

Levelrock® Floor Underlayment

CSD® RH CSD® RH Green

Please note – because we routinely develop new systems, this document may not contain the latest updates.

For product information, architectural specifications, and fire-rated or sound assembly performance information, contact your local USG Architectural Services Manager or visit usgdesignstudio.com.

West: Jennifer Link-Raschko at 951 313.4994
East: Alex MacDonald at 817 584.4714

For installation questions or to locate the nearest LEVELROCK applicator, contact ALCORP Marketing, Inc. at 817 329.1808.

Premium poured floor underlayment for use over corrugated galvanized steel deck and radiant heat systems

- Up to 55% lighter than 3 in. of concrete
- Lightweight floor design; reduces total dead load
- Ideal for buildings 4 to 10 stories high
- Allows trade traffic to resume the next day (conventional poured concrete requires 7–10 days)
- Specially formulated for radiant flooring
- UL designs available up to 2-hour fire rating, non-combustible
- LEVELROCK CSD RH Green floor underlayment may assist in obtaining LEED® credits
- Applied by USG LEVELROCK applicators

Description

LEVELROCK® CSD® RH and LEVELROCK® CSD® RH Green floor underlayment are proprietary formulations designed for interior use in buildings with light-gauge steel frame construction, a corrugated steel deck (minimum 22 gauge) and radiant heat systems. LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment provide a robust 3500–4500 psi compressive strength and may be applied at a much lower thickness than poured-in-place concrete. Average LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayments weigh approximately 18.5 lbs./sq. ft. and require a minimum of 1 ½ in. above the top of the flutes. Encasing electrical radiant heat systems typically requires less material. There should be a minimum thickness of 1 in. of LEVELROCK CSD RH or LEVELROCK CSD RH Green floor underlayment above the hydronic tubes and electric cables.

LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment reduces material cost, as well as total project cost, by reducing the weight of the floor system and supporting structure. These products can also provide scheduling advantages and may increase floor space by allowing additional floors to be added due to the lighter-weight construction. This makes these products ideal for designing buildings between 4 – 10 stories where wood framing is typically not allowed and conventional structural concrete systems may be too expensive.

The tough compressive and surface strengths of LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment provides long-term resistance to trade activity typical of multi-family, mid-rise/light-commercial construction and they accept virtually all types of floor coverings such as ceramic tile, carpeting and wood. The non-shrinking nature of LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment locks hydronic tubes and electric cables in place, preventing noise and tube chafing, while the special formulation is designed to be used within the elevated operating temperature ranges associated with radiant heat floors. In addition to locking the tubes and cables in place, the direct contact of LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment provides for an efficient transfer of heat to the underlayment by eliminating any air space that may act as an insulator and lower heat transfer efficiency.

LEVELROCK CSD RH Green floor underlayment is made with recaptured gypsum, from the flue gas desulfurization of the process used to clean combustion gases from fossil-fuel-burning power plants. This process is used to greatly reduce emissions of sulfur dioxide which helps the environment by reduction of harmful acid rain. The use of this recaptured gypsum also eliminates the need to dispose of the material in landfills as a solid waste. In addition, the high recycled content of LEVELROCK CSD RH Green floor underlayment may assist in obtaining LEED credits 4.1, 4.2, 5.1 and 5.2.

USG® poured cementitious floor underlayment systems provide an economical way to achieve lightweight, fire-resistant, sound-rated, smooth and monolithic floors in residential and light-commercial mid-rise 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 LEVELROCK sound attenuation products.

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.

LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment are not structural elements and do 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 *LEVELROCK CSD and LEVELROCK CSD Early Exposure Floor Underlayment Design Guidelines for use with Corrugated Steel Deck Floor Systems* (IG1741). Contact your USG or ALCORP Marketing representative to request a copy.

1. Do not use in exterior applications.
2. Do not use as a wearing surface.
3. Do not use as a structural element.
4. Do not install below-grade.
5. Do not install at thicknesses greater than 2 in. (as measured from top of flute).
6. Do not install when indoor temperature is below 50 °F. Do not use a salamander-type heater.
7. Do not install in any system not meeting the minimum criteria set forth in *LEVELROCK CSD and LEVELROCK CSD Early Exposure Floor Underlayment Design Guidelines for use with Corrugated Steel Deck Floor Systems* (IG1741).
8. 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.
9. Do not install where continuous exposure to moisture is a possibility (for instance, exterior balconies or large commercial/institutional shower rooms).
10. Do not use with radiant heat systems having prolonged operation temperatures exceeding 140 °F.

Product Data

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

Approximate Dry Density (aggregated): 121–125 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 LEVELROCK floor underlayment, as well as differences in mixing/pumping equipment.

Installation

LEVELROCK™ CSD™ floor underlayment primer applied at full strength to the corrugated galvanized steel deck and LEVELROCK CSD RH or LEVELROCK CSD RH Green floor underlayment must be applied only by a USG LEVELROCK applicator. The building must be completely enclosed, including roof and windows. 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.

LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment will set within 2–3 hours under normal conditions. Light foot traffic can occur after this time; normal trade traffic can resume the next day. LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment will typically require 22–25 days at a 1 ½ in. thickness from the top of the flute to dry completely. During this period, adequate ventilation and air movement must be provided to ensure uniform drying. High ambient humidity will delay the drying process. Apply the floor covering only when LEVELROCK CSD RH and LEVELROCK CSD RH Green floor underlayment is completely dry.

During the entire installation process, the building must be enclosed and temperature maintained at a 50 °F minimum until permanent heating is available. Ensure that all hydronic piping or radiant heat mats are firmly attached to the subfloor. Refer to *LEVELROCK Floor Underlayment Finished Floor Installation Guidelines* (IG1457) for floor covering installation.

For further details on installation requirements, specifications and the most up-to-date product information, please go to levelrock.com and usgdesignstudio.com.

UL Designs

G551, G553, G559, G564 and G571. Additional UL designs may be available. Contact your USG representative or see levelrock.com for the most up-to-date information.

Compliance

City of L.A. Research Report 25674; International Conference of Building Officials (ICBO) Report No. ER-5885*

*ESR pending.

Submittal Approvals

Job Name		
Contractor		Date

Product Information
See levelrock.com for the most up-to-date product information.

WARNING!

Trademarks
The following trademarks used herein are owned by United States Gypsum Company or a related company: CSD, LEVELROCK, USG, USG in stylized letters. 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 MSDS and literature before specification and installation.

