

Fiberock® Underlayment



Aqua-Tough™

Water-resistant product for all residential underlayment needs – interior use only

- Meets underlayment needs in both wet and dry areas throughout the home.
- Ideal under ceramic tile, all types of vinyl, hardwood flooring, laminate flooring, and carpeting.
- Provides a smooth, flat surface.
- Resists indentation from heels and furniture in vinyl applications.
- Free of resins, adhesives, and solvents that might stain a vinyl floor.
- Recognized by major resilient-flooring and adhesive manufacturers.
- Tested by Tile Council of North America (Robinson Floor Test Method) and recognized for residential and light-commercial use.
- Superior adhesive bonding and workability.
- Certified, recycled content of 95 percent.

Description

FIBEROCK® brand AQUA-TOUGH™ underlayment is engineered to meet water, mold and indentation resistance needs under ceramic tile, resilient flooring, carpeting, hardwood flooring, and laminate flooring. This all-purpose underlayment is manufactured from a specially engineered combination of gypsum and cellulose fibers and has a uniform, water-resistant composition that helps prevent the problems typically associated with plywood, oriented strand board (OSB), and lauan underlayments. FIBEROCK AQUA-TOUGH underlayment provides a smooth, flat surface, with no bumps or ridges to telegraph through. It resists water damage such as the swelling and warping often seen with wood-based products, and contains none of the resins, adhesives or solvents that can stain floor covering materials. It also offers greater resistance to indentation than other underlayment products, and can be used throughout a home – in both wet and dry areas – regardless of the flooring material chosen.

Advantages

Smooth, uniform surface FIBEROCK Brand Underlayment provides an excellent substrate for various floor covering installations.

Easy to install Simply score and snap product with minimal effort.

Versatile Used in both wet and dry areas throughout the home, under ceramic tile, vinyl, carpeting, wood, or laminate flooring.

Integral water and mold resistance AQUA-TOUGH technology provides a uniform, specially engineered composition for superior water resistance, through and through. FIBEROCK AQUA-TOUGH underlayment scored 10 (highest score) in independent tests per ASTM D3273, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

Warranted performance Warranted for 20 years against buckling, warping, delamination, cracking, and splitting upon fastening.

Environmentally friendly Offers an environmentally friendly alternative to wood-based underlayments because it is made from 95 percent recycled material.

Smooth, uniform surface Provides an excellent substrate for various floor covering installations.

Dimensional stability Surpasses traditional plywood, oriented strand board (OSB), and lauan underlayments in retaining dimensional stability; provides reduced linear variation and edge-thickness swell.

Quality control Manufactured in accordance with strict performance specifications. In-process and finished-product quality tests ensure quality and performance consistency.

Limitations

1. For interior use only.
2. Do not use in areas subject to prolonged exposure to standing water, for instance, gang showers, saunas, and hot-tub decks.
3. Do not install directly over concrete subfloors.
4. Do not install over heavily cushioned, thick-foam-backed vinyl flooring.
5. Not intended for walls or ceilings.
6. Do not install using drywall screws or drywall nails.
7. For ceramic tile applications, underlayment must be bonded using mortar or adhesive, and mechanically fastened to subfloor.

WARNING: Store all FIBEROCK panels flat. Panels are heavy and can fall over, causing serious injury or death. Do not move unless authorized.

Product Data	Dimensions	Size (thickness x width x length)	Units (pcs.)	Weight lbs/ft ²
		1/4" x 4' x 4'	60	1.53
1/4" x 3' x 5'	60	1.53		
3/8" x 4' x 4'	40	1.97		
3/8" x 4' x 8'	40	1.97		
3/8" x 3' x 5'	40	1.97		

Compliance with Standards

FIBEROCK AQUA-TOUGH underlayment is made from 95 percent recycled material and has earned independent certification from Scientific Certification Systems (SCS). SCS is the leading national testing company to evaluate manufacturers' environmental claims.

Residential and light-commercial performance rating based on Robinson Floor Test (ASTM C627), conducted by TCNA. For specific TCNA test reports, contact your local USG sales representative.

FIBEROCK AQUA-TOUGH underlayment has earned the Installer Friendly Seal Award by International Certified Floorcovering Installer's Association.

Underlayment Comparison Testing**Edge Swelling by the Disk Method, per ASTM D1037**

Underlayment	Thickness Increase	24 Hr. Moisture Absorption
1/4" FIBEROCK AQUA-TOUGH underlayment	0.3%	30%
5.2 mm mahogany lauan	6%	50%
1/4" oriented strand board (OSB)	33%	50%
1/4" plywood	7%	59%

Linear Variation with Change in Moisture Content, per ASTM D1037

Underlayment	Overall Length Change	Overall Free Moisture Increase
1/4" FIBEROCK AQUA-TOUGH underlayment	0.02%	0.5%
5.2 mm mahogany lauan	0.08%	11%
1/4" oriented strand board (OSB)	0.17%	10%
1/4" plywood	0.11%	11%

Storage and Handling

All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises. Allow FIBEROCK AQUA-TOUGH underlayment to acclimate to the temperature and humidity conditions at the job site prior to installation.

Limited Warranty

For a copy of the limited warranty terms and limitations, and for customer assistance, contact USG at 1-800-USG-4-YOU.

Good Design Practices

1 System Performance

Systems covered herein have been tested and evaluated for use as described. For other system applications, consult your local representative.

All details, specifications, and data contained in this literature are intended as a general guide for using FIBEROCK AQUA-TOUGH underlayment. These products must not be used in a design or construction of any given structure without complete and detailed evaluation by a qualified structural engineer or architect to verify suitability of a particular product for use in the structure.

Information in this publication should be used only for FIBEROCK Brand Underlayment, as physical properties of competitive products may vary. United States Gypsum Company assumes no liability for failure resulting from the use of alternative materials or improper application or installation of FIBEROCK AQUA-TOUGH underlayment as specified herein.

2 Floor Design

Subfloor systems should be designed for a minimum deflection limit of L/360 for the span. The design live loads and superimposed dead loads should be included in the deflection calculation.

3 Expansion and Contraction

Control joints are essential for the performance of most floor-covering installations. Underlayment panels must be separated at all building control joints. Because of the limitless conditions and structural systems on which the floor covering can be installed, the architect or engineer of record shall show locations and details of control joints on project drawings.

4 Water Barrier

FIBEROCK AQUA-TOUGH underlayment is vapor permeable and is resistant to deterioration in the presence of water. If waterproof construction is specified, a separate waterproof membrane or system must be applied over the FIBEROCK AQUA-TOUGH underlayment. Consult manufacturer's guidelines for application of waterproofing materials and installation of floor coverings over these materials.

Specifications

Part 1: General

1.1 Scope

Specify to meet project requirements.

1.2 Qualifications

All materials, unless otherwise indicated, shall be manufactured by United States Gypsum Company and shall be installed in accordance with its current printed directions.

1.3 Delivery and Storage of Materials

All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises. **WARNING:** Store all FIBEROCK AQUA-TOUGH underlayment panels flat. Panels are heavy and can fall over, causing serious injury or death. Do not move unless authorized.

1.4 Environmental Conditions

In cold weather and during FIBEROCK AQUA-TOUGH underlayment and tile installation, temperatures within the building shall be maintained within the range of 40 to 100 °F. Adequate ventilation shall be provided to carry off excess moisture. Allow underlayment panels to acclimate to the temperature and humidity conditions at the job site prior to installation.

1.5 Installation Practices

FIBEROCK AQUA-TOUGH underlayment should be cut to size with utility knife and straight edge. A handsaw or low-rpm power saw can be used. A NIOSH/MSHA-approved respirator should be worn if a low rpm saw is used.

Contractors installing tile and tile-setting materials should always follow current ANSI specifications and TCNA guidelines.

**Part 2:
Products**

2.1 Materials

- A. Underlayment – FIBEROCK AQUA-TOUGH underlayment, 1/4" x 4' x 4', 1/4" x 3' x 5', 3/8" x 4' x 4', 3/8" x 4' x 8', or 3/8" x 3' x 5'.
- B. Joint Reinforcement – DUROCK® brand interior tape (alkali-resistant), 2" x 50' or 2" x 250'.
- C. Fasteners – Choose a fastener length approximately equal to combined thickness of underlayment and subfloor; longer fasteners may penetrate the floor joists, which may compromise the ability of the subfloor to expand and contract uniformly with natural variations in temperature and humidity.
 - Ceramic tile applications**
 - Corrosive-resistant wood screws: 1-1/4", 1-5/8", 2-1/4".
 - Nails: 1-1/2" hot-dipped galvanized ring-shank underlayment nails, 1-1/2" hot-dipped galvanized roofing nails.
 - Staples: 1/4"-crown (or larger) staples.
 - Resilient-flooring applications**
 - Staples: 1/4"-crown.
- D. Subfloor – Subfloor system should be designed for a deflection limit of L/360 for the span. Subfloor should be APA Span-Rated Plywood or OSB with Exposure 1 classification or better, with T&G or back-blocked at unsupported edges.

Application	Joist Spacing	Minimum Subfloor Thickness
Ceramic Tile	16" o.c.	19/32"
	19.2" o.c.	23/32"
	24" o.c.	23/32"
Resilient Flooring	16", 19.2", or 24" o.c.	23/32"

- E. Ceramic Tiling
 - 1. Adhesives/mortars:
 - a. FIBEROCK AQUA-TOUGH underlayment to subfloor: Dryset mortar meeting ANSI A118.1, or latex portland cement mortar meeting ANSI A118.4.
 - b. Ceramic tile to FIBEROCK AQUA-TOUGH underlayment: Latex portland cement mortar meeting ANSI A118.4, or Type I ceramic tile adhesive meeting ANSI A136.1.
 - 2. Grout: Meeting ANSI A118.3, A118.6, A118.7, or A118.8.
 - 3. Tile: Meeting ANSI A137.1.
 - 4. Waterproof membrane (where waterproof construction is specified): Meeting ANSI A118.10.
- F. Resilient Flooring Application
 - 1. Adhesive: Floor covering manufacturer-recommended adhesive.
 - 2. Resilient floor covering.

**Part 3:
Execution**

**3.1
General**

- A. Preparation – Allow underlayment panels to acclimate to temperature and humidity conditions at job site prior to installation. Consult local building codes for specific crawl-space requirements. Install FIBEROCK AQUA-TOUGH underlayment only over approved wood subfloor installed per manufacturer's instructions.
- B. Subfloor – Clean subfloor and leave free of dust, dirt, and debris. Ensure subfloor is completely dry (no more than 12% moisture in subfloor prior to installation). Verify that fasteners are flush with, or slightly below, subfloor surface. Ensure that subfloor and structure are within tolerances specified by floor-covering manufacturer's guidelines. Inspect subfloor for an even, flat surface before installing underlayment. Uneven end and edge joints and variations in panel thickness may telegraph through underlayment in vinyl applications. Sand uneven joints, if necessary. Ensure subfloor is flat between framing elements. If subfloor panels appear to buckle, correct by adding blocking or cleats under floor. Fasten cleats to sub-floor to flatten the panels. Repair existing voids, large gaps, and penetrations through subfloor using a manufacturer-approved floor leveler prior to installing FIBEROCK AQUA-TOUGH underlayment.
- C. Cutting and Laying Out Panels—Maintain temperature and humidity of space prior to, during, and after installation. Conditions should approximate those of normal occupancy. Install underlayment, fastener marks up. Cut underlayment from one side using score-and-snap method. For more difficult cuts,

combine score-and-snap method with use of handsaw or low-RPM power saw. Cut out holes for plumbing with hole saw, keyhole saw, or variable-speed jigsaw. Lay cut edges against the wall; only factory edges should be joined. Begin laying panels at one corner. Maintain 1/4" space between underlayment panels and perimeter walls. Stagger underlayment panel joints 16" o.c. minimum so that four panel corners never meet, and offset panel end and edge joints 12"-16" from subfloor panel joints. Butt underlayment panel edges and ends lightly together; maximum 1/32" gap allowed.

- D. Preparation for Resilient Flooring – Consider critical lighting when determining panel layout. Run continuous panel joints in the direction of the dominant source of natural light, when possible.
- E. Prior to installation of final floor covering, avoid heavy traffic and moving heavy items across underlayment panels. If necessary, items such as refrigerators or other appliances with free rolling wheels (or on wheeled dollies) may be rolled over floor if care is taken to avoid wheel contact on the finished underlayment surface. Using hard wood strips or scrap underlayment strips to bear the wheel traffic is recommended.

**3.2
Ceramic Tile
Floor Applications**

- A. Fastening Underlayment –
 - 1. Lamination: Laminate FIBEROCK AQUA-TOUGH underlayment to minimum 5/8"-thick exterior-grade plywood/OSB with Type I organic adhesive, latex portland cement mortar, or dry-set mortar. (For subfloor requirements see Section 2.1, Materials.) Apply adhesive with a V-notched trowel, mortar with square-notched trowel.
 - 2. Fastening: Fasten panels to subfloor with staples, screws or nails, spaced 8" o.c., with perimeter fasteners 1/2" from ends and edges. Sweep all debris from underlayment and vacuum carefully to eliminate dust and dirt.
- B. Finishing Underlayment Joints – Prefill all joints with tile-setting mortar or adhesive, then immediately embed DuROCK® brand interior tape over joints. Strike joints flush.
- C. Ceramic Tile Application – Sweep all debris from underlayment and vacuum carefully to eliminate dust and dirt. Key-in mortar or adhesive to prime underlayment panel. Apply adhesive or mortar to primed underlayment with notched trowel. Set tile in accordance with ANSI A108.5; working a small area at a time, set tile with a slight twisting motion and press into place. Avoid adhesive buildup on tile edge and in grout space. Keep tiles aligned so joints are straight and uniform. Use tile spacers if desired. Grout ceramic tile units using polymer modified cement grout. Install grout in accordance with ANSI A108.10.

**3.3
Ceramic Tile
Countertop
Application**

- A. Base – Install minimum 3/4" exterior grade plywood or OSB base across cabinet supports. Position ends and edges over supports and secure with suitable screws or nails spaced 12" o.c., max.
- B. Finishing Underlayment Joints – See Section 3.2, Finishing Underlayment Joints.
- C. Ceramic Tile Application – See Section 3.2, Ceramic Tile Application

**3.4
Resilient Flooring
Application**

- A. Selecting Fasteners – Fasten FIBEROCK AQUA-TOUGH underlayment to subfloor with 1/4"-crown staples. Do not use screws or nails. Fastener length should be approximately equal to combined thickness of underlayment and subfloor. Fasteners should not penetrate through subfloor; long fasteners that penetrate the floor joists may compromise the ability of the subfloor to expand and contract uniformly with natural variations in temperature and humidity .
- B. Fastening Panels – Lay panels flat and press tightly onto subfloor while fastening. Begin fastening where three panels intersect. Affix staples along joints in a zipper pattern at 1" o.c., 1/4" from panel edge. Install staples at 4" o.c. in the field of panels.
When using pneumatic tools, apply sufficient pressure on gun to prevent the tool from bouncing. Set pneumatic tool pressure to drive fasteners flush or slightly below underlayment surface. To prevent fastener heads from telegraphing through resilient floor covering, do not countersink more than 1/16" below surface. Fasten one panel at a time. Begin at one end and fan out across the floor.
- C. Installing Panels Over Existing Vinyl Floor Covering – Do not install underlayment over heavily cushioned, thick-foam backed vinyl. Ensure that existing floor is level, fully adhered and well bonded, and meets appropriate design requirements. Repair missing or broken tiles, curling seams, severe gouges, protrusions of surface and any other damage with a high-quality floor leveler. Follow floor-covering manufacturer's recommendations for installations over existing floors.

- D. Finishing Panel Joints – Use patching compound sparingly to fill wide joints, repair any surface voids and correct joint lippage (panel edge sitting above or below the floor plane). Carefully fill joints wider than 1/32" and any surface imperfections with only enough material to infill void – do not feather. Correct joint lippage by applying patching compound to low side only and feathering to level. Allow compound to dry completely (90 min. minimum), then lightly sand or scrape, taking care not to scuff panel surface; use a flat blade to scrape away any excess material. Remove all debris from panel surfaces; vacuum carefully to eliminate excess dust and dirt.
- E. Applying Floor Covering – Refer to floor-covering manufacturer’s recommendations for proper procedures. For proper trowel selection, refer to adhesive manufacturer’s recommendation for nonporous substrates. Follow floor-covering and/or adhesive manufacturer’s guidelines for setting times before allowing traffic on the finished floor. Follow floor-covering manufacturer’s recommendations for preventive maintenance, cautions, and procedures.
 - 1. Perimeter-Bonded, Felt-Backed Resilient Floor Covering – Joint patching is not required with this type of floor covering in new construction unless joint spaces or lippage exceed 1/32". Carefully fill joints wider than 1/32" with only enough material to infill void – do not feather. Correct joint lippage by applying patching compound to low side only and feathering to level. Allow compound to dry completely (90 min. minimum), then lightly sand or scrape, taking care not to scuff panel surface. Remove dust, dirt, and debris from underlayment surface before application of floor covering.

**3.5
Wood Floor
Application**

- A. Mechanically Fastened Wood Flooring – When mechanically fastening wood flooring, fasteners must be long enough to penetrate through the FIBEROCK AQUA-TOUGH underlayment and into the subfloor. The length of the fasteners should be determined by adding the thickness of the underlayment to the length of the fastener recommended by flooring manufacturer. For underlayment installation, follow recommendations in Section 3.1, Cutting and Laying Out Panels. For fastener selection, follow recommendations in Section 3.4, Selecting Fasteners.
- B. Glue-down installation of engineered or solid hardwood flooring must be done in strict accordance with the manufacturer’s installation instructions.

**Submittal
Approvals:**

	Job Name	
	Contractor	Date

Trademarks

The following trademarks used herein are owned by United States Gypsum Company: AQUA-TOUGH, DUROCK, FIBEROCK.

Note

Products described here may not be available in all geographic markets. Consult your United States Gypsum Company sales office or representative for information.

Notice

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions 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 and industrial hygiene practices during handling and installation of all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

