODUCTS INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. User shall determine the suitability of the product for its intended use and assume all risks and liability in connection therewith.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of Penetron Specialty Products under normal environmental and working conditions. Because each project is different, PENETRON SPECIALTY PRODUCTS INC. cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

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