Level Set® 200
Self-Leveling Underlayment

1. PRODUCT NAME

TEC® Level Set® 200 Self-Leveling Underlayment
(200)

2. MANUFACTURER

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Aurora, IL 60504-6451 U.S.A.
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3. DESCRIPTION

Designed for the fast leveling of floors, Level Set® 200 is a calcium aluminate-based, self-leveling underlayment ideal for use to level and smooth floors, before finished floor covering installation. Level Set® 200 is for interior use only.

Key Features and Benefits

- Excellent workability for a smooth surface
- Single applications from ⅛" to 2" (3-50 mm) neat
- Pourable or pumpable
- High compressive strength - 5,000 psi (34.5 MPa)
- Walkable in 3-4 hours
- Accepts non-moisture sensitive tile and stone in 4 hours
- Install moisture sensitive floor covering in 16-24 hours
- Contributes to LEED® project points
- VOC 0

Packaging

50 lb. moisture-resistant bags (22.68 kg) Product #7160743111

Coverage

Coverages shown are approximate. Actual coverages may vary according to substrate conditions and thickness of applications.

Application Depth	Approximate Coverage per 50 lbs. (22.68 kg)
⅛" (3 mm)	47 sq. ft. (4.37 m^2)
¼" (6 mm)	23.5 sq. ft. (2.18 m^2)
½" (12 mm)	11.8 sq. ft. (1.10 m^2)
1" (25 mm)	5.9 sq. ft. (0.55 m^2)
2" (50 mm)	2.95 sq. ft. (0.275 m^2)

Suitable Substrates

When properly prepared, suitable substrates include:

- Concrete
- Cement or epoxy terrazzo
- Ceramic or quarry tile
- VCT
- Cement backerboard
- Exterior grade plywood (with reinforcement mesh)
- Oriented Strand Board (OSB) (with reinforcement mesh)
- Gypsum substrates—minimum tensile bond strength 72 psi (0.5 MPa)

Substrate Preparation

All materials should be stored at 50°F (10°C) to 90°F (32°C) 24 hours prior to installation. It is required that all surfaces be structurally sound and free from any contaminants that may inhibit bond, including oil, grease, dust, loose or peeling paint, sealers, floor finishes, curing compounds or contaminants. Minimum tensile bond strength of 72 psi (0.5 MPa) is required. Substrate temperature should be a minimum of 43°F (6°C) and air temperature maintained above 50°F (10°C). DO NOT cover existing building expansion or control joints. Provide control joints where specified. Create a minimum of ⅛" to ¼" (3-6 mm) wide gap where Level Set® 200 Self Leveling Underlayment abuts walls, columns, and fixtures by installing a self-sticking foam weather stripping tape or damp sand (vacuum up sand after self-leveling underlayment has cured). **Surfaces must be primed with TEC® Multipurpose Primer prior to installation of Level Set® 200.** See Primer label for application instructions. Level Set® 200 can be installed over green concrete with RH of 95% or less. For moisture sensitive floor coverings refer to the finished floor manufacturer's specifications on moisture limitations. Remediation of excessive moisture conditions must be addressed prior to the installation of Level Set® 200. To reduce moisture vapor emissions to an acceptable level, use TEC® LiquiDam™ Penetrating Moisture Vapor Barrier or LiquiDam EZ™ Moisture Vapor Barrier (see product data sheets for details). **For installation over adhesive (except for tacky and pressure sensitive adhesive), remove adhesive by scraping until all that remains is a thin transparent layer of adhesive residue.** Maximum Level Set® 200 thickness is 2" (50 mm) neat.

Single Layer of Exterior Grade Plywood or Oriented Strand Board (OSB) with Lath: Wood sub-flooring must be securely fastened with screw type or ring shank nails and adhesive. Installations of exterior grade plywood or OSB (APA Rated Sturd-I-Floor OSB, Exposure 1 or better) require ¾" (19 mm) single layer minimum thickness on bridged floor joists up to 24" (60 cm) on center, with a maximum deflection of $\frac{1}{360}$ of the span. Allow a gap of ⅛" to ¼" (3-6 mm) between sheets of plywood or OSB. Long edges of subfloor must be tongue and groove or supported by bridging between floor joists.

Use suitable TEC® surface preparation products (Feather Edge Skim Coat, VersaPatch®, Fast-Set Deep Patch) to plug all floor openings, gaps and cracks and install termination dams to prevent any seepage. Prime the floor and allow it to dry to a clear film. Next, staple ¼" (6 mm) galvanized diamond metal or plastic lath to the floor overlapping 2" (5 cm) at seams. Staple every 6" (15 cm) around the perimeter and overlaps, and every 8" (20 cm) in the field of the lath. Install Level Set® 200 based upon the following joist spacing in the table:

Joint Spacing (o.c.)	Minimum SLU thickness with lath over single layer ¾" (19 mm) tongue and groove subfloor	Minimum SLU thickness with lath over single layer ⅝" (15 mm) tongue and groove subfloor
16" or less (40 cm or less)	⅜" (9 mm)	½" (12 mm)
20" or less (50 cm or less)	½" (12 mm)	⅝" (15 mm)
24" or less (60 cm or less)	⅝" (15 mm)	¾" (19 mm)

Double Layer of Exterior Grade Plywood without Lath: Exterior Grade Plywood subflooring must be a minimum thickness of ⅝" (15 mm), securely fastened with screw type or ring shank nails and adhesive. Maximum floor joist spacing is 16" (40 cm) o.c. with a maximum deflection of $\frac{1}{360}$ of the span. Allow a gap of ⅛" to ¼" (3-6 mm) between sheets of plywood. Long edges of subfloor must be tongue and groove or supported by bridging between floor joists. Install Exterior Grade Plywood underlayment, minimum thickness of ⅝" (15 mm) with ⅛" (3 mm) gap between sheets. Underlayment fasteners should not penetrate joists below. For ¾" (19 mm) tongue and groove subfloor thickness over joists 16" (40 cm) o.c., install Exterior Grade Plywood underlayment, minimum thickness is ½" (12 mm) with ⅛" (3 mm) gap between sheets.

Use suitable TEC® surface preparation products (Feather Edge Skim Coat, VersaPatch®, Fast-Set Deep Patch) to plug all floor openings, gaps and cracks

and install termination dams to prevent any seepage. Prime the floor. Allow primer to dry to a clear film. Maintain minimum thickness for Level Set® 200 of ⅜" (9 mm).

Radiant Heating Systems: For radiant heat system installations, always prime the substrate before installing heating system components on the substrate surface. Heating system must be off 2 days before and kept off for 7 days after installation.

Electric Wire Systems Installed Over Substrate – Level Set® 200 may be used in conjunction with wire systems installed over concrete, single layer plywood/OSB subfloors with plastic lath or double layer plywood floors without lath. Follow the requirements for each substrate stated above and maintain minimum thickness of self-leveling underlayment above the wire of ¼" (6 mm).

Electric Mat Systems Installed Over Substrate – Mat system configurations can vary by system manufacturer. Contact system manufacturer for installation instructions.

Hydronic Systems Installed Over Substrate – Level Set® 200 may be used in conjunction with hydronic systems installed over concrete or ¾" (19 mm) single layer plywood/OSB subfloors with lath. Follow the requirements for each substrate stated above and maintain minimum thickness of self-leveling underlayment over the heating tubes of ½" (12 mm) (depending on the diameter of the tubing, two lifts of self-leveling underlayment may be required). When installing ceramic tile over hydronic systems the application of a crack isolation membrane over the self-leveling underlayment is recommended.

Hydronic Systems Embedded in Concrete Substrate – Follow the requirements for concrete substrate installations stated above and maintain minimum thickness of concrete over the embedded heating tubes of ¾" (19 mm). When installing ceramic tile over hydronic systems the application of a crack isolation membrane over the self-leveling underlayment is recommended.

Metal Substrates: Suitable metal substrates include non-galvanized steel, stainless steel, copper, aluminum and lead. Metal substrates must be fully supported, firmly attached and rigid with no flexing or vibration. In addition to the general surface contaminants listed above, metal surfaces shall be free of rust or corrosion. Remove surface contaminants by sand blasting, wire brush or other mechanical means. To prevent rusting of unpainted steel, prime with TEC® Multipurpose Primer immediately after surface cleaning.

Storage

Store in a cool, dry area away from direct sunlight. Do not store open containers.

Shelf Life

Maximum of 1 year from date of manufacture in unopened package.

Limitations

- For interior use only.
- Do not apply when the temperature is below 50°F (10°C).
- Not for use in conditions of hydrostatic pressure or excessive moisture.
- Do not apply over sealed concrete, tempered hardboard (e.g. Masonite), particle board, strip wood flooring or lauan plywood.
- Level Set® 200 is not a wear surface and should be protected from construction trade traffic until the final floor covering is applied. Do not allow heavy or sharp metal objects to be dragged directly across the Level Set® 200 surface.

Cautions

Read complete cautionary information printed on product container prior to use. For medical emergency information, call 1-888-853-1758.

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 the covered TEC® brand product(s) under normal environmental and working conditions. Because each project is different, H.B. Fuller Construction Products Inc. cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

4. TECHNICAL DATA

Level Set® 200 Self-Leveling Underlayment (200)

Description	Typical Results
28 Day Compressive Strength	>5000 psi (34.47 MPa)
28 Day Flexural Strength	>1000 psi (6.89 MPa)
28 Day Shrinkage	<0.07%

Greater than: > Greater than or equal to: ≥ Less than: < Less than or equal to: ≤

Physical Properties

Description	
Physical State	Dry powder
Color	Gray
Working Time	25-35 minutes
Walkable	3-4 hours
Flooring Installation	Tile: 4 hours Moisture sensitive: 16-24 hours
Flow (ASTM C1708)	5"-6" (12.7-15.2 cm)
Storage	Store in cool, dry area away from direct sunlight. Do not store open containers.
Shelf Life	Maximum 1 year from date of manufacture in properly stored, unopened package.

5. INSTALLATION INSTRUCTIONS

Mixing

For barrel mixing: Mix 2 bags of Level Set® 200 at a time. In a clean 20-25 gallon (76-95 L) container add 5.5 qts. (5.2 L) of clean, cool potable water for EACH 50 lb. (22.68 kg) bag. Next add the Level Set® 200, while mixing at full speed using an egg-beater mixing blade attached to a heavy-duty ½" (12 mm) drill (min. 650 rpm). Do not add extra water. Mix completely for a minimum of 2 minutes until lump free, adding no additional water. Avoid overwatering, over mixing or moving the mixer up and down during mixing as this will entrap air, lower the strength and may cause cracking and/or pin holing. The formation of a white film on the surface is an indication of overwatering. To keep the job moving, it is recommended that two mixing drums be used simultaneously. This will allow one mixing container to be poured while the other is being mixed.

For applications utilizing a pumping system: Level Set® 200 can be mechanically mixed using either an in-line continuous mixer and pump or a batch mixer and pump using 5.5 qts. (5.2 L) clean potable water to EACH 50 lb (22.68 kg) bag of powder. The minimum required hose length is 100 ft. (30.5 m) for In-Line Mixers. For horizontal applications greater than 300 ft. (91.4 m) and vertical applications greater than 40 ft. (12.2 m) contact TEC® Technical Services at 800-832-9023.

Before starting ensure the mixer and pumps are completely clean and in good working order. Refer to the manufacturer instructions for specific maintenance and cleaning. Prior to Level Set® 200 installation adjust the pump to ensure proper mixing and a uniform distribution of sand is achieved throughout the mix. Do not overwater as this will lower the strength and may cause cracking and/or pin holing. To avoid segregation and overwatering during installation, the water settings may require adjusting. Check the product consistency to ensure a uniform distribution of the aggregates during pumping. The conditions that can affect the overall performance are, but not limited to, length of hose, water temperature, water pressure, substrate, ambient air temperature and powder temperature. On the end of the hose attach a mesh-screen sock to trap any foreign or unmixed material. Always test pump using the actual maximum hose length and conditions before installation to ensure proper application and appearance is achieved. Test the mixed material periodically from the pump to ensure suitable mix and flow prior to general application.

NOTE: For applications utilizing a pump system, please contact TEC® Technical Services.

Application

Apply when air temperature is between 50°F (10°C) and 90°F (32°C) within 24 hours of application. Close all windows, doors and HVAC vents to minimize air flow. Divide the areas to permit continuous placement without cold joints. Pour or pump the blended Level Set® 200 onto the floor and disperse with a gauge rake followed by smoothing the material with a surface smoother. Use cleated shoes to avoid leaving marks. To prevent ridges between batches, use a smoother and work a narrower dimension. Optimum results can be obtained by providing a continuous wet flow throughout the placement. Level Set® 200 has a working time 25-35 minutes at 70°F (21°C). Temperature and humidity will affect flow, working time and set time.

Increased thickness: For installations 2"-5" (5 cm-12.7 cm) Level Set® 200 can be extended with 15 lb. (6.8 kg) of clean, washed ⅜" (9 mm) pea gravel per 50 lb. (22.68 kg) bag. If the aggregate is wet, less water will be required to prevent overwatering the Level Set® 200. Mix first with water then add 15 lb.

(6.8 kg) of aggregate, per 50 lb. (22.68 kg) bag of Level Set® 200 mixing until the aggregate is coated, then place. The addition of aggregate will decrease the workability and may require a finish coat to obtain a smooth surface finish. Allow the extended layer to dry, normally 16-24 hours.

If applying a finish coat, prime the surface with TEC® Multipurpose Primer mixed 1:1 with potable water per priming instructions outlined in the TEC® Multipurpose Primer product data sheet. Level Set® 200 can be applied after the primer has dried. Outgassing can occur when applying multiple lifts. If capping is required contact TEC® Technical Services.

NOTE: When vinyl, wood or other types of floor coverings are to be installed over Level Set® 200, the requirements of the floor covering manufacturer are to be followed with respect to, but not limited to, levels of moisture.

Curing

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

NOTE: Level Set® 200 is not a wearing surface and should be protected from construction trade traffic until the final floor covering is applied.

Clean-up

While material is still fresh, clean tools, hands and equipment with warm soapy water.

6. AVAILABILITY

TEC® Premium Tile and Stone Installation Products are available nationwide. To locate TEC® products in your area, please contact:

Phone: 800-832-9002
Website: tecspecialty.com

7. WARRANTY

For warranty details, see your sales associate or visit tecspecialty.com.

8. MAINTENANCE

Not applicable

9. TECHNICAL SERVICES

Technical assistance

Information is available by calling the Technical Support Hotline.

Toll Free: 800-832-9023
Fax: 630-952-1235

Technical and safety literature

To acquire technical and safety literature, please visit our website at tecspecialty.com.

10. FILING SYSTEM

Divisions 3 and 9

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