



USG LEVELROCK® BRAND FLOOR UNDERLAYMENT

CSD® EARLY EXPOSURE™

Premium engineered gypsum cement for early installation over CSD

- Up to 55% lighter than 3 in. of conventional concrete
- Streamlines trade scheduling—can be installed early in the building's construction schedule
- Allows trade traffic to resume the next day (conventional poured concrete requires 7-10 days)
- Applied by USG Levelrock® applicators
- GREENGUARD Gold Certification; qualifies as a low VOC emitting material (meets CA 01350)

DESCRIPTION

USG Levelrock® Brand CSD® Early Exposure™ Floor Underlayment is a proprietary engineered gypsum cement designed for interior use in buildings with light-gauge steel frame construction and a corrugated steel deck. USG Levelrock CSD Early Exposure significantly speeds and streamlines construction trade scheduling, provides high early strength and offers outstanding resistance to incidental moisture. This innovative hybrid cementitious formula can be poured up to 60 days* before installing a building's permanent windows and doors. With a robust compressive strength of 3500-5000 psi (24.1 – 34.5 MPa), USG Levelrock CSD Early Exposure may be applied at a much lower thickness than poured-in-place concrete.

Typical USG Levelrock CSD Early Exposure floor underlayments weigh approximately 13 lbs./sq. ft. and require a minimum of 1 in. above the top of the flutes. Pour thickness (as measured from the bottom of the flute) is 1-9/16 in. with a standard 9/16 in. steel deck (minimum 22 gauge). When pouring over USG Levelrock® SAM-CSD™ or USG Levelrock® SAM-N™ Ultra Series Sound Attenuation Mats, it requires a minimum of 1-3/8 in. (35 mm) thick topping of USG Levelrock CSD Early Exposure and pre-filling the flutes is not necessary.

NOTE *In geographic areas not subject to freezing conditions; only up to 30 days in areas subject to freezing conditions.

INTENDED FOR

- Commercial, light-commercial, residential
- Corrugated steel decks, light-gauge steel framing, concrete slabs, concrete planks, radiant heat systems
- UL fire-rated assemblies with UL Designation Type CSD
- Floor systems with USG sound attenuation products
- Use with a variety of floor coverings, including vinyl, carpet, hardwood, and natural and man-made stone

LIMITATIONS

When considering the use of this floor system, a licensed structural engineer should first evaluate the building loads and framing system to determine whether this corrugated steel deck flooring system is appropriate.

USG Levelrock CSD Early Exposure floor underlayment is not a structural element and does not provide any contribution to the floor diaphragm. The corrugated steel deck must be designed to address all floor diaphragm requirements and must conform to Steel Deck Institute standards. Reference the SDI Manual of Construction with Steel Deck, Section IX Special Considerations for Diaphragms. For additional requirements, please see *USG Levelrock CSD Early Exposure Floor Underlayment Product Line Design Guidelines for use with Corrugated Steel Deck Floor Systems* (IG1741). Contact your USG representative to request a copy.

LIMITATIONS CONT.

1. Do not use in exterior applications.
2. Do not use as a wear surface.
3. Do not install where continuous exposure to moisture is a possibility.
4. Do not use as a structural element.
5. Do not install below-grade.
6. Do not install at thicknesses greater than 2 in. (as measured from top of flute).
7. Do not install when indoor temperature is below 40 °F (10 °C). While pouring USG Levelrock floor underlayment, forced air space heaters must be turned off until after underlayment has set.
8. Do not install in any system not meeting the minimum criteria set forth in *USG Levelrock CSD Early Exposure Floor Underlayment Product Line Design Guidelines for use with Corrugated Steel Deck Floor Systems* (IG1741).
9. 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 licensed structural engineer.
10. Structure shall be designed so that deflection does not exceed L/240 from combined dead and live loads and L/360 from live load. Furthermore, the design criteria for metal deck selection is so the live load deflection does not exceed L/480. Certain floor coverings such as marble, limestone, travertine and wood may have more restrictive deflection limits. Consult the appropriate floor covering manufacturer.
11. 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 CSD Early Exposure 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.

INSTALLATION

USG Levelrock™ CSD™ Primer should be applied at full strength to the corrugated galvanized steel deck.

In geographic areas *not* subject to freezing conditions, USG Levelrock CSD Early Exposure 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).

Throughout the entire installation process, the building's interior temperature must be maintained above 40 °F (10 °C) and below 110°F (43 °C). Any radiant heat systems should be turned off prior to installation. During the pour, protect the area from rain, wind and drafts until floor underlayment has set, or a minimum of 4 hour hours after placing material. Remove any standing water within 12 hours. Continue protecting the floor underlayment from rain for up to three days from installation. Once it has set (becomes walkable), good airflow and air exchange is required for proper drying.

After set, USG Levelrock CSD Early Exposure will typically require 10-14 days to dry completely. High ambient humidity will delay the drying process. Protect floors from heavy trade traffic loads (i.e. loaded drywall carts, heavy tool cabinets, etc.) with plywood. Apply the floor covering only when the floor underlayment is completely dry.

USG Levelrock CSD Early Exposure requires a minimum pour of 1 in. (25 mm) above the top of the flutes. If pouring directly over corrugated steel decks, flutes must be pre-filled. When pouring over USG Levelrock SAM-CSD or USG Levelrock SAM-N Ultra Series Sound Attenuation Mats, it requires a minimum of 1-3/8 in. (35 mm) thick topping of USG Levelrock CSD Early Exposure and pre-filling the flutes is not necessary.

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 CSD Early Exposure Floor Underlayment.

INSTALLATION CONT.

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.

USG Levelrock floor underlayments are not structural and will not resist movement in buildings. Structural movement resulting in stress to the USG Levelrock floor underlayment will cause cracking to occur.

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).

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

	USG Levelrock CSD Early Exposure Floor Underlayment
Approximate Compressive Strength (aggregated) ASTM C472 (modified)	3500-5000 psi (24.1-34.5 MPa)
Approximate Dry Density (aggregated)	120 lbs./cu. ft. (1,922 kg/m ³)
Set Time Range	60 - 90 minutes
Surface-Burning Characteristics ASTM E84	Flame Spread - 0 Smoke Developed - 0

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.

TEST DATA
SOUND

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.

DURABILITY

Tested per ASTM C627 *Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester*. Contact USG for further information.

UL DESIGNATION TYPE CSD

G230, G516, G524, G535, G551*, G553*, G556, G559, G561, G562, G564*, G565, G566, G587, G588, G591, G592, H502, 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, L533, L534, L535, L536, L537, L538, L539, L540, L541, L542, L543, L545, L546, L547, L549, L550, L551, L552, L556, L557, L558, L559, L560, L562, L563, L564, L565, L568, L569, L570, 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*, M525, M527, M530, M531, M532, M535, M536, M538, M541.

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.

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

Job Name	
Contractor	Date

PRODUCT INFORMATION

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

GREENGUARD INFORMATION

GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg.

EPD & HPD INFORMATION

For sustainability transparency documents, visit usg.ecomedes.com

DANGER

Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause cancer by inhalation of respirable crystalline silica. Do not handle until all safety precautions have been read and understood. Avoid breathing dust. Use only in a well-ventilated area, wear a NIOSH/MSHA-approved respirator. Wear protective gloves/protective clothing/eye protection. If 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: 1-800-507-8899 or see the SDS at usg.com

KEEP OUT OF REACH OF CHILDREN.

TRADEMARKS

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NOTE

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NOTICE

We shall not be liable for consequential, incidental or special damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to the replacement of defective goods or a refund of the purchase price, at USG's option, and does not include costs of labor, floor-covering materials, or any other costs associated with material replacement. 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. For all applicable terms and conditions, please refer to *USG Levelrock® Brand & USG Durock™ Brand Performance Flooring Products Two-Year Limited Warranty for USG Levelrock Applicators (IG1727)* located at usg.com.

SAFETY FIRST!

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



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