ArmstrongFlooring®

COMMERCIAL LUXURY FLOORING INSTALLATION INSTRUCTIONS

(Biome™, Coalesce™, Conjunction™, Duo™, Exchange™, Theorem™, Terra™, Mixtera™ Mirage, Mixtera™ Mosaic, Mixtera™ Prism, Tandem, Natural Creations®, Parallel® USA, American Charm™ 12/20)

INSTALLATION:

Adhesives: S-995 Adhesive, S-1000 Adhesive, S-319 Roll Strong™ Adhesive
Location: All grade levels
Substrates: Concrete; Approved Suspended Wood; Steel, Stainless Steel, Aluminum; Ceramic Tile, Terrazzo, Marble; Existing Resilient Floors; Polymeric Poured (Seamless Floors)
NOTE: Installations over existing resilient flooring and acoustical underlayments such as S-1840 may be more susceptible to indentations.
NOTE: To install over steel, stainless steel, or aluminum, use S-319. In areas subject to direct sunlight, topical moisture, or temperature fluctuations, use S-1000.

ACCEPTABLE SUBFLOORS & UNDERLAYMENTS:

Wood:

Flooring can be installed on suspended wood, OSB, or a treated plywood subfloor with a 1/4" underlayment and a minimum of 18" of well-ventilated air space below. Armstrong Flooring does not recommend installing resilient flooring on wood subfloors applied directly over concrete or on sleeper-construction subfloors over, on, or below grade concrete. 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 strip, board, or plank subfloors must meet structural requirements. If the top layer is tongue-and- groove and the strip wood is 3" or less in face width, cover with 1/4" or thicker underlayment panels. All other layers should be covered with 1/2" or thicker underlayment panels.

Subject to the board manufacturer's recommendations and warranties, the following underlayments may be used with Armstrong Flooring products:

- Plywood rated as suitable underlayment for resilient floor coverings
- Poplar or Birch Plywood with a fully sanded face and exterior glue
- Luan Plywood, Type 1 (Exterior)
- Fiber Reinforced Gypsum Underlayment, Fiber Cement Board & Cementitious Backerboard rated as suitable underlayment for resilient floor coverings.

Armstrong Flooring does not recommend OSB or Treated Plywood (unless covered with a 1/4" of APA plywood underlayment), Particleboard or Hardboard.

Underlayments for resilient floors must:

- Be structurally sound
- Be designed for resilient flooring underlayment purposes
- Be a minimum of 1/4" thick
- Have panels smooth enough so that texture or graining will not show through
- Resist dents and punctures from concentrated loads
- Be free of any substance that may stain vinyl such as edge patching compounds, marking inks, paints, solvents, adhesives, asphalt, dye, etc.
- Be installed in strict accordance with the board manufacturer's recommendations

For approved underlayments, AHF Products suggests the panels be lightly butted and not filled or flashed, unless the manufacturer specifically recommends filling the joints. Differences in the thickness of wood panels should be corrected by sanding. Allow the panels to condition to the job site per manufacturer's recommendations.

Concrete:

New and existing concrete subfloors must meet the requirements of the current edition of ASTM F710, "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring". Regardless of the type of concrete or other cement-like material used as a base for resilient flooring, in the event of underlayment failure, the responsibility for warranties and/or performance guarantees rests with the concrete or cement- like material manufacturer and not with the manufacturer of resilient flooring.

Below-Grade & On-Grade Concrete Floors

1. The slab must be of good quality, standard density concrete with low water/cement ratios consistent with placing and finishing requirements, having a maximum slump of 4", a minimum compressive strength of 3000 psi, and following the recommendations of ACI Standard 302.1R for Class 2 or Class 4 floors and the Portland Cement Association's recommendations for slabs on ground.
2. The concrete slab must be dry, clean, smooth, structurally sound, and free of foreign materials that might prevent adhesive bond as described in the current edition of ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
3. The concrete slab must be protected from ground moisture with an effective and intact vapor retarder that conforms to the requirements of the current edition of ASTM E1745, "Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs."
4. The concrete slab must be placed directly on the vapor retarder.
5. The concrete must be wet cured with a moisture-retaining curing cover. Do not use spray-on curing compounds because these reduce the drying rate of concrete and can interfere with the adhesive bond.
6. Before installing the finished flooring, moisture, alkali, and bond testing must be conducted.
7. Moisture testing must be performed in accordance with the current edition of ASTM F2170 "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes" (preferred method) or in accordance with the current edition of ASTM F1869, "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride." See the section on Moisture Testing for more details.
8. Unless otherwise indicated in the adhesive specifications, the surface of the concrete must have a pH of 9 or less when tested according to the method described in the current edition of ASTM F710.
9. Bond testing must be performed to determine compatibility of the adhesives to the concrete slab.
10. After the concrete has cured and is dry, clean construction joints, saw cuts, score marks and cracks, and fill with an underlayment. Use high quality Portland Cement, calcium aluminates, or gypsum-based products. The floor fill, topping or underlayment must also have a minimum compressive strength of 3500 psi. When using these products, be sure to follow the manufacturer's recommendations regarding application, drying time, and moisture testing. S-194 Patch, Underlayment & Embossing Leveler, S-463 Level Strong and S-466 Patch Strong meet or exceed this requirement as underlayments.
11. Repaired areas must be finished flush with the surface of the concrete and allowed to fully dry before the installation of the floor covering.
12. Actual expansion joints or other moving joints with elastomeric fillers are designed to absorb movement in concrete slabs. Cementitious underlayments, patches and resilient flooring installed across expansion joints often crack or buckle when the slabs move. Armstrong Flooring does not recommend flooring products be installed across expansion or isolation joints. Expansion joint covers are available for use with various floor coverings and should be specified by the architect.

13. Dusty concrete slabs may be primed with one coat of S-185 Latex Primer. Sweep or vacuum the concrete and apply the S-185 with a 3/8" nap paint roller. You may also prime concrete subfloors with the recommended flooring adhesive for the material about to be installed. When using adhesive as a primer, allow the adhesive to dry completely
14. After sweeping/vacuuming, apply the adhesive using a smooth-edge trowel.
15. A rough concrete floor can be ground smooth with a commercial diamond or carbide-equipped grinding machine. If the concrete subfloor is extremely rough or uneven, it may be too great a job to smooth this way. In this case, apply a cementitious underlayment such as S-194, S-463 or S-466. A smooth, flat, uniform surface is necessary as a good base for resilient flooring.

Above-Grade Concrete Floors

Above-grade concrete is usually protected from most sources of moisture except the moisture initially in the mix and water vapor in the atmosphere. As with concrete placed on and below grade, above-grade concrete must be kept damp during the curing process to permit hydration to occur. Concrete poured on a metal deck is often produced with lightweight aggregate that can retain excess water longer than normal-weight aggregate. Because drying is only possible from the top surface, such construction usually takes additional drying time. Floors on metal decks or above-grade structural concrete floors must be dried and must meet the same requirements as described in Sections C-2 and C-3 for slabs on and below grade. Follow steps 7-15 above.

Curing, Sealing, Hardening, or Parting Compounds

Curing compounds leave a film that can interfere with adhesion. Use should be avoided on surfaces that will later be covered with resilient floor covering. Where applicable, a letter of compatibility should be obtained from the manufacturer before the use of a curing compound.

When curing, sealing, hardening, or parting compounds have been used, the following general statements can be made:

- If they contain soap, wax, oil, or silicone, the compounds must be removed before a resilient floor can be installed. The compounds can be removed by using a terrazzo or concrete grinder, by sanding with a drum sander or by using a polishing machine equipped with a heavy-duty wire brush.
- There are many materials that do not contain soap, wax, oil, or silicone and are advertised as being compatible with resilient flooring adhesives. Conduct bond tests to determine the need for removal. If the bond fails after 72 hours, the compound must be removed.

NOTE: In the event of adhesion failure, the responsibility for warranties and/or performance guarantees rests with the compound manufacturer and not with the manufacturer of the resilient flooring and/or adhesives.

Existing Resilient Floors

Commercial LVT can be installed over existing on- and above-grade VCT and Sheet. It cannot be installed over existing commercial LVT. The responsibility for determining if the old resilient flooring is well bonded to the subfloor and will not show through the final installation rests with the contractor and the installer. AHF Products does not recommend installing new flooring over existing rubber or slip retardant floors.

- Confirm that the existing flooring is completely and firmly bonded. Existing flooring must have been properly installed over underlayments and subfloors recommended as suitable for resilient flooring. They may not show evidence of moisture or alkaline.
- Waxes, polishes, and other finishes must be removed with a commercially available stripper. We would recommend using a 3M Black pad for stripping purposes only. Do not allow the stripping solution to dry at any time. Thoroughly rinse the existing flooring with clean water after removing the stripping solution. Do not flood with water or stripping solution at any time.
- Indentations or damaged areas should be replaced or repaired.

Polymeric Poured Floors, Metal, Ceramic Tile, Quarry Tile, Terrazzo & Marble

Armstrong commercial LVT may be installed directly over polymeric poured floors. To install flooring over polymeric poured floors, the surface must be roughened and then a Portland cement-type underlayment applied. Mix S-194 with the S-195 Underlayment Additive.

Polymeric poured floors must be well cured, have no history of moisture related problems, be free of any residual solvent, smooth, structurally sound, and well bonded to a concrete subfloor. Loose or damaged areas must be completely removed and patched with S-194 as necessary. Remove any “nubby” texture with wet, sharp sand and a floor machine equipped with carborundum stones. Do not use a skim coat of latex underlayment to smooth the surface as it will not adhere reliably.

Armstrong LVT may be installed directly over ceramic tile, quarry tile, terrazzo or marble subfloors on all grade levels which are firmly bonded to a structurally sound substrate. Clean the floor of all paint, varnish, oil, wax, and finishes. Roughen glazed or very smooth surfaces and repair badly fitted joints or cracks with, S-466 or S-194. If the floors are badly worn or have low places, they should be leveled with, S-466 or S-194. To install over metal, the surface must be roughened and then a Portland cement-type underlayment applied at a minimum of 1/8” thickness. Mix S-194 with the S-195 Underlayment Additive.

JOB CONDITIONS

- **Resilient flooring should only be installed in temperature-controlled environments**. It is necessary to maintain a constant temperature before, during and after the installation. Therefore, the permanent or temporary HVAC system must be in operation before the installation of resilient flooring. Portable heaters are not recommended, as they may not heat the room and subfloor sufficiently. Kerosene heaters should never be used.
- The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, curing compounds, residual adhesive1, adhesive removers and other foreign materials that might affect the adhesion of resilient flooring to the substrate or cause a discoloration of the flooring from below. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate, they must be mechanically removed prior to the installation of the flooring material.
- In renovation or remodel work, remove any existing adhesive residue1 so that 100% of the overall area of the original substrate is exposed.
- Allow all flooring materials and adhesives to condition to the room temperature for a minimum of 48 hours before starting the installation.
- The area to receive the resilient flooring should be maintained at a minimum of 65° F (18° C) and a maximum of 85° F (29° C) for 48 hours before, during and for 48 hours after completion.
- During the service life of the floor, the temperature should never rise above 85° F (29° C) nor fall below 55° F (13° C). The performance of the flooring material and adhesives can be adversely affected outside this temperature range.
- Conduct calcium chloride tests or percent relative humidity tests on concrete. Testing for internal relative humidity of concrete slabs must be conducted in strict accordance with the current edition of ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. All tests must meet allowable moisture limits. Any area that exceeds the allowable moisture limit must be further dried to an acceptable level or treated with a moisture remediation system before flooring installation. Performance of any third-party moisture remediation system rests with the manufacturer of that system, not with Armstrong Flooring. As a reminder, these tests cannot predict long-term moisture conditions of concrete slabs. They are only indicators of moisture conditions at the time the tests are conducted.
- MVER tests must be conducted in accordance with the current edition of ASTM F1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. When performing these tests, it is important to remove any curing agents or residues down to the bare concrete. The calcium chloride tests are to be performed only on ordinary concrete floors and are not applicable on lightweight concrete, smoothing or leveling compounds, or gypsum underlayments.

[1] Some previously manufactured asphaltic “cutback” adhesives contained asbestos (see warning statement on the last page). For removal instructions, refer to the Resilient Floor Covering Institute’s publication Recommended Work Practices for Removal of Resilient Floor Coverings.

Adhesives	% Internal Relative Humidity (RH)	MVER, lbs. per 1000ft² / 24 hours	pH
S-319 Roll Strong™	99%	N/A	12
S-995 Adhesive	On or Above Grade: 95% Below Grade: 90%	N/A	On or Above Grade: 8.0-10.0 Below Grade: 9.0
S-1000 Adhesive	100%	14	14

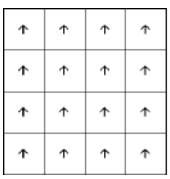
- Bond tests should also be conducted for compatibility with the substrate. It is recommended that this test be used to determine the compatibility of resilient flooring adhesives to concrete subfloors after the removal of old adhesives, curing agents, parting compounds, dust inhibitors, oil, grease, paint, varnish and other special surface treatments or conditions. Using the flooring material and recommended adhesives, install 3' x 3' panels spaced approximately 50" apart throughout the subfloor area. Select areas next to walls, columns, or other light traffic areas. Tape edges of panels to prevent edge drying of adhesive. When testing where a curing agent has been used, the curing agent must be removed in some areas for bond testing. If the panels are securely bonded after a period of 72 hours, you may conclude that the subfloor surface is sufficiently clean of foreign material for satisfactory installation of the resilient flooring.
- As an alternative to the removal of residual asphalt cutback adhesives or installing directly on metal substrates, apply a minimum 1/8" layer of cementitious underlayment, such as S-194 Patch, Underlayment and Embossing Leveler or S-466 Patch Strong™, as approved by the underlayment manufacturer. All warranties and/or performance guarantees concerning third-party underlayment failure rest with the underlayment manufacturer and not with Armstrong Flooring.
- Many adhesive removal products contain solvents that leave a residue within the subfloor. This residue can negatively affect the new adhesive and bleed through the new floor covering. The use of asbestos encapsulants or bridging materials over asphaltic adhesive is not recommended. These products may affect the bonding properties of the new adhesive.
- Radiant-heated substrates must not exceed a maximum surface temperature of 85° F (29° C).
- Concrete floors should be tested for alkalinity. The allowable readings for the installation of Armstrong flooring are 5 to 9 on the pH scale.
- To retain removability of floor panels for raised access floors, choose an LVT that is the exact size of the panels and glue the tile directly to each panel. Do not install tile across the panel joints. If installing a subfloor, underlayment system over the raised access floor, any of our floors may be considered.

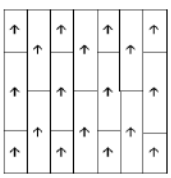
KEYS TO A SUCCESSFUL INSTALLATION

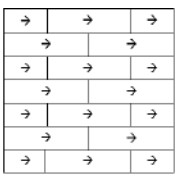
- To achieve a clean, straight cut, use a standard utility knife with a titanium blade or a concave hook blade. A vinyl tile cutter can also be used.
- For cutting around pipes, door casings and other intricate cuts, use a heat gun or torch to heat the back of the tile prior to cutting. This will soften the backing enough to cut through the structure cleanly. If tile begins to cool during cutting, stop and reheat before proceeding with the cut.
- Do not heat the front of the tile.
- If you need to trim a small section off the tile horizontally or lengthwise, pliers will make snapping the cut section off easier. Score the tile with your blade as you normally would. Use a pair of standard pliers, tile nippers or wide-nose pliers (for lengthwise cuts) to grab the tile and snap at the score.

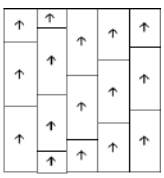
LAYOUT

- It is important to align arrows on the back of planks and tiles for select flooring patterns as pictured below: Monolithic, Ashlar, Brick, and Stagger. This applies


Monolithic


Ashlar

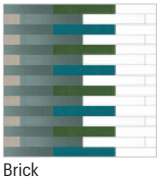

Brick


Stagger

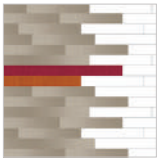
- Whenever possible, plan the layout so that joints do not fall on top of joints or seams in the existing substrate. End joints of planks and tiles should be staggered a minimum of 6" (15.24 cm) apart. Do not install over expansion joints.
- Determine which direction the planks or tiles will run. Identify the center of each of the end walls (the walls perpendicular to the long dimension of the planks and tiles) and place a pencil mark on the floor. Connect these points by striking a chalk line down the center of the room. Do a dry layout of planks and/or tiles from the center line to the wall running parallel to the long direction of the planks and tiles to determine the width of the last row of planks.
- Avoid having border pieces less than 3" (7.6 cm) wide. 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.

NOTE: Based on the unique design of Exchange LVT, the following flooring patterns are recommended to ensure a successful installation: Ashlar, Herringbone, Brick and Stagger.


Ashlar


Brick


Herringbone


Stagger

FITTING

- Before installing the material, plan the layout so tile joints fall at least 6" (15.24 cm) away from subfloor/underlayment joints. Do not install over expansion joints.
- Recommended fitting procedures include straight scribing, pattern scribing or cutting with a tile cutter.
- Install the tile along the chalk lines. Install 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.

Adhesives	Set-in-Wet	Dry-to-Touch	Working Time	Traffic Post-Installation
Armstrong Flooring S-995	N/A	Open Time: >15 minutes. Dry-to-Touch only. Trowel: U Notch 1/32" (0.8 mm) deep, 1/16" (1.6 mm) wide, 1/32" (0.8 mm) apart	2 hours	Light Foot Traffic: 24 Hours Heavy Traffic & Rolling Loads: 48 Hours
Armstrong Flooring S-319	N/A	Open Time: >15 minutes Roll on with medium nap roller. Dry-to-Touch only.	4 hours	Can be exposed to Heavy Traffic & Rolling Loads immediately
Armstrong Flooring S-1000	Open Time: Approximately 10–20 minutes Trowel: U Notch 1/32" (0.8 mm) deep, 1/16" (1.6 mm) wide, 1/32" (0.8 mm) apart	N/A	45 Min.	Light Foot Traffic: 4 Hours Heavy Traffic & Rolling Loads: 8 Hours

NOTE: The amount of open time will vary according to job conditions — temperature, humidity, air flow and type of substrate. the proper open time will help to minimize tile shifting.

ABUTTING DIFFERENT GAUGES OF RESILIENT FLOORING

When installing thinner gauge material next to thicker gauge materials, install thicker material first and then butt a 12" (30.5 cm) wide piece of scribing felt against the thicker material. Adhere the scribing felt to the subfloor with suitable adhesive. Use S-194 Patch, Underlayment and Embossing Leveler or S-466 Patch Strong™ to feather the edge of the scribing felt to the level of the substrate. Allow the patch to dry completely before installing the flooring. Scribing felt is not recommended to be used under the entire installation.

PROCEDURE | S-319 Roll Strong™

- A clean substrate is extremely important with the use of S-319 Roll Strong Adhesive. Thoroughly sweep and vacuum the substrate first. Damp mop to remove any remaining dust or debris. Extra attention to substrate preparation is essential for a successful installation. Failure to properly clean the substrate may result in telegraphing of debris.
- A roll-on application method is recommended with a medium nap (3/8" nap) roller to achieve a smooth even full-spread coating. Spread rate and drying time of the adhesive will depend on the porosity and texture of the substrates and the ambient temperature and relative humidity. KEEP PAINT ROLLER WET! Do not apply pressure to the roller, allow it to freely roll over the substrate. ADHESIVE COVERAGE MUST NOT EXCEED 400 ft^2/gal! Once the coating has dried, it must be kept clean and apart from any contact with other surfaces until ready to begin the bonding process. Do not spread more adhesive than can be covered in 4 hours.
- Bond testing prior to the installation will help identify the appropriate application rate, open and working time, and any potential bonding problems to the substrate or flooring. To determine the accurate coverage rate, measure, and chalk line the substrate into grids (using the appropriate square feet of area for the adhesive application) and apply adhesive onto each measured grid area.
- Allow the adhesive to dry completely with no transfer to fingers when lightly touched. Open time will vary depending on the adhesive coverage, substrate porosity and the ambient conditions.
- Once the S-319 Roll Strong adhesive has dried, install LVT as per recommended. LVT can be repositioned as necessary prior to applying pressure. After completion of the installation, roll the entire floor in both directions with 100 lb. roller to achieve a full contact bond.

NOTE: After the flooring has been rolled or pressed into place, repositioning is not possible. Normal traffic and rolling loads may be allowed as soon as the installation, finishing and clean-up are complete.

SAFETY AND CLEAN UP: Wet adhesive should be cleaned up immediately with soap and water on a clean cloth. Remove any dried adhesive residue with a clean, white cloth dampened with denatured alcohol.

COVERAGE: Rate of application depends on porosity of the substrate. Approximately 300 – 400 square feet per gallon when applied with a 3/8" Nap roller.

PROCEDURE | S-995 Flooring Adhesive

- Apply adhesive with recommended trowel and allow it to set until dry-to-touch.
- Begin laying planks along the center starting line and install row by row, including the cut pieces at the perimeter, until 1/2 of the installation is complete. Stagger end joints by at least 6" (15.24 cm). Apply adhesive to the remaining portion of the room, allow to dry-to-touch and complete the installation of planks in similar fashion. 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. Traffic is allowed 24 hours post-installation; heavy traffic, 48 hours post-installation. Use pieces of hardboard or underlayment panels to protect the floor when moving heavy furniture and appliances back into the room.

PROCEDURE | S-1000 Flooring Adhesive

- Move the chalk lines to 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 (Figure 1).
- Apply the Adhesive in 2" or 3" bands (Figure 2) being careful not to cover the chalk lines. Do not apply more adhesive than you can cover within 45 minutes. Allowing a 10-minute open time and fitting the border tile tightly will reduce tile shifting and adhesive oozing. DO NOT allow the adhesive to dry completely.

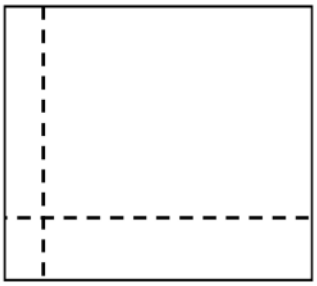


Figure 1: Chalk Lines

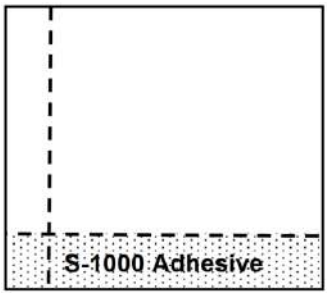


Figure 2: Adhesive Bond

- 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 within 30 minutes after installation using a 100-lb. roller.
- Do not work on newly installed tile except to roll tile. If unavoidable, use a kneeling board. Repeat the first four steps until the installation has been completed.
- Apply adhesive to 1/2 of the area at a time so you can start the installation along the center starting line.
- Begin laying planks along the center starting line and install row by row including the cut pieces at the perimeter until 1/2 of the installation is complete. Stagger end joints by at least 6" (15.24 cm). Apply adhesive to the remaining portion of the room and complete the installation of planks in similar fashion.
- After the planks are installed, immediately roll the entire floor with a 100-lb. roller. Use a hand roller in confined areas where the large floor roller will not reach, such as under toe kicks.
- Planks and tiles may be exposed to light foot traffic four hours post-installation. The floor can be exposed to heavy rolling traffic in 8 hours post-installation. Use pieces of hardboard or underlayment panels to protect the floor when moving heavy furniture and appliances back into the room.

SPECIAL SITUATIONS

USING S-1840 UNDERLAYMENT WITH S-1000 and S-995 Adhesives

- Make sure the subfloor is clean, flat, dry, and sound. It is important that the subfloor is free of all debris. Check the subfloor for unevenness or protruding objects such as nails or screws.
- When installing over concrete, the concrete must be dry with moisture vapor emission rate not exceeding 7 lbs. per 1000 square feet per 24 hours as measured by the Calcium Chloride Test and 93% RH using In-situ Probe.
- Begin in a corner and install the underlayment parallel to the wall in the opposite direction you plan to install the flooring planks. Leave at least 2" of excess underlayment up the wall and trim after completing the floor installation.
- Roll out the next roll of underlayment in the same manner, making sure that the foam seams are butted together. The use of clear 2" wide packing tape can be used to attach the seams.
- When installing on concrete or below grade subfloors, be sure to tape the seams together with 2" tape that meets the moisture vapor transmission rate for this type of installation.
- Adhere the underlayment to the subfloor and LVT to the underlayment. Follow the Procedures above using S-995 and/or S-1000. Do not use S-319 Roll Strong with S-1840.

LOOSE LAY /PERIMETER BOND INSTALLATION (4.5 MM LVT)

GENERAL INFORMATION

The loose lay installation system allows the planks/tiles to be installed without using adhesives for installations not exceeding 250 ft^2. The planks/tiles should be installed 1/8" away from all vertical surfaces such as walls, cabinets, pipes, etc. For installations exceeding 250 ft^2, a perimeter bond installation, or full spread installation system must be used. See the product and recommended adhesive chart referenced in this guide.

Base cabinets should not be installed on top of the planks/tiles when using the loose lay installation.

LOOSE LAY INSTALLATION (250 FT^2 OR LESS)

Installation:

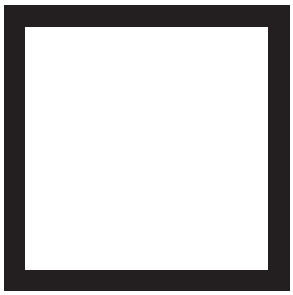
- Loose Lay LVT should be the last material installed, so as to prevent other trades from disrupting the installation and adhesive set-up, and to prevent damage to the floor.
- Loose Lay LVT comes in plank, and rectangular tile formats. Install tiles running in the same direction (block or staggered), quarter-turned or as specified by architect. Loose Lay LVT plank flooring should have end-joints offset by at least 6" and should be installed in a staggered manner, so as to create a random appearance that avoids alignment of end-joints. Loose Lay LVT can be laid out to run either parallel or diagonal to the room or primary wall. The following conditions must be given consideration when determining how AHF LVT will be installed:
  - Before installing the material, plan the layout so tile joints fall at least 6" (15.24 cm) away from subfloor/underlayment joints. Do not install over expansion joints.
  - Determine which direction the planks/tiles will run. Find the center of each of the end walls (the walls perpendicular to the long dimension of the planks/tiles) and place a pencil mark on the floor. Connect these points by striking a chalk line down the center of the room.
  - Do a dry layout of planks/tiles from the center line to the wall running parallel to the long direction of the planks/tiles to determine the width of the last row of planks/tiles. (Fig 1)
  - The planks or tiles should be installed at least 1/8" from vertical obstructions.
  - Install the planks or tiles along the chalk line moving from the center of the room to the walls. Planks and tiles should be installed end to end, ensuring the flooring material is flush with adjacent planks, with no gapping or ledging present
  - Continue moving down the chalk line and building rows. Repeat until the section is complete.
  - Same installation practice should be used on the other side of the chalk line
    - As previously stated above, base cabinets should not be installed on top of the planks or tiles. For larger spaces see the full spread adhesive installation procedure.
  - For plank installations, the end joints should be staggered a minimum of 6" (15.24 cm) apart.
  - For all installations, open several cartons and mix them as they are installed to help blend any slight shade differences from one carton to the next.

PERIMETER BOND INSTALLATION OR GRID SYSTEM (250 FT^2 OR GREATER)

For installations larger than 250 ft^2, a perimeter-bond, modified loose lay installation method must be employed

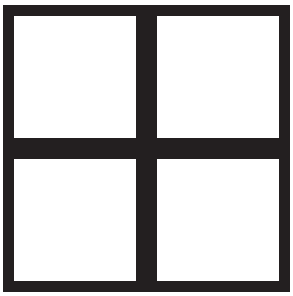
- Before installing the material, plan the layout so tile joints fall at least 6" (15.24 cm) away from subfloor/underlayment joints. Do not install over expansion joints.
- Determine which direction the planks/tiles will run. Find the center of each of the end walls (the walls perpendicular to the long dimension of the planks/tiles) and place a pencil mark on the floor. Connect these points by striking a chalk line down the center of the room.
- Do a dry layout of planks/tiles from the center line to the wall running parallel to the long direction of the planks/tiles to determine the width of the last row of planks/tiles. (Fig 1)
- The planks or tiles should be installed at least 1/8" from vertical obstructions.
- Starting at the perimeter of the installation, trowel, or roll a 12" band of adhesive around the perimeter of the room.
- As the size of the installation grows, so does the size of the perimeter bond and grid installation. For example, if your installation area is 800 ft^2, the room should be broken down into quadrants of 200 ft^2 each. This would utilize a grid system of adhesive.
- Determine which direction the planks/tiles will run. Find the center of each of the end walls (the walls perpendicular to the long dimension of the planks/tiles) and place a pencil mark on the floor. Connect these points by striking a chalk line down the center of the room. Find the center of the opposite walls and connect with a chalk line.
- Adhesive needs to be spread around the perimeter of the room as well as down the middle of the installation area.

250 sq. ft.



Max square footage for loose lay installation is 250 sq. ft. Dark area represents 12 in. band of adhesive

1000 sq. ft.



To accommodate larger areas, use this grid pattern of 250 sq. ft. areas. Shaded areas represent 12 in. bands of adhesive.

Wood door casings should be undercut so that LVT will fit neatly beneath them. Position the plank/tile on the substrate against the door casing. Lay the handsaw flat against the scrap plank/tile and carefully cut the door casing to the height of the plank/tile. Cut around metal door casings, do not cut metal door casings.

REMOVAL OF RESILIENT FLOOR TILE, SHEET FLOORING AND "CUTBACK" ADHESIVE

RECOMMENDED WORK PRACTICES

Instructions for removing resilient floor tile, sheet flooring and asphaltic "cutback" adhesives are not contained in this manual. Refer to the current Resilient Floor Covering Institute's (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings, that addresses each in-place product type: resilient floor tile, resilient sheet flooring, asphaltic "cutback" adhesive or other adhesive.

REGULATIONS AFFECTING THE REMOVAL OF EXISTING RESILIENT FLOOR COVERINGS

- Various federal, state, and local government agencies have regulations governing the removal of in- place asbestos-containing material. If you contemplate the removal of a resilient floor covering structure that contains (or is presumed to contain) asbestos, you must review and comply with all applicable regulations.
- Vinyl-asbestos tile and asphalt tile contain asbestos fibers, as did some asphaltic "cutback" adhesives and the backings of many sheet vinyl floorings and lining felts. The presence of the asbestos in these products is not readily identifiable.
- Unless positively certain that the 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.
- The Recommended Work Practices are a defined set of instructions that address the task of removing all resilient floor covering structures, whether or not they contain asbestos. When the Recommended Work Practices are followed, resilient floor covering structures that contain (or are presumed to contain) asbestos can be removed in a manner that will comply with the current Occupational Safety and Health Administration's (OSHA) Occupational Exposure to Asbestos Standard's Permissible Exposure Limits (PEL).

- Numerous products, devices and techniques have been introduced and/ or recommended for the removal of resilient floor covering structures. AHF Products is only able to endorse the RFCI Recommended Work Practices. Before you use any other practice for the removal of an in-place resilient floor covering product that contains (or is presumed to contain) asbestos, you should determine if the practice meets all applicable regulations or standards, including those of OSHA, for occupational exposure to asbestos and that the material will be compatible with the new floor covering to be installed.
- See federal and location regulations on lead- based paint testing, safety precautions and notification requirements.

WARNING:

EXISTING IN-PLACE RESILIENT FLOOR COVERING AND ASPHALTIC ADHESIVES. DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVE OR OTHER ADHESIVE.

These existing in-place products may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such 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 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 instructions on removing all resilient floor covering structures.

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