



## VINYL AND OTHER FLOORING (CONT.)

### 2. Attach Hardibacker® sheets to subfloor

• Fasten one sheet at a time. Hardibacker sheets must be flush with subfloor during installation.

• Begin the fastening pattern in a corner of the sheet, then fasten the two adjacent edges. Return to the corner and fasten in a diagonal pattern from that corner until the board is completely fastened.

• Place fasteners in a random, staggered pattern across Hardibacker board. Avoid fastening in a straight line.

• Fasten Hardibacker sheets with proper fasteners (as listed in "Materials Required") a maximum of 8" over the entire sheet surface.

• Fasten every 2" along sheet edges.

• Keep fasteners between 3/8" and 3/4" from sheet edges and 2" in from sheet corners.

• Fastener heads/crowns must be flush with or slightly countersunk a maximum of 1/16" below the surface.

### 3. Finishing surface and joints (not necessary for carpet or wood flooring)

• If necessary, lightly hand-sand seams to achieve a smooth transition between sheets. Avoid over-sanding. Sanding will generate significant respirable silica dust and those in the immediate area must wear NIOSH-approved respiratory protection (e.g. N95) in accordance with applicable government regulations.

• Thoroughly clean Hardibacker board surface to remove all debris prior to patching.

• Using a wide flat trowel, apply a skim coat of patch (as listed in "Materials Required") to all seams, sanded areas, hammer indentations, holes, gaps, gouges, chips and voids to achieve a smooth surface. Avoid building a ridge over the seams by feathering the patch out several inches on both sides of the seams.

• Obtaining a perfectly smooth surface may require more than one coat of patch.

• After the patch has thoroughly dried, lightly sand or scrape off any surface imperfections caused by the patch to achieve a smooth surface.

• Wait until patch is thoroughly dry before installing the floor covering.

### Flooring installation

• Prepared Hardibacker cement board surface must be free of all debris, oil, paint, caulk, joint compound and other foreign substances.

• Do not install floor covering seams directly over the Hardibacker board seams.

• Install floor covering according to the adhesive and floor covering manufacturers' instructions.

## BASIC COMPOSITION

90% Portland cement and sand with selected additives. Contains no asbestos, gypsum, glass fibers or formaldehyde.

### 1/4" Hardibacker® cement board:

Sheet sizes: 4' x 4' and 4' x 8' Thickness: 1/4" Weight: 1.9 lbs. psf (9.3 kg/m<sup>2</sup>)  
Complies with ASTM C1288 & ANSI A118.9

### 1/4" Hardibacker® EZ Grid® cement board:

Sheet sizes: 3' x 5' Thickness: 1/4" Weight: 1.9 lbs. psf (9.3 kg/m<sup>2</sup>)  
Complies with ASTM C1288 & ANSI A118.9

### 1/2" Hardibacker® cement board:

Sheet sizes: 3' x 5' and 4' x 8' Thickness: 1/2" nominal Weight: 2.6 lbs. psf (12.7 kg/m<sup>2</sup>)  
Complies with ASTM C1288 & ANSI A118.9

## MATERIALS REQUIRED

### MORTAR

#### For floors:

- Latex or acrylic modified thinset (complying with ANSI A118.4).
- Dry-set mortar for use between subfloor and cement board only (complying with ANSI A118.1).

#### For walls and countertops:

- Latex or acrylic modified thinset (complying with ANSI A118.4).
- Type I mastic (complying with ANSI A136.1).

### TAPE

- 2" wide high-strength alkali-resistant glass fiber tape.

### FASTENERS

#### For floors and walls:

- Minimum 1-1/4" long corrosion-resistant roofing nails.
- Minimum 1-1/4" long No. 8 x 0.375" HD self-drilling corrosion-resistant ribbed waferhead screws.
- If compliance with ANSI A108.11 is not required, minimum 1" long No. 8 x 0.323" HD self-drilling corrosion-resistant ribbed buglehead screws may be used for floors.
- If applying 1/2" Hardibacker cement board over gypsum, use minimum 1-3/4" long corrosion-resistant roofing nails.

#### For countertops:

- Minimum 3/4" long corrosion-resistant roofing nails.
- Minimum 3/4" long ribbed counter sinking corrosion-resistant screws.
- 18-gauge corrosion-resistant polymer coated 3/4" staples with a 1/4" crown.
- For 1/2" Hardibacker cement board, use minimum 1-1/4" long corrosion-resistant roofing nails or ribbed counter sinking screws.



## RECOGNITIONS

Hardibacker® cement board is recognized as an interior substrate according to the following:

- International Code Council Evaluation Service Legacy Report NER-405
- City of Los Angeles Research Report No. 24862
- HUD Materials Release Nos. 1263c and 1268c
- City of New York MEA No. 223-93M
- CCMC Evaluation Report 12678-R
- 2005 Tile Council of America Handbook for Ceramic Tile Installation
- Quality Control Agency: Intertek Testing Services – IASI AA-647

Consult these documents for additional information concerning conditions for use in applicable jurisdictions.

### \*Cementitious Backer Unit/Fiber-Cement Underlayment

#### Flexural Strength

Flexural Strength at Equilibrium Moisture Control Content (ASTM C1185)

1/4" Hardibacker and 1/4" Hardibacker EZ Grid cement board: 2100 psi (14 MPa)

1/2" Hardibacker cement board: 1700 psi (12 MPa)

#### Compressive Strength

Compressive Strength at Equilibrium Moisture Control Content (ASTM D2394)

1/4" Hardibacker and 1/4" Hardibacker EZ Grid cement board: 7000 psi (48 MPa)

1/2" Hardibacker cement board: 6500 psi (45 MPa)



**HARDIBACKER®**  
The Ultimate Cement Backerboard™

**MOLDBLOCK®**  
PROTECTION

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1-800-9HARDIE  
(1-800-942-7343)

www.lowes.com/jameshardie  
James Hardie Building Products, Inc.  
26300 La Alameda, Suite 250  
Mission Viejo, CA 92691



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**HARDIBACKER®**  
The Ultimate Cement Backerboard™



Cement Board for  
Floors, Walls & Countertops

## INSTALLATION GUIDE



1-800-9HARDIE  
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**HARDIBACKER®**  
The Ultimate Cement Backerboard™

Contractors and do-it-yourselfers trust Hardibacker® cement board as their total wet area solution. Hardibacker board with MOLDBLOCK™ Protection provides superior moisture and mold resistance, is easy to install, and unlike glass mesh boards, it won't scratch porcelain or enamel surfaces. Whether you're tiling, painting, texturing or wallpapering, Hardibacker board's dimensional stability and exceptional bonding surface deliver the ultimate in durability. That's what you can expect from America's #1 backerboard.



### Superior Water and Mold Resistance

Proprietary cement formula with MOLDBLOCK™ Protection provides superior mold resistance.



### Easy to Score & Snap

Just score one side with a scoring knife or utility knife and snap upward. Cuts cleanly and is non-abrasive.



### Easy to Install

Fastening is quick with common tools.



### A Surface that Bonds

Tile adheres securely with modified thinset.



### Lightweight

Easy to handle and carry.

Hardibacker board with MOLDBLOCK™ Protection passes both ASTM G21 and ASTM D3273 mold tests with a perfect score. Hardibacker cement board contains no gypsum or paper facing.



## CUTTING HARDIBACKER® SHEETS

- Use a straight edge as a guide to score the sheet's face with a carbide-tipped scoring knife or utility knife and snap upward along the score line. The use of shears (manual, electric or pneumatic) is also acceptable.
- For cutouts and small holes, score around perimeter and break out from the face side with hammer.
- NEVER use high-speed power tools (e.g. saws, grinders, etc.) to cut James Hardie® products indoors as they may generate excessive silica dust.
- NEVER Dry Sweep – Use wet suppression methods or HEPA vacuum for clean-up.
- To further limit respirable silica exposures, wear a properly-fitted, NIOSH-approved dust mask or respirator (e.g. N-95) in accordance with applicable government regulations and manufacturer instructions.

## COUNTERTOP INSTALLATION

*Note: For countertop applications, consider 1/4" Hardibacker board.*

### 1. Ensure cabinets are level and secure

- Use minimum 1/2" exterior grade plywood or equivalent, positioned across the wood cabinet. Space between plywood supports is not to exceed 16" on center.

### 2. Determine layout of Hardibacker cement board

- Do not align Hardibacker cement board with plywood joints.

- Score and snap sheets to required sizes and make necessary cutouts.

- We recommend an 1/8" gap from sheet edges.

### 3. Attach Hardibacker cement board to countertop

- Apply a supporting bed of dry-set mortar or modified thinset to plywood with a 1/4" square-notched trowel. Mastic can also be used with a 5/32" V-notched trowel.

- Use the fastener pattern as a guide. Fasten Hardibacker cement board with specified nails or screws (as listed in "Materials Required") every 8" over the entire surface. Keep fasteners 3/8" from sheet edges and 2" in from sheet corners.

### 4. Tape joints prior to tiling

- Prior to setting the tile, fill all joints with the same mortar used to set the tiles.

- Embed 2" wide high-strength alkali-resistant glass fiber tape in the mortar and level.



## FLOOR INSTALLATION

*Note: For floor applications, consider 1/4" Hardibacker® board unless 1/2" is needed for transition.*

### 1. Ensure subfloor is structurally sound

- **On existing structures:**
- Ensure subfloor is not damaged. Replace any loose, warped, uneven or damaged sections of floor.

- Make certain subfloor is a clean and flat surface.

### For all floors:

- Use minimum 5/8" exterior grade plywood or 23/32" exterior grade OSB, complying with local building codes and ANSI A108.11. Joists' spacing not to exceed a maximum of 19.2" on center.

- The floor must be engineered not to exceed the L/360 deflection criteria, including live and dead design loads, for the specific joist spacing used.

### 2. Determine layout of Hardibacker cement board

- Stagger all Hardibacker cement board joints. Do not align with subfloor joints.

- Never allow all four corners of sheets to meet at one point.

- We recommend an 1/8" gap between walls and cabinet bases.

- Score and snap sheets to required sizes and make necessary cutouts.

### 3. Attach Hardibacker cement board to subfloor

- Apply a supporting bed of mortar or modified thinset to subfloor using a 1/4" square-notched trowel.

- Embed Hardibacker cement board firmly and evenly in the wet mortar.

- Use the fastener pattern as a guide. Fasten Hardibacker cement board with specified nails or screws (as listed in "Materials Required") every 8" over the entire surface. Keep fasteners 3/8" from sheet edges and 2" in from sheet corners.

- Set fastener heads flush with the surface without overdriving.

### 4. Tape joints prior to tiling

- Prior to setting the tile, fill all joints with the same mortar used to set the tiles.

- Embed 2" wide high-strength alkali-resistant glass fiber tape in the mortar and level.



## WALL INSTALLATION

*Note: For wall applications, consider nominal 1/2" Hardibacker® board.*

### 1. Ensure framing is structurally sound

- Must comply with local building codes and ANSI A108.11.

- Use a minimum of 2" x 4" wood studs or 20-gauge metal studs, which must be straight, properly aligned and spaced a maximum of 16" on center.

- In tub and shower enclosures, ensure that the framing is adequately reinforced at the corners.

### 2. Determine layout of Hardibacker cement board

- Sheets may be installed vertically or horizontally.

- Edges of the board parallel to framing must be supported by a structural framing member.

- Score and snap sheets to required sizes and make necessary cutouts.

### 3. Attach Hardibacker cement board to framing

- If required by local building codes, install a moisture barrier between studs and cement board.

- Install sheets 1/4" above floor; tub or shower pan.

- Fasten cement board with specified nails or screws (as listed in "Materials Required") a maximum of 8" around perimeter and all supporting studs.

- Keep fasteners 3/8" from sheet edges and 2" in from sheet corners.

- Set fastener heads flush with the surface, without overdriving.

### 4. Tape joints prior to tiling

- Fill all joints with mortar (see "Materials Required").

- Embed 2" wide high-strength alkali-resistant glass fiber tape in the mortar and level.

**WARNING AVOID BREATHING SILICA DUST:** James Hardie products contain respirable crystalline silica, which is known to the State of California to cause cancer and is considered by IARC and NIOSH to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation, use fiber cement shears for cutting or, use score & snap technique. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheet available at [www.jameshardie.com](http://www.jameshardie.com) or by calling 1-800-9HARDIE (1-800-942-7343). FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

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Hardibacker® cement board with MOLDBLOCK™ Protection can be tiled, painted, textured or wallpapered.

## FINISHING WITH TILE

1. Refer to ANSI A108 or A108.5 and the mortar and tile manufacturers' published application guidelines for complete tiling instructions.

2. Wipe the surface of Hardibacker cement board clean with a damp sponge just prior to adding mastic or mortar.

3. Spread the mastic or mortar with a notched trowel (*Note: Please see "Materials Required" to see which setting material is required for your application.*)

4. Twist or press and beat in tiles complying with ANSI A137.1.

5. Allow a minimum of 24 hours curing set time before grouting.

## FINISHING WITH TEXTURE OR PAINT

### 1. Texturing

- Texture can be applied to Hardibacker board in the same way as drywall.

### 2. Painting or Wallpapering

- Apply a drywall primer suitable for high moisture areas, as recommended by the paint manufacturer. Paint Hardibacker board as you would drywall.

If wallpapering, prime surface of Hardibacker board with a primer suitable for high moisture areas as recommended by the wallpaper manufacturer.

## FINISHING WITH NATURAL STONE

Natural stone often has hidden weaknesses which can result in surface cracks in finished floors. To reduce the risk of job failures, always consult the Marble Institute of America Handbook.

In addition to the steps outlined under "Floor Installation," the following is required:

- Always follow the recommendations of the flooring material manufacturer.

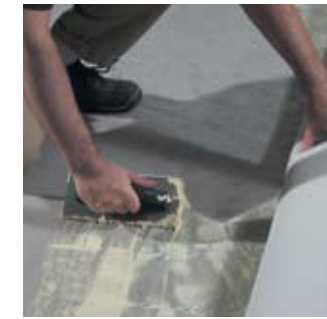
- Marble and natural stones must have sufficient flexural strength for use in flooring systems.\* Where the quality and strength of the stone is unknown, the floor must be engineered not to exceed the L/720 deflection criteria, including live and dead design loads, for the specific joist spacing used. The strength of your natural stone will have an impact on the ultimate performance of your flooring system.

\* Testing has shown that a minimum 2900 psi is preferable for flooring application.

## STEAM ROOM APPLICATION

Hardibacker board is recognized for use in residential steam rooms when installed over conventional framing and in accordance with Hardibacker printed installation instructions, TCA guidelines (*Tile Council of America*

*Handbook, www.tileusa.com*), and local building codes. Questions and concerns regarding design and construction should be directed to a knowledgeable professional.



## VINYL AND OTHER FLOORING

### MATERIALS REQUIRED

#### Fasteners

- Minimum 7/8" long galvanized or polymer-coated 18-gauge chisel point staples with 1/4" crown.
- Minimum 7/8" long galvanized ring shanked underlayment flooring nails.

- Fasteners should be long enough to reach the bottom of the subfloor; but not penetrate it.

- Avoid using resin, rosin or cement-coated fasteners that can discolor vinyl flooring.

#### Patch

- Use the cement-based, rapid-setting patching compound recommended by the floor covering manufacturer.

#### Do not use a gypsum-based patch.

- Follow the patch manufacturer's instructions.

### PREPARATION FOR UNDERLAYMENT

#### 1. Ensure subfloor is structurally sound and properly installed

##### On existing floors:

- Hardibacker® cement board may be installed over Vinyl Composition Tile (VCT) and other resilient flooring. For best results, remove existing floor covering, especially if it is in poor condition.

- If installing Hardibacker cement board over existing floor, ensure the floor is flat and floor covering is thoroughly adhered to the subfloor.

##### On all floors:

- Ensure subfloor is not damaged. Replace any loose, warped, uneven or damaged sections of floor.

- Make sure subfloor is dry, level and fastened correctly. All fasteners must be countersunk or flush with the subfloor. All seams or other areas that are not level must be sanded flat.

- Subfloor must be free of all debris, oil, grease, paint or other foreign substances.

#### 2. Basements and crawl spaces

- Crawl spaces must be well ventilated with a minimum of 18" between the ground and joists. A vapor barrier over the ground is required.

### UNDERLAYMENT INSTALLATION

#### 1. Determine layout of Hardibacker cement board

- Install smooth side up.

- Install Hardibacker sheets perpendicular to subfloor panels.

- Stagger all Hardibacker sheet joints. Do not align Hardibacker board joints with subfloor joints.
- Never allow all four corners of sheets to meet at one point.

- Lightly butt the sheet joints. Do not leave a gap or force edges together.

- Join factory-cut edges together in the body of the floor.

- Keep sheet edges 1/4" back from walls and cabinet bases.