SECTION 03 54 13 – GYPSUM CEMENT UNDERLAYMENT

SECTION 03 54 16 – HYDRAULIC CEMENT UNDERLAYMENT

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| **Product Summary:**  |
| * No mechanical preparation required for most applications.
* Apply floor covering in as little as 15 hours after underlayment application.
* Compressive strength up to 10,000 psi (68.9 MPa) with self-sealing technology.
* Can be stained, polished or used by itself as a finished floor with an appropriate coating system.
* For more information, contact **<insert product representative here>** or 800.874.4968 for technical questions.
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| **Note to Specification Writer:**  |
| * This document is not intended to function as a standalone specification. It is intended to assist the specifier in inserting the proper language into the following recommended specification sections: 035413 and 035416.
* USG Durock™ Brand Quik-Top™ White and Quik-Top™ Gray Self-Leveling Underlayments are pre-sanded cementitious underlayments designed by USG for interior use in commercial, institutional and rehab construction. They provide a smooth, hard underlayment surface over concrete slabs, pre-stressed concrete or concrete planks at a typical thickness from featheredge to 3 in. (76.2 mm).
* An innovative USG technology minimizes downtime with quick set times and high production rates. This allows for trade traffic within hours of installation and installation of floor coverings within 15 hours after the underlayment is poured.
* Reference USG Literature CB515 for application and finishing recommendations.
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| **Sustainability Notes:** |
| * USG Durock™ Quik-Top White™ and Quik-Top™ Gray Self-Leveling Underlayments are defined as “Low Emitting” materials per California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010 (CA Section 01350) for school classroom, single-family residence and private-office modeling scenarios.
* Meets USGBC’s LEED® v4 emission requirements.
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1. GENERAL

This product requires a minimum maintained temperature for proper curing. This condition is necessary for proper setting.

* + - 1. FIELD CONDITIONS
				1. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.

Place gypsum cement underlayments only when ambient temperature and temperature of substrates is maintained between 50-90 deg F (10-35 deg C).

Existing subfloor may require additional mechanical preparation depending on what combination of sealer and or poured underlayment is used. Contact your USG representative for information on product compatibility.

* + - 1. SUBFLOOR PREPERATION
				1. Subfloors must be clean and free of foreign substances, all holes and cracks to be filled before Durock EcoCap is applied.
				2. Concrete exhibiting signs of laitance, scaling, spalling and crumbling must be mechanically removed to achieve a clean substrate prior to installation of the underlayment.
				3. Concrete subfloor must be greater than 28 days for proper installation of Durock Ecocap.
			2. QUALITY ASSURANCE
				1. Performance Standards:

All flooring substrate products, unless indicated otherwise, shall be manufactured by a single source manufacturer; USG Corporation and installed by an approved installer.

Underlayments shall be installed according to manufacturer’s instructions.

The finish surface of the installed underlayment shall be finished according to manufacturer’s instructions.

Warranty of system is contingent upon installation according to product instructions.

1. PRODUCTS

2.2 GYPSUM CEMENT UNDERLAYMENTS

* + - * 1. Gypsum Cement Underlayment **<INSERT MATERIAL DESIGNATION HERE>**:

Basis of Design: Subject to compliance with project requirements, the design is based on the following: USG Corporation **“[USG Durock™ Brand Quik-Top™ White Self-Leveling Underlayment] [USG Durock™ Brand Quik-Top™ Gray Self-Leveling Underlayment]”.**

Cement Binder: Gypsum or blended gypsum cement as defined by ASTM C 219

Compressive Strength: 7,000-10,000 psi (48.3-68.9 MPa) when tested according to ASTM C 109/C 109M.

Water:

Potable, free from impurities, cool, clean water and form a domestic source.

Product data:

Approximate Final Set ASTM C191: 60-90 minutes, light foot traffic 2 hours after set. Allows for application of floor covering 15 hours after underlayment application.

Flow time: 25 minutes

Average Dry Density: 124-130 lb/cu. ft. (2-2.08 kg/L).

Thickness: Featheredge to 3” (76.2 mm).

Approximate Coverage: 21 ft2 per bag at 1/4 in. (1.95 m2 per bag at 5mm) depth.

Approximate Flexural Strength ASTM C348: minimum 1,000 psi (6.9 MPa).

Surface pH Range ASTM F710: 11.

Mixing Ratio 3.6–5.0 quarts (3.4 to 4.75 liters) of water per 50 lb. (22.7 kg) bag

Slump Test: Underlayment mix shall be tested for a slump using a 1” x 2” cylinder resulting in a patty size of 6 1/4”- 6-1/2” for USG Durock™ Quik-Top™ Gray Self-Leveling Underlayment and 7”- 7-1/2” for USG Durock™ Quik-Top™ White Self-Leveling Underlayment. Slump shall be taken at the beginning of each installation to verify required mix. Slump should be tested periodically thereafter at a minimum of every 2500 sq. ft. to verify it is being maintained.

* + - * 1. Surface Preparation and Underlayment Primer:

For primer application, the temperature, of the subfloor and the room must be maintained between 50°-95°F (10°-35°C) for a period of 48 hours before and after application.

For primer application, the temperature, of the subfloor and the room must be maintained between 50°F and 95°F for a period of 48 hours before and after application.

USG Durock™ Brand Primer-Sealer.

Coverage: 200-350 square feet per gallon Coverage: 200-350 ft2/Ga. (18.5-32.5 m2/3.8l) (Dilutions vary based on substrate type and condition.)

Drying Time: 3-4 hours.

If USG RH-100 is used, reference USG Literature CB670 for more information regarding slab preparation, underlayment application and finishing.

Moisture Vapor Reducer: “USG Durock™ Brand RH-100™ Moisture Vapor Reducer”.

Moisture Vapor Emission Rate Gain (MVER) as defined by ASTM F1869**: [Up to 25 lbs/1000 ft2 (11.3kg/92.9m2)per24 hrs.] [MVERs greater than 25 lbs/1000 ft2 (11.3kg/92.9m2)per24 hrs].**

Relative Humidity as defined by ASTM F2170: Withstands Up to 100%

Alkalinity: Resists up to 14 pH

Solids Content: 100%

Permeance (ASTM E96): 13 mil: .050 (grains/h/sq. ft./in. Hg)

Tensile Strength as defined by ASTM D638: 5,500 psi (37.9 MPa)

Approximate Coverage: [375 sq. ft./3-gallon kit at 13 mil] minimum thickness [300 sq. ft./3-gallon kit at 16 mil].

Approximate Working Time: 15 minutes at 77°F (25° C).

Approximate Curing Time: 4 hours at 77°F (25° C).

Durock brand Quick Top may be used as an exposed finish. Contact USG for proper finishing instructions if required.

* + - 1. Optional Finishing:
				1. USG Durock™ Quik-Top Self-Leveling Underlayments can be used as a wear surface with a tested decorative coating system. With the proper finishing, Quick-Top can provide a concrete look when used with a clear coating system.
				2. All coating systems must be tested for adhesion to USG Durock™ Quik-Top White and Quik-Top Gray Self-Leveling Underlayments. The bond test and performance of coatings are the responsibility of the coating manufacturer.

A 10-year limited system warranty applies when using USG Durock™ Quik-Top White and Quik-Top Gray Self-Leveling Underlayments sealed with USG Durock™ X2 Primer-Sealer and a XL Brands® manufactured adhesive. Please contact USG for further details.

* + - 1. Topcoats: Sealing of Finish Coats.
				1. USG Durock™ Brand Primer-Sealer – is this used under and over?

Coverage: 400-450 square feet per gallon, undiluted.

Drying Time: 2-3 hours.

* + - * 1. USG Durock™ Brand X2 Primer-Sealer.

Coverage: 315-360 square feet per gallon.

Drying Time: 4 hours.

Disclaimer: The USG Product Specifications contained herein are intended for use as product reference material by architects, engineers, other design professionals, contractors, building code officials, or other competent construction industry trade professionals having an interest in the selection, specification and use of products manufactured by the subsidiaries of USG Corporation. They are intended solely as technical support incident to the sale and use of our products and not intended to be a substitute for the design review and approval of the licensed design professional for the project. These materials may be printed and/or transferred electronically solely as needed by the user. Because CAD electronic files and BIM (Building Information Modeling) files with the Autodesk Revit Platform can be modified by other parties, without notice or indication of such modifications, modification of USG Product Guide Specifications and Drawings is the sole responsibility of the Design Professional.