

LOOSE LAY LVT INSTALLATION INSTRUCTIONS

GENERAL INFORMATION

These instructions cover all loose lay installations of Ivy Hill Luxury Vinyl Plank and Tile (LVF). All recommendations are based on the most recent available information. The information on these sheets provides general guidelines. These instructions and recommendations must be followed for a satisfactory installation.

The installation of Ivy Hill LVF is straightforward and similar to the installation procedures that apply to all quality resilient flooring. Proper preparation is essential for trouble-free installation. Do not install Ivy Hill LVF until job-site testing and subfloor preparations are finished and the work of all other trades is completed. Site conditions must comply with the relevant building codes and local, state and national regulations.

- Ivy Hill Luxury Vinyl Flooring is recommended for use over properly prepared concrete, suspended wood, metal and other suitable substrates. Never install Ivy Hill LVT over residual asphalt type (Cutback) adhesive as "Bleed Through" may occur.
- Ivy Hill LVF is not suitable for external installation or unheated locations.
- Ivy Hill LVT flooring, adhesive, job-site and subfloor must be acclimated to a stable condition before installation. (See Job-site Testing).
- Following installation of Ivy Hill LVT, foot traffic should be minimized for 24 hours; point loads and rolling traffic should be minimized for 48 hours, and wet cleaning should be minimized for 5 days
- Ivy Hill LVT flooring should remain at a temperature between 55°-85°F (13°-29.4°C) during its service life.
- Adhesive types can have a significantly different moisture tolerance which can influence required subfloor prep as well as install time.

MATERIAL RECEIVING, HANDLING & STORAGE

1. All floor covering products require care during storage and handling. It is important to store flooring products in a dry, temperature-controlled interior area.
2. The temperature range should be between 65°F (18.3°C) and 85°F (29.4°C) with a relative humidity between 40% and 60%
3. During the service life of the floor, the temperature should never rise above 85° F 29.4° C) nor fall below 55° F (13° C). The performance of the flooring material and adhesives can be adversely affected outside this temperature range.
4. Material must be conditioned for at least 48 hours before beginning the installation.
5. For areas that are exposed to intense or direct sunlight, Ivy Hill LVT must be protected during the conditioning, installation, and adhesive curing periods, by covering the light source.
6. Flooring materials that are shipped in cartons must also be stored properly. Cartons must be kept squarely positioned on the pallet to prevent distortion of the contents and to be fully supported.
7. Do not store close to exterior walls, in direct sunlight or near HVAC vents.
8. Stored cartons are to be protected from forklift and other traffic that can damage carton corners.
9. Never double-stack pallets of flooring products.
10. Immediately remove all shrink wrapping before acclimation and verify materials delivered are correct style, color and quantity.

11. Report discrepancies immediately to Ivy Hill, as installation of products installed with visual defects, mixed production runs or incorrect style will not be honored.
12. Ivy Hill cannot accept responsibility for any loss or damage that may result due to processing or working conditions and/or workmanship outside our control.
13. Ivy Hill uses the highest quality materials and performs all ASTM testing through third party testing. We advise users to confirm the suitability of this product by their own tests.

JOB-SITE TESTING

1. Before job-site testing, the building envelope must be sealed (walls, roofing, windows, doorways etc., installed).
2. The area to receive the LVT flooring should be maintained at a minimum of 65° F (18° C) and a maximum of 85° F (29.4° C) for 48 hours before, during and for 48 hours after completion.
3. The installation area and materials to be installed shall be maintained at a minimum of 65°F (18.3°C) and a maximum of 85°F (29.4°C) for 48 hours before, during and for 48 hours after completion of the installation.
 - i. Relative humidity level extremes should also be avoided. General recommended humidity control level is between 35–55%. If a system other than the permanent HVAC source is utilized, it must provide proper control of both temperature and humidity to recommended or specific levels for the appropriate time duration.
4. Test sites must be properly prepared and protected for the duration of testing to achieve valid results.
5. Surface flatness for all subfloors: The surface shall be flat to 3/16" (3.9mm) in 10 ft. (3050 mm) and 1/32" (0.8 mm) in 1 ft. (305 mm). To check flatness, place a 10-ft. straight edge, string, laser level or use another suitable method on the surface, and measure the gap.
6. Concrete subfloors:
 - i. Concrete subfloors must be finished, cured, and free of all sealers, coatings, finishes, dirt, film-forming curing compounds or other substances that may prevent proper bonding of the flooring materials (ACI 302.1 and ASTM F710).
 - ii. Randomly check concrete subfloor for porosity using the drop water test. Place a 1"-diameter drop of water directly onto the concrete subfloor. If the water droplet does not dissipate within 60 to 90 seconds, the subfloor is considered non-porous.
 - iii. Concrete subfloors must have a minimum compressive strength of 3000 psi. Concrete subfloors shall not consist of lightweight concrete or gypsum
 - iv. Moisture testing: Perform either the preferred In-situ Relative Humidity (RH) Test (ASTM F2170) or the acceptable. Moisture Vapor Emission Rate (MVER) Test (ASTM F1869). For acceptable moisture limits please refer to the specifications of the adhesive of choice.
 - v. Alkalinity: You must test surface alkalinity (pH) as per ASTM F710.
7. Wood subfloors and underlayment panels shall have the moisture content tested using a suitable wood pin meter. Readings between the wood subfloor and underlayment should be within 3% and have a maximum moisture content of 14% or less.

MOISTURE SUPPRESSANT SYSTEM

Concrete subfloors that exceed adhesive specifications will require a Moisture Suppressant System. Due to complexities associated with moisture vapor transmission, emissions and movement of soluble salts (alkalinity) in concrete subfloors, Ivy Hill does not offer, recommend or warranty a specific solution for excess moisture in concrete slabs. However, there are many companies that offer solutions with warranties for excess moisture in concrete slabs.

Ivy Hill suggests that you reference the current ASTM F710, "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring," and ASTM F3010, "Standard Practice for Two Component Resin Based Membrane Forming Moisture Mitigation Systems for Use Under Resilient Flooring Systems." Contact one or more of the following or other moisture suppressant system suppliers for assistance:

Ardex: 724.203.5000, www.ardex.com | Mapei: 800.426.2734, www.mapei.com | Schonox: 855.391.2649, www.hpsubfloors.com

ASBESTOS WARNING! DO NOT MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVES OR OTHER ADHESIVES.

Previously installed resilient floor covering products and the asphaltic or cutback adhesives used to install them may contain either asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of asbestos or crystalline dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the previously installed product is a non-asbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern the removal and disposal of material. See current edition of the Resilient Floor Covering Institute (RFCI) publication "Recommended Work Practices for Removal of Resilient Floor Coverings" for detailed information and instructions on removing all resilient covering structures.

SUBFLOOR PREPARATION

- Record and file site conditions, test results and any corrective action(s) taken. It is important to maintain this documentation throughout the warranty period.
- Subfloor must be clean (free of dirt, sealers, curing, hardening or parting compounds or any substance that may stain or prevent adhesion), smooth, flat, sound, fit for purpose and free of movement, excessive moisture and high alkalinity.
- Slick surfaces such as power-troweled concrete shall be abraded or profiled to allow for a mechanical bond between the adhesive and subfloors.

CONCRETE SUBSTRATES

New and existing concrete subfloors should meet the guidelines of the latest edition of ACI 302 and ASTM F 710, "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring" available from the American Society for Testing and Materials.

- Never use liquid adhesive remover or solvent cleaners for removing old adhesive residue or other substances on the substrate; their use will cause failure.
- On or below-grade slabs must have an effective vapor retarder directly under the slab.
 - Wet curing 7 days is the preferred method for curing new concrete.
- Curing compounds (DO NOT USE). If present they can interfere with the bond of the adhesive to the concrete.
- Remove curing compounds 28 days after placement, so concrete can begin drying.
- Concrete floors shall be flat and smooth within the equivalent of 1/32" in 12" and 3/16" in 10 feet.
- Leveling and patching: For concrete subfloors, use only high-quality Portland cement-based materials (minimum 3000 psi compressive strength according to ASTM C109 or ACI). Mix with water only; do not use latex. Caution: Do not lightly skim coat highly polished or slick power-troweled concrete surfaces. A thin film of floor patch will not bond to a slick subfloor and may become a bond breaker, causing flooring to release at the interface of the subfloor and patching material. If in doubt, perform a bond test prior to commencing with the installation.

Relative Humidity (RH) – Tests must be performed per the latest edition of ASTM F 2170 - IRH (Internal Relative Humidity Test). Three tests should be conducted for areas up to 1000 SF. One additional test, for each additional 1000 SF.

NOTE: It may not be the floor covering installer's responsibility to conduct the tests. It is, however, the floor covering installer's responsibility to make sure these tests have been conducted and that the results are acceptable prior to installing the floor covering. When moisture tests are conducted, it indicates the conditions only at the time of the test.

Use only Portland-based patching and leveling compounds. Do not install Ivy Hill LVT flooring over gypsum based patching and/or leveling compounds.

WOOD SUBSTRATE

Wood subfloors must have a minimum 18" (47 cm) of cross-ventilated space between the bottom of the joist and ground. Exposed earth crawl spaces must be sealed with a polyethylene moisture barrier. Subfloors must meet local and national building codes. Trade associations, such as the APA -The Engineered Wood Association, offer structural guidelines for meeting various code requirements. Refer to ASTM F 1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to receive Resilient Flooring, for additional information.

- Wood subfloors require an underlayment (double layer construction) with a minimum total thickness of 1" (25 mm). Use minimum 1/4" (6 mm) thick APA rated "underlayment grade" plywood with a fully sanded face, or other underlayment panel that is appropriate for the intended usage. Install and prepare panels and seams according to the manufacturer's instructions. Also refer to ASTM F1482, "Standard Practice for Installation and Preparation of Panel Underlayments to Receive Resilient Flooring."
- Many times, wood panel subfloors are damaged during the construction process or are not underlayment grade. These panels must be covered with an appropriate underlayment. Underlayment panels are intended to be used to provide a smooth surface on which to adhere the finished floor covering. Underlayment panels cannot correct structural deficiencies.
- Panels intended to be used as underlayment should be specifically designed for this purpose. These panels should have a minimum thickness of 1/4" (6 mm). Any panels selected as an underlayment must meet the following criteria:
 - Be dimensionally stable.
 - Have a smooth, fully sanded face, so graining or texture will not telegraph through.
 - Be resistant to both static and impact indentation.
 - Be free of any surface components that may cause staining, such as plastic fillers, marking inks sealers, etc.
 - Be of uniform density, porosity and thickness.
 - Have a written warranty for suitability and performance from the panel manufacturer, or have a history of proven performance.
- Any unevenness at the joints between panels must be sanded to a level surface. Gaps between panels, hammer indentations and all other surface irregularities must be filled and sanded.
- Particleboard, chipboard, construction grade plywood, OSB, flake-board and wafer board are not recommended as underlayments. All have inadequate uniformity, poor dimensional stability and variable surface porosity. Ivy Hill will not accept responsibility for adhered installation over these subfloors. In all cases, the underlayment manufacturer or underlayment installer is responsible for all underlayment warranties.

RESILIENT SUBSTRATE

- Must be single layered, non-cushion backed, fully adhered, and smooth.
- Show no signs of moisture or alkalinity.
- Wax, polish, grease and grime must be removed.
- Cuts, cracks, gouges, dents and other irregularities in the existing floor covering must be repaired or replaced.

NOTE: The responsibility of determining if the existing flooring is suitable to be installed over rests solely with installer/ flooring contractor on site. If there is any doubt as to suitability, the existing flooring should be removed, or an acceptable underlayment installed over it. Installations over existing resilient flooring may be more susceptible to indentation.

POURED FLOOR SUBSTRATE (EPOXY, POLYMERIC, SEAMLESS)

- Must be totally cured and well bonded to the concrete.
- Must be free of any residual solvents and petroleum residue.
- Wax, polish, grease and grime must be removed.
- Cuts, cracks, gouges, dents and other irregularities in the existing floor covering must be repaired or replaced.

- Texture must be smooth.
- Show no signs of moisture or alkalinity.

TERRAZZO & CERAMIC FLOOR SUBSTRATE

- Surface must be thoroughly sanded to remove all glaze and waxes.
- Cuts, cracks, gouges, dents and other irregularities in the existing floor covering must be repaired or replaced.
- Clean the grout lines.
- Use a good quality Portland cement based leveling compound to fill all grout lines and other depressions.

INSTALLATION / LAYOUT:

- Whenever possible, plan the layout so that the joints in the planks do not fall on top of joints or seams in the existing substrate. The end joints of the planks should be staggered a minimum of 6" (15.24 cm) apart. Do not install over-expansion joints.
- Determine which direction the planks will run. Find the center of each of the end walls (the walls perpendicular to the long dimension of the planks) and place a pencil mark on the floor. Connect these points by striking a chalk line down the center of the room (Fig. 1). Do a dry layout of planks from the center line to the wall running parallel to the long direction of the planks to determine the width of the last row of planks (Fig. 1). Fig. 1 Dry layout to determine width of border plank.
- Avoid having border pieces less than 2" (5.1 cm) wide for the 4" (10.2 cm) wide planks and less than 3" (7.6 cm) wide for the 6" (15.24 cm) wide planks. If you find the border planks will be less than 1/2 the width of the plank, the center starting line should be shifted a distance equal to 1/2 the plank width. This will "balance" the room and provide for a larger cut piece at the wall.

PRODUCT INSTALLATION PROCEDURE

Adhesive Application: See adhesive chart below and follow adhesive label instructions for proper use.

- **Grid Stick Method:**
Spaces with dimensions greater than 12 feet in any direction require a minimum of a grid installation (4 inch strip of adhesive on the perimeter of the space, along with 4" strip intervals every 8 feet parallel to each perimeter wall, creating the grid pattern). Follow adhesive recommendations on the label.
- **Full Adhesive Coverage:**
In areas of mid to high foot traffic, moderate to high temperature variations, rolling loads, or where there are concerns with subfloor conditions. Reference to Glue Down LVT installation instructions. Always follow adhesive recommendations on the label.
- Do not mix batch numbers during the installation.
- Square the area and establish reference points on the substrate
 - Use chalk lines for reference points. Start either at the corner or end of the room farthest from the doorway. These lines should be 2' or 3' from the wall depending on your reach.
- Apply the adhesive to the substrate and allow proper open time. Open and working times are dependent on the ambient temperature, humidity, substrate porosity and temperature, and air movement. It is the installer's responsibility to modify the open and working time for jobsite conditions.

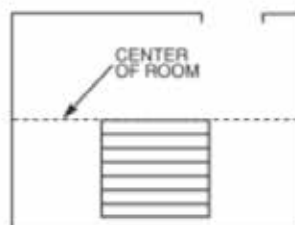


Fig. 1 Dry layout to determine width of border plank.

- Install the flooring using the established reference points (chalk lines).
- Install Planks in the same direction, in a random pattern, and offset plank end joints by 6" (15.2 cm).
- Wood plank visuals must be installed with the arrows pointing in the same direction. Square and rectangle tiles may be installed with arrows pointing in the same direction, quarter turned or randomly installed for customized visuals. Install the field area first and then fit in the border tile.
- Do not force planks or tiles together. Sliding tiles will result in forcing the adhesive out between the seams, creating a ledge condition at the seams and corners.
- Check proper adhesive transfer by periodically lifting the corner of an installed tile or plank.
- Immediately remove any adhesive from the surface of the flooring using a clean, white cloth dampened with a neutral detergent and water. Roll the tile in both directions after installation using a 100-lb. roller. Use a small hand roller in areas that cannot be reached with a large roller.

POST-INSTALLATION PROTECTION

Ivy Hill recommends that the installation of new flooring material not be performed until all the other trades have completed their work. Proper precautions must be taken during and after the installation process to avoid damage to the newly installed flooring.

- Follow instructions found in Ivy Hill's LVT maintenance instructions www.Ivy Hill.com and the preventative care.

ADHESIVE SELECTION CHART

ADHESIVE	APPLICATIONS + COVERING		MOISTURE / PH LIMITS		NOTES
	POROUS	NON-POROUS	RH%	PH	
Roll	3/8" Nap Paint Roller (used with a paint tray) 350 - 400 sq. ft. per gallon	3/8" Nap Paint Roller (used with a paint tray) 350 - 400 sq. ft. per gallon	95%	11	Adhesive coverage must not exceed 400 ft ² / gallon. While still wet, adhesive bed should read 10 – 14 mil on wet film thickness gauge
Trowel	1/16 x 1/16 x 1/16 V 150 – 175 sq. ft. per gallon	1/32 x 1/16 x 1/32 U 220 – 260 sq. ft. per gallon	90%	10	The trowel adhesive is sensitive to substrate porosity. Determine substrate porosity and follow the adhesive label instructions regarding porous and nonporous substrate drying times prior to the installation.