

GENERAL INSTALLATION GUIDELINES

1. Read all instructions prior to installation. Follow all guidelines for a successful installation.
2. It is the responsibility of the installer to ensure that products are installed correctly in accordance with all applicable guidelines. Refer to the Shenandoah warranty for any questions about the suitability of a product for any application.
3. It is important to work out of several cartons to mix the pattern when installing Shenandoah to properly mix the décor and ensure a beautiful installation.
4. Eastern Flooring Products™ produces Shenandoah to imitate natural color and texture variation, but there are a finite number of unique pieces. Therefore, it is necessary to pay attention to avoid creating unintended patterns by installing identical pieces beside one another.
5. Avoid creating patterns with the end joints of the material. Stagger the first piece of each row in size to avoid the end joints of alternating rows from lining up. No pieces smaller than ¼ of the piece in length should be installed to maintain the structural integrity of the floor. End joints in adjacent rows should be a minimum of 12” from one another.
6. All pieces should be thoroughly inspected prior to installation. Installation of material constitutes acceptance of physical and/or aesthetic imperfections. If you have any concerns about the product, please immediately contact your point of sale. Flooring that has been cut or installed is not eligible for returns
7. Shenandoah does not require acclimation; however, the flooring should be the same temperature as the environment in which it is being installed. Installation environments should be temperature controlled by an HVAC system to provide a constant temperature of 60-80° F prior to installation, during installation, and for 24 hours after installation.
8. When installing Shenandoah in 3 season rooms, please ensure that the area is fully enclosed and will stay constantly between 23-120° F
9. It is important to protect Shenandoah from exposure to direct sunlight. Direct sunlight can result in thermal expansion, UV fading, and discoloration. Ideal protection will include UV treated windows and the use of drapes/blinds during peak sunlight hours.
10. Eastern Flooring Products™ recommends installing Shenandoah after all other trades have completed their work to avoid damaging or soiling the floor.
11. Dry fit all moldings prior to installing the floor to ensure proper color, fit, and finish.
12. Do not fasten anything through the floor such as cabinets, toilets, trim, or molding. Failure to maintain a floating installation may result in buckling or disengaging.
13. Expansion is required around all fixed obstructions such as walls, door jambs, cabinets fastened

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to the floor, islands, or toilets. Please allow the following expansion space depending on the maximum length of the floor in any direction.

- a. Less than 40' – 1/4" expansion gap
- b. 40' to 65' – 3/8" expansion gap
- c. Over 65' – Contact technical support at Eastern Flooring Products™

GENERAL SUBFLOOR GUIDELINES

1. Before beginning installation, read all subfloor guidelines for the correct subfloor type. Proper subfloor preparation is the responsibility of the installer and one of the most important components of the durability of any floor.
2. The subfloor must be level, flat, clean, dry, and structurally sound. The subfloor flatness must be within 3/16" in 10' or 1/8" in 6' in all directions.
3. The subfloor must be free of any dust, solvent, wax, asphalt sealing compound, and other material that may compromise the backing of the flooring or inhibit the free floating of the floor after installation. Unevenness and obstructions may compromise the locking mechanism and cause it to disengage.
4. Any patching or leveling compound used to achieve a flat subfloor needs to meet subfloor alkalinity and moisture standards. Eastern Flooring Products™ recommends the use of a water resistant, non-shrinking, Portland leveling compound with a compressive strength of at least 3,000 psi.
5. Shenandoah is waterproof, but it is not a vapor barrier. Subfloor moisture can still cause mold, mildew, and other moisture-related issues, unrelated to Shenandoah. It is the responsibility of the installer to ensure the subfloor is not improperly emitting moisture prior to installation.
6. Acceptable subfloor types include:
 - a. Concrete slab meeting updated ASTM F710 guidelines
 - b. APA rated plywood underlayment meeting updated ASTM F1482 guidelines
 - c. Underlayment grade particleboard
 - d. Securely fastened hard surface floors including hardwood, ceramic tile, or one layer of non-cushion backed resilient sheet or tile. Must be clean, flat, free of deflection, and securely adhered or fastened.
7. Properly prepared gypsum cement with a dry density exceeding 90 pounds per cubic foot.
8. Unacceptable subfloor types include, but are not limited to:

- a. Crumb rubber underlayment, as it may interact with the flooring, chemically.
- b. Existing floating floors or cushion back products of any kind. Soft layers of flooring under Shenandoah may compromise the locking integrity and resistance to indentation.
- c. Ceramic tile with grout joints exceeding 1/4" in width. Grout joints exceeding 1/4" must be filled with an acceptable patching compound, previously described.
- d. Carpet of any kind
- e. Wood adhered to concrete, including sleeper construction subfloors
- f. Underlayment with cushioning properties
 - i. Shenandoah already features a comfortable underlayment and further cushioning may compromise the integrity of the locking mechanism.
 - ii. Eastern Flooring Products™ does not recommend the use of AMB2000 with this product.

CONCRETE SUBFLOOR GUIDELINES

1. Concrete subfloors must meet the updated ASTM F710 guidelines, prior to installation.
2. New concrete floors should be fully cured prior to installation. Concrete slabs must have no visible moisture.
3. Concrete subfloors should be free of any adhesive residue. If adhesive residue is cut-back, it must be removed by safe methods such as mechanical removal or wet scraping. Contact a professional to remove these adhesives as breathing crystalline silica or asbestos fibers can cause cancer and is a severe respiratory hazard. Refer to the Resilient Floor Covering Institute's guide "Recommended Work Practices for Removal of Resilient Floor Coverings" for more information on safe removal of resilient flooring.
4. Conduct moisture and pH testing prior to installing any floor to limit liability. Ensuring acceptable moisture levels and retaining test records for Shenandoah are the responsibility of the installer. Eastern Flooring Products™ is not liable for moisture related claims that do not meet stated installation standards.
 - a. ASTM 1869 Calcium Chloride – maximum result 8 lbs
 - b. ASTM 2170 Relative Humidity – maximum result 90% per 1000 sf per 24 hours
 - c. Concrete pH should be no less than 7, but not exceed 10
5. Shenandoah is not a vapor barrier. Subfloor moisture can still cause mold, mildew, and other moisture-related issues, unrelated to Shenandoah. It is the responsibility of the installer to ensure the subfloor is not improperly emitting moisture prior to installation. An additional layer

of underlayment with a perm rating of .1 or less may be used as a vapor barrier over concrete floors if it has no cushioning properties.

WOOD SUBFLOOR GUIDELINES

1. Wooden subfloors must meet the updated ASTM F1482 guidelines, prior to installation.
2. Be certain the floor joists do not impede the floor flatness as required. Floors must be sufficiently rigid to avoid excess deflection. An additional layer of APA rated 1/4" thick underlayment is recommend to aid rigidity where unacceptable conditions exist.
3. Crawl spaces and basements must be dry. The bottom of wooden subfloor joists must be a minimum of 18" above ground surface. A 6 mil or greater black polyethylene sheeting must be in place covering 100% of the ground and overlapping a minimum 6" at seams acting as a moisture barrier. This polyethylene sheeting must run up the walls no less than 6". Air venting must be open on all sides and open no less than 1.5% of the total crawlspace area.
4. Plastic sheeting is not recommended over wood subfloors.

RADIANT HEAT GUIDELINES

1. Embedded radiant heating elements are acceptable in the subfloor provided they are a minimum of 1/2" from Shenandoah in final installation.
2. Material covering embedded radiant heating elements should still meet subfloor standards.
3. To install Shenandoah over radiant heating systems, system should be running and operational for at least 2 weeks prior to installation. System temperature should be reduced to 65°F or cooler 72 hours before installation. After installation, increase temperature in increments of 5°F per 24 hours period to avoid overheating. Once installed, the floor temperature should never exceed 85°F.

INSTALLATION INSTRUCTIONS

Required Tools

1. Appropriately sized spacers, depending on the installation dimensions
2. Tape measure
3. Cutter
4. Rubber mallet

Installation Steps

1. After determining the wall you'd like to be parallel to the long side of the product, start on the left end of that wall. When installing, the tongue side of the pieces should face your starting wall.

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2. Ensure your starting piece is no less than one third the size of your total piece.
3. Should you need to disassemble two pieces on the long side, you can lift to the same angle used when assembling the pieces. Failure to disassemble correctly can damage the pieces.
4. Should you need to disassemble two pieces on the short side, first disengage both pieces on the long side, then you must slide the pieces apart, keeping them both flat to the floor. Failure to disassemble correctly can damage the pieces.
5. If poly film is required for installation, install the first row of poly film before installing the material. Run the poly film up the walls prior to installation and trim after installation is finished, being sure not to impede the expansion space of the product. Do not install more than one row of poly film at a time to avoid slip hazard. Seams must be taped for concrete substrates with a minimum 4" overlap. Ensure poly film is smooth and flat before laying flooring pieces over it.
6. Use the appropriate amount of expansion space based on the installation dimensions for all fixed obstructions. Under cut door jambs where necessary to provide the same amount of expansion as along walls. Do not under cut metal door jambs without checking local building codes.
7. It is the responsibility of the installer to ensure that all subfloor requirements are met. Refer to the subfloor requirements section of the installation instructions before proceeding.

Installation Steps

1. Working from multiple cartons, dry lay several rows of material to ensure desired aesthetic.
2. Measure the room to ensure that the last row will not be smaller than $\frac{1}{2}$ the width of the product, nor the last piece of a row smaller than $\frac{1}{4}$ the length of the product. If so, rip the first row to accommodate the last row and/or cut the first piece to accommodate the last.
3. It is very important that the first row is installed straight, while accommodating proper expansion space. Installation alternates back and forth between rows one and two, for the first two rows only. Start with an appropriately sized, cut piece and position this piece close to the wall.
4. Now use a full-size piece. Using the Click4U™ angle system, angle the long side of piece 2 on to the long side of piece 1. Drop piece 2 to lock. Make sure there are no gaps. If gaps are present, use firm manual pressure to pull the plank towards the grove side of the previous row. Do not use a tapping block.
5. Take another full-size piece. Repeating the previous step, insert the long side of piece 3 into the long side of the top of piece 2. Then slide piece 3 to your left until the short side is in contact with the short side of piece 1.
6. Using the 3L TripleLock™ one-piece drop-lock system, drop the short side of piece 3 onto the short side of piece 1.
7. Using firm, manual pressure or a rubber mallet, lightly tap the joints on the short side to secure.

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This fastens the triple lock mechanism into place. Using excessive force while tapping may result in post-installation disengagement.

8. Finish rows 1 and 2 by continuing to alternate pieces on rows 1 and 2 to avoid misalignment. Ensure proper spacing with appropriately sized spacers before moving on to the third row. From row 3 onward, installation does not require alternating rows. Install one row after another by starting with angling the long side, sliding until the short sides are in contact then locking the short side.
9. As you go, don't forget to use firm, manual pressure or a rubber mallet on the short sides to secure the end joints. Pieces that are correctly engaged on the short side will not lift from one another and must be disassembled with the horizontal sliding motion described in Installation Note 4.

MOLDING INSTALLATION

1. When you have finished installing Shenandoah, remove perimeter spacers, and ensure you have maintained the required expansion space in all instances. Protect all edges with non-pinning base boards, transition strips, or quarter round.
2. Eastern Flooring Products™ recommends using stair caps on stairs when possible. Matching stair caps and risers can be purchased from your source for Shenandoah.
3. All moldings and trim should be thoroughly inspected and dry fit prior to the installation of Shenandoah to ensure proper fit, finish, and match.
4. Do not install transition strips to the pieces of flooring, except when instructed to do so in stairnose installation instructions. Do not nail, staple, or screw moldings through the floor into the subfloor. Do not pinch the floor with transitions or perimeter molding, such as baseboards or quarter round.

AFTER INSTALLATION

1. All vinyl floors can be scratched in abusive situations. To avoid scratching your floor:
 - a. All furniture must be equipped with felt pads to avoid scratching the floor. Heavy furniture and appliances must be equipped with non-staining large surface floor protectors. Furniture with wheeled castors should only have 2" or wider castors no less than 4" in diameter.
 - b. Regularly sweep or vacuum floors to keep your floor free of debris. Debris can become trapped in shoes, castors, or other acceptable contacts with floor and create scratches. Do not use vacuums with beater bar attachments on.
 - c. Keep pets' nails trimmed.
 - d. Avoid sliding things across the floor that could have rough edges or trap debris.
 - e. Avoid high heeled shoes as they can create pressure of over 500PSI which may scratch or indent floors.

2. Eastern Flooring Products™ doesn't recommend any sort of heavy rolling traffic on floating floors. Office areas must have a protective mat under chairs and be equipped with soft, non-marking, roller blade style wheels. Do not use ball-type castors.
3. Floating floors must not be pinned with fixed cabinetry, heavy equipment, or other heavy items. This includes kitchen cabinets/islands, slate pool tables, safes, or other heavy objects that would keep the floor from floating freely. If you have a question about a given piece of furniture or otherwise heavy object, please contact point of sale.
4. Furniture should be moved onto the newly installed floor using an appliance hand truck over hardboard runways.
5. Oil or petroleum-based products can result in surface staining. Do not track asphalt driveway sealer or other oil-based products on the floor.
6. Use walk-off mats at entrances to prevent dirt, grit, and staining substances from damaging the floor. Use mats with non-staining backs, as rubber may discolor the floor.
7. Eastern Flooring Products™ does not recommend the use of steam cleaning devices of any sort, abrasive cleaners, harsh chemicals, detergents, or "mop and shine" products. If you have a question about care and maintenance, consult the Eastern Flooring Products™ Care and Maintenance Guide.

REPORTING A PROBLEM

1. If you think there is something wrong with your floor that is covered by this warranty, immediately contact the company you purchased the floor from within 48 hours of noticing the problem. Subsequent damage to the floor is not covered by the warranty.
2. Do not walk or roll anything over the affected area of the floor until the problem is identified or resolved.
3. If the company you purchased the product from determines there is a warranted issue with the floor, they will contact Eastern Flooring Products™ to file a claim. They are the only party that can file a claim or inquire as to the status of that claim.
4. Eastern Flooring Products™ has the unimpeachable right to decline a claim if not given the opportunity to inspect the floor in a timely manner. Floors that have been repaired, replaced, or permanently covered without manufacturer inspection will not be eligible to file a claim or receive compensation.

WARNING: Existing resilient floor coverings and black asphalt adhesive may contain asbestos. Improper removal procedures could release asbestos fibers into the air. Asbestos fibers, when inhaled, could cause serious bodily harm. Do not sand or dry scrape these materials. If removal of existing floor coverings is necessary, be certain that all precautions are taken and proper procedures are followed. For information regarding proper removal procedures in the U.S.A., please consult the Resilient Floor Covering Institute (966 Hungerford Drive, Suite 12-B, Rockville, MD 20850) for a pamphlet, "Recommended Work Practices for the Removal of Resilient Floor Coverings."