TechLevel Lite® High Flow Lightweight Self-Leveling Underlayment

1. Product Name

TechLevel Lite® High Flow Lightweight Self-Leveling Underlayment

2. Manufacturer

Custom Building Products Technical Services
10400 Pioneer Boulevard, Unit 3
Santa Fe Springs, CA 90670
Customer Support: 800-272-8786
Technical Services: 800-282-8786
Fax: 800- 200-7765
Email: contactus@cbpmail.net custombuildingproducts.com

3. Product Description

TechLevel Lite® Self-Leveling Underlayment is a high-quality, flowable hydraulic cement underlayment that helps flatten and level interior floors in preparation for ceramic tile, natural stone, resilient flooring, carpet, wood, and other floor covering installations. This quick-setting underlayment seeks its own level in minutes and can be applied up to 2″ (5 cm) thick in a single pour. It may also be used in residential applications with floor joints up to 24″ o.c.

With CustomLite® Technology, TechLevel Lite weighs 3 lbs. less (1.36 kg) per square foot at 1/2″ (13 mm) thickness than other self-leveling underlayments. A 30 lb. (13.6 kg) bag covers the same area as a 50 lb. (22.6 kg) bag, allowing installers to move, mix, and pour less material while covering more floor area efficiently. TechLevel Lite is also formulated with Controlled Cure Technology®, which helps reduce excess free moisture during curing and minimize installation issues such as bond failure, crumbling, and staining of resilient flooring.

*Leveling requires surveying and setting leveling pins as guides for placing mortar. Refer to ANSI A118.16 & A108.21.

Key Features

- Lightweight, sustainable formula; superior handling & weight reduction
- Apply from feather edge up to 2" in one pour
- Superior crack resistance formula reduces shrinkage & cracks
- Exceeds ASTM requirements for resilient floor covering installations
- Exceeds ANSI requirements for tile and natural stone installations
- CUSTOM® cement products allow free passage of moisture

Uses

Suitable as an Underlayment for:

- Carpet
- Wood and parquet flooring
- Luxury Vinyl Tile/Planks (LVT/LVP)
- Vinyl composition flooring (VCT)
- Sheet vinyl and rubber flooring
- Laminated flooring
- Ceramic, mosaic, quarry or cement body tile
- Impervious porcelain and glass tile
- Cement-based precast terrazzo
- Natural stone tile
- Terrazzo

Suitable Substrates

- Absorbent and non-absorbent concrete
- Gypsum-based underlayment (meeting ASTM F2419)
- Exterior grade plywood & OSB / APA or CANPLY Group 1
- Flooring manufacturer’s approved wood underlayment
- Existing ceramic tile
- Resilient flooring
- Embossed vinyl
- Cutback adhesive residue
- Primed cement terrazzo
- Approved and prepared moisture control membranes
- Properly prepared steel and aluminum

*Special preparation or primers may be required

Composition of Product

TechLevel Lite® is a dry, proprietary blend of copolymers, Portland cement, post industrial and consumer recycled aggregate and inorganic chemicals.

Limitations to the Product

- For use in interior dry areas. Ambient, substrate and product temperature is to be between 50° F (10° C) 90° F (32° C). Chill or warm water when needed to make mixture fall between these
- Assure that substrates are not wet from condensation in ambient conditions of high humidity. High humidity conditions may affect surface drying and subsequently final results.
- Do not bond directly to hardwood, Luan plywood, particle board, parquet, cushion or sponge-back vinyl flooring, metal, fiberglass or plastic. Contact technical services for recommendations.
- Do not use as a permanent wear
- Do not use on sloped surfaces that require drainage.
- Precautions for finished flooring deflection and movement joint requirements should be considered when applying over post-tensioned concrete, pre-stressed concrete or prefabricated concrete planks.
- Contact technical services for further

Packaging

30 lb. (13.6 kg) Bags

4. Technical Data

Applicable Standards

ASTM International (ASTM)

- ASTM C1708 Standard Test Methods for Self-leveling

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Mortars Containing Hydraulic Cements

- ASTM F2873 Standard Practice for the Installation of Self-Leveling Underlayment and the Preparation of Surface to Receive Resilient Flooring
- ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
- ASTM F3191 Field Determination of Water Absorption
- ASTM F1869 Standard Test Method for Measuring Moisture Vapor
- ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester
- ASTM F3191 Field Determination of Water Absorption

American National Standards Institute (ANSI)

- ANSI A108.01 and A108.02 of the American National Standards for the Installation of Ceramic Tile
- A118.16 American National Standard Specifications for Flowable Hydraulic Cement Underlayment/Self-Leveling Underlayment
- A108.21 Interior Installation of Flowable Hydraulic Cement Underlayment/Self-Leveling Underlayment

Resilient Floor Covering Institute (RFCI) Recommended Work Practices for Removal of Resilient Floor Coverings

Tile Council of North America (TCNA) TCNA Handbook for Ceramic Tile Installation, TCNA Method EJ171

Terrazzo, Tile & Marble Association of Canada (TTMAC)

Technical Chart

Property	Test Method	TypicalResults@70°F (21°C) and 50%RH
Pot Life (in bucket)		>30 minutes
Healing Time (Re-heal)	ASTM C-1708	>10 minutes
Compressive Strength at 28 days	ASTM C-1708	>3,000 psi
Flexural Strength at 28 days	ASTM C-348	>500 psi (3.45 MPa)
Walkable Hardness		2 - 4 Hours
Installed Density - Dry		~ 65-72lbs/ft3
Robinson Test	ASTM C-627	Extra Heavy
Time Before Installing Floor Covering		
Ceramic tile/ non-moisture sensitive floor covering		>4 Hours
Moisture-sensitive floor coverings		>16 Hours

Environmental Consideration

Custom® Building Products is committed to environmental responsibility in both products produced and in manufacturing practices. Use of this product may contribute to LEED® certification.

Complies with CA Section 01350 and CDPH V1.2-2017.

5. **Instructions**

General Surface Prep

Refer to Technical Bulletin 108 – General Requirements of Installing Finishes for additional information.

All surfaces must be structurally sound, clean, dry and free from contaminants such as grease, oil, dirt, dust, curing compounds, waxes, sealers, efflorescence, or any other foreign matter. Concrete must be fully cured and absorb water. Smooth concrete surfaces, existing glazed tile, terrazzo, or polished stone may need to be roughened or scarified to increse porosity. Refer to MBP Multi-Surface Bonding Primer technical datasheet for use in lieu of mechanical preparation or when applying over Custom TechMVCTM Moisture Vapor and Alkalinity Barrier. For increased performance in demanding applications, concrete surfaces can be mechanically profiled and prepared by shotblasting, sandblasting, scarifying, diamond-grinding or other engineered approved methods (reference ICRI CSP 3 standards for ideal profile height). Any existing flooring must be well bonded and stripped of old finish.

CUSTOM® products may be used in assemblies over concrete with high moisture vapor emission levels provided that other materials such as finish flooring, adhesives or membranes are approved in these conditions. Consult the manufacturers for their limitations and requirements. Additionally, any sources of moisture are to be limited to initial concrete placement and not from sources such as water intrusion or from a lack of an effective vapor retarder/barrier.

Assembly mockups will determine suitability for these conditions on specific projects. Contact CUSTOM Technical Services for product information (800) 282-8786

Always wear proper protective equipment when handling the product, including IMPERVIOUS GLOVES, such as nitrile, safety glasses, and a NIOSH N95 respirator (mask).

Bonding To Concrete Surfaces

In addition to general surface preparation requirements listed above, concrete must be free of efflorescence, surface condensation or hydrostatic pressure and not subject to moisture beyond the floor covering manufacturers' limits. Concrete surfaces must have a tensile pull-off strength in excess of 200 psi (1.4 n/mm²). Concrete that was treated with curing compounds must be evaluated for suitability or mechanically removed. For more information about concrete curing compounds see CUSTOM Building Products Technical Bulletin #92 available on the website under Reference Library. Consult the flooring manufacturer’s directions of the specified floor covering for maximum allowable substrate moisture content. Where moisture test readings exceed the maximum allowable limitations specify and install CustomTech™ TechMVC Moisture Vapor and Alkalinity Barrier first. Additionally, any sources of moisture are to be limited to initial concrete placement and not from sources such as water intrusion or from a lack of an effective vapor retarder under

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concrete slab. Assembly mock-ups are always recommended and will determine suitability for these conditions on specific projects. Contact CUSTOM Technical Services for product information (800) 282-8786.

Bonding to Gypsum Surfaces

Gypsum-based underlayment must be solid and structurally sound, achieving a compressive strength >2000psi (13.8 MP) Remove any unacceptable surfaces. The underlayment must be sufficiently dry and properly cured to the manufacturer's specifications for permanent, non-moisture permeable coverings. Substrate deflection not to exceed the current industry standards. All Gypsum surfaces are required to be sealed or primed prior to leveling. Apply TechPrime™ A Acrylic Primer directly to the gypsum or over gypsum manufacturer's sealer. Dilute TechPrime A 3- parts water to 1-part primer with clean, potable water. Apply a second application of primer diluted 1:1. Drying time depends on site conditions but is normally less than 1 hour between coats. Leveler can be applied to the primed surface after primer dries. Gypsum based underlayment used in tile or stone applications may require waterproofing or crack isolation. For these applications we recommend applying RedGard® Waterproofing and Crack Prevention Membrane over leveler once cured.

Bonding to Plywood and OSB Surfaces

Plywood and OSB including those under resilient flooring, must be structurally sound and must meet all industry guidelines. Subfloors shall be structurally compliant to building codes and area usage including joist blocking or bracing, be sound, clean, dry, and free from contaminants that would prevent adhesion. Any loose plywood or deflecting areas must be addressed prior to leveler installation. Floors may be prepared by sanding. Do not use sweeping compounds, or chemicals or solvents to clean the floor. Fasten 2.5 lb./yd² metal lath every 6" ¬ 8" (15 ¬ 20 cm) with fasteners that have a galvanized or corrosion-resistant coating over primed surfaces. It is generally accepted that wood-framed substrate deflection for Porcelain tiles is limited to <L/360; natural stone <L/720. Dimensionally weaker finishes such as natural stone, Saltillo, cement, glass tile and resilient flooring installations may require additional plywood layers based on area size/span; deflection; leveler thickness and project usage, live and dead loads. Leveler may require ½" thickness to replace cement backerboard use under tile or to provide adequate rigidity for floor covering. To help prevent failures from substrate creep install heavy dead loads such as stone countertops prior to leveler and tile or flooring installation. Refer to ANSI A108 AN2 "General Requirements for Subsurfaces" and TCNA details for further information for tile installations or contact CUSTOM Technical Services. Block any open spaces to prevent leveler spilling to adjoining areas. Fill joints with a CUSTOM patching compound such as Silk™ Patching & Finishing Compound. All wood subfloors require a primer application of undiluted TechPrime™ A Acrylic Primer or MBP - Multi-Surface Bonding Primer .

Priming

Prime all surfaces with an appropriate Custom® primer before application of TechLevel Lite. Refer to TechPrime™ A Acrylic Primer for porous surfaces, MBP - Multi-Surface Bonding Primer or TechPrime™ E 100%-Solids Epoxy Primer technical datasheets.

Movement Joint Placement

Substrate cracks and joints must be assessed and treated, as needed, prior to application of levelers to provide a solid and stable surface. For the proper treatment of dormant cracks and control or saw cut joints for resilient flooring, refer to ASTM F710. For tile installations, refer to TCNA Details EJ171, F125 & F125A and ANSI A108.01.

Expansion joints and cold joints should be carried from the substrate up through the leveler, tile or flooring surface and filled with an appropriate elastomeric sealant, such as Custom's® Commercial 100% Silicone Sealant. To allow for movement and help prevent cracking, joints must be placed at perimeters and changes of plane. Contact Custom Technical Services for additional information.

Always wear proper protective equipment when handling the product, including IMPERVIOUS GLOVES, such as nitrile, safety glasses, and a NIOSH N95 respirator (mask).

Mixing Ratios

Mix the entire 30 lb. (13.6 kg) bag of powder with 5.5 – 6.5 quarts (5.2- 5.7L) of clean, cool water.

Mixing Procedures
Barrel:

Mix 30 lb. (13.6 kg) bag of powder with the appropriate amount of clean, cool water. Slowly add powder to water while mixing with a heavy-duty 1/2" (13 mm) electric drill and an "eggbeater" mixing paddle at minimum 650 RPM. Thoroughly mix for 2 minutes to a lump- free consistency. Do not overmix. Overmixing or moving the mixer up and down during the mixing process could trap air, which could shorten the pot life or cause pin holing during application and curing.

Pumping:

TechLevel Lite can be pumped with a mixing pump. Adjust the water setting to obtain the optimum workability. Do NOT overwater. Pump the mix and use spreader to evenly distribute the materials to desired thickness.

Application of Product

Place the mixed product in one area at a time and spread with a long-handled gauge rake to the desired thickness. Directly afterward, the mortar has been dispersed, use a smoothing blade to break the material's surface rheology and blend any inconsistencies to create a more uniform or homogeneous appearance. Plan to keep a wet edge when pouring multiple mixes in the same area and join before previous pours have set.

If a second layer is required, install immediately after the first layer has set to a walkable hardness. If the first layer has dried over 12 hours, re-prime before second application.

*** Always install a test area to confirm proper bonding as well as a desired appearance.

IMPORTANT NOTES:

Substrate and ambient temperature must be above 50^{0}F (10^{0}C). High ambient air humidity approaching dew point will affect drying times and can decrease final surface hardness. Provide ventilation in these conditions.

Self-leveling cement based products may exhibit slight cracking due to structure and substrate moment; shrinkage; and creep. Sharp or reentrant wall corners can contribute to crack formation. These shrinkage cracks are considered normal. To assist with prevention of reentrant cracking, please a soft foam or expansion material in a rounded configuration at corners. Other causes of shrinkage cracking are due to high ambient or substrate temperatures; wind or air flow; water ratios and mixing technique. To allow for movement and help prevent cracking, joints must be placed at perimeters and

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changes of plane.

Curing of Product
Install non-moisture-sensitive ceramic tile or stone in 4 hours; all other floor coverings should be installed after 16 hours Cure time can vary with temperature and humidity. Confirm moisture limitations of flooring and adhesives before installing over leveler.

Cleaning of Equipment
Clean with water before the material dries.

Storage
Protect from freezing. Store in a cool, dry area.

Health Precautions
DANGER: CAUSES SEVERE SKIN BURNS AND SERIOUS EYE DAMAGE. PROLONGED OR REPEATED INHALATION OF DUST MAY CAUSE LUNG DAMAGE OR CANCER. DO NOT BREATHE DUST OR SWALLOW. You cannot rely on pain to alert you to cement burns. Portland cement can cause dermatitis or sensitization. A NIOSH N95 respirator (mask) is recommended, especially in poorly ventilated areas, when use is frequent, or when permissible exposure limits may be exceeded. Immediately wash contaminated body and clothing thoroughly. If in eyes: rinse cautiously with water for several minutes; remove contact lenses if easy to do; continue rinsing. If inhaled: remove person to fresh air and keep comfortable for breathing. If swallowed: rinse mouth; do NOT induce vomiting. If you experience a burn, rash or skin irritation: immediately see a doctor. Immediately seek medical attention if any symptoms are significant or persist. In Emergency: 1-800-535-5053. **Contains portland cement and crystalline silica**. Before handling read Safety Data Sheet at www.custombuildingproducts.com. **KEEP OUT OF REACH OF CHILDREN.** **WARNING:** This product can expose you to chemicals including crystalline silica, which is known to the State of California to cause cancer, and hexavalent chromium compounds, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Conformance to Building Codes
Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

6. Size & Availability

Item Code	Size	Package
XXXXXXX	30 lb (13.6 kg)	Bag

Contact your distributor about product cost and visit custombuildingproducts.com for more information and availability.

7. Product Warranty

NOTICE: Obtain the applicable **LIMITED PRODUCT WARRANTY** at www.custombuildingproducts.com/warranties or send a written request to Custom Building Products, Inc., Five Concourse Parkway, Atlanta, GA 30328, USA. Manufactured by or under the authority of Custom Building Products, Inc.

8. Product Maintenance

Properly installed product requires no special maintenance. TechLevel Lite® is not recommended as a finish or wear surface.

9. Technical Services Information

For technical assistance, contact Custom technical services at 800-272-8786 or visit custombuildingproducts.com.

10. Filing System

Additional product information is available from the manufacturer upon request.

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Coverage Chart

TYPICAL SQUARE FOOT COVERAGE PER 30 LB BAG (SQUARE METER PER 13.6 KG) Coverage will vary depending on the texture of the surface being flattened or leveled.

Thickness	Coverage
1/8" (3.17 mm)	45 sq. ft. (4.1 M²)
1/4" (6.35 mm)	22.5 sq. ft. (2 M²)
1/2" (12.7 mm)	11.25 sq. ft. (1 M²)
1" (25.4 mm)	5.62 sq. ft. (0.52 M²)
2" (50.8 mm)	2.81 sq. ft. (0.26 M²)

Chart for estimating purposes. Coverage may vary based on installation practices and jobsite conditions. For more sizes, use the material calculator at CustomBuildingProducts.com or contact CUSTOM Technical Services at 800-282-8786.