

Installation Guide

Interior and Exterior Applications

Interior Installation of PermaBase® and PermaBase PLUS®

General: All framing should comply with local building code requirements and be designed to provide support with a maximum allowable deflection of $L/360$ under all intended loads. Framing members should be spaced a maximum of 16" o.c. Cut or score PermaBase® on printed side of panel. Use a straightedge and pencil to mark line. Use utility knife to score/cut the glass mesh. Snap the board and cut through the now visible glass mesh on the other side. Install tile and tile setting materials in accordance with current ANSI specifications and Tile Council of North America (TCNA) guidelines.

Control Joints: Consult TCNA Handbook Installation Method EJ171 Architect, builder or design professional must specify location of all control joints. For interior installations, allow a maximum of 30 lineal feet between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings, or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

WALLS AND CEILINGS

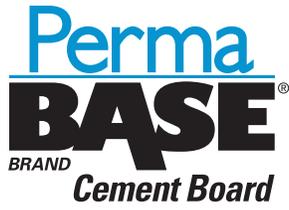
Wall Framing: Edges of PermaBase parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper PermaBase attachment. Do not install PermaBase directly over protrusions from stud plane, such as heavy brackets and fastener heads. Studs above a shower floor should either be notched or furred to accommodate the thickness of the waterproof membrane or pan. The surround opening for a tub or precast shower receptor should not be more than 1/4" longer than unit to be installed. In mortar bed (mud bed) applications, PermaBase Cement Boards can be embedded into the mud bed per TCNA Handbook method B415-19.

Ceiling Framing: The deflection of the complete ceiling assembly due to dead load (including insulation, PermaBase, bonding material and facing material) should not exceed $L/360$. The dead load applied to the ceiling frame should not exceed 10 psf. Ceiling joist or furring channel should not exceed 16" o.c. (Edges of PermaBase parallel to framing should be continuously supported.) Provide additional blocking when necessary to permit proper PermaBase attachment.

PermaBase Cement Board: Apply PermaBase with ends and edges closely butted but not forced together. Stagger ends joints in successive courses. Drive fasteners into field of cement board first, working toward ends and edges. Space fasteners maximum 8" o.c. for walls, 6" o.c. for ceilings with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Ensure PermaBase is tight to framing.

Joint Reinforcement: Trowel bonding material to completely fill the tapered recessed board joints and gaps between each panel. On non-tapered joints, apply a 6" wide, approx. 1/16" thick coat of bonding material over entire joint. For all joints, immediately embed 2" alkali-resistant fiberglass mesh tape fully into applied bonding material and allow it to cure. For outside corners, 4" wide mesh tape is recommended. Same bonding material should be applied to corners, control joints, trims and other accessories. Feather bonding material over fasteners to fully conceal.

For installation accessories, see page 20.



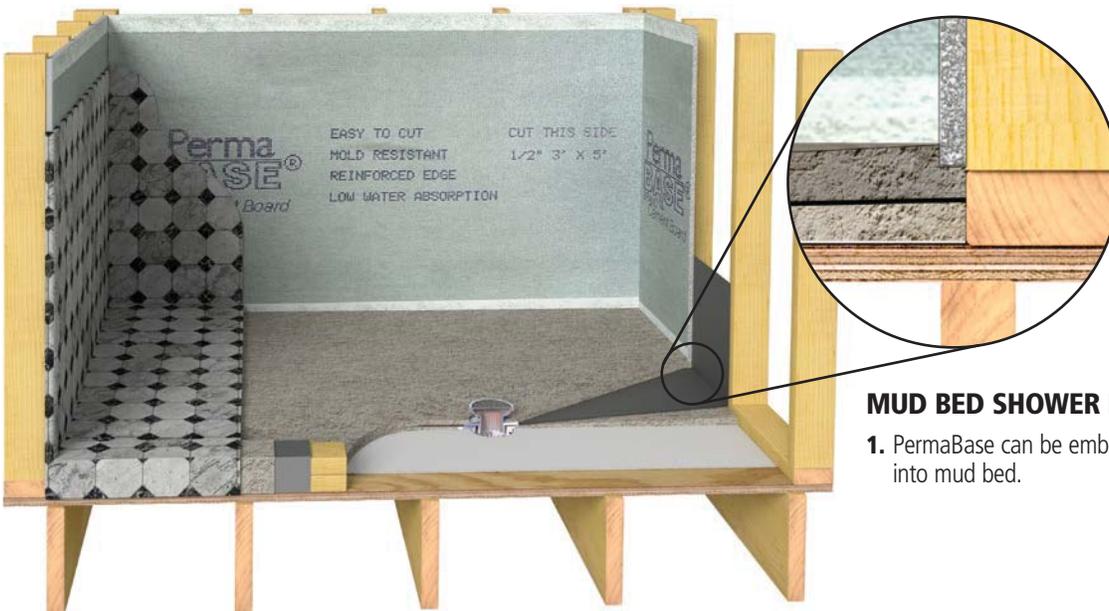
SHOWER INSTALLATION

- 1. Support Framing 1/4" / 1/2" Slope Toward Drain
- 2. Plywood, Min. 1/2"
- 3. PermaBase® Cement Board
- 4. Membrane
- 5. Latex-Portland Cement Mortar
- 6. Alkali-Resistant Mesh Tape
- 7. Sealant
- 8. Tile and Grout



DIVIDER WALL INSTALLATION

- 1. PermaBase® Cement Board
- 2. Membrane
- 3. Latex-Portland Cement Mortar
- 4. Alkali-Resistant Mesh Tape



MUD BED SHOWER BASE

- 1. PermaBase can be embedded into mud bed.

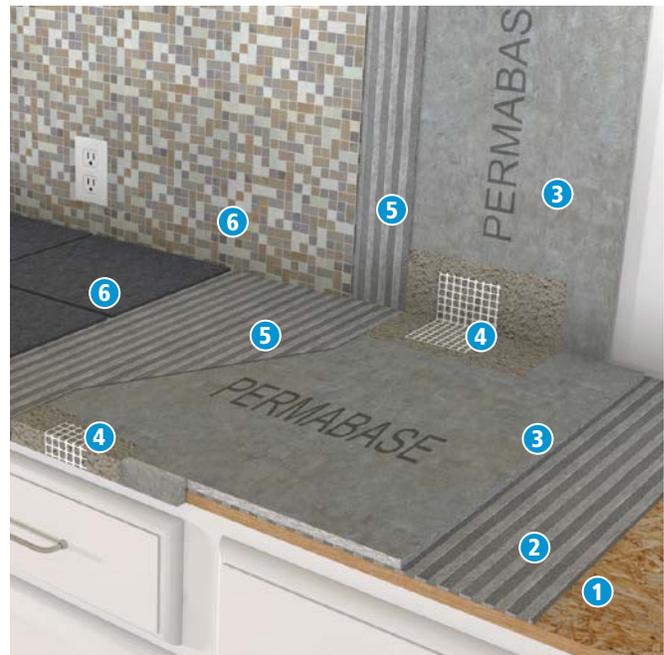
FLOORS AND COUNTERS

Subfloor or Base: For flooring applications with 16" o.c. floor joists, 5/8" tongue-and-groove exterior-grade plywood or 3/4" tongue-and-groove exterior-grade OSB may be used. For 19.2" o.c. and 24" o.c. floor joists, 3/4" tongue-and-groove exterior-grade plywood or OSB must be used. Tile size for floors with 24" o.c. floor joists must be 12" x 12" or larger. The joist and subfloor assembly must meet L/360 as well as the appropriate code tables for live and dead loads.

Underlayment: Using a 1/4" square-notched trowel, apply a setting bed of polymer-modified mortar (or thin-set mortar) to the subfloor or counter base. Immediately laminate PermaBase to subfloor or base leaving a 1/8" space between boards at all joints and corners. Leave a 1/4" gap along walls. Stagger all joints so that they do not line up with underlying substrate joints. Fasten PermaBase every 8" o.c. throughout board field and around all edges while setting bed mortar is still workable. Around perimeter of each board, locate fasteners 2" from corners and not less than 3/8" from the edges. Fill all joints solid with bonding material. On non-tapered joints such as butt ends, apply a 6" wide, 1/16" thick coat over the entire joint. For all joints, immediately embed 2" fiberglass mesh tape fully into applied bonding material; ensure that tape is centered over joint. Apply bonding material over fasteners to fully conceal. Remove all excess bonding material and allow to cure.

LIMITATIONS

- Joints should be treated with alkali-resistant fiberglass mesh tape set in a polymer-modified mortar
- Conventional paper drywall tape, joint compound and drywall nails or screws should not be used
- Maximum wall framing spacing should not exceed 16" o.c. and must be designed to limit deflection to L/360 under all live and dead loads
- Steel framing must be 20 gauge (galvanized) or heavier – 16" o.c.
- 1/4" PermaBase and 1/4" UltraBacker® should not be used on walls or ceilings
- PermaBase is not a water barrier; consult local building code for moisture barrier requirements
- Not recommended for use under vinyl flooring
- PermaBase should not be exposed to temperatures over 220°F (105°C)
- PermaBase is not a nailing base for other finishes

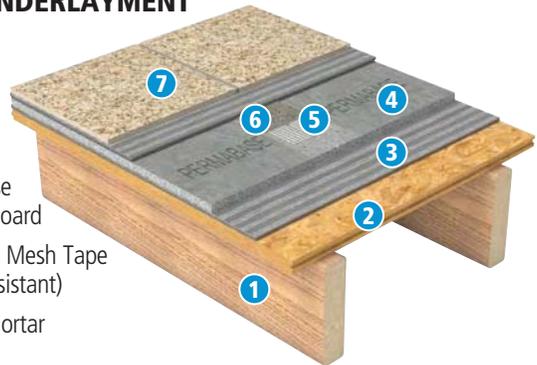


COUNTERTOP INSTALLATION

1. OSB/plywood
2. Dry-Set Mortar
3. PermaBase Cement Board
4. Fiberglass Mesh Tape (Alkali-Resistant) Embedded in Mortar
5. Dry-Set Mortar
6. Tile

FLOOR UNDERLAYMENT

1. Joists
2. Subfloor
3. Dry-Set Mortar
4. PermaBase Cement Board
5. Fiberglass Mesh Tape (Alkali Resistant)
6. Dry-Set Mortar
7. Tile



FLOOR UNDERLAYMENT

1. Open-Web Wood Trusses
2. Subfloor
3. Dry-Set Mortar
4. PermaBase Cement Board
5. Mesh Tape
6. Dry-Set Mortar
7. Mortar Bed
8. Tile

