

USG
Gypsum
Solutions

USG DUROCK™ BRAND
ADVANCED SKIM COAT™ PLUS
FLOOR PATCH

INSTALLATION GUIDE



USG 
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USG Durock™ Advanced Skim Coat™ Plus Floor Patch is a versatile cementitious floor patch for interior use over wood, concrete and gypsum subfloors.¹ Its versatility allows USG Durock™ Advanced Skim Coat Plus Floor Patch to be used over most interior floors, including ceramic and quarry tile, terrazzo, wood, metal and interior concrete, as well as properly prepared residues of cutback and other non-water-soluble adhesives on concrete and epoxy coatings.

USG Durock™ Advanced Skim Coat Plus Floor Patch can also be used as an embossing leveler over most floor coverings including sheet goods, VCT and tile when mixed with water. To enhance bond to epoxy coatings or for high performance applications, use in conjunction with USG Durock™ Matrix™ Bond Enhancer.

The purpose of this installation guide is to provide you with general steps and procedures on how to properly install USG Durock™ Advanced Skim Coat Plus Floor Patch in several different application types. Please contact your local USG representative prior to using in an application not listed.

For further product information, see CB5478 *USG Durock™ Advanced Skim Coat™ Plus Floor Patch Submittal* at usg.com.

1. See *Notes/Limitations* #19, pg. 10.

INSTALLATION

SUBFLOOR PREPARATION

All subfloors must be structurally sound, stable and solid. If there is any question about the structural soundness of the subfloor, consult with the engineer on the project or request the services of a professional structural engineer.

Subfloors must be clean and free of dirt, tar, wax, oil, grease, latex compounds, sealers, curing compounds, release agents, asphalt, water-soluble adhesives, paint, chemicals, loose old cementitious products, joint compounds from drywall installation or any other contaminant that might prevent proper bonding of USG Durock™ Advanced Skim Coat Plus Floor Patch to the subfloor.

CONCRETE SUBFLOORS

Concrete exhibiting signs of laitance (a layer of weak material on the concrete surface either visible or invisible), scaling, spalling, crumbling or delamination must be mechanically removed to achieve a solid and clean substrate. Prior to installation of the underlayment, remove weak or degraded concrete (as described above) with hammer, chisel or other simple means. It is not required to mechanically profile the concrete subfloor with methods such as shot blasting, scarifying or diamond grinding.

Concrete subfloors receiving USG Durock™ Advanced Skim Coat Plus Floor Patch must be cured properly (generally for a minimum of 28 days) prior to installation. Subfloor Moisture Vapor Emission Rate (MVER) exceeding 12 lbs./1,000 sq. ft. (5.4 kg/92.9 m²) per 24 hours per ASTM F1869, 11 pH or a relative humidity (RH) greater than 99% per ASTM F2170, must be treated with an approved moisture vapor reducer.

USG Durock™ Advanced Skim Coat Plus Floor Patch is not a vapor barrier. Transmission of excessive moisture vapors from the concrete subfloor through USG Durock™ Advanced Skim Coat Plus Floor Patch can interfere with floor coverings and/or floor-covering adhesives, thus compromising their performance. If the concrete subfloor has been treated with a moisture vapor reducer, it must be primed with USG Durock™ Primer-Sealer prior to application of USG Durock™ Advanced Skim Coat Plus Floor Patch.

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 Durock™ Advanced Skim Coat Plus Floor Patch. 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 through the layer of USG Durock™ Advanced Skim Coat Plus Floor Patch. First remove the weak concrete along the length of the cracks by

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chiseling or other suitable means. Next, remove accumulated dust and debris from the crack cavities using a HEPA filtration industrial vacuum or other suitable means. Various cracks present in the concrete subfloor including shrinkage cracks must be filled with a suitable commercially available crack-repair material designed for concrete flooring applications. To ensure superior resistance to crack growth, use injection 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 USG Durock™ Advanced Skim Coat Plus Floor Patch. Growth of existing cracks or formation of new cracks in the concrete subfloor can lead to cracks telegraphing through USG Durock™ Advanced Skim Coat Plus Floor Patch. Respect existing expansion and control joints (see *Notes/Limitations #7*, pg. 9).

USG Durock™ Advanced Skim Coat Plus Floor Patch can be installed over non-water-soluble adhesives on concrete only. The adhesive residue must first be tested to make certain it is non-water-soluble. Any water-soluble adhesive residues must be mechanically removed down to clean concrete. Non-water-soluble adhesive residues should be prepared to a thin, well-bonded residue using the “wet-scraping” technique as recommended by the Resilient Floor Covering Institute (rfci.com) to remove thick areas and adhesive buildup, as well as any areas that are weak or not well bonded to the concrete. Any existing patches below the adhesive must be completely removed. Subfloor must be properly prepared and primed prior to underlayment application.

GYPSUM UNDERLAYMENTS

USG Durock™ Advanced Skim Coat Plus Floor Patch can be used over gypsum underlayments. For more information on compromised gypsum underlayments, please see *USG Rehabilitation Guidelines for Damaged Gypsum Underlayments* (CB822). Existing gypsum underlayments must be solid with no cracks and be dust free. Underlayment must be sealed with USG Durock™ Brand Primer-Sealer or USG Durock™ Fusion™ Primer. First test surface hardness by scratching existing underlayment with a coin. If surface can be gouged, do not use USG Durock™ Advanced Skim Coat Plus Floor Patch and consult USG for alternative repair methods.

METAL SUBFLOORS

Ensure that metal subfloors are structurally sound, stable, well supported, rigid, properly anchored and free of undue flex and vibration. (See *Notes/Limitations #18*, pg. 10. Also note that the design criteria for metal deck selection is so the live load deflection does not exceed $L/480$.) Metal subfloors must be clean and free of rust, corrosion or any contaminant that might prevent proper bonding of USG Durock™ Advanced Skim Coat Plus Floor Patch to the metal subfloor.

Paint steel surfaces with an anti-corrosive coating to prevent rust from recurring. Allow coating to dry thoroughly. Follow coating manufacturer's instructions, including cure time. An anti-corrosive coating is not necessary for aluminum, copper and lead subfloors.

Next, prime the prepared metal subfloor with USG Durock™ Primer-Sealer. Mix and apply USG Durock™ primers per their corresponding installation instructions. After the USG Durock™ primer has dried, USG Durock™ Advanced Skim Coat Plus Floor Patch may be applied.

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SPECIALTY APPLICATIONS

WOOD SUBFLOORS

USG Durock™ Advanced Skim Coat Plus Floor Patch can be applied over engineer-approved, APA-Rated exterior glue plywood or oriented strand board (OSB) (i.e., APA-Rated Exterior or Exposure 1 panels) wood subfloors. Subfloor must be properly prepared. See *Notes/Limitations*, #18, pg. 10 for subfloor deflections.

ADHESIVE RESIDUES

USG Durock™ Advanced Skim Coat Plus Floor Patch can be installed over non-water-soluble adhesives on concrete only. The adhesive residue must first be tested to make certain it is non-water-soluble. Any water-soluble adhesive residues must be mechanically removed down to clean concrete. Non-water-soluble adhesive residues should be prepared to a thin, well-bonded residue using the “wet-scraping” technique as recommended by the Resilient Floor Covering Institute’s (rfci.com) *Recommended Work Practices for Removal of Resilient Floor Coverings* to remove thick areas and adhesive buildup, as well as any areas that are weak or not well bonded to the concrete. Any existing patches below the adhesive must be completely removed.

CUTBACK ADHESIVE RESIDUES

To use USG Durock™ Advanced Skim Coat Plus Floor Patch over cutback adhesive residue, first remove all loose debris from the cutback. Spread dry USG Durock™ Advanced Skim Coat Plus Floor Patch over the cutback adhesive, then work the dry powder into the floor with a broom. Next, use a razorblade scraper to scrape the cutback down to a very thin thickness and allow to thoroughly dry prior to the application of USG Durock™ Advanced Skim Coat Plus Floor Patch to the area.

EPOXY COATINGS

All epoxy coatings must be solidly bonded to the existing substrate and be cured, clean and sound. A weak or degraded epoxy surface layer must be mechanically removed to provide a solid base. See *Subfloor Preparation, Concrete Subfloors*, pgs. 3-4 for further information.

For application of USG Durock™ Advanced Skim Coat Plus Floor Patch directly to the surface of USG Durock™ RH-100 Moisture Vapor Reducer, the patch must be mixed with USG Durock™ Matrix Bond Enhancer. For all other epoxy applications, prime the prepared epoxy coating with USG Durock™ Primer-Sealer. Mix and apply USG Durock™ Primer-Sealer per the corresponding installation instructions. After USG Durock™ Primer-Sealer has dried, USG Durock™ Advanced Skim Coat Plus Floor Patch may be applied.

MIXING

TOOLS

- Mixing bucket
- Trowels
- Razor scraper
- Mixing drill type 2 through 7—as outlined in the *Technical Guidelines* prepared by the International Concrete Repair Institute, *Pictorial Atlas of Concrete Repair Material Mixing Equipment* (Guideline No. 320.5R-2014).
- Mixing paddle type 2, 3, 4, 8 or 9—as outlined in the *Technical Guidelines* prepared by the International Concrete Repair Institute, *Pictorial Atlas of Concrete Repair Material Mixing Equipment* (Guideline No. 320.5R-2014).

RATIO

Three parts USG Durock™ Advanced Skim Coat Plus Floor Patch to one part water by volume, or up to 1.58 qt. (1.5 L) of water per one 10 lb. (4.5 kg) bag of USG Durock™ Advanced Skim Coat Plus Floor Patch.

INSTRUCTIONS

When opening bags and mixing use engineering controls, including local exhaust, to reduce exposure to dust. Wear NIOSH-recommended respirator if needed. It is important that the mixing water is in the bucket prior to adding the dry material.

To mix a 10 lb. (4.5 kg) bag of USG Durock™ Advanced Skim Coat Plus Floor Patch, first add up to 1.58 qt. (1.5 L) of clean water to a mixing bucket, then add the USG Durock™ Advanced Skim Coat Plus Floor Patch. Mix with a paddle and drill.

To mix smaller quantities by hand, use three parts USG Durock™ Advanced Skim Coat Plus Floor Patch to one part water by volume. Mix vigorously for 2 to 3 minutes with a trowel to achieve a lump-free consistency. Do not overwater. Use USG Durock™ Advanced Skim Coat Plus Floor Patch within 10–15 minutes after mixing. Working time may be extended by retempering without adding water. Dispose of any USG Durock™ Advanced Skim Coat Plus Floor Patch once setting has occurred.

APPLICATION

During application and until USG Durock™ Advanced Skim Coat Plus Floor Patch is set (typically within 15–30 minutes, depending on floor patch thickness and drying conditions), close all doors, windows and other openings in the building and turn off HVAC systems to prevent air drafts. Protect installation areas from direct sunlight exposure during setting time. Thereafter, the HVAC system can resume, as well as the use of doors, windows and other openings.

The building environment, USG Durock™ Advanced Skim Coat Plus Floor Patch—in either mixed or powdered form—and subfloor temperature should be maintained between 50 °F (10 °C) and 95 °F (35 °C) before, during and for 72 hours after USG Durock™ Advanced Skim Coat Plus Floor Patch 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. For temperatures above 95 °F (35 °C), consult USG.

It is recommended to patch several small test areas before conducting full installation of USG Durock™ Advanced Skim Coat Plus Floor Patch. The test areas must also include finish flooring to establish suitability of the complete system for intended use.

USG Durock™ Advanced Skim Coat Plus Floor Patch has a working time of approximately 10–15 minutes at 70 °F (21 °C)/50% RH. At higher temperatures the working time is shortened; at lower temperatures the working time is extended.

FLOOR-COVERING INSTALLATION

- Follow floor-covering manufacturers' recommendations for surface-sealing requirements. If the floor-covering or adhesive manufacturer requirements are more stringent, their requirements take precedence.
- USG Durock™ Advanced Skim Coat Plus Floor Patch may be ready for floor covering in as little as 15 minutes after application (at 70 °F (21 °C)). Drying time is dependent on job site temperature and humidity conditions as well as application thickness. For example, high humidity and/or low subfloor temperatures will extend dry times.
- Floor coverings such as ceramic tile, VCT, sheet vinyl and carpeting can be installed as soon as USG Durock™ Advanced Skim Coat Plus Floor Patch can be worked on without damaging the surface.
- Nonbreathable floor coverings requiring special adhesives that are sensitive to moisture; high performance adhesives such as urethanes or epoxies; and wood flooring can be installed after 6-8 hours.
- Check with floor-covering and adhesive manufacturers for installation guidelines and suitability of their manufactured products over USG Durock™ Advanced Skim Coat Plus Floor Patch.
- Protect the surface of USG Durock™ Advanced Skim Coat Plus Floor Patch from contaminants and water until installation of floor covering is accomplished.
- Perform field bond test to determine adhesive/flooring performance over USG Durock™ Advanced Skim Coat Plus Floor Patch. Install floor covering with adhesive and perform field bond test approximately 72 hours after installation.

STORAGE

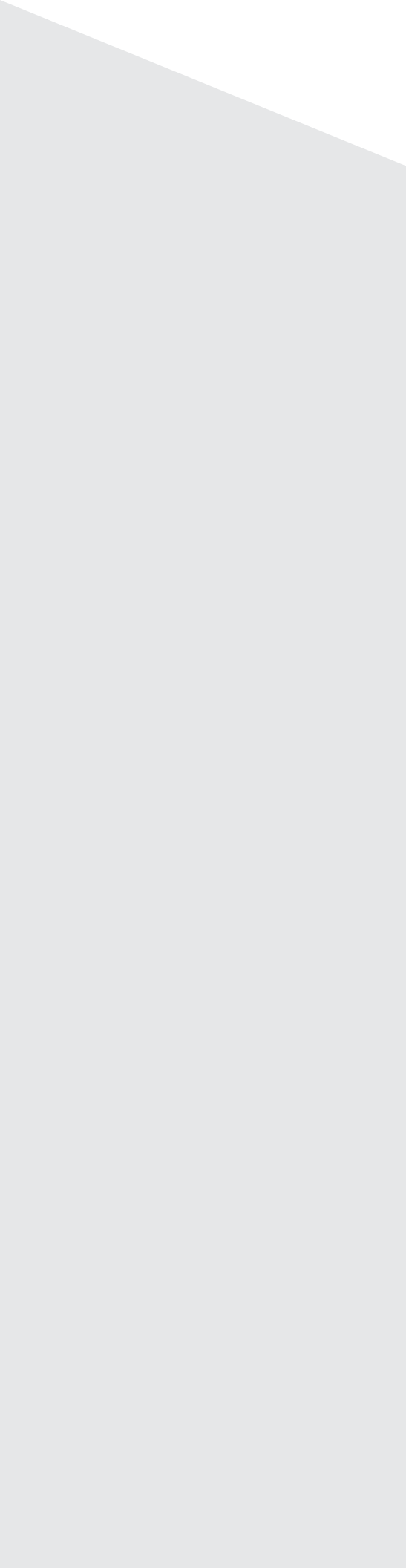
USG Durock™ Advanced Skim Coat Plus Floor Patch should be stored in an enclosed shelter providing protection from damage and exposure from the elements. During winter, dry mix material should be stored in a heated room before application, as deeply cooled material may increase the risk that some additives may not dissolve during mixing. If temperature is too high, premature setting may occur. Protect unused material by removing air from bag and sealing tightly. Remove damaged or deteriorated materials from the job site. USG Durock™ Advanced Skim Coat Plus Floor Patch has a shelf life of 18 months from the manufactured date when in original unopened packaging.

NOTES/LIMITATIONS

1. Do not use in exterior applications.
2. Do not use as a wear surface.
3. Do not install over dimensionally unstable, improperly prepared, weak subfloors.
4. Do not install over concrete subfloor less than 28 days old. For untreated (without an approved moisture mitigation system) concrete subfloors less than 28 days old, contact USG.
5. For below-grade applications, contact USG.
6. Do not apply directly to sound mat.
7. Do not use over expansion or isolation joints. Continue all movement joints in the concrete slab up through the layer of floor patch. 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 services of a professional structural engineer to provide such joints as part of the system in accordance with engineering requirements and industry standards.
8. Existing cracks in the new and old concrete must be repaired with an appropriate crack-repair material in accordance with industry recommendations prior to installation of USG Durock™ Advanced Skim Coat Plus Floor Patch. Note that repair of existing cracks in the concrete subfloor only subdues but does not completely prevent their ability to telegraph through USG Durock™ Advanced Skim Coat Plus Floor Patch. Growth of existing cracks or formation of new cracks in the concrete subfloor can lead to cracks telegraphing through the floor patch.
9. When the MVER exceeds 12 lbs. (5.4 kg)/1,000 sq. ft. (92.9 m²)/24 hours, 11 pH or an RH greater than 99% per ASTM F2170, treat the concrete subfloor with a USG Durock™ Brand Moisture Vapor Reducer. USG Durock™ Advanced Skim Coat Plus Floor Patch is not a vapor or moisture barrier. Transmission of excessive water vapor or moisture from the concrete subfloor through the USG Durock™ Advanced Skim Coat Plus Floor Patch can interfere with floor coverings and/or floor-covering adhesives, thus compromising their performance. For ongrade applications, use a USG Durock™ Brand Moisture Vapor Reducer over concrete. 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 12 lbs. (5.4 kg)/1,000 sq. ft. (92.9 m²)/24 hours, 11 pH or has an RH less than 99% per ASTM F2170.
10. Do not use acid etching as a method of cleaning and preparing the concrete subfloor.
11. Do not use oil-based sweeping compounds to clean and prepare the concrete subfloor. Use of such sweeping compounds leaves an oil film on the surface of the concrete that will interfere with the floor patch's bond development. Use a HEPA filtration industrial vacuum to remove the dust and debris and prepare the subfloor for USG Durock™ Advanced Skim Coat Plus Floor Patch application.
12. Do not use adhesive-removing chemicals or solvents to eliminate contaminants from the concrete subfloor. Use of such chemicals can transport oil, grease and other contaminants further into the concrete pores. These chemicals can leech back to the surface over time thus compromising the bond performance of flooring adhesives to USG Durock™ Advanced Skim Coat Plus Floor Patch.

NOTES/LIMITATIONS CONT.

13. For applications over materials containing asbestos reference CB5378 *Guidelines for Covering Asbestos Containing Materials (ACM)*.
14. Do not overwater or overmix.
15. Do not add non-USG approved chemical additives or polymers to USG Durock™ Advanced Skim Coat Plus Floor Patch.
16. Existing curing compounds on concrete surfaces must be removed prior to the application of USG Durock™ Advanced Skim Coat Plus Floor Patch.
17. Do not mix with other cementitious products or self-leveling materials.
18. Structure shall be designed so 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.
19. Existing gypsum underlayments must be solid with no cracks and dust free. First test surface hardness by scratching existing underlayment with a coin. If surface can be gouged, do not use USG Durock™ Advanced Skim Coat Floor Patch and see *USG Rehabilitation Guidelines for Damaged Gypsum Underlayments* (CB822).



CONTACT INFORMATION

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

TECHNICAL SERVICE

800 USG.4YOU

WEBSITE

usg.com

CUSTOMER SERVICE

800 621.9523

PRODUCT INFORMATION

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

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: 800 507-8899 or see the SDS at usg.com.

KEEP OUT OF REACH OF CHILDREN.

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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 warranty information, please refer to *USG Durock™ Brand Floor Preparation Products Two-Year Limited Warranty* (CB747) located at usg.com. For all terms and conditions see usg.com/terms-and-conditions.

SAFETY FIRST!

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