

FRP

Installation Guide



Titebond
THE PRO'S ADVANTAGE

Product Comparison



Bonds Virtually Any Material

Easy to Trowel / Quick Grab / VOC-compliant / Nonflammable / Mold & Mildew Resistant / Fast Strength Development



Bonds Porous Substrates

Quick Grab Formula / Minimal Bracing / VOC-compliant / Nonflammable / No Offensive Odor / Easy to Trowel



Bonds Porous Substrates

Unaffected by Moisture & High Humidity / Easy to Trowel / Will Not Become Hard or Brittle / Excellent Wet Out

Cure Process	Cures as moisture penetrates the adhesive (reactive)	Dries as water leaves adhesive	Dries as solvents leave adhesive
Open Time	20 minutes	20 minutes	10-15 minutes
Application Temperature	50-90°F (Can be applied down to 0°F but reduces drying speed)	50-90°F	50°F to 90°F (Can be applied down to 0°F but reduces drying speed)
Coverage*	3/16" W x 1/4" D x 11/16" c-c V-notch (60 sq. ft. per gallon) 3/16" W x 1/4" D x 1/2" c-c V-notch (50 sq. ft. per gallon)	3/16" W x 1/4" D x 1/2" c-c V-notch (50 sq. ft. per gallon)	3/16" W x 1/4" D x 1/2" c-c V-notch (50 sq. ft. per gallon)
Cleanup	It is important to cleanup adhesive immediately while still wet. To clean adhesive from panel, tools and hands while wet, isopropyl alcohol or acetone as a solvent. Once adhesive is cured, it can be extremely difficult to remove. Follow solvent vendor's precautions. NOTE: Test solvent in an out-of-the-way area to make sure it will not mar or attack the surface.	Tools and adhesive may be cleaned with water while the adhesive is wet. If dried, tools and adhesive may be cleaned with water/acetone/vinegar mixture. Follow solvent vendor's precautions.	Scrape off dried excess with a putty knife. Remove residue with mineral spirits or equivalent solvent while the adhesive is still wet. Follow solvent vendor's precautions when using solvents. NOTE: Test solvent on an out-of-the-way area to make sure it will not affect the surface being cleaned.
Specifications	Meets LEED v4, SCAQMD, CARB, NAHB Green Building, NFPA Class A Fire rated, and ASTM C557 specifications.	Meets LEED v4, SCAQMD, CARB, NAHB Green Building, NFPA Class A Fire rated, ASTM C557, FDA and Canadian Food Inspection Agency (CFIA) approved for indirect food contact.	Meets ASTM C557 specification.
FRP can be adhered to the following substrates:	DRYWALL (fire rated gypsum, fiberglass faced, mold-resistant, firecode core, greenboard moisture-resistant & standard unpainted) / PLYWOOD (treated, fire rated & standard unpainted) / CEMENT BOARD / MOISTURE RESISTANT CEMENT BOARD / DENSGLASS / FRP / CERAMIC TILE / STAINLESS STEEL / METAL / GALVANIZED METAL / ALUMINUM / CEMENT BLOCK (above grade/inside wall or below grade/outside wall) / PAINTED WALLS (paint must be well anchored) / FOAM (polystyrene & polyurethane) / INSULATION (foil-faced)	DRYWALL (standard unpainted) / PLYWOOD (standard unpainted) / CEMENT BOARD† / CEMENT BLOCK (above grade or inside wall)	DRYWALL (fiberglass faced, mold-resistant, firecode core, greenboard moisture-resistant & standard unpainted) / PLYWOOD (treated, fire rated & standard unpainted) / CEMENT BOARD / MOISTURE RESISTANT CEMENT BOARD / CEMENT BLOCK (above grade/inside wall or below grade/outside wall) / PAINTED WALLS (paint must be well anchored)
Special Package Features	Ultimate Advanced Polymer Panel now comes in a plastic pail with six pouches. One half gallon pouch covers a standard 4' X 8' FRP panel		

Installation Tips

- Trowel adhesive to the back of the panel (not the wall surface).
- Check wall surface for irregularities that might deter adhesion: high/low spots, dirt, dust, oil, paint, excessive joint compound, etc.
- Acclimate panels to room temperature and lay panels flat for 24 hours before installation.
- Check to make sure the climate of the room, adhesive, panel and wall surface are all above 50°F at least 24 hours before, during, and after installation. Avoid large temperature swings during the first 24 hours after installation.
- Use correct trowel size as recommended by the manufacturer.
- Check the top and bottom moldings for proper expansion space.
- Create oversized holes to allow for panel movement if any permanent fasteners are drilled through the panel, such as done for drop ceilings, cabinets, sinks and machinery.
- Press and roll entire panel against wall substrate.
- Cleanup is easier for all our adhesives when they are wet. Titebond® Fast Grab FRP cleans up with water. Titebond® Ultimate Advanced Polymer Panel and Titebond Solvent-Based FRP should be cleaned up with mineral spirits or an equivalent solvent. Follow all the solvent vendor's precautions.



* Optimum trowel sizes are given for best overall performance and coverage. Trowel dimensions other than the optimum size may be used, but will affect working time and coverage. Please contact Franklin Technical Service at 800.347.4583 for additional trowel recommendations or questions.
† May have longer drying time and FRP may have to be braced

Troubleshooting

If you are experiencing bubbles or other weak bonding points on the FRP panels, reinstallation may be required. To help determine the cause of these problems and to prevent future recurrence, please review the information below. If you cannot identify the cause of the problem, circle the affected area with a permanent marker and take photos before taking down the panel. Send samples of the affected area to the manufacturer along with the samples of the adhesive and a lot number to have the issue analyzed by an expert.

Vertical & Horizontal Bubbles

- If there are long vertical bubbles down the middle, check right and left moldings for proper expansion space. (See A)
- If there are long horizontal bubbles, check the top and bottom moldings for proper expansion space. (See B)

Incorrect Trowel Ridges

- Check trowel ridges and spacing to determine if correct trowel size was used and if trowel marks are on the panel. If there are bare spots or drag spots on the panel, then the adhesive was applied to the wall, not the panel as indicated in the instructions. (See C)
- Look for skips in the adhesive trowel pattern. Low trowel ridges (less than full depth) where the adhesive never made contact with the wall substrate could cause a failed installation. (See D)

Undisturbed Ridges

- Check to see if there are normal undisturbed ridges that never reached the wall, where lack of pressure or extreme unevenness in the wall prevented a good bond between the wall substrate and the panel. (See E)

Allowing for Expansion Space Around Panels

FRP changes dimension with temperature and grows as temperature increases.

- FRP panels expand and contract due to fluctuating temperatures and humidity. Always allow for adequate space between and around the panel, allowing for proper expansion and contraction. Always refer to the panel manufacturer's spacing guidelines before the installation. (See F)

Improper Rolling

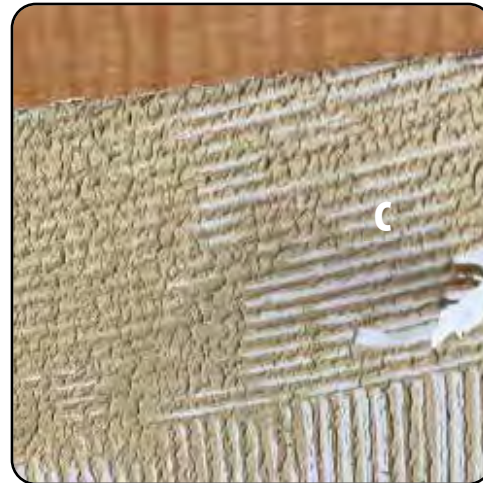
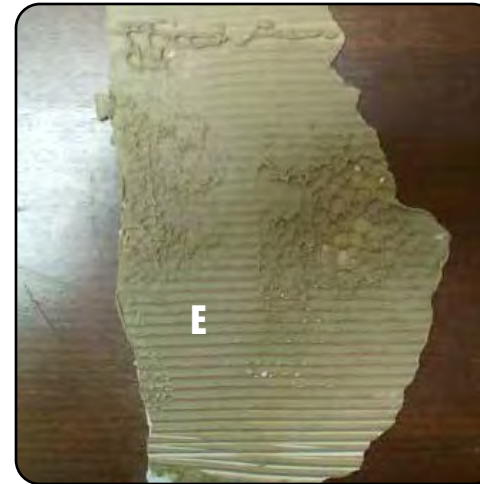
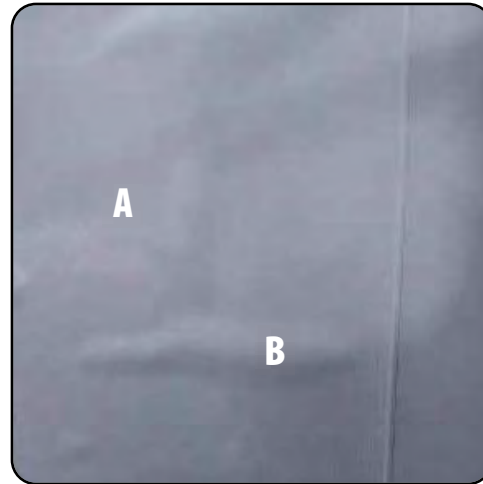
- Adhesive needs to come in contact over the entire wall substrate. If not, the adhesive may not bond, and create bubbles. (See G)

Flattened Beads

- A flattened bead on back of the panel with no adhesive transfer shows that the open time of the adhesive was exceeded and the panel was not applied to the wall substrate in time. Only one panel at a time should be troweled and immediately applied to the wall.

Loose Particles

- Check to see if loose particles (like drywall joint compound) are on the adhesive. If so, the substrate was not clean and adhesive bonded to only the loose particles.



Common Installation Errors

Preparing Wall Surface for Optimal Adhesion

- Make certain that both surfaces are clean and free of loose material that would affect adhesion, including excessive amounts of joint compound.
- The wall surface must be flat enough that adhesive beads will properly transfer from the FRP panel surface to the wall surface.
- Concrete surfaces must be fully dried or cured so adhesive can properly dry (Titebond Fast Grab FRP Adhesive only).

Choosing an Appropriate Adhesive

Failure to choose the right adhesive could result in adhesive not drying or curing.

- DO NOT use Titebond Fast Grab FRP Adhesive with fire rated or pressure treated plywood substrates. Only use Titebond Solvent-Based FRP Adhesive or Titebond Ultimate Advanced Polymer Panel Adhesive.
- DO NOT use Titebond Fast Grab FRP Adhesive or Titebond Solvent-Based Adhesive for non-porous wall surfaces. Only use Titebond Ultimate Advanced Polymer Panel Adhesive.

Inappropriate Trowel Selection & Use

The inappropriate use of a trowel could result in incorrect trowel ridges and spacing, creating bare spots or drag spots on the back of the FRP panel.

- Depth of trowel notches needs to accommodate unevenness and bridges gaps between the wall surface and the installed FRP panel. The trowel notches will help accommodate wall imperfections.
- Size of bead produced affects adhesive working time. The smaller the bead, the less working time you have.
- Please refer to the comparison guide for exact trowel coverage.

Application of Adhesive

- DO NOT apply adhesive directly to the wall surface. Only apply adhesive to the FRP panel.
- DO NOT wait longer than the manufacturer's recommended open time. Doing so could allow the adhesive to dry (or cure) and create a weak bond to the wall surface.
- ALWAYS spread the adhesive over the entire back of the panel using the recommended trowel.
- Keep trowel notches clean and free of adhesive build-up to insure proper application.
- After the adhesive is applied to the FRP panel, adhere the panel to the wall surface. Failure to adhere the panel to the wall surface within the recommended open-time will result in weak bonding or bubbles.

Post Installation Additions

Avoid post installation additions, such as ceramic tile base directly over the FRP panel. Such additions restrict expansion space of the panel.

Restricting Free Expansion of the Panels

Recognize the need for oversized holes where pipes or conduits penetrate the wall. Failure to oversize any necessary holes through the panel could force the FRP panel to buckle or bubble.

Properly Rolling or Pressing Entire Panel as it is Positioned

Use linoleum roller, J-roller or diligent hand pressure to adhere entire surface of the panel, ensuring good contact over the entire panel.

- Place panel against surface and press firmly over entire surface, working from the edge of the panel where molding is installed outward to the open edge.
- Apply an approved Titebond Sealant or Titebond 100% Silicone Sealant around panels where edges are exposed, around oversized holes for pipes or conduits and along baseboard moldings where moisture can penetrate.
- Use grommetted heads and an approved Titebond Sealant or Titebond 100% Silicone Sealant where fasteners penetrate panel.

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Adhesive Recommendation for FRP to Various Substrates

Substrate	Titebond® Ultimate Advanced Polymer Panel Adhesive	Titebond® Fast Grab FRP Adhesive	Titebond® Solvent-Based FRP Adhesive
Standard Unpainted Drywall	Yes	Yes	Yes
Standard Unpainted Plywood	Yes	Yes	Yes
Treated Plywood	Yes	No	Yes
Fire Rated Plywood	Yes	No	Yes
Cement Board	Yes	Yes (may have longer drying time & FRP may have to be braced)	Yes
Moisture Resistant Cement Board	Yes	No	Yes
Firecode Core Drywall	Yes	Yes*	Yes
DensGlass & Fiberglass Faced Wallboard	Yes	No	No
FRP	Yes	No	No
Mold & Moisture Resistant Drywall	Yes	No	Yes
Ceramic Tile	Yes	No	No
Stainless Steel	Yes	No	No
Metal	Yes	No	No
Aluminum	Yes	No	No
Galvanized Metal	Yes	No	No
Cement Block (Above Grade or Inside Wall)	Yes	Yes (may have longer drying time & FRP may have to be braced)	Yes
Cement Block (Below Grade or Outside Wall)	Yes	No	Yes
Painted Walls (If Paint is Well Anchored)	Yes	No	Yes (may have longer drying time & FRP may have to be braced)
Polystyrene Foam	Yes	No	No
Polyurethane Foam	Yes	No	No
Foil-faced Insulation	Yes	No	No
Fire Rated Gypsum Drywall	Yes	No (with exception of untreated faced drywall)	No
Medium Density Fiberboard	Yes	Yes	Yes
Particle Board	Yes	Yes	Yes

NOTE: This list should not be considered fully exhaustive. It represents Franklin International's adhesive recommendations for specific materials and substrates.

For questions regarding adhesive application for specific substrates please call Franklin International's Technical Service at 1.800.347.4583.

* For firecode drywall with face paper that contains borax, use Titebond Ultimate Advanced Polymer Panel Adhesive or Titebond Solvent-Based FRP Adhesive.

Visit [Titebond.com](https://www.titebond.com) for the most up-to-date product information.

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