Lakehaven

4.5mm Glue Down Luxury Vinyl Plank
Installation Instructions

General Information

Important Information: The current product documentation, including installation and maintenance instructions, product data sheets, adhesive labels, and limited warranties (including exclusions and restrictions) shall be read, understood and followed. Using unapproved adhesives will limit the warranty coverage to product wear and defect coverage only and does not include any other costs associated with removal, preparation, or installation of replacement flooring, including project management, lost time, furniture removal, and overtime pay. Ensure that all subfloor and substrate and preparation, including any required moisture testing, has been completed, reviewed, and understood by all involved parties before installation. Do not proceed until all conditions are met as no subfloor, installation or site-related issues are covered under warranty.

The product should be used in temperatures between 40°F (4°C) and 80°F (27°C). Avoid extended exposure to temperatures above 80°F (27°C), outdoor installations, direct sunlight or prolonged UV/IR radiation exposure, or high heat sources such as self-cleaning ovens, as these conditions can lead to discoloration, damage, or excessive movement of the material. Avoid installing the flooring in areas where sharp or pointed objects (e.g., stiletto heels, cleats) may be present, as they can damage the surface. Do not use rubber tires, rubber casters, or rubber-backed mats directly on the flooring, as they may cause permanent stains. For a complete list of suitable installation environments and special considerations for wet areas, consult the Material Usage Guide.

All materials should be delivered to the installation site in their original packaging with labels intact. While mixing materials from different lots will not affect performance, this may lead to noticeable visual differences in shading or texture - mixing lots is not recommended or covered under warranty. If required, compare different lots under various lighting conditions before installation to ensure customer approval. ASTM documents can be purchased at www.astm.org.

Receiving Material & Storage: Remove all plastic and strapping from the product after delivery. Confirm that the flooring product color, style and quantity are correct, and check lot numbers. In the event there is more than one product, color, style or lot number, separate and mark each one for easy identification. Carefully check all materials for shipping damage and note all damage on the bill of lading before accepting the delivery. Material accepted with visible shipping damage that is not reported on the bill of lading is not covered under warranty. The floor covering and accessories must be stored in dry indoors conditions between 40°F to 90°F (4°C to 32°C). Do not store outside (even in containers) and do not stack pallets.

Recommended Tool List:

- Safety Glasses
- Cut-Resistant Gloves
- Dust Mask
- Knee Pads
- Appropriate Substrate Preparation Tools
- HEPA-Filtered Vacuum
- 10-foot and 6-foot Straight Edge or Level
- Tape Measure
- Pencil
- Speed Square
- Utility Knife with New Blades
- Chalk Marking Line
- Adhesive Trowel and Blades
- 100 lb. Three Section Roller
- Oscillating Multi-Tool or hand saw (for door jambs)
- Non-Contact Infrared Thermometer

Approved Adhesive Information: Use an approved adhesive only. Follow adhesive instructions and limitations, including substrate moisture testing or other pre-qualification testing or protocols. Replace trowels every 4 gallons to ensure even coverage - do not re-notch trowels. ***Labor costs associated with materials installed with an unapproved adhesive will not be covered under warranty.***

Warning: All local, state, and federal regulations must be followed; this includes the removal of in-place asbestos flooring and adhesive, as well as any lead-containing materials. The Occupational Safety and Health Administration (OSHA) has exposure limits for people exposed to respirable crystalline silica; this requirement must be followed. Do not use solvent or 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. Always wear safety glasses and use respiratory protection or other safeguards to avoid inhaling any dust. The label, installation, and maintenance instructions along with the technical data sheet, limited warranty and any appropriate Safety Data Sheet (SDS) of all products must be read, understood, and followed prior to installation. Do not leave spills unattended - wipe up promptly, and allow the floor covering to dry before allowing foot traffic.

Documentation: Record and/or photograph the site conditions, test results, and any corrective measures taken. All relevant pre-installation documentation, as well original product invoices and associated shop drawings or project information, should be stored for the entire warranty period.

Substrate & Subfloor Preparation

Flatness Requirements: All substrates must be checked prior to installation. It must have a floor flatness of FF32 or have a

maximum deviation of 3/16 inch (3.9 mm) over 10 feet (3.05 m), or 1/8 inch (3.18 mm) over 6 feet (1.83 m), and 1/32 inch (0.8 mm) over 12 inches (305 mm), when measured using the *ASTM E1155/ E1155M Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers* or another industry-recognized method. If required, it must be corrected before installation. Failure to meet this flatness may affect the limited wear warranty and must be agreed upon with the customer or end-user before installation.

Concrete Substrate Requirements: All concrete must be at least 28-days old, free of contaminates and structurally sound. If required, flatten and/or smooth the surface using a suitable, moisture-resistant, commercial-grade leveling or patching compound, following the product instructions. Do not install if water or hydrostatic pressure is visible, present or suspected. If a chemical adhesive remover has been used, contact the technical department.

Clean dormant construction joints and cracks of debris, dust, and dirt. Fill cracks with a rigid crack treatment designed for construction joints, ensuring the surface is troweled flush with the surrounding concrete. If required, a moisture mitigation system may be needed or flatten and/or smooth the surface using a suitable, moisture-resistant, commercial-grade leveling or patching compound, following the product instructions. Use an appropriate expansion joint covering system over all expansion joints to manage concrete expansion and contraction.

Concrete Moisture Requirements: Obtain confirmation that all concrete slabs that are in direct contact with ground have a vapor retarder installed directly beneath the slab that is compliant with the *ASTM E1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*. If required by the adhesive manufacturer, conduct moisture testing in accordance with their specified protocol(s). Confirm that moisture levels are within acceptable limits for the adhesive being used. If a vapor retarder isn't confirmed or if the measured moisture levels exceed the limits of the adhesive, install a surface applied concrete moisture mitigation system with a permeability value of ≤ 0.1 grains/ sq. ft./hr. when tested in accordance with the *ASTM E96 / E96M Standard Test Methods for Water Vapor Transmission of Materials (Method B)*. If needed, flatten or smooth the surface with a moisture-resistant, commercial-grade leveling or patching compound, following the manufacturer's instructions.

Gypsum/Lightweight Substrate Requirements: Lightweight or gypsum substrates must be dry per the product manufacturer's specifications and have a minimum compressive strength of 2000 PSI when installed over wood or 3000 PSI when installed over concrete. Lightweight or gypsum substrates must be installed and prepared in accordance with the *ASTM F2471 Standard Practice for Installation of Thick Poured Lightweight Cellular Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring* or the *ASTM F2419 Standard Practice for Installation of Thick Poured Gypsum Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring*. New or existing substrates may require a sealant or primer before installing resilient flooring. Follow the product manufacturer's instructions for appropriate preparation. Substrates must be firmly bonded to a structurally sound Substrate. Any cracked or damaged areas must be removed and repaired using a compatible repair product.

Wood Substrate & Subfloors Requirements: All wood substrates must be structurally sound, stable, and free from deflection, movement, or instability. Sleepers and sleeper systems must not make direct contact with concrete subfloors. The moisture content percentage (MC-%) of the wood must also meet the requirements for the specific region to ensure proper performance and durability. Wood subfloors and substrates must be compliant with and, if necessary, prepared in accordance with the *ASTM F1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring*. Wood substrates must consist of a double-layer construction with a recommended total thickness of at least 1 inch, adhering to local, state, and federal building codes. For standard installations, the top layer must be American Plywood Association (APA) Underlayment Grade plywood or an equivalent material, with a minimum thickness of 1/4 inch. The plywood must be smooth, free of knots or voids, and fully sanded. When floors may be subjected to moisture, use an APA approved exterior grade plywood or an equivalent material.

Resinous Coating Requirements: When installing directly over a resinous coating, such as an epoxy coating or a moisture mitigation system, ensure the coating is clean and free of contaminates, structurally sound, smooth, dry and cured for the prescribed length of time.

Metal Subfloor Requirements: Metal substrates must be clean, dry, structurally sound smooth and free of oil, rust and/or oxidation. When installing in areas that may be subject to topical water, moisture and/or high humidity, an anti-corrosive coating should be applied to protect the metal substrate. Contact a local paint or coating supplier for coating recommendations.

Other Subfloor & Substrates: Installing over existing resilient vinyl flooring is not recommended. However, it may be possible over some materials, such as VCT, quartz tile, solid vinyl tile, sheet vinyl or linoleum, as well as existing hard surface flooring substrates, such as terrazzo, porcelain or ceramic tile. Ensure Substrate is dry, existing flooring is a single layer and is clean, dry, sound, solid and well adhered. All loose material must be removed and repaired or replaced. All imperfections must be smoothed or troweled flush with a suitable cementitious patch. Electing to install over any existing floor covering releases the manufacturer from any responsibility regarding the suitability and continued performance of that product, including any resulting effect on the new floor covering.

Radiant Heating Requirements: When installing flooring over a substrate that contains a radiant heating system, ensure that none of the heating elements make direct contact with the flooring material. Ensure radiant heat is no higher than 70° F (21° C) 8 hours prior to and during the entire installation. After installation, the radiant heat may gradually be increased over the course of 24 hours, until normal operating temperature is reached. Ensure the temperature of the radiant heating system does not exceed 80° F (26.6° C) and avoid making abrupt changes in radiant heating temperature.

Sound Control Substrates: Additional sound control underlayments cannot be used under this flooring. Any and all issues related to the installation of additional, unapproved underlayments will not be covered under warranty.

Unsuitable Substrates: These include, but are not limited to: Floating or loose floor coverings, VAT, hardwood, carpet, cushioned vinyl, rubber, cork, foam, asphalt tile, additional acoustical underlayments and any substrate with visible mold, mildew, or fungi and any substrate in wet areas, such as inside showers and saunas. Do not install over substrates that have been coated with a varnish or an oil-based, enamel, paint, primer, primer-sealer or stain-blocker. Do not install over any substrates made of Masonite™, chipboard, wafer board, fiberboard, particleboard, construction-grade plywood, CDX, OSB (including AdvanTech™), Lauan, cement board or any non-underlayment grade panels – if present, cover with an APA-rated underlayment-grade plywood. Do not use pressure-treated plywood. If using fire-retardant plywood, confirm adhesion using the Mat Bond Evaluation detailed below. Do not install directly over any adhesive or adhesive residue of any kind or in recreation vehicles, campers or boats.

Note: Issues related to unsuitable substrates or subfloors are not covered under warranty.

Adhesive Mat Bond Evaluation: If the compatibility of an otherwise suitable substrate or adhesive is in question, perform a mat bond test following the *ASTM F3311 Standard Practice for Evaluation of Performance and Compatibility for Resilient Flooring System Components* prior to installation.

Flooring Installation

Site Conditions: The installation area must be fully enclosed and weatherproof. Control and maintain site conditions (within ± 5°F) using an HVAC system set to the in-service conditions, which is the normal operating temperature and humidity the material will experience after installation. The in-service ambient conditions must be between 60°F (16°C) and 80°F (27°C), with relative humidity between 35% and 65%, for at least 48 hours before, during, and after installation. Additionally, the temperature must be ≥ 10°F above the dew point.

During installation, block any direct sunlight using window treatments or other protective methods. Failure to meet these conditions may impact adhesive performance. If the required conditions are not met, contact the technical department before proceeding. A wireless, cloud-based monitoring system is recommended to track and record site conditions, especially when the site is unoccupied.

Acclimation: Before installation, confirm the flooring is acclimated to within ± 2°F of the ambient in-service temperature using a non-contact infrared (IR) thermometer. If these conditions are not fulfilled, delay the installation until the flooring temperature is within the acceptable ranges.

Installation Preparation: It is recommended to undercut all wooden door jambs using an Oscillating Multi-Tool or an undercut saw, ensuring the cut height matches the thickness of the floor covering. Allow all trades to complete their work before installation begins and thoroughly clean the area with a HEPA-filtered vacuum.

Layout: Confirm the installation pattern and direction according to design specifications or the work order. Planks should be installed in a random pattern, ensuring plank end joints are spaced at least 8 inches apart. It is recommended to avoid "H" joints and "stair-stepped" patterns, ensuring no obvious pattern repeats. Tiles should be installed in a brick-bond or 1/3 offset pattern.

Starting Line: Measure the width of each end of the area, then calculate and mark your starting line, at the center of the room. Calculate the width of the last row – if it is less than half the width of the floor covering, adjust your starting line by half the width of the flooring.

Cutting: To cut the floor covering, carefully score along the cut line at least twice with a sharp utility knife. When cutting across the width of a piece, use a speed square as a guide. Snap the piece downwards. Alternately and as necessary, a floor guillotine, or a jigsaw with a carbide blade may be used for complicated cuts, following the tool's safety instructions.

Adhesive Application: Apply the adhesive to the substrate following the adhesive instructions. Only apply adhesive that can be covered and rolled within the working-time - it's recommended to work on one side of the starting line at a time. Allow the required open-time, which may vary depending on the porosity of the substrate and the environmental conditions. Ensure the flooring is installed into the adhesive within the adhesive working time.

Grouting: If the flooring has a micro-beveled edge, it can be grouted. During installation, ensure a consistent gap is left around all four sides of each tile or plank using appropriate tile spacers. The gap should be 1/16 inch, 1/8 inch, or 3/16 inch wide. Remove the spacers before rolling and grout the joints with a flexible grout designed for vinyl flooring. Follow the grout manufacturer's instructions for application and cleaning.

Note: Any grout residue left on the surface may impact

maintenance and is not covered under the warranty.

Flooring Installation: Blend materials from multiple cartons within the same lot to ensure a consistent appearance. Some patterns have natural color, texture and shade variations that are considered acceptable. Inspect the flooring before and during installation to ensure there are no visible defects, such as excessive shading, sheen, or texture variations. L***abor and associated costs with materials installed with obvious visual defects, or mixing production lots is not covered under warranty.***

Install the flooring into the adhesive bed along the starting line, ensuring the starting row is straight. The acceptable straightness tolerance is within 1/16 inch for lengths over 20 feet or 1/32 inch for lengths under 20 feet. Ensure the arrows on the back of each piece are pointed in the same direction and that all joints are tight and snug without over-compressing. Keeping within the adhesive working time, roll the installation area slowly, first width then length, using a 100 lb. three-section roller. Failure to roll correctly may result in bond failure.

Repeat this process for the remainder of the installation, including perimeter cuts. If adhesive gets on the surface of the material, immediately remove it using a clean, damp cloth. If the adhesive has dried, use a small amount of 70% Isopropyl alcohol and a clean cloth to remove it.

Post-Installation: Visually inspect the installation to ensure that the appearance is uniform and straight, that all seams are tight and correctly staggered/spaced. When spot cleaning, do not apply abrasive or solvent-based cleaners directly to the surface of the floor covering. When required, protect newly installed flooring with construction grade paper or protective boards, such as Masonite, Ram Board or plywood, to prevent damage from other trades. Take photographs and have any required documentation signed and filed following completion. Save three or more extra pieces of material in the original packaging as attic stock for the lifetime of the floor. ***In the unlikely event of a product issue, attic stock can play a crucial role in product identification, color matching, product claim verification and possible repairs.***

Flooring Protection

Do not slide or drag heavy objects across the floor. When moving appliances, heavy furniture or equipment, protect the flooring with appropriate, hard surface furniture sliders or 1/2" plywood.

All furniture casters or glides must be intended for resilient flooring and made of a soft material, such as a felt, silicone or a poly-based material. Casters and glides must have a flat contact point that is at least 1 sq. in. or 1.125 in. in diameter to limit indentation and flooring or finish damage. All rolling seating in desk areas must have chairs that use soft, polyurethane wheels or have a resilient flooring chair pad installed over the finished floor to protect it. ***To avoid maintenance-related issues, do not use nylon/hard plastic wheels, glides or casters.***

All fixed furniture legs or corners must have permanent floor protectors installed on all contact points to reduce indentation, wear, scratching and other flooring or finish damage. Floor protectors must be intended for resilient flooring and made of a soft material (such as a felt, silicone or a poly-based material). Floor protectors must have a flat contact point of at least 1 sq. in. or 1.125 in. diameter and must cover the entire bottom surface of the furniture leg. ***Do not use nylon/hard plastic floor protectors or furniture feet.***

Ensure all furniture castors and chair legs are clean and free of all dirt and debris. Routinely clean chair castors and furniture legs to ensure that dirt or debris has not built up or become embedded in castors or floor protectors. Replace chair castors and floor protectors at regular intervals, especially if they become damaged or heavily soiled. Felt floor protection devices may need to be replaced 3 or more times a year to prevent accumulation. Use an effective walk-off mat or system at all outdoor entrances/exits and prevent water from accumulating. Ensure mats are manufactured with non-staining backs to prevent discoloration.