

LEVELROCK™ Brand Floor Underlayment 3500

Premium poured gypsum flooring underlayment products

- Fast application, fast setting allows for return of light trade traffic within hours
- Variable thickness
- Ideal for wood frame, renovation, hotel/motel, and light commercial construction
- Meets vinyl industry commercial specifications
- UL designs available up to 2-hour fire rating
- Smooth crack-resistant surface
- Helps maximize sound isolation between floors/units
- Applied by USG licensed contractors

System Description

LEVELROCK™ Brand Floor Underlayment 3500 is a high quality, versatile gypsum floor underlayment for use in light commercial and renovation construction. It can be easily applied over wood and concrete subfloors at a thickness up to 3 inches. Its high compressive strengths at low thickness provide superior underlayment performance for higher traffic areas. High production rates, lightweight with high compressive strength, and exceptional sound and fire resistance make LEVELROCK Brand Floor Underlayment 3500 an ideal alternative to concrete floor applications.

Product Description

USG poured gypsum underlayment products are mixed with sand and water to yield a lightweight slurry having self leveling qualities. A 3/4-inch thick gypsum underlayment weighs approximately 7.5 pounds per square foot and has a density of only 120 pounds per cubic foot.

System Benefits

USG poured gypsum floor underlayment systems provide an economical way to achieve lightweight, fire-resistant, sound-rated, leveling floors in renovation and light commercial construction. Typical applications are less labor intensive than many other types of construction and provide high fire ratings characteristic of gypsum systems. Designed sound systems provide for improved STC and IIC ratings when used with acoustical mat. Higher compressive strengths minimize floor damage from trades.

Physical Properties

Nominal Compressive Strength (aggregated) ASTM C472	3500-4000 psi
Density (aggregated)	120 lb./cu.ft.

Limitations

- USG poured gypsum floor underlayment systems should not:
1. Be used as a wearing surface.
 2. Be installed where continuous exposure to moisture is a possibility (for instance, exterior balconies or shower rooms). In bathrooms, kitchens, and other areas subject to moisture intrusion, protective floor finish materials such as vinyl or ceramic tile must be applied over the gypsum floor underlayment system.
 3. Be installed in below-grade applications.

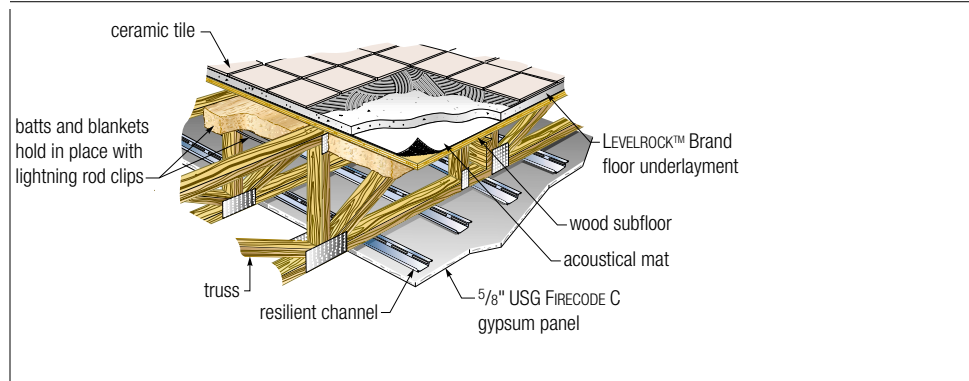
Installation

During the entire installation process, the building must be enclosed and temperature maintained at 50 °F minimum until permanent heating is available. Adequate ventilation must be provided to ensure uniform drying of the installed gypsum floor underlayment, which typically occurs within five to seven days. Limit design of the subfloor and framing to a minimum of L/360 to prevent undue stress from occurring in the floor fill material, as this stress may produce cracks. Over plywood subfloors, tongue-and-groove edge supported type plywood is recommended for meeting this deflection criterion. The application of LEVELROCK Brand Primer to the subfloor is necessary to provide maximum bond between the underlayment and the subfloor. Concrete slabs that are receiving gypsum underlayment systems must be properly cured (generally for a minimum of 28 days) prior to the underlayment installation. Concrete slabs should be properly treated with LEVELROCK Brand Primer according to manufacturer's recommendations.



Sound Testing

Conducted at Riverbank Acoustical Laboratory. Tested in conformity with ASTM E90-99 and E413-87.



Assembly #1

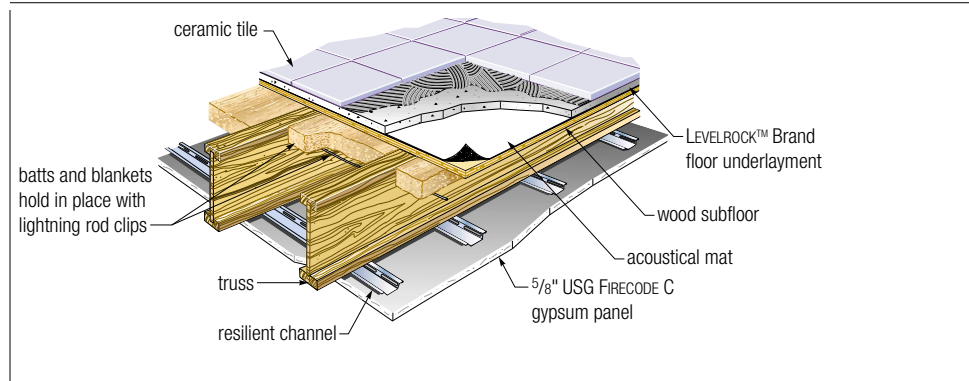
LEVELROCK Brand Floor Underlayment Sound System #1 description (from the top down): Various floor coverings (see chart below), 1-inch LEVELROCK Brand Floor Underlayment 3500 poured onto 2/5-inch (0.4-inch) thick ENKASONIC® 9110 acoustical mat. Acoustical mat was laid on a 23/32-inch tongue and groove APA rated plywood. Plywood was screw applied to parallel chord (2x4 lumber) trusses, nominally 18 inch deep with lumber-oriented horizontally. The trusses were spaced on 24-inch centers. The cavities between the joists contained a layer of 3-1/2- inch thick by 24-inch wide unfaced R-11 fiberglass insulation held in place against the underside of the floor deck by "lightning rod" clips. Resilient channels were attached to the chord of the trusses. 5/8-inch thick SHEETROCK® Brand Gypsum Panels FIRECODE™ C Core, Type X was attached to the resilient channels. All seams and screwheads were covered with SHEETROCK Brand All Purpose Joint Compound Ready-Mixed. ENKASONIC 9003 perimeter strips were placed against the wall (between underlayment and wall) prior to the installation of the underlayment.

Results

Floor Covering	Rating (classified per ASTM E492-90 and E989-89)
None	STC: 61
Carpet, 24 oz. w/716 in. 6 lb. foam	IIC: 73
Ceramic tiles, 5/16 in. thick, nominal 12x12 in. adhered with Type I mastic	IIC: 56
Sheet vinyl 1/15 in. thick	IIC: 55

Sound Testing

Conducted at Riverbank Acoustical Laboratory. Tested in conformity with ASTM E90-99 and E413-87.



Assembly #2

LEVELROCK Brand Floor Underlayment Sound System #2 description (from the top down): Various floor coverings (see chart below), 1- inch LEVELROCK Brand Floor Underlayment 3500 poured onto 2/5-inch (0.4-inch) thick ENKASONIC 9110 acoustical mat. Acoustical mat was laid on a 23/32-inch tongue and groove APA rated plywood. Plywood was screw applied to 9-1/2-inch I-Joists. The I-Joists were spaced on 24-inch centers. The cavities between the joists contained a layer of 3-1/2-inch thick by 24-inch wide unfaced R-11 fiberglass insulation, held in place against the underside of the floor deck by "lightning rod" clips. Resilient channels were attached to the chord of the I-Joists. 5/8-inch thick SHEETROCK Brand Gypsum Panels FIRECODE C Core, Type X was attached to the resilient channels. All seams and screwheads were covered with SHEETROCK Brand All Purpose Joint Compound Ready-Mixed. **Note:** 1-hour fire rating per UL 544 requires 2 layers of 1/2-inch SHEETROCK Brand Gypsum Panels FIRECODE C or 2 layers of 5/8-inch SHEETROCK Brand Gypsum Panels FIRECODE C. ENKASONIC 9003 perimeter strips were placed against the wall (between underlayment and wall) prior to the installation of the underlayment.

Results	Floor Covering	Rating (classified per ASTM 492-90 and E989-89)
	None	STC: 60
	Carpet, 24 oz. w/716 in. 6 lb. foam	IIC: 77
	Ceramic tiles, 5/16 in. thick, nominal 12x12 in. adhered with Type I mastic	IIC: 56
	Wood laminate floor	IIC:52

UL Designs

G230, G516, J917, J919, J920, J924, J927, J931, J957, J966, J991, J994, K906, L206, L501, L505, L511, L512, L513, L514, L518, L521, L524, L525, L528, L529, L530, L534, L535, L536, L537, L541, L544.

Specifications Note to Architect

These are specifications for the installation of LEVELROCK Brand Floor Underlayment 3500 covering normal project requirements. For additional data regarding special conditions and applications, please contact your local USG representative.

Part 1: General**1.1 Scope**

Specify to meet project requirements.

1.2 Qualifications

All materials, unless otherwise indicated, shall be manufactured by the United States Gypsum Company and shall be installed in accordance with its current printed directions by USG licensed LEVELROCK Brand applicators.

1.3 Delivery and Storage of Materials

All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure from the elements. Damaged or deteriorated materials shall be removed from the premises.

1.4 Site Conditions

Before, during, and after installation of product, building interior shall be enclosed and maintained at a temperature above 50 °F (10 °C)

Part 2: Mixing**2.1 Products**

- A. Gypsum Cement**—LEVELROCK Brand Floor Underlayment 3500.
- B. Primer**—Use LEVELROCK Brand Primer over approved subfloor as specified by manufacturer.
- C. Sand**—Washed sand meeting specifications published in the USG LEVELROCK Brand Application Manual.
- D. Water**—Potable, free from impurities.

2.2 Mixing Proportions

Add 4.0 to 4.5 gallons of water, one 80 lb. bag of LEVELROCK Brand Floor Underlayment 3500 and sand volume not to exceed 1.4 cu. ft. depending upon specified compressive strength. Do not over water. Water amount will change with wetness of sand.

Part 3: Execution	3.1 Preparation	A. Subfloor shall be structurally sound. Contractor shall clean subfloor to remove mud, oil, grease, and other contaminating factors before arrival of the underlayment crew. Check that substrates are dry, smooth, and clean. Apply leak prevention material to crack and void. (Set temporary dams as required.)
	3.2 Application of Cementitious Flooring	A. Application shall not begin until the building is enclosed, including roof, windows, doors, and other fenestration. Install after drywall installation unless tenant finish requirements identify partitioning after the pour. B. Place cementitious flooring 3/4-inch minimum thickness over wood frame, 1/2-inch minimum thickness over plank or poured in place concrete. Immediately spread and screed product to a smooth surface. Except at authorized joints, place product as continuously as possible until application is complete so that no slurry is placed against product that has obtained its initial set. C. General contractor shall provide continuous ventilation and adequate heat to rapidly remove moisture from the area until the cementitious underlayment is dry.
	3.3 Preparation for Installation of Glue Down Floor Goods	A. After the floor has dried, use manufacturer approved sealer to seal the cementitious underlayment prior to installation of glue down floor goods. Where floor goods manufacturers require special adhesive or installation systems, their requirements supersede these recommendations. Damaged floor areas need to be repaired prior to the flooring sealing.
	3.4 Field Quality Control	A. Cementitious underlayment mix shall be tested for slump as it's being pumped using a 2" (i.d.) x 4" cylinder resulting in a patty size of 8 inches to 9-1/2 inches diameter. B. At least one set of three (3) molded cube samples shall be taken from each day's pour or every 10,000 sq. ft. (whichever is less) during the cementitious underlayment application. Cube mold material shall brass or engineered plastics. Cubes shall be tested in accordance with modified ASTM C472. Test results shall be available to architect and/or contractor upon request.

**Submittal
Approvals:**

Job Name		
Contractor		Date

Warning

When mixed with water, this material hardens and then slowly becomes hot—sometimes quickly. DO NOT attempt to make a cast enclosing any part of the body using this material. Failure to follow these instructions can cause severe burns that may require surgical removal of affected tissue or amputation of limb. Dust may require cause skin, eye, nose, throat, or respiratory irritation. Avoid dust inhalation and exposure to dust. If dusty, wear an NIOSH/MSHA-

approved dust respirator. Use proper ventilation to reduce dust exposure. Portland cement is strongly alkaline and can be corrosive to eyes, skin, and respiratory tract. Wear eye and skin protection. If eye contact occurs, immediately flush thoroughly with water for 15 minutes and get medical attention. Do not ingest. If ingested and any discomfort occurs, call physician. Product safety information: (800) 507-8899. KEEP OUT OF REACH OF CHILDREN.

Trademarks

The following trademark used herein is owned by United States Gypsum Company or a related company: FIBEROCK, LEVELROCK, SHEETROCK, USG. ENKASONIC is a trademark of Colbond, Inc.

Notice

We shall not be liable for incidental or consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instruction or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.