

# USG LEVELROCK® BRAND FLOOR UNDERLAYMENT ULTRAARMOR™

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**Innovative all-in-one floor underlayment and wear surface product**

- Fast application, fast-setting allows for return of light trade traffic within hours
  - Hybrid cementitious formula can be used as a traditional underlayment with wear surface qualities equal to concrete
  - Can be installed over wood frame, radiant heat (RH), corrugated steel deck, pre-cast concrete or concrete structures
  - Smooth crack-resistant surface
  - Meets vinyl industry commercial performance requirements
  - Can be dyed to create unique aesthetic designs
  - Can be applied to concrete surfaces without requiring mechanical profiling
  - Classified as to fire resistance and non-combustibility
  - May assist in obtaining LEED® credits
  - Applied by USG Levelrock authorized applicators
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**DESCRIPTION**

USG Levelrock® Brand UltraArmor™ Floor Underlayment is a proprietary high-quality, versatile engineered cementitious underlayment for interior use in new and renovation construction in residential and commercial applications. With a compressive strength range of 3500-5000 psi, USG Levelrock UltraArmor floor underlayment is the industry's first "all-in-one" product that provides fire-rated designs, improved sound attenuation characteristics, and is robust enough to be used as a wear surface without the need for epoxy or urethane coatings.

USG Levelrock UltraArmor is an ideal underlayment/finished floor product for wood-frame structures and a superior finished floor topping material when used over concrete. It may also be used as an underlayment/topping product for corrugated steel deck projects. A wear-resistant coating is not necessary; however, to provide a washable and stain-resistant floor surface, it is recommended that the appropriate sealer is used. USG Levelrock UltraArmor may also be dyed to create unique aesthetic designs.

USG engineered cementitious underlayment is mixed with sand and water at the job site to yield a lightweight underlayment or topping product with a smooth and monolithic surface. A 3/4-in. thick underlayment weighs approximately 7.5 lbs./sq.ft. and has an approximate dry density range of 118 - 124 lbs./cu. ft. USG Levelrock UltraArmor floor underlayment may assist in obtaining LEED credits 5.1 and 5.2.

USG engineered cementitious underlayment systems provide an economical way to achieve lightweight, fire-resistant, smooth and monolithic floors in residential and light-commercial construction. When used with USG Levelrock™ Perimeter Isolation Strip, USG Levelrock UltraArmor floor underlayment provides an enhanced system to reduce potential cracking. Typical applications are less labor intensive than many other types of construction and provide high fire ratings. Designed sound systems provide for improved STC and IIC ratings when used with USG Levelrock™ sound attenuation products.

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**WARRANTY**

A 10-year limited system warranty applies when using USG Levelrock UltraArmor engineered cementitious underlayment sealed with USG Durock™ X2 primer-sealer and a XL Brands® manufactured adhesive. Please contact USG for further details.

## LIMITATIONS

1. Do not use in exterior applications.
2. Do not install where continuous exposure to moisture is a possibility.
3. Do not install in below-grade applications. Contact USG for on-grade application recommendations.
4. For wood subfloors, do not install on plywood/OSB subfloors lacking tongue and groove edges without back-blocking.
5. Do not use 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 professional structural engineer to provide such joints as part of the system in accordance with engineering requirements and industry standards.
6. 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.

## INSTALLATION

In geographic areas *not* subject to freezing conditions, USG Levelrock UltraArmor floor underlayment can be poured up to 60 days before permanent windows and doors are installed\* (only up to 30 days in areas subject to freezing conditions).

Before, during and up to 3 days after installation of the underlayment, the building's interior temperature must be maintained above 50 °F and below 110 °F. The poured underlayment must be protected from wind until set has occurred, or a minimum of 4 hours after placing material. Light foot traffic can occur after this time; normal trade traffic can resume the next day.

After set, a ¾-in. thick pour of USG Levelrock UltraArmor floor underlayment will typically require 5-7 days to dry completely – provided the building temperature is maintained between 50 °F and 110 °F along with adequate ventilation and air movement to ensure uniform drying. High ambient humidity will delay the drying process. Apply the floor covering only when USG Levelrock UltraArmor floor underlayment is completely dry. Protect floors from heavy trade traffic loads (i.e. loaded drywall carts, heavy tool cabinets, etc.) with plywood. Because this may cause the protected areas to take longer to dry, check for dryness in these areas before installing floor covering.

### Wood subfloors

The application of USG Levelrock™ Wood Primer to the subfloor is necessary to provide maximum bond between the underlayment and subfloor. For more information on wood subfloor applications, please see [usg.com](http://usg.com) or [pourlevelrock.com](http://pourlevelrock.com) for *USG Levelrock 2500 and Green Floor Underlayment Submittal* (IG1450).

### Concrete subfloors

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 USG Levelrock UltraArmor floor underlayment. Repair all existing cracks in old and new concrete to minimize and control their ability to telegraph through the layer of USG Levelrock UltraArmor floor underlayment. Remove the weak concrete along the length of the cracks by chiseling or other suitable means. Remove accumulated dust and debris from the crack cavities using a vacuum or other suitable means. Various cracks present in the concrete subfloor including shrinkage cracks must be filled with a suitable commercially available crack-fill epoxy adhesive designed for concrete flooring applications. To ensure superior resistance to crack growth, use injection epoxy crack-repair techniques per industry guidelines to repair cracks that are active or deep. Note that repair of existing cracks in the concrete subfloor only subdues, but does not completely prevent their ability to telegraph through the underlayment. Growth of existing cracks or formation of new cracks in the concrete subfloor can lead to cracks telegraphing through the underlayment. Respect existing expansion and control joints (see *Limitations* #5, pg. #2).

Concrete subfloors receiving cementitious underlayment systems must be cured properly (generally for a minimum of 28 days) prior to the underlayment installation. For on- or above-grade applications on concrete subfloors or concrete planks, measure the Moisture Vapor Emission Rate (MVER) using ASTM F1869. MVER should be below 5 lbs./1000 sq. ft./24 hrs. Contact USG for further information. Concrete subfloors should be treated properly with USG Levelrock™ Acrylic Concrete Primer, using the standard two-coat application method. Refer to *USG Levelrock Floor Underlayment Finished Floor Installation Guidelines* (IG1457) for floor-covering installation.

To prepare concrete subfloors, clean all surface debris and dust by sweeping or vacuuming and remove all loose or spawled concrete. Mechanical floor preparation such as shot-blasting, scarification or other methods of grinding are not needed.

To minimize the effect of expansion and cracking on outside corners, use USG Levelrock perimeter isolation strip. See *USG Levelrock Brand Perimeter Isolation Strip Submittal* (IG1874) for further details.

When used as a wear surface, seal the surface to prevent dirt, grime or other contaminants from staining the surface. For more information on concrete subfloor applications, please see [usg.com](http://usg.com) or [pourlevelrock.com](http://pourlevelrock.com) for *USG Levelrock® 4500 Floor Underlayment Submittal* (IG1725) and *USG Durock™ Brand Quik-Top™ White and Gray Self-Leveling Underlayment Submittal* (CB515).

#### **RH applications (wood and concrete subfloors)**

During and for two weeks after the installation of USG Levelrock UltraArmor floor underlayment, radiant heat systems should be turned off. The application of USG Levelrock wood primer to the subfloor is necessary to provide maximum bond between the underlayment and subfloor. For more information on RH applications, please see [usg.com](http://usg.com) or [pourlevelrock.com](http://pourlevelrock.com) for *USG Levelrock RH and Green Floor Underlayment Submittal* (IG1459) and *USG Levelrock Commercial RH and Green Floor Underlayment Submittal* (IG1541).

#### **Corrugated steel deck**

When used on corrugated steel deck, USG Levelrock™ CSD™ Primer must be applied at full strength. For more information on corrugated steel deck applications, please see [usg.com](http://usg.com) or [pourlevelrock.com](http://pourlevelrock.com) for *USG Levelrock® CSD® Early Exposure™ Floor Underlayment Submittal* (IG1648).

For further details on installation requirements, specifications and the most up-to-date product information, please see [usg.com](http://usg.com) or [pourlevelrock.com](http://pourlevelrock.com).

**NOTE** \*If permanent windows, doors and a roof have not been installed before the time of pour, temporary windows and doors, plus a permanent deck and exterior sheathing, must be installed before the pour commences.

## **PRODUCT DATA**

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Approximate Compressive Strength (aggregated) ASTM C472 (modified): 3500-4500 psi\*

Approximate Dry Density (aggregated): 118-124 lbs./cu. ft.

**NOTE** \*Compressive strengths published herein 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.

## **UL DESIGNATION TYPE CSD**

G524, G230, G516, G535, G551\*, G553\*, G556, G561, G562, G564\*, G566, G587, G588, G591, J917, J919, J920, J924, J927, J931, J957, J958, J991, J994, L006, L201, L206, L208, L209, L210, L211, L212, L501, L502, L503, L504, L505, L506, L507, L508, L509, L510, L511, L512, L513, L514, L515, L516, L517, L518, L519, L520, L521, L522, L523, L524, L525, L526, L527, L528, L529, L530, L532, L533, L534, L535, L536, L537, L538, L539, L540, L541, L542, L543, L545, L546, L547, L549, L550, L551, L552, L556, L557, L558, L559, L562, L563, L564, L565, L568, L569, L570, L571, L573, L574, L577, L579, L581, L583, L585, L587, L588, L589, L590, L592, L593, M500, M501, M502, M503, M504, M505, M506, M508, M510, M511, M513, M515, M521\*.

For the most up-to-date UL Designation Type CSD, 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.

Type CSD is UL/ULC Classified as a non-combustible material in accordance with ASTM E136 and CAN/ULC-S114.

**SUBMITTAL APPROVALS**

<b>Job Name</b>	
<b>Contractor</b>	<b>Date</b>

**PRODUCT INFORMATION**

See usg.com or pourlevelrock.com for the most up-to-date product information.

**LEED INFORMATION**

For the most up-to-date information on LEED rating systems, project certification and the U.S. Green Building Council, please visit usgbc.org.

**DANGER**

Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection. Use only in a well-ventilated area, wear a NIOSH/MSHA-approved respirator. If exposed, swallowed, inhaled, or skin irritation occurs get medical attention. If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses and continue rinsing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Dispose of in accordance with local, state, and federal regulations. For more information call Product Safety: 800-507-8899 or see the SDS at usg.com.

**KEEP OUT OF REACH OF CHILDREN.**

**TRADEMARKS**

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LEED is a registered trademark of U.S. Green Building Council.

**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.

**SAFETY FIRST!**

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

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