

Hardirock[®]

WATERGUARD[™]



Hardirock Waterguard gypsum board is an economical underlayment for wet area wall applications. It has a specially treated core and water repellent papers to better withstand the damaging effects of moisture. This makes Hardirock Waterguard an excellent base for ceramic tile, paint and wallpaper. It can be used in both residential and commercial projects for bathrooms, laundries, kitchens and utility rooms. Waterguard is not recommended for saunas, gang shower rooms, swimming pool enclosures and areas continuously or repeatedly exposed to excessive moisture.

Where Hardirock Waterguard gypsum board is used on ceilings, the following restrictions apply:

Thickness	Framing Spacing
1/2" (12.7mm)	12" (305mm) o.c. or less
5/8" (15.9mm)	16" (406mm) o.c. or less

(Check local building codes; restrictions may vary.)

Hardirock Waterguard gypsum board is available with a 1/2" regular or 5/8" Fire X core. Both products are manufactured with the long edges tapered to facilitate the application of joint compound. The face paper is green to differentiate the Waterguard products from other gypsum boards.



**Hardirock[®] Waterguard[™]
Gypsum Board For
Wet Area Applications**

PHYSICAL PROPERTIES

Hardirock[®] Waterguard gypsum board meets or exceeds the physical property requirements specified in American Society for Testing and Materials (ASTM) C 630.

	Waterguard Regular	Waterguard Fire X
Thickness	1/2" (12.7 mm)	5/8" (15.9 mm)
Width	4' (1219 mm)	4' (1219 mm)
Standard Lengths	8', 12' (2438, 3658 mm)	8', 12' (2438, 3658 mm)
Edges	Tapered	Tapered
Approx. Weight	1.8 psf (8.8 kg/m ²)	2.3 psf (11.2 kg/m ²)

For further information consult a James Hardie Gypsum sales representative. All products are not available in all geographic areas. Consult local building codes for regulations in your area.

SURFACE BURNING CHARACTERISTICS

When tested in accordance with ASTM E 84:

Flame Spread (Class I, Class A)	0 - 25
Smoke Developed	0

HANDLING AND STORAGE

Hardirock gypsum boards should be stacked flat on a smooth, level surface, but not stored directly on concrete floors. When spacers are used, position them closely enough together to minimize warpage. Care should be taken to prevent damage to edges and corners. Always keep Hardirock gypsum board dry prior to installation.

TECHNICAL REFERENCES

For additional information on application and finishing consult:

- BOCA[®] National Building Code
- Standard Building Code
- Uniform Building Code
- CABO One- and Two-Family Dwelling Code
- Gypsum Association Brochures GA-214, GA-216, and GA-600
- ASTM C 475, C 514, C 630, C 645, C 754, C 840, C 1002, C 1047, E 119
- As a member of the Gypsum Association, James Hardie's Waterguard Gypsum Board is recognized for use in ICBO Evaluation Service Report #1874

For Additional Product Information
Contact James Hardie Gypsum
Technical Services Department
Phone: 1-800-346-3537
Web Site: www.hardirock.com



**James Hardie
Gypsum**

CUTTING

The score and snap method is a fast and efficient way to cut Hardirock gypsum boards.

Steps:

1. On the face side, position a straight edge along the line of cut.
2. Score with a knife or other suitable tool.
3. With a quick, firm motion, snap back away from the face.
4. The back paper can either be cut with a knife or separated by snapping the piece in the opposite direction.
5. Smooth all cut ends and edges to ensure tight joints.

Hardirock gypsum boards can also be cut with a saw. For information on avoiding dust inhalation, refer to a Material Safety Data Sheet available where James Hardie Gypsum products are sold. Safety glasses should always be worn when using power tools.

To make cut outs, score around the perimeter on the face and back and tap out the waste piece from the face side. For rectangular openings, it may be helpful to score diagonally from corner to corner. Cut outs can also be made with a drywall saw.

INSTALLATION

Consult ASTM C 840, GA-216, ICBO Report #1874 and instructions below when installing 1/2" Regular and 5/8" Fire X Waterguard gypsum boards in single ply wall applications. Where fire resistance and sound control are required, specific construction details should be obtained from the Gypsum Association Fire Resistance Design Manual GA- 600 and the local building code.

Framing

Hardirock 1/2" Regular and 5/8" Fire X Waterguard gypsum boards can be installed over wood or steel framing. All construction shall comply with local building codes. Framing members must be straight, true, of uniform dimensions and properly aligned. Steel components shall meet ASTM C 645 and be installed in accordance with ASTM C 754. Studs shall not be spaced greater than 24" o.c.

TABLE 1 - Fastener Types and Sizes

Hardirock 1/2" Regular & 5/8" Fire X Waterguard gypsum board can be attached with either:
 • nails (meeting ASTM C 514) or,
 • screws (meeting ASTM C 1002).

TABLE 2 - Fastener Lengths For Single Ply Applications

Framing	Board Thickness	Nails*		Screws**	
		Min. Penetration	Length	Min. Penetration	Length
Wood	1/2"	7/8"	1-3/8"	3/4"	1-1/4"
	5/8"	7/8"	1-1/2"	5/8"	1-1/4"
Steel	1/2"	—	—	1/2"	1"
	5/8"	—	—	1/2"	1-1/8"

* For nail application use: drywall type nails
 ** For screw applications use: Type W for wood framing and Type S for steel framing

TABLE 3 - Fastener Spacing For Single Ply Applications

Framing Spacing*	Tile Thickness		Nails or Screws
	16" or 24"	3/8" or less	
16" or 24"	3/8" or less	8" o.c.	
16" or 24"	> 3/8"	4" o.c.	

* Wood or steel framing
 Consult ASTM C 840 or GA-216 for recommendations on installing gypsum board with adhesives or adhesives with mechanical fasteners.

Framing or additional blocking must be utilized in the following situations:

- At 1" above the top of tub or shower pan when studs are spaced more than 16" o.c.
- Behind all horizontal gypsum board joints under ceramic tile when studs are spaced more than 16" o.c.
- To support plumbing fixtures, soap dishes, grab bars and other accessories.
- At inside corners to provide solid backing.

The tub or shower pan should be installed before the gypsum board. If necessary, use furring on the studs to ensure that the inside lip of the unit is flush with face of the board.

Attachment

1. Install Hardirock Waterguard gypsum board horizontally with the factory sealed edge spaced 1/4" above the lip of the tub or shower pan. Refer to Diagrams 1&2.
2. Where fire or sound ratings are required, a base layer of gypsum board must first be installed the full height from floor to ceiling as illustrated in Diagram 3.
3. Where treatment of water resistant gypsum board joints under tile in wet areas is required, follow the specific joint compound manufacturer's recommendations. All cut edges and openings around pipes shall be caulked

flush with water resistant flexible sealant. Consult ASTM C 840 and GA-216 for further information.

4. Holding the gypsum board firmly against the framing, begin fastening in the center of the sheet and move outward toward ends and edges. For fastener types and spacing follow the recommendations above. Nails or screws must not be less than 3/8" or further than 1/2" from the ends and edges of the sheets.
5. Set fastener heads slightly indented from the surface without breaking the face paper or damaging the gypsum core.
6. Ends and edges of sheets shall be in moderate contact.

For areas other than tub and shower surrounds:

7. Install sheets in a brick pattern with the ends staggered and supported by framing members. Joints shall not fall on the same studs as those directly on the opposite side of the wall.
8. Cut openings out of full sheets or lay out joints to fall on the studs nearest the center of doors and windows. Where possible, position full sheets to extend completely above and below openings and avoid piecing.

DIAGRAM 1

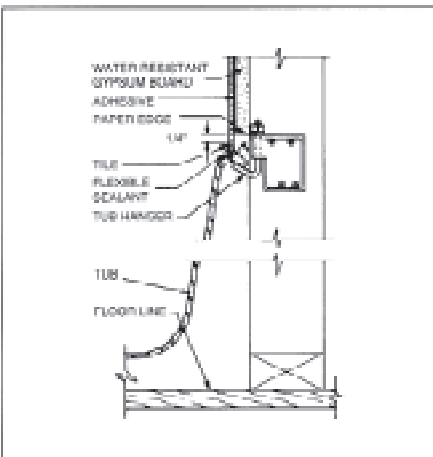


DIAGRAM 2

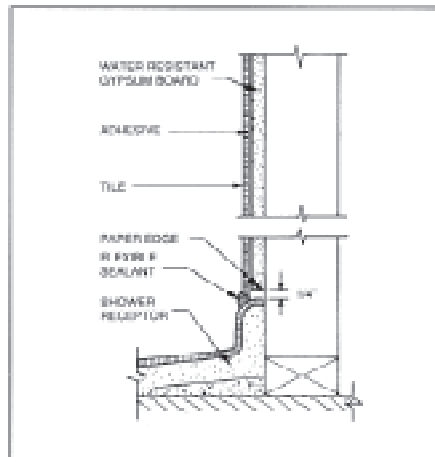
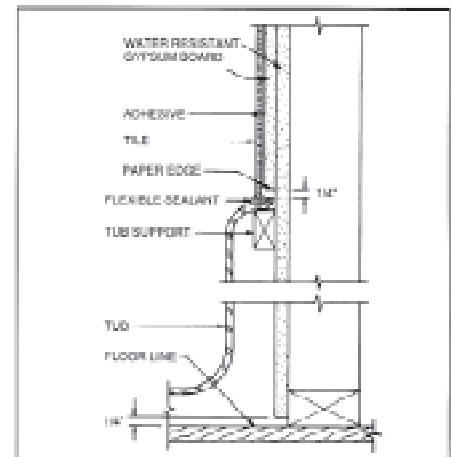


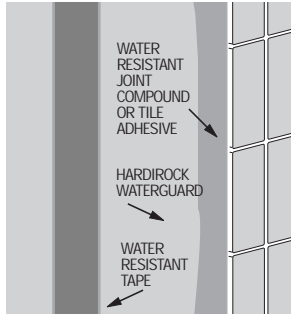
DIAGRAM 3



Finishing

General

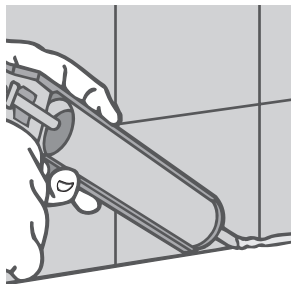
No finishing shall be done until the interior temperature has been maintained at a minimum of 50° F for at least 48 hours prior to application of compounds and until all materials have completely dried. Adequate and continuous ventilation must also be provided.



Finishing with Ceramic Tile

As a general rule, recessed joints under ceramic tile can be filled and leveled with the tile adhesive (meeting American National Standards Institute ANSI A136.1, Type I) applied over water resistant tape. Installation of ceramic tile meeting ANSI A137.1 shall always be done in accordance with ANSI A108.4 or A108.5 and the tile and adhesive manufacturers' written instructions. The following coverage guidelines should apply:

Over tubs without shower heads	6" above tub rim
Over tubs with shower heads	A minimum of 5' above the rim or 6" above shower head, whichever is higher
Shower stalls	A minimum of 6' above shower dam or 6" above shower head, whichever is higher
Outside of tub and shower areas	A distance of at least 4" and to the full specified height
Around windows in tub and shower areas	To the full specified height



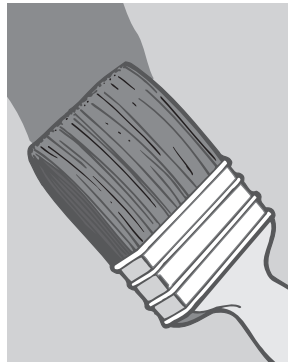
After the tile is installed, fill the 1/4" gap between the wall and tub or shower pan with a non-hardening waterproof caulk.

Finishing with Paint and Wallpaper

Surface preparation shall be done in accordance with ASTM C 840, the GA-216 and the joint compound manufacturer's instructions. Materials shall comply with ASTM C 475 and ASTM C 1047.

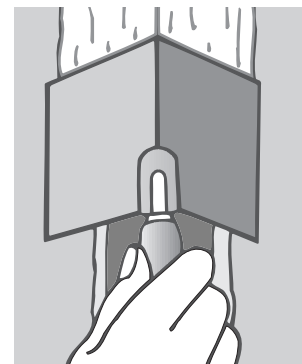
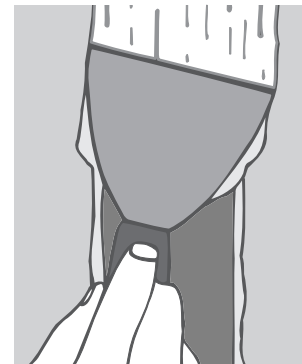
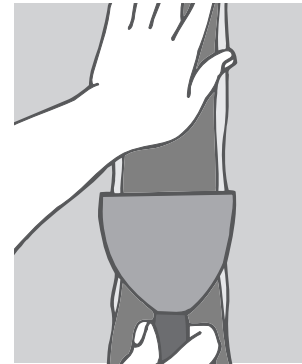
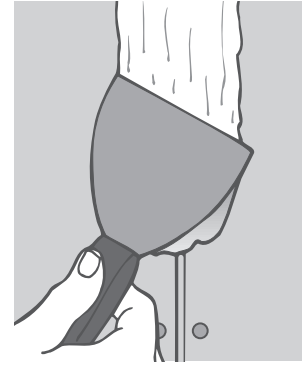
1. Fill and level joints with joint compound.
2. Embed tape into the wet compound and allow to dry. For inside corners, crease the tape and work it into the joint.
3. Apply a second coat of compound across the joint and feather to approximately 4" on each side.
4. Apply a third coat and feather to approximately 6" on each side.
5. Allow each coat to dry before proceeding.
6. Attach corner bead to outside corners and apply three coats of joint compound. Feather out each coat as described in steps 3-5.
7. Spot cover all fastener heads with three coats of joint compound applied in different directions.
8. Lightly sand the last coat of all treated areas, taking care not to rough the surrounding gypsum board paper. Smoothing can also be accomplished with a damp sponge.
9. Use a high quality primer/sealer prior to painting. For high gloss paint and severe lighting conditions, a thin skim coat of joint compound should be applied across the entire surface.

Always follow the recommendations in the Gypsum Association Brochure Levels of Gypsum Board Finish, GA-214.



LIMITATIONS

- HardiRock Waterguard gypsum board is limited to interior use.
- It must not be used in areas that are continuously or repeatedly exposed to excessive moisture or steam such as saunas, gang shower rooms or swimming pool enclosures.
- Waterguard board shall not be installed over a vapor retarder in wet area applications.
- Waterguard board is not suitable for use on ceilings or soffits except where framing members are spaced not greater than 12" o.c for 1/2" and 16" o.c. for 5/8" board.



- Control joints shall be installed when specified and detailed by the architect.
- Gypsum board shall not be exposed to sustained temperatures exceeding 125° F.

Consider local climatic conditions and consult local building codes.

WARRANTY

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