

USG LEVELROCK® BRAND
USG DUROCK™ BRAND
GYPSUM UNDERLAYMENTS

DRYING CONDITIONS GUIDELINES

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To ensure the proper drying of USG Levelrock® Brand and USG Durock™ Brand gypsum floor underlayments, the following steps and considerations must be taken into account.

RESPONSIBILITY FOR DRYING ENVIRONMENT

The building environment, product and substrate temperature should be maintained between 50 °F (10 °C) and 95 °F (35 °C) before, during and for 72 hours after a USG Levelrock or USG Durock™ gypsum underlayment is installed. The general contractor must be made aware of these conditions at the job meeting and is responsible for ensuring that they are met.

The best and easiest way to accelerate the drying process (after allowing 2 to 3 hours for setting) is by putting a fan on the floor and slightly opening the windows (even in winter) to ensure good air movement and air exchange. Rooms with no windows, such as bathrooms and closets, typically dry slower due to lack of ventilation. Placing fans in these areas should be considered, especially since floor coverings are typically installed in bathrooms earlier than in other areas. If the HVAC system in the building is operational, that should be turned on as well. However, this is not always possible (especially in new construction) because the system may not be operational yet.

If poor drying conditions are encountered (i.e. high humidity), then strong consideration should be given to utilizing mechanical desiccating ventilators such as those manufactured by Polygon Group US (polygongroup.us). In all cases, the use of fans is still recommended. Portable heaters should be used in cooler climates, but must be used in conjunction with adequate ventilation to ensure proper air exchange. The by-product of 'salamander' type heaters and some other types of kerosene heaters is carbon dioxide and water vapor which will inhibit drying. Thus, if these are the only methods available, proper air exchange is especially critical. After the USG Levelrock or USG Durock™ pour has been completed, the responsibility for maintaining the proper drying environment rests with the general contractor.



DRYING RATES

USG Levelrock and USG Durock™ gypsum underlayments must be completely dry before installing floor covering. Underlayment thickness, higher humidities and cooler temperatures—often found on jobsites—will inhibit drying. As a general rule of thumb, USG Levelrock and USG Durock™ gypsum underlayments at their typical application rates will dry as follows:

- 1/2 in. (13 mm): 3-5 days
- 3/4 in. (19 mm): 5-7 days
- 1-1/2 in. (38 mm): 14-17 days

Drying times are based on environmental conditions of 75 °F (24 °C), 50% relative humidity with proper ventilation/good air flow. Pours that exceed 1-1/2 in. (38 mm) will require approximately 4-5 additional days for every additional 1/4 in. (6 mm) increment. Underlayment thickness, higher humidities, lower temperatures and poor air flow will lengthen drying times so contact your USG Performance Flooring Representative to discuss alternative installation practices when pouring deeper than 1-1/2 in. (38 mm).

Drafts occurring during the setting process – usually within the first 2-3 hours after the pour can cause dusting on the surface of USG Levelrock and USG Durock™ gypsum underlayments due to the surface drying before it sets. However, once the material is set, air movement/air exchange is encouraged to speed the drying process.

The exceptions to the drying times previously listed are the USG Durock™ Quik-Top™ Self-Leveling Underlayment Series of products. These products have a unique drying technology that allows for floor covering installation 15 hours after underlayment installation.

VARIABLE CIRCUMSTANCES

Other situations that affect drying times are: leaks in roofs; lack of a permanent roof, windows or doors; and windows left open during storms which result in flooding of the floor—all of which have a potential negative effect on drying and product performance.

The standard recommendations regarding environmental conditions for USG Levelrock and USG Durock™ gypsum underlayments specifically state permanent windows, doors and a roof must be in place prior to the installation of USG Levelrock and USG Durock™ gypsum underlayments.* Where jobsite conditions are not as specified, (windows get broken, doors left open or roofs leak), then any water covering a USG Levelrock or USG Durock™ gypsum underlayment should be removed as soon as possible. In most cases, a first wetting of a USG Levelrock or USG Durock™ gypsum underlayment will not affect the serviceability of the floor, assuming that it is allowed to dry properly. Repeated or continuous exposure to water however, can be detrimental. When in doubt, contact your USG Gypsum Solutions Representative. More importantly, after a flooding incident, recognize that the floor has now taken up more free water and therefore standard drying times no longer apply. Again, good air circulation and fresh air exchange are critical to helping the floor dry quickly.

Note *USG Levelrock® CSD® Early Exposure™ Floor Underlayment is the exception to this recommendation. See *USG Levelrock® CSD® Early Exposure™ Floor Underlayment Submittal Sheet* (IG1648) at usg.com for more information.



CHECKING FOR DRYNESS

Floor coverings or wear surface coatings should not be installed until it can be determined the USG Levelrock or USG Durock™ gypsum underlayment has dried. Likewise, non-breathable crack isolation membranes should not be installed until the underlayment is dry. The best way to determine this is by use of a Protimeter moisture meter (protimeter.com). Two different models are acceptable for this purpose: the Surveymaster® and the Aquant®.

The entire floor should be surveyed to identify those spots which are taking longer to dry. Typically, a reading of 180 or less on the Protimeter moisture meter indicates less than 1% moisture content and represents a suitable dryness level of the floor. There can be slight variance between meters so it is important to calibrate the Protimeter moisture meter and determine where that "true dryness" level exists on a given instrument. Please strictly observe the manufacturer's instructions regarding the proper operation, maintenance and calibration of all moisture meters.

Here are two other methods that may be used for checking dryness:

- Tape an 18 in. x 18 in. (457 mm x 457 mm) section of 4-mil vinyl plastic (as per ASTM D4263) to the surface of the underlayment and seal the edges.
- Lay a 24 in. x 24 in. (610 mm x 610 mm) high-density, smooth rubber mat on the underlayment surface and sufficiently weigh it down to prevent the mat from shifting.

For both methods, the underlayment is considered dry if there is no discoloration (darkening) of the underlayment or condensation on the test covering after 16 hours.

Perform additional tests if necessary. Perform tests in critical areas such as high underlayment thickness or in an area of poor air flow. More than one test may be necessary, so perform additional tests until the floor is dry.

MOLD AND MILDEW

Mold will grow in the proper environment. The 'proper environment' required to support mold growth is moisture, food and the presence of mold spores. Because mold spores are everywhere, a supply of moisture and food will provide the habitat needed to support mold. Organic compounds are typical food sources for mold.

USG Levelrock and USG Durock™ gypsum underlayments do not support mold or mildew growth, but there is always a chance for such growth to start from other organic materials, such as latex paint or sawdust, that may have contaminated the underlayment surface.

Because most construction products contain organic materials that serve as a food source, the only practical control to prevent mold growth on a job site is to eliminate the sources of moisture. Therefore it is necessary to start drying the underlayment as soon as it has been placed and is set. Continue drying at a rapid rate until dry. Closed buildings with poor air movement, low temperature and high humidity increase the likelihood of mold growth when a food source is present. Spotting on the surface may be evidence that mold spore colonies have started to grow due to the presence of a food source and excessive moisture.

As mentioned, the best method for preventing mold growth is to follow proper construction practices. See the Moisture & Mold section under Products & Solutions at usg.com for information regarding recommended construction practices to prevent mold growth.

For additional remediation information, see *Moisture Control in Buildings: The Key Factor in Mold Prevention: 2nd Edition* at astm.org and visit epa.gov/mold.



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

CONTACT INFORMATION

United States Gypsum Company
550 West Adams Street
Chicago, IL 60661

PRODUCT INFORMATION

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

CUSTOMER SERVICE

800 621-9523

TECHNICAL SERVICE

800 USG.4YOU (874-4968)

WEBSITES

usg.com
usgdesignstudio.com

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