



Level Set® LW-60 High Quality, Ultra-Light Self-Leveling Underlayment

1. PRODUCT NAME

TEC® Level Set® LW-60 High Quality,
Ultra-Light Self-Leveling Underlayment
(053)

2. MANUFACTURER

H.B. Fuller Construction Products Inc.
1105 South Frontenac Street
Aurora, IL 60504-6451 U.S.A.
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3. DESCRIPTION

TEC® Level Set® LW-60 is the ideal choice for an underlayment when the weight of materials is a critical factor in load bearing structures. It is a unique, ultra-lightweight, high quality, easy to handle, self-leveling underlayment that provides a flat, smooth, durable surface for finished flooring installation, at half of the weight of a conventional portland cement or gypsum-based underlayment--just 60 pounds/cubic foot.

Note: All surfaces must be primed with TEC® Multipurpose Primer before installing Level Set® LW-60.

Key Features and Benefits

- Calcium aluminate cement-based
- Provides a smooth surface
- Applications from ¼"-2" (6-50 mm) neat and can be featheredged to adjoining elevations
- 50% lighter than conventional cement and gypsum based systems
- Walkable in 3-4 hours
- Accepts non-moisture sensitive tile and stone in 4 hours
- Install moisture sensitive floor covering in 16-24 hours
- Lower alkaline binder system, when installed at ≥ ⅜" (4.7 mm), reduces the potential for decomposition of alkali sensitive adhesives and coatings compared to installations over concrete*
- Contributes to LEED® project points
- VOC 0

*Based on independent industry reports available upon request.

Packaging

25 lb. moisture-resistant bags (11.34 kg)
Gray

Product #7161243013

Coverage

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

Application Depth	Weight/sq. ft. (Weight/m ²)	Approximate Coverage per 25 lbs. (11.34 kg)
¼" (6 mm)	1.3 lbs./sq.ft. (6.34 kg/m ²)	24 sq.ft. (2.23 m ²)
½" (12 mm)	2.6 lbs./sq.ft. (12.69 kg/m ²)	12 sq.ft. (1.11 m ²)
1" (25 mm)	5.2 lbs./sq.ft. (25.38 kg/m ²)	6 sq.ft. (0.56 m ²)
2" (50 mm)	10.4 lbs./sq.ft. (50.77 kg/m ²)	3 sq.ft. (0.28 m ²)

Suitable Substrates

When properly prepared, suitable substrates include:

- Concrete
- Ceramic, porcelain or quarry tile
- Cement or epoxy terrazzo
- Cement backerboard, properly prepared
- VCT or full glue down, non-cushioned vinyl sheetgoods
- Exterior grade plywood
- Oriented Strand Board (OSB)
- Existing wood flooring
- Gypsum substrates – minimum tensile bond strength 72 psi (0.5 MPa)

Substrate Preparation

General: All surfaces must be structurally sound and free from any contaminants that may inhibit bond, including oil, grease, dust, loose or peeling paint, floor finishes or waxes, etc.

Surfaces must be primed with TEC® Multipurpose Primer prior to installation of Level Set® LW-60. See Primer label for application instructions. Minimum tensile bond strength of 72 psi (0.5 MPa) is required.

All materials should be stored at 50°F (10°C) to 90°F (32°C) for 24 hours prior to installation. Substrate temperature should be a minimum of 43°F (6°C) and air temperature maintained above 50°F (10°C) and below 100°F (38°C) during and within 24 hours of application.

DO NOT cover existing building expansion or dynamic (moving) control joints or cracks. Provide joints where specified. Create ⅛" to ¼" (3-6 mm) wide gaps where 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). Plug all floor openings, gaps and static (non-moving) cracks and install termination dams to prevent any seepage.

Concrete: Level Set® LW-60 can be installed over new ("green") concrete with a maximum of 95% RH or 15 lbs per 1000 ft² (0.07 kg/m²) per 24 hours. **However, when installing 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 Level Set® LW-60. To reduce moisture vapor emissions to an acceptable level, use TEC® LiquiDam™ Penetrating Moisture Vapor Barrier prior to application of TEC® Multipurpose Primer and Level Set® LW-60 (see TEC® LiquiDam™ product data sheet for details).

A successful application to concrete requires evaluation of the concrete surface and preparation to address any conditions that would prevent a good bond. Following are the four conditions you need to check for. Check for Condition 1 on the entire concrete surface. Check for Conditions 2 through 4 on several areas, typically every 100 square feet (9.3 m²) on applications of 1000 square feet (93 m²) or less and every 500 square feet (46.5 m²) on larger applications. Once you have completed the preparation method, always re-check to confirm the method worked.

Shot blasting is one of the most effective methods of removing a wide variety of contaminants, or laitance (weak concrete surface material) from concrete. A shot blast machine will remove sealers, coatings, curing compounds and other contaminants quickly and effectively, leaving behind a proper surface ready to receive the primer and underlayment. Thickness of surface removal must be deep enough to eliminate penetrated contaminants or laitance.

CONDITION 1: Surface coatings and/or contamination such as gypsum plaster, joint compound, or adhesive.

Evaluation: Look at the surface and note the type and location of the surface contamination.

Preparation: First scrape off any lumps and loose material. Then use an appropriate cleaning method for the type of contamination. Examples include:

- Coatings or paints – Application over coatings is acceptable if they are well bonded and achieve a minimum of 72 psi (0.5 MPa) tensile bond strength. Coating surface must be free from any contaminants that may inhibit bond. Poorly bonded or peeling coatings must be removed by mechanical method.

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- Gypsum plaster and joint compound – Scrub with warm water and detergent to remove any remaining material. Thoroughly rinse off any residue and allow concrete surface to dry prior to application of any TEC® materials.
- Adhesive:
 - Cutback Adhesive Residue (non-asbestos) – Application over asphalt-based cutback adhesive residue is acceptable provided the residue is well bonded and can achieve a minimum of 72 psi (0.5 MPa) tensile bond strength. Scrape and remove adhesive until all that remains is a thin, transparent layer.

NOTE: Mechanical removal of cutback by sanding, grinding or blasting can be hazardous since old cutback adhesive may contain asbestos. Harmful dust may result. Inhalation of asbestos dust may cause asbestosis or other serious bodily harm. Consult all applicable government agencies for rules and regulations concerning the removal of floorings and adhesives that contain asbestos.

- Tacky or pressure-sensitive adhesive – Do not apply TEC® underlayments over these adhesives. They must be mechanically removed by a method such as shot blasting.

CONDITION 2: Weak top layer (laitance) or damaged concrete (spalling, scaling, or crumbling).

Evaluation: First scrape the surface with a knife blade. If this produces a fine powder, then laitance is present. Then use a hammer or other heavy object to sound out weak or hollow areas. Note the areas that are weak or damaged.

Preparation: Weak or damaged concrete must be removed by mechanical method such as shot blasting.

NOTE: Acid washing or etching is not recommended because it is difficult to control and to fully remove contaminants and properly neutralize. The acid can penetrate into the porous concrete and chemically undermine the cement, weakening the concrete. Acid washing will not remove grease or oil.

CONDITION 3: Invisible contamination such as sealers, curing compounds or oil.

Evaluation: Sprinkle water onto the surface. If water forms droplets without absorbing immediately, the surface is probably contaminated.

Preparation: Contaminated concrete must be removed by mechanical method such as shot blasting.

• Curing Compounds

- Petroleum based, wax emulsion or dissipating curing compounds must be removed by mechanical means such as shot blasting. If the type of curing compound is unknown, removal is required.
- Silicate or Acrylic resin curing compounds may be acceptable. Install primer test sample areas to evaluate bond strength first. Samples must achieve 72 psi (0.5 MPa) tensile bond strength. For silicate types, all residual salts must be removed prior to application of the primer and underlayment.

CONDITION 4: Surface dirt and dust.

Evaluation: Wipe the surface with a clean dark cloth. If powder is visible on the cloth the surface is not clean enough. Note the areas that require cleaning.

Preparation: Always use a two step method to remove surface dirt and dust. First use a dry clean broom and sweep the entire surface. Do not use sweeping compounds. They can leave an oily or waxy film on the concrete surface that will prevent a proper bond. The second step should consist of one of the following:

- Vacuuming – use a heavy-duty industrial type vacuum to provide a dust-free surface.
- Water cleaning – use a stream of potable water with sufficient pressure to remove dust and dirt. When necessary, also scrub with a stiff bristled brush. Thoroughly remove all wash water and allow concrete surface to dry prior to application of any TEC® materials.
- Detergent water cleaning – Using a stiff bristled brush or broom, scrub the entire concrete surface with a cleaning product intended for concrete or a solution of at least 4 ounces (118 mL) of trisodium phosphate per gallon (3.78 L) of warm water. Before the surface dries, thoroughly flush the concrete with clean potable water to remove all wash water and residue. Allow concrete surface to dry completely with no puddling, prior to application of TEC® materials.

Single Layer of Exterior Grade Plywood or Oriented Strand Board (OSB)

with Lath: Wood subflooring 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, from the highest point of the floor, on bridged floor joists up to 24" (60 cm) on center, with a maximum deflection of 1/360 of the span. Allow a gap of 1/8" to 1/4" (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, PerfectFinish™, 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 1/4" (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® LW-60 based upon the following joist spacing in the table below:

Joint Spacing (o.c.)	Minimum SLU thickness over single layer ¾" (19 mm) tongue and groove subfloor with lath
16" or less (40 cm or less)	3/8" (9 mm)
20" or less (50 cm or less)	1/2" (12 mm)
24" or less (60 cm or less)	5/8" (15 mm)

Double Layer of Exterior Grade Plywood without Lath (underlayment only):

Exterior Grade Plywood subflooring must be a minimum thickness of 5/8" (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 1/360 of the span. Allow a gap of 1/8" to 1/4" (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 5/8" (15 mm) with 1/8" (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 1/2" (12 mm) with 1/8" (3 mm) gap between sheets.

Use suitable TEC® surface preparation products (Feather Edge Skim Coat, PerfectFinish™, 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® LW-60 of 3/8" (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® LW-60 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 above the wire when used as a self leveling underlayment of 1/4" (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® LW-60 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 Level Set® LW-60 over the heating tubes of 1/2" (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), from the highest point of the floor. 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 by sand blasting, wire brush or other mechanical means. To prevent rusting of unpainted steel, prime with TEC® Multipurpose Primer immediately after surface cleaning.

Solid Hardwood Flooring: Existing ¾" (19 mm) thick tongue and groove solid hardwood flooring only (laminates are not acceptable) with maximum deflection of 1/360 of the span. Remove surface contaminants and ensure 72 psi (0.5 MPa) tensile bond strength. Prime with TEC® Multipurpose Primer full strength (undiluted). Next, staple 1/4" (6 mm) galvanized diamond metal or plastic lath to

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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. Maintain minimum thickness for Level Set® LW-60 of ¾" (19 mm), from the highest point of the floor.

Storage

Store in 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 trowel.
- Do not use as a wearing surface. For a wearing surface, use TEC® Level Set® Wear Topping.
- Do not overwater, retemper or add any additives.
- Do not install over dimensionally unstable substrates such as particle board, luan, asbestos or chip board.
- Do not allow heavy or sharp metal objects to be dragged directly across the Level Set® LW-60 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

TEC® Level Set WL-60 High Quality, Ultra-Light Self-Leveling Underlayment (053)

Description	Test Standard	Typical Results
28 Day Compressive Strength	ASTM C109	> 4000 psi (27.59MPa)
28 Day Flexural Strength	ASTM C348	> 1100 psi (7.59 MPa)
28 Day Shrinkage	ASTM C157	< -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 Hardness	3-4 hours
Flooring Installation*	Non-moisture sensitive tile and stone: 4 hours Moisture sensitive floor coverings: 16-24 hours
Ideal Flow Range (ASTM C1708)	5-6 inches (12.7-15.2 cm)
Storage	Store in cool, dry location. Do not expose to nor store in direct sunlight. After opening, remove air from bag and seal tightly.
Shelf Life	Maximum 1 year from date of manufacture in properly stored, unopened package.

*Flooring material installation within hours shown above after application is dependent on thickness, drying conditions, and type of flooring.

5. INSTALLATION INSTRUCTIONS

Mixing

For barrel mixing: Mix 2 bags of Level Set® LW-60 at a time. In a clean 20-25 gallon container add 6.0 qts. (5.7 L) of clean, cool potable water for EACH 25 lbs. (11.34 kg) bag. Next add the Level Set® LW-60, while mixing at full speed using an eggbeater 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 over watering, 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 over watering. 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. After use clean all mixing equipment thoroughly to avoid hardened product in subsequent batches.

For applications utilizing a pumping system: Level Set® LW-60 can be mechanically mixed using either an in-line continuous mixer and pump or a batch mixer and pump using 6.0 qts. (5.7 L) clean potable water for EACH 25 lb (11.34 kg) bag of powder. The minimum required hose length is 100 ft. (30.5 m) for In-Line Mixers. Do not use for pumping applications that have a horizontal hose length of 300 ft. and/or a vertical hose length of 40 ft.

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® LW-60 installation adjust the pump to ensure proper mixing and that 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 pinholing. To avoid segregation and over watering 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.

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

Application

Apply when air and substrate temperatures are between 40°F (4°C) and 100°F (38°C) within 24 hours of application. For applications outside this range of temperatures, contact TEC® Technical Services.

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® LW-60 on to 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 tool and work a narrow dimension. Optimum results can be obtained by providing a continuous wet flow throughout the placement. Level Set® LW-60 has a working time of 25-35 minutes at 70°F (21°C). Temperature and humidity will affect flow, working time and set time. Outgassing can occur when applying multiple lifts. If capping is required contact your TEC® representative.

NOTES: When vinyl, wood or other types of floor coverings are to be installed over Level Set® LW-60, the requirements of the floor covering manufacturer are to be followed with respect to, but not limited to, levels of moisture.

Level Set® LW-60 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.

Clean-up

Use clean potable water to clean all tools immediately after use.

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.

NOTE: Level Set® LW-60 is not a wearing surface and should be protected from construction trade traffic until the final floor covering is applied.

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

Division 9



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