

Viking Flooring

3/4” Engineered Unfinished

Installation Instructions

IMPORTANT

**INSTALLATION OF ANY FLOORING
CONSTITUTES ACCEPTANCE OF ITS GRADE,
COLOR, AND MILLING**

**THE QUANTITY AND ACCURACY OF THE
PRODUCT ORDERED MUST BE VERIFIED AT THE
TIME OF DELIVERY.**

**PRODUCT CLAIMS MUST BE MADE BEFORE
INSTALLATION.**

**FLOORING MUST BE INSPECTED FOR QUALITY
OF MANUFACTURE, GRADE, COLOR, AND
MOISTURE CONTENT BEFORE INSTALLATION.**

**IT IS OUR RESPONSIBILITY TO PROVIDE A DRY,
WELL MANUFACTURED PRODUCT.**

**IT IS YOUR RESPONSIBILITY TO CONFIRM THIS
BEFORE INSTALLATION.**

READ ALL OF THESE INSTRUCTIONS BEFORE BEGINNING INSTALLATION. IN ADDITION TO THESE INSTRUCTIONS, IT IS RECOMMEND THAT THE INSTALLER FOLLOW ALL INSTALLATION GUIDELINES SET FORTH BY THE NATIONAL WOOD FLOORING ASSOCIATION (WWW.NWFA.ORG). WHERE THESE INSTRUCTIONS ARE DIFFERENT FROM NWFA GUIDELINES, THIS DOCUMENT TAKES PRECEDENCE.

Installation Instructions - INSTALLATION CONSTITUTES ACCEPTANCE

PRIOR TO INSTALLATION

It is the installer's responsibility to ensure that all these General Conditions are met prior to installation and that all specific installation instructions below for the installation method you have chosen (Glue Down, Nail Down, Nail Down with Glue Assist) is followed carefully. When installed according to these instructions, Viking engineered wood flooring is approved for use above, on and below grade. **When installing below grade, use the Glue Down method with an approved moisture vapor barrier.**

It is the installer's responsibility to inspect the flooring for proper grade, visible manufacturing defects, damage, or otherwise unsatisfactory appearance or condition. **Do not install damaged or visibly unsatisfactory material. Installation of any flooring constitutes acceptance.** If necessary, contact your local retailer or distributor regarding any unsatisfactory material **PRIOR TO INSTALLATION.**

NOTE: When nailing wide plank flooring to a wood subfloor, we recommend both nailing and gluing (see below under Nail Down with Glue Assist Installation Instructions for details).

GENERAL JOB SITE CONDITIONS – ALL INSTALLATION METHODS

Environmental Conditions

When wood absorbs moisture, it expands and when it expels moisture it contracts. To minimize moisture related expansion and contraction, verify the following conditions prior to installation:

- All exterior walls, windows, and doors must be in place and the building closed during temperature acclimation and installation.
- All wet work such as painting, drywall, masonry, tile, stone, and concrete must be completed and dry.
- Basements and crawl spaces must be dry and well ventilated. Crawl spaces must be a minimum of 18" high from the ground to the bottom of the joist. Dirt floors in crawl spaces should be covered with a 6-10 mil black plastic to reduce moisture migration. Seams should overlap and be sealed with waterproof tape. Perimeter crawl space cross ventilation should equal 1.5% of the square footage. Vents must remain open year-round.
- Permanent HVAC should be on, operational and maintained between 60-75°F with relative humidity of 35%-55% for a minimum of 7 days prior to delivery, as well as during and after installation of the flooring. Humidity levels below 35% may cause movement in the flooring, including gapping between pieces and cupping and cracking in the face. Use of a humidification and/or dehumidification system may be required to maintain proper humidity levels.
- Exterior grading should be complete and drainage should move away from the building structure with a minimum drop of 3" in 10'.

Flooring Temperature Acclimation

Store the sealed cartons in the installation area at the job site for 48 hours to adjust to room temperature and then install directly out of freshly opened cartons. Work from several cartons at the same time and shuffle boards for the best visual appearance. **Do not open cartons prior to installation.**

Subfloor Conditions

Subfloors must be:

Clean - Subfloors must be scraped clean and free of debris. Sweep and /or vacuum all debris from the subfloor. Debris on the subfloor may cause overwood and uneven surfaces in the finished floor, poor fit between planks, and poor adhesive bond in glue down installations.

Flat - Subfloors must be flat to within 3/16" over any 10' radius and 1/8" over any 6' radius. Check the flatness using a straight edge, laser line or string line. Grind, scrape, sand or shim all high or low spots. On concrete subfloors, grind all high areas and fill low areas using a quality cementitious leveling compound. Ensure that all fasteners securing the subfloor are set flush.

Dry - Check and record all moisture and temperature conditions prior to installation. Visually check the jobsite for potential moisture problems. Look for signs of water intrusion around windows and doors. Check for mold or fungus on walls and all other areas. Water intrusion may necessitate structural repairs and/or create conditions unsuitable for flooring installation.

Plywood and composite subfloors should be checked using a calibrated moisture meter. Be sure to use the correct moisture meter setting for the species being checked. Carefully follow the moisture meter manufacturer's operation instructions. Moisture readings should not exceed 10% in any location and the moisture variation between the subfloor and the flooring should not exceed 2% at time of installation.

Concrete subfloors must be fully cured, at least 60 days old, and should have a minimum of 6 mil poly film between the concrete and ground.

Installations over concrete require a Calcium Chloride test per ASTM F 1869, or an in-situ relative humidity test using probes inserted into holes drilled into the concrete. Test all areas where wood will be installed. The results of the Calcium Chloride tests should not exceed 3 lbs. per 24 hours per 1000 square feet, and in-situ test results should not exceed 75% RH. Carefully record all results.

- NOTE: These tests give a snapshot of moisture conditions at the time of the test, but do not reflect the permanent year-round condition of the substrate.

If gluing down on concrete that is on or below grade, it is highly recommended to use a concrete sealer approved by the manufacturer of the adhesive you have chosen, even if you believe the concrete is dry. A concrete slab on or below grade that measures dry today may become moist in the future and cause floor failure. Viking Flooring is not responsible for site related moisture issues.

Structurally Sound -- Wood subfloors must be well fastened. Use screws every 6" and replace subfloor panels/boards as necessary to eliminate all movement and squeaking.

Acceptable subfloor types:

- CDX plywood - at least 5/8" thick for joist spacing up to 16" on center, minimum 3/4" thick for joist spacing greater than 16" on center (19.2" maximum). Plywood subfloors installed over concrete must be installed in accordance with the guidelines set forth by the National Wood Flooring Association (NWFA)

– www.nwfa.org).

- OSB -- at least 3/4" thick, PS 2--92 rated or PS 1--95 rated.

- Existing hardwood flooring over a suitable subfloor as outlined above. The existing floor must be well fastened, smooth, and for glue down installations, unfinished.
- Underlayment grade particleboard (minimum 40 lb. density) - **Glue Down only.**
- Concrete slab - **Glue Down only.** Concrete must be at least 3000 lbs. density for glue down installations.
- Lightweight concrete (gypcrete) – NOT APPROVED
- Ceramic tile – NOT APPROVED
- Resilient tile & sheet vinyl - **Glue Down only;** for glue down, tile/vinyl must be new and not have any urethane coating (many luxury vinyl flooring products now come with a urethane top coating).

Preparing the Perimeter

- Undercut door trim, jambs, and casings to the thickness of the flooring plus any adhesive or underlayment you plan to use.
- All wood flooring expands and contracts with changes in humidity. It is essential to install the floor leaving adequate expansion space between ALL sides of the flooring and ALL vertical obstructions, including door trim, jambs, studs, plumbing, cabinets, etc. This space can be covered with base molding, quarter round or shoe molding. **Failure to provide adequate expansion space in any single location can cause damage to the entire floor. Minimum expansion space is 5/8".**

Layout

On wood subfloors, if the subfloor is fastened to joists or trusses, the flooring should be installed perpendicular or at a 45° angle to the joists/trusses. If possible, use an outside wall as the starting wall.

General Tools and Accessories recommended (all installation methods):

- Pencil -Tape Measure -Safety Glasses -Utility Knife -Moisture Meter -Hammer -Shim Wedges
- Tapping Block -Rubber Mallet -Carpenter square -Pry bar or pull bar -Wood Filler -Scraper -Dust Mask
- Rags -Chalk Box & Chalk -Recommended Saws: power miter saw, table saw, jamb saw

Once all these General Conditions are met, continue the installation using the instructions for the type(s) of installation you have chosen (Nail Down, Nail Down w/ Glue Assist, Glue Down).

NAIL DOWN INSTALLATION INSTRUCTIONS

Viking Engineered Wood Flooring can be nailed to plywood, OSB and existing wood flooring meeting the requirements outlined above under 'Subfloor Conditions.'

IMPORTANT: FOR 9" AND WIDER FLOORS NAIL DOWN W/ GLUE ASSIST OR GLUE DOWN (FULL SPREAD ADHESIVE) INSTALLATION METHODS LISTED BELOW MUST BE USED. NAIL DOWN ONLY INSTALLATION IS NOT AN ACCEPTABLE INSTALLATION METHOD FOR 9" AND WIDER FLOORS.

For Nail Down Installations, you will need the General Tools and Accessories, plus:

- Nail set -Tack Stapler or 1" roofing nails (for felt)
- 6d Finish Nails or Pneumatic Finish Nailer with 1 1/4" to 1 1/2" fastener
- Blind Stapler/Nailer (Manual or Pneumatic) with 1 1/2" - 2" Fasteners for flooring 3/4" thick; cleats are recommended over staples (always do a test plank to verify that fasteners are seating properly and not causing dimpling in the face of the flooring before proceeding with the installation)
- Compressor with hose (if pneumatic tools are used)
- 15 lb. roofing felt, #15 hardwood floor underlayment felt, or other suitable underlayment paper

Nailing Down the Floor

1. After installing underlayment paper per the manufacturer's instructions, measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks.
2. Lay the tongue side of the first row of flooring along the chalk line facing out from the starting wall. Face nail (top nail) the first row of flooring in place. Place the fasteners approximately 3/4" from the wall side (groove side) of the flooring board every 4" to 6". Continue the first row installation blind nailing every 4" to 6" along the tongue and every 2" to 3" from every end joint.
Note: Blind nailing of the first row may require the installer to use 6d finish nails or the pneumatic finish nailer along the tongue.
3. Continue the installation across the room, blind nailing every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 18". Avoid creating "H" patterns (where an end joint is adjacent to another end joint in the second to last row installed). Use cut pieces or starter pieces to start the subsequent row, discarding any pieces shorter than 12".
4. Trim the last row of flooring to maintain the minimum expansion space at the far wall.
5. At the far (finish) wall, it may be necessary to face nail the last 2-3 rows due to the angle of the stapler/nailer. The last row or two of flooring may need to be pulled together using a pulling bar.
6. Complete the installation by reinstalling or installing new base moldings, quarter round or shoe molding.

NAIL DOWN w/ GLUE ASSIST INSTALLATION INSTRUCTIONS

RECOMMENDED FOR 5" UP TO 8" WIDE FLOORING FOR BEST RESULTS.

FOR 9" AND WIDER FLOORING, NAIL DOWN w/ GLUE ASSIST OR GLUE DOWN (FULL SPREAD ADHESIVE) INSTALLATION METHOD IS REQUIRED.

Viking engineered wood flooring can be nailed to plywood, OSB and existing wood flooring meeting the requirements outlined above under 'Subfloor Conditions' using a glue assist method as described below. This is recommended for optimal performance and to minimize squeaking and floor movement.

For nail down with glue assist installation, you will need the General Tools and Accessories, plus:

- Adhesive: Bona, Stauf or Bostik wood flooring adhesive or equivalent quality adhesive recommended by the adhesive manufacturer for wood flooring installations.
- Adhesive remover recommended by the manufacturer of the adhesive selected
- Adhesive applicator recommended by the manufacturer of the adhesive selected
- Liquid moisture barrier compatible with flooring adhesive (recommended)

Nail Down w/ Glue Assist Notes

1. Do not use roofing felt or other underlayment paper when using adhesives. Where applicable, the use of a liquid-applied, or similar Class II vapor retarder that is compatible with the adhesive should be used to help prevent potential moisture issues in a glue-assist installation. **NEVER INSTALL FLOORING OVER A KNOWN MOISTURE CONDITION.**
2. Test the adhesive to ensure compatibility with the flooring and sub-floor before installation.
3. Nailing schedule should remain the same as a regular nail down installation. The use of adhesive is intended as a supplement, not a replacement, to the mechanical fastening method.

4. Follow all instructions and requirements recommended by the adhesive manufacturer including moisture barrier systems, temperature, humidity, ventilation, spread rate, open time, proper equipment, clean-up, and cure time.
5. Do not allow adhesive to dry on the face of the flooring.
6. The performance of the adhesive is the responsibility of the adhesive manufacturer and careful adherence to the adhesive manufacturer's installation instructions for the subfloor surface is crucial. Viking Flooring does not guarantee the adhesive bond between the subfloor and the wood flooring.

Nailing Down the Floor w/ Glue Assist

1. Measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks.

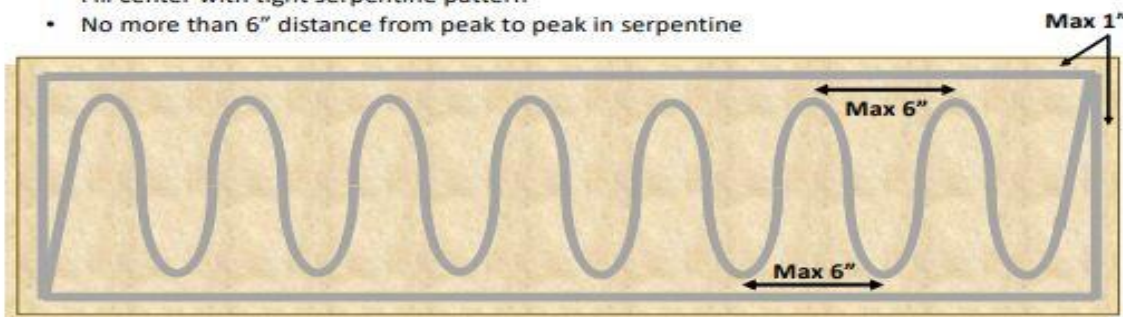
2. Lay the tongue side of the first row of flooring along the chalk line facing out from the starting wall. Face nail (top nail) the first row of flooring in place. Place the fasteners approximately 3/4" from the wall side (groove side) of the flooring board every 4" to 6". Continue the first-row installation blind nailing every 4" to 6" along the tongue and every 2" to 3" from every end joint.

Note: Blind nailing of the first row may require the installer to use 6d finish nails or the pneumatic finish nailer along the tongue.

3. In addition to nailing, apply a minimum 1/4" – 3/8" wide, uniform bead of adhesive in a serpentine pattern, or as the adhesive manufacturer recommends, to the subfloor along the center of each row of flooring, along with a perimeter bead of adhesive along all four edges. The adhesive should be applied so that it covers the entire width and length of each plank, to at least 1" of the ends and edges of each board, with no more than 6" distance from peak to peak in the serpentine pattern. See image below for reference.

'Serpentine + Perimeter' Glue Pattern for Glue Assist Nail Down Install

- Use minimum 1/4" thick bead of adhesive
- Apply perimeter stripes along all four edges, within 1" of edge
- Fill center with tight serpentine pattern
- No more than 6" distance from peak to peak in serpentine



4. NOTE: The installer should either stand on the floor or apply a downward pressure to the surface of each piece of flooring as it is being nailed. This will ensure the flooring does not pull away from the subfloor causing unnecessary movement or hollow noises.

5. Work from several cartons at the same time and shuffle boards for the best visual appearance. Continue the installation across the room, blind nailing every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 6". Avoid creating "H" patterns (where an end joint is adjacent to another end joint in the

second to last row installed). Use cut pieces or starter pieces to start the subsequent row, discarding any pieces shorter than 8”.

6. Trim the last row of flooring to maintain the minimum expansion space at the far wall.
7. At the far (finish) wall, it may be necessary to face nail the last 2-3 rows due to the angle of the stapler/nailer. The last row or two of flooring may need to be pulled together using a pulling bar.
8. Complete the installation by reinstalling or installing new base moldings, quarter round or shoe molding.

GLUE DOWN (FULL SPREAD ADHESIVE) INSTALLATION INSTRUCTIONS

FOR 9” AND WIDER FLOORING, NAIL DOWN w/ GLUE ASSIST OR GLUE DOWN (FULL SPREAD ADHESIVE) INSTALLATION METHOD IS REQUIRED.

Viking Engineered Wood Flooring can be glued down to concrete, plywood, OSB, underlayment grade particleboard, and existing wood floors meeting the requirements outlined above under General Conditions/Subfloor Conditions. Viking Engineered Wood Flooring can also be glued to other surfaces: well-adhered sheet vinyl, vinyl tile, etc., but the performance of the adhesive is the responsibility of the adhesive manufacturer and careful adherence to the adhesive manufacturer’s installation instructions for that subfloor surface is crucial. Viking Flooring does not guarantee the adhesive bond between the subfloor and the wood flooring. **When installing below grade, an approved moisture vapor barrier system must be used in addition to the wood floor adhesive.**

For Glue Down Installations, you will need the General Tools and Accessories, plus:

- Adhesive: Bona or Bostik wood flooring adhesive or equivalent quality adhesive recommended by the adhesive manufacturer for wood flooring installations.
- Adhesive remover recommended by the manufacturer of the adhesive selected
- Adhesive trowel recommended by the manufacturer of the adhesive selected
- Moisture vapor barrier approved for use with the adhesive when installing below grade.

Gluing Down the Floor

1. Measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks. Install backer boards as guides along the wall side of the chalk line. Anchor the backer boards in place with screws or finish nails. Over concrete subfloors anchor the backer boards with concrete screws or concrete nails. These boards will be removed later.
2. Lay the first row of flooring, but do not glue it into place. Align the tongue side of the flooring boards against the backer board. Use cut ends to start the subsequent row, discarding any pieces shorter than 12”. Dry lay the next two rows of flooring in place, sliding the tongue into the groove. End joints should be staggered by at least 18”. Pull the rows of flooring boards away from the backer board approximately 24” to allow for the glue to be spread.
3. Trowel spread the adhesive on the subfloor along the backer board wide enough to allow the first three rows of flooring to be installed. Follow the adhesive manufacturer’s recommendations for wet lay times before proceeding to the next step.
4. Install the first row of flooring, pressing the tongue to the backer board. Slide the tongue of the next row of flooring into the groove of the first row and continue until the first three rows are done.

5. Trowel spread adhesive and continue the installation across the room. Trim the last row of flooring to maintain the minimum expansion space at the far wall. Be careful not to move the installed flooring out of position. Using knee--boards can help prevent movement. Some flooring boards may need to be tapped or pulled into place with a tapping block or pull bar.
6. Most adhesives require that the installer clean the adhesive off the flooring boards during the installation. Follow the adhesive manufacturer's recommendations for this procedure.
7. Once the room is finished, remove the backer boards from the starter row.
8. Dry lay the first row of flooring to replace the backer board. Trowel spread the adhesive on the back of the flooring boards (not on the subfloor) and install the flooring, sliding the tongue into the groove of the already installed starter row. Doorways and other openings may require installation of the flooring the same way. Slide the flooring boards under the previously cut door trims and casings.
9. Complete the installation by reinstalling or installing new base moldings.
10. Do not allow foot traffic on the floor for at least 24 hours after installation is complete.

NOTE: FLOATING FLOOR INSTALLATION IS NOT RECOMMENDED FOR UNFINISHED VIKING FLOORING

Installer Responsibilities: INSTALLATION CONSTITUTES ACCEPTANCE

- Carefully follow the flooring installation Instructions.
- Verify that installation and/or site conditions are adequate for the installation and ensure that humidity and temperature conditions are maintained before and during acclimation and installation.
- Verify that the subfloor is clean, dry, flat, and structurally sound per the requirements listed in the installation instructions.
- Verify that the flooring has been properly acclimated to temperature.
- Check the flooring for manufacturing defects and/or visible damage. The installer is the final grader of the flooring product. Installation of a floor is considered acceptance of the floor by the installer for grade and milling. Verify prior to installation that any hardwood flooring that will be installed has been manufactured within acceptable tolerances and is satisfactory to the end user. If in doubt, do not install. It is the installer's responsibility to stop the installation within 100 SF or 10% of the flooring boxes opened, whichever is less.