



LEVEL SET 100

Description

ProSpec® Level Set 100 is a polymer modified portland cement based underlayment for interior applications.

Features

- Portland cement based
- Dimensionally stable
- Self-leveling
- Excellent merging characteristics
- Pumpable and pourable
- Crack and spall resistant
- Open to light traffic in 4-6 hours
- 1/8" Up to 1" (25 mm) in one pour
- Self-healing
- Smooth surface
- Ceramic tile and stone application in 24 hours
- Floor covering sheet goods applied in 3 days

Uses

Over:

- Concrete floors*
- Wooden floors**

Under:

- Carpeting
- Vinyl sheet goods
- Ceramic tile
- Wood flooring
- Quarry tile
- Vinyl Composition Tile (VCT)
- Stone

* For other substrates, contact ProSpec Technical Services
** Must use metal lath; contact Technical Services for details.

Technical Data

Working Time @ 70° F (21° C)

30 minutes

Set Time – Temp. 70° F (21° C) ASTM C 191

Initial set 40 to 70 minutes

Final set 1 to 1 1/2 hours

Compressive Strength ASTM C 109

1 day >1,500 psi (10.3 MPa)

7 days >3,800 psi (26.2 MPa)

28 days >5,000 psi (34.5 MPa)

Flexural Strength ASTM C 348

28 days >900 psi (6.2 MPa)

Flexural Strength ASTM C 580

7 days 1,500 psi (10.3 MPa)

28 days 1,800 psi (12.4 MPa)

Tensile Strength ASTM C 190

28 days >600 psi (4.1 MPa)

Wet Density

128 lbs./ft³ (2050 kg/m³)

Modulus of Elasticity ASTM C 469

28 days 1.8 x 10⁶

NOTE: Test results obtained under controlled laboratory conditions at 72° (22° C) and 50% relative humidity. Tested using 5.75 qts. water. Reasonable variations can occur due to atmospheric and job site conditions.

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Preparation	Refer to
<p>Concrete substrates:</p> <ul style="list-style-type: none"> • Clean area and remove all unbound concrete, grease, oil, paint and any other foreign materials that will inhibit performance. • Substrates must be stable, solid and structurally sound • After cleaning and profiling test for MVER (moisture vapor emission rate - reference ASTM F1869) see Best Performance • Repair deep areas, holes and nonmoving cracks with ProSpec® Vinyl Concrete Patcher or Floor Patch prior to application and allow to cure for a minimum of 3 hours. • Tensile strength of substrate must be > 72 psi DTBS (ASTM C-1583) <p>For residential use over interior wood floors that are structurally sound and not subject to moisture:</p> <p>Best Performance:</p> <ul style="list-style-type: none"> • Residential installations only, 1/2" (13 mm) min. mortar thickness for areas up to 100 ft² (9.3 m²); 1 1/4" (32 mm) min. mortar thickness for areas greater than 100 ft² (9.3 m²) 	<ul style="list-style-type: none"> • ASTM D 4259 <u>Abrading Concrete</u> • ACI 201.1R <u>Guide for Making a Conditions Survey of Concrete in Service</u> • ACI 224.1R93 <u>Causes and Repair of Cracks in Concrete Structure</u> • ICRI 03732 <u>Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays</u>
<p>Priming</p> <ul style="list-style-type: none"> • ProSpec Level Set Primer must be applied over entire substrate. Do not apply over standing water. • For porous or highly porous substrates 2 coats of ProSpec Level Set Primer may be necessary. The dilution rate may vary from 1:1 to 1:3 (primer to water). • For non-porous substrates, use Level Set Primer Plus. 	<ul style="list-style-type: none"> • If primed floor is not covered with ProSpec Level Set 100 within 24 hours, primer must be reapplied. • Protect primed substrate from foot traffic. • Install a bond breaker where vertical surfaces meet the new topping.
<p>Mixing</p> <ol style="list-style-type: none"> 1. Add dry material gradually to 5.5 to 6.5 qts. (5.2 to 6.2 L) of potable water per 50 lb. bag (22.7 kg). 2. Mix only the amount that can be applied in 15 minutes. 	<ol style="list-style-type: none"> 3. Mix at full speed with a paddle mixer attached to a heavy duty 1/2" drill (min. 650 to 1,000 r.p.m.)

- If < 72 psi DTBS then the substrate surface will need to be mechanically prepared, i.e. Shotblast, Scarify or Aggressive Diamond Grinding or similar to achieve a sound floor.
- Concrete that has been power troweled must be tested to verify surface strength and adhesion, i.e. DTBS.
- All surfaces require Level Set Primer or Level Set Primer Plus (see "Priming" section below)
- Tight concrete substrates and nonporous substrates require Level Set Primer Plus

NOTE: It is the responsibility of the installer/applicator to ensure that test areas are performed to determine the suitability of the product for its intended use.

Requirements:

- Cleavage membrane
- 2.5 lbs./yd² metal lath (min.), nailed with 1" (25 mm) hot dipped galvanized ribbed roofing nails or stapled with 1" (25 mm) crown galvanized staples

- Design floor areas over which tile is to be applied to have a deflection not greater than l/360 of the span. Make allowance for live load and impact as well as dead load, including weight of the tile and setting bed. Tape or caulk all plywood seams.

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Mixing (cont'd)

4. Mix for 2-3 minutes to ensure a uniform lump free consistency and place immediately.
5. For optimum application and performance, the mix temperature should be 60° F (15° C) to 70° F (21° C) at time of placement.
6. Addition of cold water at high temperatures or warm water at low temperatures will aid in adjusting the mix temperature.
7. Over watering or over mixing will affect strength, abrasion resistance and may cause cracking or pinholing.

Placement

1. The substrate temperature should be a minimum of 40° F (4° C) and must not exceed 100° F (38° C).
2. Close all windows and doors to minimize air flow.
3. Divide the areas to permit continuous placement without cold joints.
4. Use appropriate spreading tools.
5. To prevent ridges between batches, use a smoother tool and work a narrow dimension.
6. Troweling is not recommended.
7. For placements greater in depth than 1" (25 mm) preblend or broadcast 15 lbs (7 kg) of 3/8" (10 mm) clean, dry coarse aggregate to each 50 lb. (22.7 kg) bag. The addition of aggregate will inhibit the workability of the product, which will make it necessary to install a finish coat to obtain a smooth surface.

NOTE: When vinyl, wood or other types of floor coverings are to be installed over ProSpec Level Set 100, the requirements of the floor covering manufacturer are to be followed with respect to, but not limited to, levels of moisture.

Refer to

- RFCI (Resilient Floor Covering Institute publication) MRP: [Addressing Moisture Related Problems Relevant to Resilient Floor Coverings Installed Over Concrete](#)
- NOFMA (National Oak Flooring Institute) publication: [Installing Hardwood Flooring, Rev. 3/10/98](#)
- TCA (Tile Council of North America) Handbook for Ceramic Tile Installation
- American National Standard Specifications for the Installation of Ceramic Tile

Note: ProSpec Level Set 100 will not correct or compensate for a structurally defective substrate. Faults in the substrate can appear in the underlayment. The use of alkali resistant glass fabric or galvanized metal reinforcing (Federal Specification QQL 101C) can be helpful in reducing reflective cracking.

Curing

Protect from excessive drying due to temperature and air movement.

Clean Up

Use water to clean all tools immediately after use.

Tools

The following tools will ensure a satisfactory Level Set 100 installation. Call ProSpec for details.

- Level Set Mixing Drum
- Level Set Mixing Paddle
- Level Set Measuring Pails
- Level Set Depth Gauge
- Level Set Surface Smoother
- 1/2" Heavy-Duty Drill

Coverage

Per 50 lb. (22.7 kg) bag

Nominal Thickness	Approximate Coverage
1/8" (3 mm)	50 to 60 ft ² (4.6 to 5.8 m ²)
1/4" (6 mm)	25 to 30 ft ² (2.3 to 2.8 m ²)
1/2" (12 mm)	12 to 15 ft ² (1.1 to 1.4 m ²)



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Packaging

50 lb. (22.7 kg) bag

Storage

Always keep in cool/dry place unexposed to sunlight and tightly reseal container.

Shelf Life

One year from date of manufacture.

Best Performance

- Interior use only.
- Apply when air or substrate temperature is between 40° F (4° C) and 100° F (38° C) within 24 hours of application.
- ProSpec Level Set Primer is required as a primer.
- Non-absorptive substrates require the use of Level Set Primer Plus
- Do not retemper.
- Troweling is not recommended.
- Not a wearing surface. For a wearing surface, use ProSpec Level Set Wear Topping.
- Use butt-edge metal lath when applying over wood substrates.
- Applications to slabs on grade require an effective moisture barrier under the slab.
- The use of damp curing or the use of curing compounds is not recommended.
- Protect ProSpec Level Set 100 Underlayment from excessive heat or draft conditions during curing. Turn off all forced air ventilation and radiant heating systems whenever possible for up to 24 hours after installation
- The MVER of the substrate may not exceed 5 lbs. per 1,000 ft² (2.3 kg per 92.9 m²) as tested per the Calcium Chloride test.
- Do not over water, retemper or add additional additives.

Caution

KEEP OUT OF REACH OF CHILDREN AND ANIMALS. Product is alkaline and may burn or irritate upon contact with eyes or skin. Do not take internally. Use of safety goggles, rubber gloves and dust respirator is recommended.

Avoid prolonged contact with clothing. This product contains crystalline silica. Take measures to contain and reduce dust. Prolonged exposure to crystalline silica may cause silicosis or other serious delayed lung injury. Avoid

breathing dust. For prolonged exposure wear a respirator approved for protection against crystalline silica dust. Crystalline silica has been classified by IARC and NTP as a carcinogen.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes and SEEK IMMEDIATE MEDICAL ATTENTION. For skin contact, wash thoroughly with soap and water.

If swallowed, SEEK IMMEDIATE MEDICAL ATTENTION. For additional information, call Bonsal American at 704-525-1621 or CHEMTREC at 800-424-9300 or 703-527-3887 outside of the USA.

Refer to Material Safety Data Sheet (MSDS) for further information.

LIMITED 1 YEAR WARRANTY FROM DATE OF MANUFACTURE: Bonsal American warrants that this product and the materials used therein meet or exceed the applicable standards listed and enforced at the time of manufacture. Bonsal American will replace any product or part which proves defective due to quality of ingredients used or due to the manufacturing process itself. This Warranty shall apply only if the product is used in strict accordance with applicable specifications and instructions provided by Bonsal American for its use, and Bonsal American shall not be liable otherwise. Replacement of any defective product, or, at Bonsal American's option, refund of the purchase of any defective product shall be the buyer's sole remedy under this Warranty, and Bonsal American shall in no event be liable for any damages in excess of the purchase price of the defective product. BONSAL AMERICAN SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES INCLUDING LOSS OF PROFITS OF ANY KIND.

Product demonstrations are done for illustrative purposes only and do not constitute a warranty or warranty alteration of any kind. This Warranty constitutes the sole warranty given by Bonsal American in connection with this product. No modification of this Warranty in favor of any buyer shall be valid unless given in writing and signed by an officer of Bonsal American. Bonsal American has authorized no person to make or give any other warranties or representation, oral or written on its behalf. IN PARTICULAR, THERE ARE NO IMPLIED WARRANTIES, INCLUDING WITHOUT EXCEPTION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.