USG LEVELROCK® BRAND
4500
FLOOR UNDERLAYMENT

DESCRIPTION

Premium engineered underlayment with a high compressive strength
• Innovative, self-sealing technology
• Fast application, fast setting, allows for quick return of light trade traffic within hours
• High compressive strength—stands up to commercial and institutional use
• Applied by USG Levelrock® authorized applicators
• GREENGUARD Gold Certification; qualifies as a low VOC emitting material (meets CA 01350)

USG Levelrock® Brand 4500 Floor Underlayment is an engineered cementitious underlayment which provide a smooth, hard, self-sealing underlayment surface. It can be applied at thicknesses from featheredge (with proper sand) to 3 in. (76 mm), while exceeding commercial vinyl floor-covering requirements as a high-performance underlayment with compressive strengths of up to 5500 psi (37.9 MPa).

USG Levelrock 4500 Floor Underlayment is mixed with approved sand and potable water at the job site to yield a lightweight underlayment that weighs approximately 5 lbs./sq. ft. (24.4 kg/m²) at 1/2 in. (13 mm) thickness and has an approximate dry density range of 123-130 lbs./cu. ft. (1,970-2,082 kg/m³).

INTENDED FOR

• Commercial, light-commercial, residential, institutional and rehab construction
• Concrete slabs, pre-stressed concrete, concrete planks, concrete repair/leveling, existing gypsum, radiant heat systems, OSB and plywood
• UL fire-rated assemblies with UL Designation Type HSLRK
• Floor systems with USG sound attenuation products
• Use with a variety of floor coverings, including vinyl, carpet, hardwood, and natural and man-made stone
• Use as a wear surface with decorative protective coating system

LIMITATIONS

1. Do not use in exterior applications.
2. Do not over water or over sand.
3. Can be used as a wear surface with a tested decorative, protective coating system. Coating systems must be tested for adhesion. The bond test and performance of coatings are the responsibility of the coating manufacturer.
4. Do not install where continuous exposure to moisture is a possibility.
5. For wood subfloors - install only on tongue-and-groove edge plywood or OSB, or square-edge wood subfloor with back-bracing.
6. Do not install in below-grade applications without a USG-approved moisture vapor reducer.
7. Do not pour over expansion or isolation joints. Continue all movement joints in the concrete slab up through the layer of underlayment. In areas where the expansion or isolation joints are not present in the floor or where the concrete slab has developed systematic cracks in response to slab movement, consult with an engineer on the project or request the services of a licensed structural engineer.
8. Structure shall be designed so that deflection does not exceed L/240 from combined dead and live loads and L/360 from live loads. Certain floor coverings such as marble, limestone, travertine and wood may have more restrictive deflection limits. Consult the appropriate floor covering manufacturer.
9. Adhere to the Radiant Panel Association (RPA) Guidelines for Hydronic Radiant Floor Heating regarding temperature and fluid temperatures. Fluid temperatures of radiant systems shall not exceed 140 °F (60 °C) at the exit of the heating device. To limit risk, floor temperatures shall not exceed 100 °F (38 °C) in general and shall be limited to 85 °F (29 °C) in areas of direct contact by building occupants. To minimize any potential of shocking the USG Levelrock 4500 Floor Underlayment, the radiant heat system should be ramped up slowly over several days until the underlayment is fully dry. Startup of radiant systems shall be in accordance with manufacturers’ and RPA-recommended startup procedures.
During the entire installation process, the building must be enclosed and temperature maintained at 50 °F (10 °C) minimum. Adequate ventilation must be provided to ensure uniform drying of the installed floor underlayment, which typically occurs within 3-5 days at a 1/2 in. (13 mm) thickness. Protect floors from heavy trade traffic loads (i.e. loaded drywall carts, heavy tool cabinets, etc.) with plywood. This may cause the protected areas to take longer to dry. Check for dryness in these areas before installing floor covering.

When the MVER exceeds 5 lbs. (2.3 kg)/1,000 sq. ft. (92.9 m²)/24 hours or an RH greater than 80% per ASTM F2170, treat the concrete subfloor with an approved moisture vapor reducer. USG Levelrock Floor Underlayments are not vapor or moisture barriers. Transmission of excessive water vapor or moisture from the concrete subfloor through the floor underlayments can interfere with floor coverings and/or floor-covering adhesives, thus compromising their performance. For on-grade concrete applications, use an approved moisture vapor reducer. A moisture mitigation system may not be needed if a vapor retarder is installed below the concrete slab in accordance to industry specifications and practice (ASTM E1745, ASTM E1993, ASTM E1693) and the MVER value of the concrete slab is below 5 lbs. (2.3 kg)/1,000 sq. ft. (92.9 m²)/24 hours or has an RH less than 80% per ASTM F2170. If the concrete subfloor has been treated with an approved moisture vapor reducer, it must be primed with USG Levelrock® Acrylic Concrete Primer prior to application of the USG Levelrock 4500 Floor Underlayment.

Cracks in the existing concrete subfloor must be inspected to determine if the crack is due to typical concrete “shrink” or if it is a result of a structural movement. In the case of the latter, remediation of the crack must be addressed or eventually the crack will telegraph through. Consult with the engineer on the project or request the services of a professional structural engineer for all suspected structural cracks.

Repair all non-structural cracks in old and new concrete to minimize and control their ability to telegraph. Note that repair of existing cracks in the concrete subfloor only subdues but does not completely prevent their ability to telegraph. Respect existing expansion and control joints.

For UL assemblies, the minimum thickness required when pouring USG Levelrock 4500 Floor Underlayment over OSB or plywood is 3/4 in. (19 mm) at a 1.4 mix design. For non-UL assemblies, install galvanized wire lath at less than 3/4 in. (19 mm) thickness.

USG Levelrock 4500 Floor Underlayment is specially formulated with a built-in sealer. Thus, for most floor coverings, the application of a primer or sealer is neither necessary nor recommended, but a bond test for compatibility should always be conducted. Check with floor-covering and adhesive manufacturers for installation guidelines and suitability of their manufactured products over USG Levelrock.

To minimize the effect of expansion and cracking, wrap USG Levelrock® Brand Perimeter Isolation Strip 2.5 (1/4 in. (6 mm) thick) around all door jambs, columns and pipes. For outside corners, the strip should extend a minimum of 24 in. (610 mm) from the corner on both sides. For more information on perimeter isolation strip installation, see USG Levelrock® Brand Perimeter Isolation Strip Submittal (IG1874).

When used as a wear surface, use a suitable protective coating intended to prevent dirt, grime or other contaminants from staining the surface.

<table>
<thead>
<tr>
<th>USG Levelrock 4500 Floor Underlayment</th>
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<tbody>
<tr>
<td>Approximate Compressive Strength (aggregated)</td>
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<tr>
<td>ASTM C472 (modified)</td>
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<tr>
<td>4500-5500 psi (31.0-37.9 MPa)</td>
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<tr>
<td>Approximate Dry Density (aggregated)</td>
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<tr>
<td>125 lbs./cu. ft. (2,002 kg/m³)</td>
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<tr>
<td>Set Time Range</td>
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<td>60 - 90 minutes</td>
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<tr>
<td>Surface-Burning Characteristics</td>
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<tr>
<td>ASTM E84</td>
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<tr>
<td>Flame Spread – 0</td>
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<td>Smoke Developed – 0</td>
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NOTE: Results for the properties published above were achieved under controlled laboratory conditions. Actual field results may differ due to environmental conditions, regional sand variations, inconsistent proportioning of field applied water, sand and USG Levelrock floor underlayment, as well as differences in mixing/pumping equipment.
USG Levelrock floor underlayments and systems have been tested in accordance with ASTM E90 and E492. See USG Levelrock® & USG Durock™ Sound Systems Fire & Sound Rating Guide (IG1685) for STC and IIC results or visit usg.com for further information on sound test results.


For the most up-to-date UL Designation Type HSLRK, contact your USG representative.

NOTE *UL Design requires greater minimum pour depths and compressive strengths and/or additional requirements. See individual UL Designs for specifics.

EXTENDED WARRANTY
An extended warranty may apply when using USG Levelrock floor underlayments in a system application. Please contact USG for further details.

SUBMITTAL APPROVALS

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Contractor</th>
<th>Date</th>
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