



# USG DUROCK™ BRAND EXG™ CONCRETE REPAIR PATCH

## Innovative interior & exterior polymer-modified cementitious concrete repair patch

- Tolerates 100% RH and up to 14 pH
- Ideal for repairing interior concrete floors prior to installation of high relative humidity (RH) durable floor coverings and exterior concrete area repairs such as sidewalks, driveways, steps, parking garages and pool decks
- Fast-setting – allows for vehicular traffic in about an hour
- Can receive floor coverings in as little as 45 minutes
- Featheredge to 3 in. (76 mm) neat; deep fills up to 12 in. (305 mm) when extended
- Superior bond to concrete substrates without bonding primers
- Durable and strong for heavy duty applications—up to 10,500 psi (72.4 MPa)
- May be broom finished or smooth finished with a trowel
- Extremely freeze/thaw and salt resistant
- Meets ASTM C928 standard specification
- Environmentally sustainable – high recycled content, low embodied energy, low carbon footprint
- May assist in obtaining LEED® credits

## DESCRIPTION

USG Durock™ Brand EXG™ Concrete Repair Patch is a trowelable high-performance, air-entrained cementitious patch suitable for wet interior and exterior applications. Rapid-setting and eco-friendly, this next generation technology is an ideal solution for use under high relative humidity (RH) tolerant floor covering adhesives and systems. USG Durock™ EXG Concrete Repair Patch is easy to apply and strong—up to 10,500 psi (72.4 MPa). Whether used neat (thicknesses up to 3 in. (76 mm)) or with aggregate (thicknesses up to 12 in. (305 mm)), USG Durock™ EXG Concrete Repair Patch provides superior working properties and excellent water and freeze-thaw resistance. In addition, USG Durock™ EXG Concrete Repair Patch is an extremely dimensionally stable product and provides excellent resistance to sulfates and salt-scaling. Due to its special chemical composition, USG Durock™ EXG Concrete Repair Patch develops excellent bond to concrete substrates without requiring a bonding primer and allows for the application of floor coverings in as little as 45 minutes (specialty adhesives may require a minimum of 16 hours).

USG Durock™ EXG Concrete Repair Patch may assist in obtaining various LEED credits for the project. The product's 65% recycled content in the cementitious binder, low embodied energy and low carbon footprint makes it an environmentally sustainable material. USG Durock™ EXG Concrete Repair Patch meets the ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repair.

## VOC EMISSIONS

USG Durock™ EXG Concrete Repair Patch achieved GREENGUARD Gold Certification and qualifies as a “Low Emitting” material per California Department of Public Health CDPH/EHLB/Standard Method (CA Section 01350) for school classroom, single-family residence and private office modeling scenarios, and meets USGBC's LEED® v4 emission requirements.



## SURFACE PREPARATION

### CONCRETE SLABS

All concrete surfaces 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.

Concrete surfaces 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™ EXG Concrete Repair Patch to the host substrate.

**SURFACE PREPARATION CONT.****CONCRETE SLABS**

Concrete slabs receiving cementitious floor patch must be cured properly (generally for a minimum of 28 days) prior to floor patch installation. USG Durock™ EXG Concrete Repair Patch is not a vapor barrier. Transmission of excessive moisture vapors from the concrete slabs through USG Durock™ EXG Concrete Repair Patch can interfere with floor coverings and/or floor-covering adhesives, thus compromising their performance.

Mechanical floor preparation such as shot-blasting, scarification or other methods of grinding may not be required prior to installation of the underlayment over a well-bonded, sound and clean subfloor. To decide whether mechanical preparation of substrate is required or not, the concrete substrate must be thoroughly assessed for its quality over the entire pour area. Simple visual appearance of the concrete substrate as strong and solid does not necessarily guarantee that the concrete substrate is free of impurities and has the right tensile strength. The tensile bond strength of the concrete slab over which USG Durock™ EXG Concrete Repair Patch is being applied must be a minimum of 175 psi (1.2 MPa) when tested per the ASTM C1583 standard.

A weak or degraded concrete surface or concrete exhibiting signs of laitance (either visible or invisible), scaling, spalling, crumbling or delamination must be mechanically removed to achieve a solid and clean substrate.

Cracks in the existing concrete slab 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™ EXG Concrete Repair 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™ EXG Concrete Repair Patch. First remove the weak concrete along the length of the cracks by 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-fill epoxy adhesive designed for concrete flooring applications. To ensure superior resistance to crack growth, use injection epoxy 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™ EXG Concrete Repair Patch. Growth of existing cracks or formation of new cracks in the concrete slab can lead to cracks telegraphing through USG Durock™ EXG Concrete Repair Patch. Respect existing expansion and control joints (see *Notes/Limitations* #8, pg. 4).

If USG Durock™ EXG Concrete Repair Patch is being used to patch an area adjacent to non-concrete materials such as control or expansion joints, a bonding agent approved by appropriate government regulatory agencies and used in accordance with manufacturer’s recommendations is suggested.

**USG DUROCK™ RH-100™ MOISTURE VAPOR REDUCER**

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 *Surface Preparation, Concrete Slabs*, pgs. 1-2 for further information.

USG Durock™ EXG™ Concrete Repair Patch can be applied directly to a properly prepared surface (clean and dry) of USG Durock™ RH-100 Moisture Vapor Reducer without a bonding primer.

**VERTICAL/OVERHEAD SURFACES**

For vertical/overhead surfaces, contact USG.

**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**

Six parts USG Durock™ EXG Concrete Repair Patch to one part water by volume, or 2.0–2.5 quarts (1.9–2.4 L) of water per one 50 lb. (22.7 kg) bag of USG Durock™ EXG Concrete Repair Patch.

## MIXING CONT. 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 for the total number of bags to be mixed is in the barrel prior to adding the dry material.

### NEAT MIX

To mix a 50 lb. (22.7 kg) bag of USG Durock™ EXG Concrete Repair Patch, first add 2.0–2.5 quarts (1.9–2.4 L) of clean water to a mixing bucket then add the patch. (To mix a 25 lb. (11.3 kg) bag, add 1–1.25 quarts (1.0–1.2 L) of clean water.) Mix with a paddle and drill. To mix smaller quantities by hand, use six (6) parts USG Durock™ EXG Concrete Repair Patch to one (1) part water by volume. Mix vigorously for two to three minutes with a trowel to achieve a lump-free consistency. Do not overwater or overmix.

### EXTENDED MIX

For an extended mix, add 50 lbs. (22.7 kg) of USG Durock™ EXG Concrete Repair Patch and up to 32.5 lb. (14.7 kg) of 3/8 in. (10 mm) to 1/2 in. (13 mm) clean, saturated surface dry (SSD) aggregates (meeting ASTM C33 specification) to 2.25–3.0 quarts (2.1–2.8 L) of water. Mix with a paddle and drill for approximately 2 minutes or until the desired consistency is reached. When using wet aggregate, adjust water quantity for the aggregate moisture content. **Because USG Durock™ EXG Concrete Repair Patch is pre-sanded, do not add any field sand to the mixture.** The batch may be scaled up as long as the mixer capacity is not exceeded. Maintain the leading edge in workable consistency to ensure proper homogeneity of poured material from successive batches.

Use USG Durock™ EXG Concrete Repair Patch within 15–25 minutes after mixing. Remix (without adding water) as needed within this time frame. Dispose of any USG Durock™ EXG Concrete Repair Patch once setting has occurred.

## APPLICATION

The subfloor temperature and USG Durock™ EXG Concrete Repair Patch product—either mixed or in powdered form—must be between 34 °F – 95 °F (1 – 35 °C) at the time of installation of USG Durock™ EXG Concrete Repair Patch. For temperatures above 77 °F (25 °C), lightly dampen the surrounding concrete to a saturated surface dry (SSD) condition with no standing water. Under hot/windy conditions, use of an approved concrete curing membrane may be required to prevent surface dry out.

If USG Durock™ EXG Concrete Repair Patch is to be used at or near freezing temperatures, keep materials and equipment as warm as possible. Keep the mixed USG Durock™ EXG Concrete Repair Patch compound and adjacent pavement above 32 °F (0 °C) until it has set.

It is recommended to patch several small test areas before conducting full installation of USG Durock™ EXG Concrete Repair Patch. Perform field bond test to determine adhesive/flooring performance over USG Durock™ EXG Concrete Repair Patch. Install floor covering with adhesive and perform field bond test approximately 72 hours after installation.

USG Durock™ EXG Concrete Repair Patch has a working time of approximately 15–25 minutes at 70 °F (21 °C)/50% RH (at higher temperatures the working time is shortened; at lower temperatures the working time is extended). USG Durock™ EXG Concrete Repair Patch will set in approximately 20–40 minutes under normal conditions, depending on floor patch thickness. Light foot traffic can occur in approximately 45 – 60 minutes; deeper thicknesses require additional drying time. After USG Durock™ EXG Concrete Repair 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.

Priming is not required for skim coat applications over concrete. USG Durock™ EXG Concrete Repair Patch may be applied from featheredge to 3 in. (76 mm) neat and deep fills up to 12 in. (305 mm) when extended over saturated surface dry (SSD) concrete subfloors with no standing water.

## DEEP FILL APPLICATION

Consult *ICRI Guideline No. 310.2 Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlay* for surface preparation equipment and methods. Mark off the perimeter of the damaged area. Break out all material within the area and clean all debris from the void. A structurally sound base is essential for ensuring a good repair job. Ensure that the application surface is clean, sound, and free from contaminants that may inhibit bond such as oil, wax, asphalt, acid, curing compound, dirt and loose debris. Note - the existing concrete does not require a bonding primer. Lightly dampen the surrounding concrete, especially in hot weather conditions. Apply USG Durock™ EXG Concrete Repair Patch to saturated surface dry (SSD) substrate with no standing water.

## SPECIALTY APPLICATIONS

NONPOROUS (BURNISHED CONCRETE, TERRAZZO, CERAMIC AND QUARRY TILE, AND EPOXY COATINGS)

All nonporous substrates must be solidly bonded to the existing subfloor and be clean and sound. After a solid base has been achieved, abrade substrate to a dull finish, then remove all dust using a HEPA filtration industrial vacuum or mop (see *Notes/Limitations #14*, pg. 4).

Prime the substrate with USG Durock™ Primer-Sealer or for preparing the subfloor prior to application of USG Durock™ EXG Concrete Repair Patch. Refer to *USG Durock™ Brand Primer-Sealer* submittal (CB519) at usg.com for installation instructions and application rates. USG Durock™ EXG Concrete Repair Patch may be applied from featheredge to 3 in. (76 mm) neat and deep fills up to 12 in. (305 mm) when extended.

## FLOOR-COVERING INSTALLATION

- A skim coat application of USG Durock™ EXG Concrete Repair Patch can be walked on in as little as 45 minutes (70 °F (21 °C)/50% RH). Thicker applications, cooler temperatures, high humidity and inadequate ventilation can extend drying times.
- Breathable floor coverings can be installed after USG Durock™ EXG Concrete Repair Patch has fully set, so as not to damage the surface. Moisture-sensitive adhesives used with non-breathable floor coverings can be installed after 16 hours.
- Check with floor-covering and adhesive manufacturers for RH limitations, installation guidelines and suitability of their manufactured products over USG Durock™ EXG Concrete Repair Patch.
- For interior applications prior to installation of floor coverings, protect the surface of USG Durock™ EXG Concrete Repair Patch from contaminants and water.
- Perform field bond test to determine adhesive/flooring performance over USG Durock™ EXG Concrete Repair Patch. Install floor covering with adhesive and perform field bond test approximately 72 hours after 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.

## NOTES/LIMITATIONS

1. Do not overwater or overmix.
2. The subfloor temperature and USG Durock™ EXG Concrete Repair Patch product—either mixed or in powdered form—must be between 34 °F – 95 °F (1 – 35 °C) at the time of installation of USG Durock™ EXG Concrete Repair Patch. For temperatures above 77 °F (25 °C), lightly dampen the surrounding concrete to a saturated surface dry (SSD) condition with no standing water. Under hot/windy conditions, use of an approved concrete curing membrane may be required to prevent surface dry out.
3. Do not use reactive aggregates that can potentially cause alkali-silica reaction.
4. Do not permit USG Durock™ EXG Concrete Repair Patch mix to freeze before set has taken place.
5. Do not install over dimensionally unstable, improperly prepared, weak subfloors.
6. Do not install over concrete less than 28 days old.
7. Do not use over sound mat.
8. Do not use over expansion or isolation joints. Continue all movement joints in the concrete slab up through the layer of 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.
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™ EXG Concrete Repair 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™ EXG Concrete Repair Patch. Growth of existing cracks or formation of new cracks in the concrete subfloor can lead to cracks telegraphing through the patch.
10. USG Durock™ EXG Concrete Repair Patch is not a vapor or moisture barrier. Transmission of excessive water vapors or moisture from the concrete subfloor through the USG Durock™ EXG Concrete Repair Patch can interfere with floor coverings and/or floor-covering adhesives, thus compromising their performance.
11. Do not use acid etching as a method of cleaning and preparing the concrete.
12. Do not use oil-based sweeping compounds to clean and prepare the concrete. Use of such sweeping compounds leaves an oil film on the surface of the concrete that will interfere with the USG Durock™ EXG Concrete Repair Patch's bond development. Use vacuum, compressed air or a dry broom to remove the dust and debris and prepare the subfloor for USG Durock™ EXG Concrete Repair Patch application.
13. 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™ EXG Concrete Repair 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™ EXG Concrete Repair Patch.
14. For applications over materials containing asbestos, contact USG. Do not mechanically remove organic adhesives, asphalt, coal-tar-based adhesives or other materials containing asbestos.
15. Do not add any chemical additives or polymers to USG Durock™ EXG Concrete Repair Patch.
16. Do not use wet curing or curing compounds. Existing curing compounds on concrete surfaces must be removed. Shot blasting is the only recommended method of removal.
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.

**PRODUCT DATA**

**Mixing Ratio (Neat):**  
 50 lbs. (22.7 kg) of USG Durock™ EXG Concrete Repair Patch to 2.0-2.5 quarts (1.9-2.4 L) of water (25 lb. (11.3 kg) requires 1-1.25 quarts (1.0-1.2 L) of water) (six parts USG Durock™ EXG Concrete Repair Patch to one part water by volume)

**Mixing Ratio (Extended):**  
 50 lbs. (22.7 kg) of USG Durock™ EXG Concrete Repair Patch to 32.5 lb. (14.7 kg) of 3/8 in. (10 mm) to 1/2 in. (13 mm) clean, saturated surface dry (SSD) aggregates (meeting ASTM C33 specification) to 2.25-3.0 quarts (2.1-2.8 L) of water

**Approximate Compressive Strength ASTM C109 (modified):**  
 10,000-10,500 (68.9-72.4 MPa) psi<sup>2</sup> at 28 days

**Installed Weight:** 2.5 lbs./sq. ft. (.1 kg/m<sup>2</sup>) at ¼ in. (6 mm) thickness

**Approximate Coverage (Neat):**  
 20 sq. ft. (1.86 m<sup>2</sup>)/bag at 1/4 in. (6 mm) thickness per 50 lb. (22.7 kg) bag

**Approximate Coverage (Extended with 32.5 lb. (14.7 kg) of aggregate):**  
 14.9 sq. ft. (1.4 m<sup>2</sup>)/bag at 1/2 in. (13 mm) thickness per 50 lb. (22.7 kg) bag

**Approximate Working Time:** 15–25 minutes (70 °F (21 °C)/50% RH)

**Approximate Final Set ASTM C191 (modified):**  
 25–45 minutes (depending on patch thickness and drying conditions)

**Approximate Light Foot Traffic:**  
 45–60 minutes (70 °F (21 °C)/50% RH) (depending on thickness and drying conditions)

**Approximate Time to Flooring:**  
 In as little as 45 minutes or when USG Durock™ EXG Concrete Repair 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 3 in. (76 mm) neat; up to 12 in. (305 mm) when extended

**Freeze-Thaw Resistance ASTM C666 (Procedure A):** 1200 Cycles

**Relative Dynamic Modulus ASTM C215:** > 95% (after 1200 freeze thaw cycles)

**Salt Scaling Resistance ASTM C672:** Excellent - No significant weight loss (< 0.10 lbs./sq. ft. after 75 cycles)

**Chloride Permeability ASTM C1202:** Permeability Class - Low

**Packaging:** 50 lb. (22.7 kg) multiwall paper bags  
 25 lb. (11.3 kg) multiwall paper bags

**Notes:**  
 1. ASTM C109 modified refers to air-drying as opposed to damp curing.  
 2. 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, aggregate and USG Durock™ EXG Concrete Repair Patch, as well as differences in mixing/pumping equipment.

**STORAGE**

USG Durock™ EXG Concrete Repair 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™ EXG Concrete Repair 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™ EXG Concrete Repair Patch dries.

**SUBMITTAL APPROVALS**

Job Name	
Contractor	Date

**PRODUCT INFORMATION**

See [usg.com](http://usg.com) for the most up-to-date product information.

**GREENGUARD INFORMATION**

GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit [ul.com/gg](http://ul.com/gg).

**DANGER**

Causes skin irritation. Causes serious eye damage. May cause cancer by inhalation of respirable crystalline silica. Avoid breathing dust. Do not handle until all safety precautions have been read and understood. 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. Immediately call a doctor. Wash contaminated clothing before reuse. When mixed with water, this material hardens and becomes very hot sometimes quickly. DO NOT attempt to make a cast enclosing any part of the body using this material. 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](http://usg.com).

**KEEP OUT OF REACH OF CHILDREN.**

**TRADEMARKS**

The trademarks USG, DUROCK, EXG, RH-100, IT'S YOUR WORLD. BUILD IT., the USG logo, the design elements and colors, and related marks are trademarks of USG Corporation or its affiliates.

LEED is a registered trademark of U.S. Green Building Council.

**NOTE**

The information in this document is subject to change without notice. USG Corp. assumes no responsibility for any errors that may inadvertently appear in this document. Consult your USG Company sales office or representative for information.

**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 SDS and literature before specification and installation.

800 USG.4YOU  
800 (874.4968)  
[usg.com](http://usg.com)

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

CB792-USA-ENG/rev. 2-18  
© 2018 USG Corporation and/or  
its affiliates. All rights reserved.  
Printed in U.S.A.

**USG**  
IT'S YOUR WORLD. BUILD IT.®

