

USG DUROCK™ BRAND

X

FLOOR PATCH

Versatile, trowelable cementitious patching compound

- For interior use over properly prepared concrete, gypsum and approved wood subfloors
- Polymer-modified—promotes early strength and workability
- No priming necessary for most applications¹
- Fast setting—floor coverings may be installed in as little as 35 minutes
- Low energy required to mix and apply
- Can be used as an embossing leveler when mixed with USG Durock™ Brand Matrix Bond Enhancer².
- Featheredge to 1/2 in. (12.7 mm) thick

1. Existing gypsum underlayments require special consideration. See Gypsum Underlayments in the Application section.
2. See USG Durock™ Brand Matrix™ Bond Enhancer Submittal Sheet (CB765) for mixing ratio and coverage rates at usg.com.

DESCRIPTION

USG Durock™ Brand X Floor Patch is a polymer-modified, cement-based patching compound for interior use over concrete and approved wood subfloors. Ideal for renovation projects, this economical floor patch provides a smooth skim coat for accepting floor coverings. Easy to mix and apply, USG Durock™ X floor patch is fast drying; floor coverings can be installed in as little as 35 minutes (depending on floor patch thickness and drying conditions).

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™ X floor patch to the host substrate.

Read submittal and SDS before USG Durock™ X floor patch application.

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)

MIXING RATIO

Three parts USG Durock™ X floor patch to 1 parts water by volume, or up to 3.0 quarts (2.9 L) of water per one (1) 18 lb. bag (8.1 kg) of USG Durock™ X floor patch.

MIXING CONT.
INSTRUCTIONS

To mix an 18 lb. (8.1 kg) bag of USG Durock™ X floor patch, first add up to 3.0 quarts (2.9 L) of clean water to a mixing bucket, then add the floor patch. Mix with a paddle and drill. To mix smaller quantities by hand, use three parts USG Durock™ X floor patch to 1 parts water by weight. Mix with a trowel to achieve a smooth, lump-free consistency. Do not overwater.

Use USG Durock™ X floor patch within 10–15 minutes after mixing. Remix (without adding water) as needed within this time frame. Dispose of any USG Durock™ X floor patch once setting has occurred.

APPLICATION

During application and until USG Durock™ X 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 subfloor, room temperature and USG Durock™ X floor patch product—either mixed or in powdered form—must be between 50 °F and 95 °F (10–35 °C) at the time of application and for 72 hours after installation of USG Durock™ X floor patch. 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™ X floor patch. The test areas must also include finish flooring to establish suitability of the complete system for intended use.

USG Durock™ X 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. Light foot traffic can occur in approximately 35 minutes with thicker applications requiring additional drying time. After USG Durock™ X floor patch is firmly set, provide adequate ventilation to ensure uniform drying of the installed floor patch. High ambient humidity and higher thicknesses will delay the drying process. Protect floors from heavy trade traffic loads (i.e., loaded drywall carts, heavy tool cabinets, etc.) with plywood.

CONCRETE SUBFLOORS

Concrete subfloors receiving cementitious floor patch must be cured properly (generally for a minimum of 28 days) prior to floor patch installation. Subfloor moisture vapor emission rate (MVER) exceeding 5 lb. (2.3 kg)/1,000 sq. ft. (92.9 m²)/24 hours per ASTM F1869 must be treated with USG Durock™ Brand RH-100™ Moisture Vapor Reducer per manufacturer recommendations to achieve an MVER value of 5 lb. (2.3 kg)/1,000 sq. ft. (92.9 m²)/24 hours or less. USG Durock™ X floor patch is not a vapor barrier. Transmission of excessive moisture vapors from the concrete subfloor through USG Durock™ X floor patch can interfere with floor-covering adhesives and compromise their performance.

A weak or degraded concrete surface layer must be removed mechanically to provide a solid base. To decide whether mechanical preparation of substrate is required or not, the concrete substrate must be thoroughly assessed for its quality and tensile strength over the entire application area. The assessment of concrete tensile strength must be made in its existing state without the removal of any foreign material that may be present on the concrete surface. Simple visual appearance of concrete substrate as strong and solid does not necessarily guarantee that the concrete substrate is free of impurities and has the right tensile strength.

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. Use mechanical removal methods such as shot blasting, scarifying or diamond grinding to clean and prepare the concrete subfloor contaminated with adhesives, asphalt or oil. Shot blasting is the preferred method of mechanically profiling and preparing the concrete subfloor for the application of USG Durock™ X floor patch.

CONCRETE SUBFLOORS CONT.

If cracks are found in the existing concrete subfloor, they must be inspected by the engineer on the project or a professional structural engineer 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™ X floor patch. Repair all existing cracks in old and new concrete to minimize and control their ability to telegraph through the layer of USG Durock™ X floor patch. Remove the weak concrete along the length of the cracks by chiseling or other suitable means. Remove accumulated dust and debris from the crack cavities using a vacuum with a HEPA filter or other suitable means. Various cracks present in the concrete subfloor, including shrinkage cracks, must be filled with a suitable commercially available crack-fill epoxy adhesive designed for concrete flooring applications. To ensure superior resistance to crack growth, use injection epoxy crack-repair techniques per manufacturer 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™ X floor patch. Growth of existing cracks or formation of new cracks in the concrete subfloor can lead to cracks telegraphing through USG Durock™ X floor patch. Respect existing expansion and control joints (see Notes/Limitations #8, pg. 4).

Priming is not required over concrete. USG Durock™ X floor patch may be applied from featheredge to 1/2 in. (12.7 mm) thick over concrete subfloors.

WOOD SUBFLOORS

USG Durock™ X 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.

Before application, subfloor must be properly prepared (see Notes/Limitations #20 pg. 4 for subfloor deflections) and loose boards secured with deck screws. Priming is not required over wood subfloors. USG Durock™ X floor patch may be applied from featheredge to 1/2 in. (12.7 mm) thick over approved wood subfloors.

GYPSUM UNDERLAYMENTS

Existing gypsum underlayments must be solid with no cracks and dust free. Gypsum underlayment must be sealed with USG Durock™ Primer-Sealer or X2 Primer-Sealer. First test surface hardness by scratching existing underlayment with a coin. If surface can be gouged, do not use USG Durock™ X floor patch and consult USG for alternative repair methods.

EPOXY COATINGS

All epoxy coatings must be solidly bonded to the existing substrate and be clean and sound. Weak or degraded concrete surface layer must be removed mechanically to provide a solid base. See Application, Concrete Subfloors on pg. 2 for further information. After a solid base has been achieved, prime the epoxy with USG Durock™ Brand Primer-Sealer. Mix and apply USG Durock™ Primer-Sealer as instructed in USG Durock™ Brand Primer-Sealer submittal sheet (CB519). After USG Durock™ Primer-Sealer has dried, USG Durock™ X floor patch may be applied.

FLOOR-COVERING INSTALLATION

- USG Durock™ X floor patch may be ready for floor covering in as little as 35 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 substrate temperatures will extend dry times.
- Floor coverings such as ceramic tile, VCT, sheet vinyl and carpeting can be installed as soon as USG Durock™ X 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 16 hours.
- Check with floor-covering and adhesive manufacturers for installation guidelines and suitability of their manufactured products over USG Durock™ X floor patch.
- Protect the surface of USG Durock™ X 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™ X floor patch.
- Follow floor-covering manufacturers' recommendations for surface-sealing requirements. If the floor-covering or adhesive manufacturer requirements are more stringent, their requirements take precedence.

NOTES/LIMITATIONS

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 install over dimensionally unstable, improperly prepared, weak subfloors.
5. 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.
6. For below-grade applications, contact USG.
7. Do not apply directly to sound mat.
8. 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 professional structural engineer to provide such joints as part of the system in accordance with engineering requirements and industry standards.
9. 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™ X 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™ X floor patch. Growth of existing cracks or formation of new cracks in the concrete subfloor can lead to cracks telegraphing through the floor patch.
10. When the MVER exceeds 5 lbs. (2.3 kg)/1000 sq. ft. (92.9 m²)/24 hours, treat the concrete subfloor with USG Durock™ Brand RH-100™ moisture vapor reducer in all areas of use where potential for moisture problems may exist. USG Durock™ X floor patch is not a vapor or moisture barrier. Transmission of excessive water vapors or moisture from the concrete subfloor through the USG Durock™ X floor patch can interfere with floor-covering adhesives and compromise their performance.
11. For on-grade applications, apply USG Durock™ Brand RH-100™ moisture vapor reducer. 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)/1000 sq. ft. (92.9 m²)/24 hours.
12. Do not use acid etching as a method of cleaning and preparing the concrete subfloor.
13. 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 USG Durock™ X floor patch's bond development. Use a vacuum with a HEPA filter or a dry broom to remove the dust and debris and prepare the subfloor for USG Durock™ X floor patch application.
14. 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 be released back to the surface at a later time to interfere with the floor-covering adhesives, thus compromising the bond performance with USG Durock™ X floor patch. Mechanically removing the organic adhesives, asphalt, coal-tar-based adhesives and other oil-based contaminants is the sole recommended method of preparing the subfloor for application of USG Durock™ X floor patch.
15. For application over materials containing asbestos, contact USG. Do not mechanically remove organic adhesives, asphalt, coal-tar-based adhesives or other materials containing asbestos—contact an asbestos abatement professional.
16. Do not overwater or overmix.
17. Do not add non-USG approved chemical additives or polymers to USG Durock™ X floor patch.
18. Existing curing compounds on concrete surfaces must be removed. Shot blasting is the only recommended method of removal.
19. Do not mix with other cementitious products or self-leveling materials.
20. 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.

PRODUCT DATA

Mixing Ratio: Up to 3 qts. (2.9 L) clean water per 18 lb. (8.1 kg) bag. (3 parts USG Durock™ X floor patch to 1 parts water by volume)

Approximate Coverage:

Up to 94 sq. ft. (8.7 m²)/bag at 1/16 in.(1.6 mm) thickness

Up to 47 sq. ft. (4.4 m²)/bag at 1/8 in.(3.2 mm) thickness

Up to 23 sq. ft. (2.2 m²)/bag at 1/4 in.(6.4 mm) thickness

Approximate Working Time (ASTM C191 modified): 10–15 minutes at 70 °F (21 °C)/50% RH

Application of Floor Covering: In as little as 35 minutes (at 70 °F (21 °C)) or when USG Durock™ X floor patch can be worked on without damaging the surface. Drying time is dependent on job site temperature and humidity conditions as well as application thickness.

Thickness Range: Featheredge to 1/2 in. (12.7 mm) thick

Packaging: 18 lb. (8.1 kg) multiwall paper bags

Note:

Physical characteristics published herein were achieved under controlled laboratory conditions. Actual field results may differ due to environmental conditions, inconsistent proportioning of field-applied water and USG Durock™ X floor patch, as well as differences in mixing equipment.

STORAGE

USG Durock™ X 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 jobsite. USG Durock™ X floor patch has a shelf life of 12 months from the manufactured date when in original unopened packaging.

CLEANUP

Clean tools with water immediately after use and before USG Durock™ X floor patch dries.

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.

TRADEMARKS

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SAFETY FIRST!

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

SUBMITTAL APPROVALS

Job Name	
Contractor	Date

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