

# USG DUROCK™ BRAND ESB™ PRIMER

## DESCRIPTION

### Epoxy primer specifically designed to receive broadcast aggregate

- Designed for use over interior concrete substrates
- Provides a coarse profile for demanding applications when aggregate is added
- 100% solids epoxy-based primer with zero VOCs (ASTM D3960)
- Allows for underlayment application in approximately 24 hours, depending on conditions
- Excellent substrate wetting capabilities
- No mechanical preparation required for most applications
- Empty packaging can be recycled

USG Durock™ Brand ESB™ Primer is a two-component, 100% solids epoxy primer designed specifically to receive broadcast aggregate to provide an aggressive surface profile prior to the application of USG Durock™ Brand and USG Levelrock® Brand underlayments. It features excellent substrate wetting capabilities to promote penetration and adhesion to the substrate.

## SUBFLOOR PREPARATION

All subfloors must be structurally sound, solid and secure. 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.

When applying USG Durock™ ESB Primer directly to a concrete substrate, the concrete must be cured 30 days, clean and free of dirt, tar, wax, oil, grease, latex compounds, sealers, curing compounds, release agents, asphalt, adhesives, paint, chemicals, loose old cementitious products, joint compounds from drywall installation or any other contaminant that might prevent proper bonding of USG Durock™ ESB Primer to the concrete substrate. The tensile bond strength of the concrete over which USG Durock™ ESB Primer is being applied must be a minimum of 175 psi (1.2 MPa) when tested per the ASTM C1583 standard. Seal off floor drains before starting the application of the primer to prevent clogging.

Contaminated concrete substrates exhibiting signs of laitance (a layer of weak material on the concrete surface either visible or invisible), scaling, spalling, crumbling, carbonation 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 substrate. If the surface is diamond ground, use 12-16 grit diamonds and vacuum the subfloor with a HEPA filtration industrial vacuum to remove dust and debris.

If cracks are found in the existing concrete substrate, 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™ ESB Primer and the floor underlayment. Repair all existing cracks in old and new concrete to minimize their ability to telegraph through the layer of USG Durock™ ESB Primer and the floor underlayment. 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 HEPA filtration industrial vacuum or other suitable means. Various cracks present in the concrete substrate, including shrinkage cracks, must be filled with a commercially available crack-fill compound for concrete flooring applications. See *Notes/Limitations #5* on pg. 2.

## SUBFLOOR PREPARATION

Interior concrete slabs not poured over an effective moisture vapor retarder are subject to possible moisture vapor transmission that may lead to blistering and failure of the coating system. It is the coating applicator's responsibility to conduct calcium chloride and relative humidity probe testing per ASTM F710 standards to determine if excessive levels of vapor emissions are present before applying any coatings. USG will not be responsible for coating failures due to undetected moisture vapor emissions. USG Durock™ ESB Primer is not a moisture mitigation system. If moisture levels per ASTM F710 exceeds 4 lbs. (1.8 kg)/1000 sq. ft. (92.9 m<sup>2</sup>)/24 hours, or internal RH is greater than 75% RH, apply USG Durock™ RH-100™ Moisture Vapor Reducer. See the *USG Durock™ RH-100™ Moisture Vapor Reducer* Submittal Sheet (CB670) at usg.com.

## MIXING EQUIPMENT

- Chemical safety glasses or splash-proof goggles
- Protective gloves
- NIOSH/OSHA-approved organic vapor respirator
- Non-metallic cleated shoes
- Long sleeved shirts and trousers
- Emergency showers and eye wash stations should be readily accessible
- Electric drill (300–400 rpm)
- Jiffy®-type mixer
- Notched squeegee
- Nonshedding ¼ in. (6 mm) or ⅜ in. (19 mm) nap phenolic core roller cover
- Wet mil. gauge

## INSTRUCTIONS

Read the entire warning which appears on the last page of this Submittal before even opening the package. USG Durock™ ESB Primer is packaged in a two-part, premeasured kit. Both parts must be mixed in full—do not mix partial amounts of the materials. Pour the entire contents of part B into the part A container.

Using an electric drill (300–400 rpm) with a Jiffy-type mixer, mix the combined materials in container A for two full minutes. Do not mix by hand. Mix all material by moving drill around container's sides and bottom. **IMPORTANT** - The entire contents of USG Durock™ ESB Primer must be poured out of the pail immediately after mixing or the material may reach extreme temperatures and possibly combust.

## APPLICATION

Apply USG Durock™ ESB Primer with a roller and squeegee. Immediately after mixing, pour USG Durock™ ESB Primer from the mixing container in a ribbon format to the properly prepared concrete substrate. Spread material at an approximate rate of 100-160 sq. ft./gal. (2.5-3.9 m<sup>2</sup>/L), then back roll with a 1/4 in. (6 mm) nap phenolic core roller. Immediately broadcast graded, clean, washed, kiln-dried sand to full rejection. If wet spots appear on the surface after broadcasting sand, rejection has not been achieved; apply additional sand. Allow USG Durock™ ESB Primer to fully cure (approximately 24 hours at 77 °F (25 °C)). If any bare spots exist, mechanically abrade bare areas, clean thoroughly and reapply primer and sand to rejection. Allow primer to cure (approximately 24 hours at 77 °F (25 °C)) and remove loose sand.<sup>1</sup>

**Note 1.** Cure times and working times are influenced by both the ambient air temperature and the temperature of the concrete.

## NOTES/LIMITATIONS

1. Do not use in exterior applications.
2. Must be applied to a clean, dry surface.
3. Should be applied with aggregate fillers broadcast to excess.
4. USG Durock™ ESB Primer is not a moisture control membrane and should not be used by itself as a moisture mitigation solution.
5. 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 services of a professional structural engineer to provide such joints as part of the system in accordance with engineering requirements and industry standards.
6. 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 the primer. Note that repair of existing cracks in the concrete subfloor only subdues but does not completely prevent their ability to telegraph through USG Durock™ ESB Primer and the poured underlayment. Growth of existing cracks or formation of new cracks in the concrete subfloor can lead to cracks telegraphing through USG Durock™ ESB Primer and the poured underlayment.

**PRODUCT DATA**

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**Solids Content:** 100%  
**VOC Content:** 0 g/L  
**Viscosity, (Clear Material, 77 °F (25 °C)):** 4200 cps  
**Coverage:** 100-160 sq. ft./gal. (2.5-3.9 m<sup>2</sup>/L)  
**Cure Times (77 °F (25 °C))<sup>1</sup>**  
**Dry to Touch:** 12 hours  
**Light Traffic:** 24 hours  
**Kit Packaging:** 3.5 gal. (US) (13.2 L) pail containing 1 gal. (US) (3.7 L) Part A and 1 gal. (US) (3.7 L) Part B

**Note 1.** Cure times are influenced by both the ambient air temperature and the temperature of the concrete.

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**STORAGE**

USG Durock™ ESB Primer should be stored in an enclosed shelter providing protection from damage and exposure from the elements. Keep USG Durock™ ESB Primer from freezing and extreme heat. Store USG Durock™ ESB Primer at temperatures between 60 °F and 100 °F (15-38 °C). Dispose of any waste material according to federal/state/local regulations.<sup>1</sup> USG Durock™ ESB Primer has a shelf life of 12 months from the date of manufacture.

**Note 1.** Metal shipping containers and the high-density polyethylene (HDPE) cradle can be recycled or disposed of as solid waste as long as they are empty per section 261.7 (Residues of hazardous waste in empty containers) of The Resource Conservation and Recovery Act (RCRA). If the material is catalyzed and solid it can be disposed of as solid waste. If it is liquid it would need to be disposed of as RCRA waste.

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**CLEANUP**

Clean tools with denatured alcohol or isopropyl alcohol Acetone before the material dries.

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**SUBMITTAL APPROVALS**

<b>Job Name</b>	
<b>Contractor</b>	<b>Date</b>

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**WARNING**

Danger copy and other information is on the following page. Please read entire Danger copy before opening package.

#### PRODUCT INFORMATION

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

#### DANGER

Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation. Suspected of causing genetic defects. Suspected of damaging fertility or the unborn child. Very toxic to aquatic life with long lasting effects. Do not handle until all safety precautions have been read and understood. Use only in a well-ventilated area. Avoid contact with eyes or skin, ingestion, and inhalation of mist or vapor. Use NIOSH/OSHA-approved organic vapor respirator. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection. If swallowed, inhaled, on skin (or hair), or in eyes: immediately call a poison center or doctor. If swallowed: Rinse mouth; do not induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Immediately remove all contaminated clothing; rinse skin with 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. Store locked up. Collect spillage and dispose of in accordance with local, state, and federal regulations. For more information call Product Safety (Chemtrec): 800-424-9300 or see the SDS at usg.com

**KEEP OUT OF REACH OF CHILDREN.**

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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.

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