

General Information

The installation and maintenance instructions along with the limited warranty must be read, understood, and followed before installation commences. This flooring is for dry interior applications only and must be installed by professional installers; they must also have enough professional liability insurance coverage (aka Errors and Omissions Insurance) for the project. Also, it is required by the flooring contractor to document every process, including testing, subfloor preparation, and the installation with video or photographs, as this may be required in the unlikely event of a claim. Check the lot numbers on the packaging and do not install the flooring if they do not match; contact the technical department at 602-432-6341 or jeff.powerhold@gmail.com.

Using entrance matting at all outdoor entrances is recommended, this will improve air quality and reduce maintenance. Do not use rubber or latex-backed matting directly over vinyl flooring. Felt glides $\geq 1\text{-inch}^2$ (645-mm²) must be used on all furniture that may slide on the floor. Do not move heavy or sharp objects across the floor; use protective boards. Copies of *ASTM* documents are available from (www.astm.org).

Radiant Heated Substrates: The flooring is suitable for installation over radiant heating substrates, providing at the adhesive line it does not exceed 85°F, and the system is not used for 72 hours after the installation. When used, the temperature must not be increased by more than 10°F per day, or thermal shock may cause bond failure.

Grouting Option: Providing your selected glue down flooring has a micro-beveled edge, then grouting is an option. If required, grout the joints using a flexible grout specifically made for LVT/LVP flooring. During installation leave a constant gap, either 1/16-inch, 1/8-inch or 3/16-inch wide, using tile spacers. Remove them before rolling and follow the written application and cleaning process instructions from the manufacturer.

Warning: The Occupational Safety and Health Administration (OSHA) has exposure limits for people exposed to respirable crystalline silica; these limits must be followed. All local, state and federal regulations must also be followed; this includes but is not limited to the removal of in-place asbestos and/or lead-containing material. Do not use solvent/citrus-based adhesive removers. When appropriate, follow the Resilient Floor Covering Institute's (RFCI) "Recommended Work Practice for Removal of Existing Floor Covering and Adhesive". All appropriate Safety Data Sheet (SDS) must be read, understood, and followed. Always wear safety glasses and use respiratory protection or other safeguards to avoid inhaling any dust.

Waterproof: Although this flooring is waterproof, it is not a waterproof barrier. Powerhold T-226 and T-259 Adhesives have mold and fungi resistance properties; however, it is known that very high moisture, combined with any organic material trapped beneath the flooring may facilitate mold growth. Any resulting, property damage and/or any resulting health issues as a direct result of mold is not covered by the limited warranty of this flooring or adhesive. Do not leave liquid on the flooring surface, wipe up spills immediately, and allow the floor to dry before allowing foot traffic.

Quick Reference Chart

Adhesive & moisture limit	Powerhold TT-226 \leq 85% RH or Powerhold TT-259 \leq 95% RH per ASTM
pH testing	F2170 Not required
Trowel notch	1/16-inch x 1/32-inch x 1/32-inch U- notched trowel (FFA), 1 per 4 gallons
Required temperature	Between 65°F and 85°F (18°C—29°C)
Acclimation period	48-hours or confirm the flooring is between 65°F and 85°F (18°C—29°C)
Flatness tolerance	\leq 3/16-inch over 10-foot and 3/32-inch over 1-foot
Acoustic underlayment	Not recommended
Radiant heating	Suitable

Preparation

Concrete Subfloors: The prepared substrate must be dry, clean (without contaminates), structurally sound, smooth (ridge-free) within a flatness tolerance of \leq 3/16-inch over 10-foot and 3/32-inch over 1-foot in all directions. Unless stated otherwise, prepare the subfloor according to "*ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*". Do not install this flooring if hydrostatic pressure exists, the subfloor has Alkali Silicate Reaction (ASR), or if a chemical adhesive remover has been used; contact the technical department at Powerhold or jeff.powerhold@gmail.com.

On and Below Grade: All on and below-grade concrete slabs must have a confirmed and effective vapor retarder installed directly underneath the slab that meets the requirements of "*ASTM E1745 Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*". If this cannot be confirmed, then use an appropriate moisture mitigation system.

Moisture and pH: All other concrete subfloors, regardless of age or grade level, must be tested for moisture before preparation. They must be tested following the protocol of "*ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Slabs using in-situ Probes*". It may not be the flooring contractor's responsibility to conduct moisture testing, but it is the flooring contractor's responsibility to confirm the testing has been performed, and that the provided results are acceptable for the adhesive before installation. Powerhold T-226 adhesive limit is \leq 85% RH, while Powerhold T-259 has a limit of \leq 95% RH. The alternatives are to allow the subfloor to dry to an acceptable level or use an appropriate moisture mitigation system. Testing should be performed by an International Concrete Repair Institute (ICRI) certified technician (www.icri.org). Testing for pH is not required.

Porosity: Determine if the substrate is absorbent (porous), as this will alter the required open time of the adhesive. Test according to "*ASTM F3191 Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive*

Resilient Flooring". The water droplet(s) placed on the surface of the substrate must be absorbed within 10 minutes for it to be considered absorbent.

Expansion Joints & Cracks: Do not install over any expansion or moving joints, as any subfloor movement may cause installation failure. Use a suitable industry-standard expansion joint assembly system, as needed. Dormant cracks and saw cuts must be cleaned out, removing all dirt and debris, then filled using a suitable commercial grade patching or crack repairing compound following the written instructions from the manufacturer and then allowed to dry/cure.

Moisture Mitigation System: If required, it is recommended to use a suitable moisture mitigation system that conforms to "ASTM F3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings", follow the written instructions from the manufacturer and allow it to cure before proceeding. Other types of mitigation systems are available and may be acceptable like single component, floating or bonded membranes. However, the warranty of its performance, suitability, and compatibility with the flooring and the adhesive must be provided by the manufacturer of any such product used. Silicate admixtures are not recommended.

Smoothing Underlayment: If required, smooth using a suitable commercial grade leveling or patching underlayment following the written instructions of the manufacturer. The selected product must meet all building code requirements for the project, and its use, including any heavy static or rolling loads and the specific moisture condition of the subfloor. The underlayment must be allowed to fully cure/dry before proceeding. A minimum of 1/8-inch thickness is required for it to be considered absorbent.

Gypsum Subfloors: Any finished gypsum substrate must be dry, fully bonded and structurally sound, clean (without contaminants), smooth (ridge-free) within a flatness tolerance of $\leq 3/16$ -inch over 10-foot and $3/32$ -inch over 1-foot in all directions. If required, smooth using a suitable gypsum-based leveling or patching underlayment. Follow the written instructions of the manufacturer, including any requirement to prime before application. The selected product must meet all building code requirements for the project, and its use, including any heavy static or rolling loads and the specific moisture condition of the subfloor. The underlayment must be allowed to fully cure/dry before proceeding, and if the manufacturer requires, primer the surface, for compatibility with acrylic adhesives.

Wooden Subfloors: Unless stated otherwise all wooden subfloors must be prepared in accordance with "ASTM F1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring". The substrate must be clean without any contaminants, and dry according to the NWFA guidelines for the region. They must be double layer construction with a minimum total thickness of 1-inch, if required, use an underlayment grade plywood, with a minimum thickness of 1/4" or for bathrooms, etc., use an exterior underlayment grade plywood. The subfloor must be rigid, free from movement, and have at least 18-inches of well-ventilated air space below. Sleepers must not be directly in contact with concrete or earth, and the ground beneath the subfloor must be covered by a suitable vapor retarder. The substrate must also be smooth (ridge-free) with a minimum flatness tolerance of $\leq 3/16$ -inch over 10-foot and $3/32$ -inch over 1-foot in all directions. Do not install directly over Masonite™, Luan, fire retardant, particle, chipboard, any finished or sealed wooden substrate. **Note:** The plywood seams may telegraph through any fully adhered resilient flooring, due to its natural expansion and contraction from changes in moisture content, this is not covered by the Limited Warranty.

Other Subfloors and Substrates: Other substrates may be acceptable; however, they must be dry, clean (without contaminants), structurally sound (well bonded), smooth (ridge-free) within a flatness tolerance of $\leq 3/16$ -inch over 10-foot and $3/32$ -inch over 1-foot in all directions. Mat Bond Evaluation(s) is required before the installation, for these substrates (see below).

Unsuitable Substrates: Do not install over an acoustic underlayment, cushion vinyl, rubber, cork, asphalt tile, or any other floating (unfixed) floor covering. Do not install directly over any acrylic or water-based adhesive residue, remove or cover, depending on the subfloor and adhesive.

Storage: When required, store the flooring and adhesive in dry conditions that are between 65°F and 85°. Do not store outside (even in containers) and do not stack pallets.

Conditions: The prepared installation area must be enclosed, weather tight and properly conditioned at a constant ($\pm 5^\circ\text{F}$) service temperature that is between 65°F and 85°F with ambient relative humidity between 35% - 65%. Also, the substrate surface must be at least 5°F above the dew point for 8-hours before, during, and for at least 72-hours after the installation. Direct sunshine through windows etc. on the substrate must be covered using blinds, curtains (or similar) for 2-hours before, during, and for 72-hours after installation, to allow the adhesive to cure.

Acclimation: Depending on the temperature of the flooring, an acclimation period may not be required. Upon receipt of the flooring at the project, it is recommended to unpack the pallets and place all boxes directly on the flat prepared substrate (not stacked). The flooring must be between 65°F and 85°F before installation. Check the temperature, from the center of the boxes using a non-contact infrared digital thermometer, and do not proceed until the required temperature is reached. Alternatively, allow ≥ 48 -hours acclimation period.

Installation Instructions

Flooring Tool List: Hepa filtered vacuum, safety glasses, dust mask, 10-foot metal straight edge or laser level, tape measure, pencil, framer's square, utility knife with blades, string line, adhesive trowel with enough 1/16-inch x 1/32-inch x 1/32-inch U-notched trowel (FFA) replacement blades (1-per 4-gallons), 100 lb. three-section roller, heat gun, and knee pads. Optional; Guillotine style cutter.

Mat Bond Evaluations: If the substrate is not listed (above) or the installer(s) are not familiar and confident of compatibility and installing the combinations of products and subfloor preparation methods, required for the project, then performing Mat Bond Evaluation(s) is required. Select an appropriate amount and installed in exact accordance with the associated manufacturer(s) written instructions. This may include a partial or extensive combination of subfloor material, preparation and application/installation

method(s) of the products being considered which may include moisture mitigation systems, leveling or patching compounds. The perimeter of each flooring sample is to be sealed to the substrate using a 2-inch (51-mm) wide duct tape (or similar) and left to cure for \geq 72-hours before evaluation. The results must be assessed and recorded, if concerned about any product then contact the manufacturer or the technical department at 602-432-6341 or jeff.powerhold@gmail.com.

Layout: The flooring layout should be balanced with equal sizes on both sides of the area. Measure the width of the area, calculate and mark your centerline. This will be used as your starting line, however, if the last row (at the wall) is less than half the width of the flooring, move your starter line over by half the width of the flooring. Tiles should be installed in a brick bond pattern, with each end \geq 6-inches. For plank installation, the layout should be in a random pattern with \geq 6-inches end-seam separation from the previous row. Clean the entire area to be installed (Hepa filtered vacuum).

Cutting: To cut the flooring, measure, mark and carefully use a sharp utility knife and a framer's square to score the flooring a few times and then snap it along your cut and trim off any extra backing. Alternatively, cut using a guillotine style tile cutter. For complicated cuts, it is helpful to gently warm the flooring from the back using a heat gum (~ 6-inches away) before cutting.

Adhesive: Only use Powerhold T-226 or T-259 Adhesive, or the flooring warranty will only cover product defects and surface wear according to the published Limited Warranty, providing it remains bonded to the substrate. Take care to ensure you do not apply the adhesive to an area so large that it cannot be completed within the working time of the adhesive. Apply the adhesive using a 1/16-inch x 1/32-inch x 1/32-inch U-notched trowel (FFA) holding the trowel at an angle of approximately 60° to the prepared substrate, without voids or puddles. Do not make any sharp turns with the trowel to avoid an uneven application of the adhesive. Replace all worn trowels (every 4 gallons) to ensure the proper spread rate; do not re-notch trowels.

Open Time: Absorbent substrates will require approximately 10-20 minutes of open time, while non-absorbent substrates will require approximately 30-60 minutes, depending on conditions. Do not install the flooring into wet adhesive on non-absorbent substrates.

Installation: Mix flooring from several boxes to ensure a random appearance. During the installation, inspect each piece for visible defects, including damage, gloss, color, or shade variations. Do not install with any visible defects or damage, doing so assumes acceptance and full responsibility for the damaged material; contact the technical department at 602-432-6341 or jeff.powerhold@gmail.com.

After application and allowing the appropriate open time for the adhesive, begin the installation and ensure correct placement of the flooring into the adhesive, following your starter line and keeping all joints snug but without pressure fitting them. Press into place and complete one row at a time including the perimeter cuts. After each section is completed, roll the entire area slowly across the width first, then length using a 100 lb. three-section roller. This step is very important as the adhesive is pressure-sensitive, and failure to roll may result in bond failure.

For plank installation, the waste from the previous row may be used as a starter for one of the following rows, making sure the end joints are random and at least 6-inches apart from the previous row. Repeat this process for the remainder of the floor. Once finished, roll the entire floor again. Remove any adhesive from the surface using a clean damp (water) cloth. If the adhesive has dried, use a small amount of 70% Isopropyl alcohol and a clean cloth to remove it.

For areas that may be subjected to standing water on the surface of the flooring, like along-side bathtubs or showers, they must be properly sealed along the edge using a flexible caulking grout to prevent any water getting beneath the flooring. Bathmats must also be used, and any standing water removed immediately.

Finish: Take photographs and have any required documentation signed. If required, protect the flooring appropriately from other trades.

Maintenance Instructions

Precautions: Do not perform any wet maintenance procedures for 72 hours after the installation to allow the adhesive to cure. Always post "wet floor" signs and/or "caution tape" when wet maintenance is going to be performed. Prohibit foot traffic until the floor is completely dry. Remove all metal objects before wetting the flooring. Follow facility's Standard Operating Procedures (SOP).

Do not use dust mops treated with oils or silicones, acetone, strong alkaline cleaning agents, multi-surface cleaners, vinegar/ammonia/ citrus oil solutions, scouring powder, strong solvents, or abrasive cleaning pads, as these can damage the flooring. The application of a floor-finish is not usually recommended.

Regular Cleaning: Dust mop or vacuum (without a beater bar) the floor to remove any dirt or grit. Damp-mop the floor as often as required using a flat microfiber mop and water or a suitable diluted vinyl floor cleaning solution (neutral pH), changing the pad as often as required.

Deep Cleaning: This may be required when your routine cleaning is not meeting your expectations. Dust mop or vacuum the floor to remove dirt or grit. Wet mop the entire floor using a suitable neutral cleaning solution like Diversey Profi or similar. Allow the solution a dwell time of approximately 5 minutes. Scrub the floor using a suitable auto-scrubbing machine or single-disc, rotary floor scrubber (~ 175 RPM) with a white pad. For small areas, a medium nylon broom and wet vacuum may also be used. Remove the soiled solution using a wet vacuum. Rinse with clean water and then remove it using a wet vacuum.