

Installation Instructions

Forest Accents

Engineered Hardwood Flooring



Forest Accents[®]

Attention

Before starting installation, read all instructions in entirety. Installation instructions and maintenance procedures must be followed in entirety for warranties to be considered valid. Forest Accents desires for you to have the best performing floor possible. For proper performance, it is your responsibility to handle and install this product in strict adherence to these installation instructions. Beautiful hardwood floors are a product of nature. This flooring is manufactured in accordance with accepted industry standards, which permit a defect tolerance not to exceed 5%. Such defects may be manufacturing or natural. Hardwood flooring is a product with natural variations in color, tone, and grain. We cannot warrant against color variations within a floor or variations between samples and the installed floor. **INSTALLATION OF FOREST ACCENTS CONSTITUTES ACCEPTANCE OF THE FLOOR'S GRADE, COLOR, MILLING, SHEEN, AND FINISH.**

Pre-Inspection, Handling, and Acclimation

- We **require** the homeowner and installer to inspect the flooring in well-lighted conditions prior to installation to ensure the flooring is satisfactory. If there is a concern with the flooring, the decision not to proceed with the installation must be made within the first 10% of the total square footage or 100 square feet of flooring boxes opened, whichever is less. Boxes of flooring that are opened in excess of the 10% of total square footage or 100 square feet, (whichever is less) are not eligible for return including boxes left over from a completed job. Flooring that has been installed will be deemed to have been inspected and accepted by the owner and installer. Forest Accents will not be responsible for flooring that has been installed with visible defects.
- Pre-inspect the job site prior to delivery of the Forest Accents. It is the responsibility of the owner and installer to ensure that the building is suitable for the installation of engineered hardwood flooring.
- A wood flooring professional should have a general understanding of the geographic climate zone for the building that is receiving the wood floor and can thus make a decision as to whether the interior conditions of the structure will allow for wood flooring to be installed and the best means of installation.
- Evaluate the exterior of the building to ensure that the jobsite is ready to receive wood flooring. Grade level of the structure as well as site drainage should be documented. Also, the installer should identify any areas within the structure that wood flooring is being installed that are adjacent to unconditioned (no heat/no A/C) spaces. Any concerns should be addressed with the homeowner and/or builder prior to beginning installation. Forest Accents engineered wood flooring can be installed below, on, or above grade. Forest Accents is not responsible for flooring failure due to poor or unsatisfactory jobsite conditions.
- Be mindful that foundation issues become flooring issues. Cracks in foundations can be a sign of moisture intrusion or structural damage that needs to be repaired by a qualified contractor prior to the installation of wood flooring.
- The conditions in the space in which the wood flooring is being installed will directly impact the performance of the wood flooring. Wood flooring should **never** be stored, nor packages opened, on a jobsite where there is no climate control (no heat/no A/C).
- Wood flooring should be one of the last jobs completed in any new construction or remodel project.
- Flooring should not be delivered until the structure has been fully closed in with windows, doors, siding, soffits, roof coverings, insulation, and ventilation in place. The structure must be fully enclosed and protected from outside weather conditions. All wet work including cement, masonry, plastering, drywall, painting, and all other “wet” work must be completed and dry. This includes any wall coverings, including painting except for the final coat of paint on base molding. Concrete work must be at least 60 days old.
- Never unload or transport flooring in rain, snow, or excessive moisture conditions.
- The structure must have permanent mechanical (heating, cooling, dehumidification, and humidification) systems in place and operational. These systems **must** be operating a minimum of 14 days prior to the delivery of the wood flooring. In the dry (heating) season, a humidifier is recommended to prevent excessive shrinkage in wood floors due to low humidity levels. Use of wood stoves and electric heat can create very dry conditions. In the non-heating (humid/wet) season, proper humidity levels can be maintained by use of air conditioning systems and dehumidifiers. Avoid excessive exposure to water from foot traffic during periods of inclement weather.
- The installer should test and document the temperature and relative humidity in each room that the wood flooring will be installed.
- Climate control at the job site must be maintained with the temperature between 60-75 degrees Fahrenheit and relative humidity within 30-50% **before, during, and after installation**. These conditions

should be maintained at least 14 days prior to installation. Following installation, these conditions should be maintained **at all times** to ensure proper performance of the floor.

- The space below the flooring system should be free of any standing water or high humidity levels or any evidence of such.
- Prior to the delivery of the flooring, the installer should take readings of the jobsite temperature and humidity levels as well as a reading of the moisture content of the subfloor to ensure compliance with requirements for the wood flooring. These readings should be documented.
- Upon delivery of the wood flooring, the installer should check the temperature, humidity levels, and moisture content of the subfloor. The readings should be documented.
- Upon delivery, multiple boards of flooring from several different bundles or boxes should be checked for their moisture content (MC) using a moisture meter. Check with the moisture meter manufacturer for the correct setting for the wood species being tested. These readings need to be documented. MC readings of the wood flooring need to be taken on a minimum of 40 boards for up to the first 1,000 square feet, and an additional 4 readings per 100 square feet thereafter. Document the results in writing and with pictures. Do the math to get an average reading. More readings will result in a more accurate average reading. If a pin-type moisture meter is used, take the readings from the back of the boards so as not to damage the face of the flooring. Any boards that register with an unusually high or low moisture content should not be installed. Forest Accents will not warrant any floor failure issues arising from moisture issues.
- To ensure optimal acclimation, Forest Accents recommends cross stacking planks in the building in which the flooring will be installed. Stack on a pallet at least 4" off the ground. This will allow for proper air flow.
- Upon delivery, calibrate the moisture meter to take subfloor readings. Again, consult the manufacturer of the moisture meter to determine the correct setting. Once your moisture meter is calibrated, take MC readings in a minimum of 20 test locations for up to the first 1,000 square feet, and an additional 4 readings per 100 square feet thereafter. Document the results in writing and with pictures. You should test the subfloor MC in areas that represent the entire scope of the project and should include a minimum of 3 tests per room receiving the wood flooring. Again, do the math and get an average of the readings. More readings will result in a more accurate average. The moisture content of the subfloor must not exceed 12%. The moisture content of the flooring should not be more than 2% different than the subfloor moisture content for flooring that has a face width of 3" or greater and not more than 4% different for flooring that has a face width of less than 3". Any unusually high or low subfloor moisture reading should be dealt with prior to the installation of any wood flooring. Forest Accents **will not** warrant any floor failure issues arising from moisture related issues.
- Once the wood flooring is delivered and the MC is compliant with the expected normal living conditions and the required temperature and relative humidity levels have been maintained for a minimum of 14 days, the flooring may be installed.

Basements and Crawlspace

- Basements and crawlspaces must be dry, weather tight, and well-ventilated prior to installation of wood flooring.
- The environmental conditions of basements will change from season to season which may affect the wood flooring that is installed above. Be careful to make sure to evaluate the environment of the basements prior to installation and at several times during the year to ensure the basement is dry and maintained at the proper humidity and temperature levels.
- Relative humidity of basements should not vary more than 10% higher than the relative humidity of the upper floors.
- Changing a basement space from unfinished, meaning no climate control, to a finished space, meaning insulated walls and a climate-controlled space, could affect an already installed wood floor.

- In a crawlspace, the distance from the earth to the underside of the floor joist must be 18” and a minimum of 12” from the earth to the underside of the beams. The piers should be set on the footings evenly.
- The International Residential Code (IRC), section R408, gives standard requirements for ventilation in crawlspaces. As per the IRC, the underfloor space between the bottom of the floor joists and the earth under any building (except space occupied by a basement) shall have ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet of under floor space area unless the ground surface is covered by a Class I vapor retarder material. When a Class I vapor retarded material is used, the minimum net area of ventilation openings, shall not be less than 1 square foot for each 1500 square feet of under floor space area. One such ventilation opening shall be within 3 feet of each corner of the building.
- Crawlspaces are considered enclosed and conditioned spaces when they meet all the requirements of IRC R408.3, and the entire space is conditioned and maintained at the same temperature and humidity levels as the above interior living space. IRC R408.3, does not require ventilation openings in crawlspaces where the following conditions are met:
 1. A ground cover of 6-8 mil black polyethylene film to serve as a vapor retarded is present. The vapor retarder should overlap by 6” and be taped to create a seal. The edges of the vapor retarder should extend not less than 6” up the stem wall and should be attached and sealed to the stem wall or the insulation; and
 2. One of the following is provided for the crawlspace:
 - a. Continuously operated mechanical exhaust ventilation at a rate equal to 1 cubic foot per minute for each 50 square feet of crawlspace floor area, including an air pathway to the common area, and perimeter walls insulated per IRC Section N1102.2.22, or
 - b. Conditioned air supply that will deliver at a rate of 1 cubic foot per minute for each 50 square feet of crawlspace floor area, including an air pathway to the common area, and perimeter walls insulated per IRC Section N1102.2.22, or
 - c. Plenum, which is a chamber that forms part of an air-circulation system other than the occupied space being conditioned, in existing structures in compliance with IRC Section M1601.5, if the crawlspace is used as a plenum, or
 - d. Dehumidification system that delivers 70 pints of moisture removal per day for every 1,000 square feet.
- Vapor retarder installed on the underside of the joists. For hot and humid climates, see the IRC Section 408.8. In IRC Section 408.8, there is a standard requirement for installation of a continuous Class I or Class II vapor retarded to be installed on the exposed face of insulation installed between the floor joists and exposed to the grade in the under floor space. There are some exemptions. See IRC code for more specific detail.
- Building codes in specific climate regions dictate crawlspace construction methods and best practices related to installation of insulation and moisture control systems. Be sure your crawlspace complies with current building codes prior to the installation of Forest Accents flooring.
- **Never install Forest Accents engineered wood flooring over a known moisture issue.**

Subfloor Requirements

Wood Subfloors and Wood Structural Panel Subfloors

- Preferred subfloor surfaces are 3/4” CDX grade plywood and 3/4” OSB PS2 rated underlayment. These preferred subfloor recommendations allow for 19.2” O/C joist spacing if the joist manufacturer’s recommended span is not exceeded. Joist spacing that exceeds 19.2” O/C may not offer optimum results.

- Plywood subfloors should meet or exceed the most up-to-date U.S. Voluntary product standard of PS 1 performance for Construction and Industrial Plywood. It should also meet the requirements of the International Residential Code (IRC) and the International Building Code (IBC) at the time it was manufactured. The subfloor system must meet or exceed all applicable standards of the construction and materials industry. The final wood floor installation is only as good as the subfloor it is installed over.
- Oriented strand board (OSB) subfloor panels should meet the U.S. Voluntary PS 2 performance standard as well as the IRC and IBC codes. The OSB board must be installed sealed side down.
- When possible check the back of the subfloor panel for identifying information about the panel. The underside of the installed panel should contain a stamp from an accredited testing agency indicating that it complies with the PS1 or PS2 standard at the time it was manufactured.
- It is the responsibility of the flooring installer to make sure the subfloor is in acceptable condition before beginning the installation of the hardwood flooring. If there is undesirable noise, movement, loose fasteners, delamination, water damage, or other types of damage within the subfloor system, or the subfloor does not meet building code standards, then the wood flooring should not be installed until all the issues are addressed appropriately.
- The subfloor must be clean, flat, structurally sound, and dry.
- The subfloor must be free of wax, paint, oil, and/or debris.
- Subfloor flatness can be assessed by using a laser-level, a string line, or a straight edge and taking measurements across the plane of the line to determine flatness.
- Where one room meets another, the flatness of the subfloor should be within standard building code tolerances. Where adjoining rooms are not within tolerance, or are on a separate plane, or adjoining a ramp, a custom transition will be required.
- The subfloor should be flat to within minimum tolerance of 1/8" in 6', or 3/16" in 10'. Sand the high areas or joints. Low spots can be flattened using shims or layers of builder's felt between the wood and the subfloor during installation. For floating installations, the subfloor should be flat to within a minimum tolerance of 1/8" in 6' or 3/16" in 10'. Forest Accents engineered wood flooring should never be floated over non flat surfaces or ramps.
- Ensure the subfloor is structurally sound by nailing or screwing down any loose areas that squeak. Replace any water damaged, swollen, or delaminated subflooring or underlayment, as they are not properly suited to hold fasteners. Subfloors with excessive vertical movement should be avoided unless they have been properly stiffened prior to the installation of the wood flooring. Optimum performance of the wood flooring occurs when there is no horizontal or vertical movement of the subfloor.
- Check moisture content of subfloor. Take MC readings in a minimum of 20 test locations for up to the first 1,000 square feet, and an additional 4 readings per 100 square feet thereafter. You should test the subfloor MC in areas that represent the entire scope of the project and should include a minimum of 3 tests per room receiving the wood flooring. Again, do the math and get an average of the readings. More readings will result in a more accurate average. The moisture content of the subfloor must not exceed 12%. The moisture content of the flooring should not be more than 2% different than the subfloor moisture content for flooring that has a face width of 3" or greater and not more than 4% different for flooring that has a face width less than 3". Any unusually high or low subfloor moisture reading should be dealt with prior to the installation of any wood flooring.
- Installation of the hardwood flooring should be perpendicular to the floor joists when possible. Installations should not be made parallel to the floor joists or on joist spacing that exceeds 19.2" O/C unless the subfloor has been properly stiffened. Stiffening may require that the addition of a second layer of subflooring material to bring the overall thickness to 1-1/8".

Subfloor Requirements

Wood Subfloor Systems over Concrete

- The concrete must be of high compressive strength and must meet all moisture requirements.
- Testing the moisture content of the concrete slab will help give the installer the ability to know when the job can be started and what products are appropriate for the install. Testing of a new concrete slab should begin no earlier than 30 days after its installation.
- All testing of concrete slabs should be performed as dictated by the American Standard Test Method (ASTM) concrete standards. Common ASTM tests are:
 1. ASTM 1869 Calcium Chloride
 - a. The Calcium Chloride test measures the moisture vapor emission rate (MVER) of a concrete subfloor using anhydrous calcium chloride. The results of this test do give quantifiable results.
 - b. Results are shown as pounds of water over a period of 24 hours, per 1,000 square feet.
 - c. Ambient conditions must be 65°-85° Fahrenheit and 40% - 60% relative humidity for a minimum of 48 hours prior to the test.
 - d. Each area tested must be at least 20" x 20", clean, and free of any debris.
 - e. If the MVER reading is greater than 3 pounds per 1,000 square feet per 24 hours, it is highly recommended to wait for further drying of the slab. If unacceptable moisture levels are discovered, the use of a moisture vapor barrier is required.
 - f. Be careful to follow the instructions in the test kit to make sure you get accurate results.
 2. ASTM 2170 Relative Humidity
 - a. Relative humidity moisture testing is the standard test for determining relative humidity in concrete slabs using in-situ probes. The results of this test do give quantifiable results.
 - b. This method of testing predicts what the equalized relative humidity will be through the entire thickness of the slab once the flooring material is installed.
 - c. Normal living conditions should be maintained for 48 hours prior to testing.
 - d. Probes that have not been used for 30 days should be recalibrated prior to using.
 - e. Tests should be placed within 3 feet of each exterior wall.
 - f. Concrete slabs with a RH reading of more than 80% are highly recommended to wait for further drying of the slab. If unacceptable moisture levels are discovered, the use of moisture vapor barrier is required.
 - g. Be sure to follow all the test manufacturer's guidelines in performing the test to ensure accurate results.
- Test for moisture content in several areas and document readings. Be sure to test near exterior walls and walls containing plumbing.
- Concrete subfloors must be moisture tested and appropriate moisture control systems should be in place prior to the installation of any wood floor. A moisture barrier of a 6-8 mil poly film should be installed between the ground and the concrete. **Forest Accents engineered flooring cannot be installed over concrete unless a proper vapor barrier has been installed.**
- Wood flooring is not congruent with wet conditions. Forest Accents will not warrant our engineered flooring against moisture related issues or damages to the flooring arising from moisture related issues. Therefore, it is very important that you test for moisture prior to the installation of Forest Accents engineered hardwood flooring.
- Concrete moisture tests indicate the condition of the concrete slab at the time the test is taken under the specific ambient conditions at the time of the test. These moisture tests are not a predictor of future moisture content of the slab and cannot specify a permanent condition of the slab. This is increasingly true if an effective moisture vapor barrier is not present or has been compromised. All concrete slabs will

experience moisture changes over time. Due to the inevitability of concrete moisture emissions changing over time, we **highly recommend** that you choose an adhesive with moisture vapor barrier properties.

- Fortane MBA or Bona R540 are all good choices for moisture vapor barrier adhesives. Please be sure to follow adhesive manufacturer's recommendations.
- The concrete slab should be flat to within 1/8" in 6' or 3/16" in 10' prior to the installation of the wood flooring.

Subfloor Requirements

Concrete

- The flooring installer should be able to determine the type of concrete subfloor over which the wood flooring will be installed. The type of concrete subfloor determines the subfloor prep that is needed, the method of installation, how the moisture tests need to be conducted, and the type of flooring that is suitable for the job. Always follow the adhesive manufacturer's recommendation instructions for the appropriate subfloor.
- The installer must know the compressive strength of the slab to properly prepare the slab for wood floor installation. If the builder cannot tell the installer the compressive strength, run a nail forcefully across the surface. If it leaves an indentation, it will be necessary to apply a sealer. Follow the adhesive manufacturer's recommendation for sealers. The compressive strength of concrete can be tested according to ASTM C39. Normal compressive strengths are 3000 psi to 4000 psi. 3000 psi is the minimum compressive strength for wood floor installations.
- The slab must be constructed in such a way as to prevent groundwater from permeating the concrete
- Concrete subfloors must be moisture tested and appropriate moisture control systems should be in place prior to the installation of any wood floor. A moisture barrier of a 6-8 mil poly film should be installed between the ground and the concrete. Forest Accents engineered flooring cannot be installed over concrete unless a proper vapor barrier has been installed.
- Testing the moisture content of the concrete slab will help give the installer the ability to know when the job can be started and what products are appropriate for the install. Testing of a new concrete slab should begin no earlier than 30 days after its installation. Follow ASTM moisture testing guidelines as outlined on page 6 of these instructions.
- Concrete moisture tests indicate the condition of the concrete slab at the time the test is taken under the specific ambient conditions at the time of the test. These moisture tests are not a predictor of future moisture content of the slab and cannot specify a permanent condition of the slab. This is increasingly true if an effective moisture vapor barrier is not present or has been compromised. All concrete slabs will experience moisture changes over time. Due to the inevitability of concrete moisture emissions changing over time, we **highly recommend** that you choose an adhesive with moisture vapor barrier properties.
- A concrete subfloor must be sound, flat, clean, and dry prior to the installation of any wood flooring. Check for hollow spots, cracks, or crumbling areas. Do not install wood flooring over any areas that are compromised. Subfloor flatness should be measured across the span of the rooms receiving the wood flooring. Where one room meets another flatness should remain in tolerance. The subfloor should be flat to within the minimum tolerance of 1/8" in 6' and 3/16" in 10'. Self-leveling compounds should not be applied before the concrete moisture tests are done and favorable results are recorded. Remove all existing adhesives, oil, paint, wax, sealers, dust, drywall compounds, and any other surface compounds in entirety. Do not use solvent-based strippers to clean the slab since they can inhibit the bonding of moisture vapor adhesives. Adhesive materials must provide a resilient bond between the concrete subfloor and the flooring.

- **Slab-on-grade** is required to have an appropriate Class I vapor retarder that is in compliance with ASTM E1745 or ASTM E1993. The vapor retarder must be installed in accordance with ACI 302.2R which is the Guide to Concrete Slabs pertaining to Moisture-Sensitive Flooring Materials. Concrete slabs should have a Class I vapor barrier installed directly beneath them. Moisture testing of the concrete slab should be done using ASTM standards prior to the installation of any wood flooring.
- Lightweight concrete subfloors can accommodate wood floor installations; however, further preparation is required. Surface densifiers and hardeners must be properly applied prior to installation. Check with the adhesive manufacturer regarding requirements for proper wood floor installations over lightweight concrete. Lightweight concrete does require longer drying times than regular concrete because the aggregate used to make it is pre-saturated with water. ASTM F2107 is the approved moisture testing method for lightweight concrete. The floating installation method is the only suitable method of installation on lightweight concrete.
- Be aware that the pH of a new concrete slab can change over time as it reacts with carbon dioxide in the air. Follow the adhesive manufacturer's recommendation for pH testing since a high pH can result in the breakdown of wood flooring adhesives. ASTM F710 is the method for testing pH in concrete.
- The concrete's porosity or its ability to absorb water plays a key role in determining the adhesive, the moisture vapor barrier, primers, and self-leveling compounds that can be used. The ASTM F3191 is the procedure to follow to determine the concrete's porosity. Leveling compounds must be completely cured and dry prior to the installation of any hardwood flooring.
- Wood flooring is not congruent with wet conditions. Forest Accents will not warrant our engineered flooring against moisture related issues or damages to the flooring arising from moisture related issues. Therefore, it is very important that you test for moisture prior to the installation of Forest Accents engineered hardwood flooring.

Subfloor Requirements

Screeds/Sleepers

- Forest Accents engineered flooring less than 3/4" thick should **not** be installed directly to screeds/sleepers. The screed/sleeper system must be overlaid with a wood subfloor system to accommodate such installations.
- Screed/sleeper material must be kiln dried. If using pressure-treated material, only use material that has been kiln dried after treatment.
- Screed/sleeper material should be acclimated to the expected interior use conditions with regards to temperature and relative humidity of the areas where the wood flooring is being installed.
- The substrate on which the screeds/sleepers are being installed over should be moisture tested.
- A proper Class I vapor retarder must be installed over the substrate and below the screeds/sleepers.
- The channels between the screeds/sleepers should be filled with concrete, a lightweight concrete mix, or a gypsum-based topping compound. This will introduce moisture to the screeds/sleepers. Dry times of subfloor toppings vary and may add significant time to the process. A minimum of 20 areas per 1,000 square feet of subflooring should be moisture tested using a moisture meter set to the appropriate species. Test areas that will represent the entire project and be sure to include a minimum of 3 tests per room. Take readings at multiple depths to ensure readings are inclusive. The MC of any screed/sleeper material should be no more than 2% MC difference from plank flooring (flooring greater than or equal to 3" in width) and no more than 4% difference in strip flooring (less than 3" in width). Be sure to document all moisture readings. Elevated readings should be addressed prior to the installation of any wood flooring.
- Screeds/sleepers should be adhered to the subfloor perpendicular to the direction of the flooring and parallel to one another.

- For screeds/sleepers laid flat, bond the material to the concrete subfloor using an elastic wood floor adhesive or hot tar that is specifically designed for wood flooring applications.
- Screed/sleeper material must be flat with an 8'-10' straight edge. All screeds should come into full contact with the straight edge. If material is not flat, sand the high spots to achieve the flatness tolerance where all the screeds come into full contact with the straight edge. Shim the low areas of the screeds or replace the low screeds. If shimming the low areas, be sure that the material used is acceptable and allows for floor fastener penetration and hold.
- The moisture content (MC) of any screed/sleeper material should be no more than 2% MC difference from plank flooring (flooring greater than or equal to 3" in width) and no more than 4% difference in strip flooring (less than 3" in width). Check the moisture of the screeds/sleepers with a wood moisture meter set to the appropriate species. Take readings at multiple depths to ensure readings are inclusive. Be sure to document all moisture readings. Elevated readings should be addressed prior to the installation of any wood flooring.

IMPORTANT NOTE: Forest Accents warranties **do not** cover any issues due to improper substrates or improper installation of substrates.

Radiant Heat

- Forest Accents engineered hardwood flooring can only be installed over radiant heat systems only if the floor is installed using the floating method of installation. **Only hydronic radiant systems** in a wood subfloor are suitable for Forest Accents engineered flooring. These systems must be low temperature with accurate control systems that prevent the surface temperature of the floor from exceeding 80°F. An outdoor reset control with high/low settings, along with an in-floor sensor, should be installed to control rapid changes in temperature. Programmable thermostats should not be used as they allow for greater variation in temperatures.
- Special consideration should be given when choosing to install a wood floor over a radiant heat system. Acacia, Hickory, Beech, and Maple species should not be installed over radiant heat. Narrower width floors are also more suitable for use with radiant heat systems since they expand and contract less than wider width boards.
- Radiant cooling systems are never recommended under wood flooring.
- The floor's surface temperature should **never** exceed 80°F. The radiant heat system must provide an even distribution of heat over the wood floor surface. This can be achieved with aluminum transfer sheets. Aluminum tube hanging systems must cover the entire area between the joists on the bottom of the subfloor. The temperature of the wood floor surface should not vary by more than 3°F at any point within the installed floor. Keep in mind that wood floors perform best when temperatures are consistent. The floor should not fluctuate in temperature by more than 5°F per day.
- Heating pipes must be covered with 1" concrete or be a minimum of 1/8" below bottom of plywood subfloor.
- The subfloor should be completely dry. Moisture on a dry weight basis must not exceed 1.5% for concrete, 0.3% or less for gypsum, and 6%-12% for wood subfloors.
- A vapor barrier should be installed on all wood subfloors. It must be directly under or as close to the flooring as possible.
- Rooms that are radiant heated when joined with rooms that are not should be separated with expansion joints.
- Hydronic radiant heat systems should be fully operational and maintained at normal living temperature for 14 days prior to the installation of Forest Accents engineered wood flooring. Moisture levels in the wood subfloor are not to exceed 12% MC. Only after the radiant heated area has reached optimal climate conditions can the wood flooring be brought into the rooms.

- When a wood panel subfloor has been installed over a concrete slab, a Class I impervious vapor retarder must be installed over the slab and under the wood panel subfloor in all on or below grade scenarios.
- An appropriate Class II vapor retarder is required over a wood subfloor when the wood flooring is being installed over an unconditioned space.
- The floating floor pad R values should be considered because it could affect the efficiency of the radiant heat system.
- Be sure the glue used for the floating application is approved for use over radiant heat systems.
- Relative humidity levels of 30%-50% must be present at time of installation and maintained at all times thereafter.
- A supplemental humidity control system is **highly** recommended in order to maintain the proper humidity levels in the living space where the wood floor has been installed over the radiant heat.
- Area rugs, mattresses, pet beds, or other insulating items that cover the floor will trap heat in the floor and increase the floor's surface temperature which can result in major damage to the wood flooring.

Installation over Existing Wood Floors

- An existing wood floor over concrete is **not** an acceptable substrate for the new engineered flooring.
- An existing wood floor on a wood subfloor is an acceptable substrate for the new flooring. The existing wood floor must be sound and firmly attached to the subfloor. The new wood flooring must be installed at a 90° right angle or 45° angle across the grain of the existing wood floor.
- A new nail-down or glue-down Forest Accents engineered wood floor should always be installed perpendicular to or on a diagonal to the existing floor. Installing a new wood floor parallel to an existing solid nail-down floor will require a double layer subfloor system using an overlay of a minimum of 11/32" (9.5mm) subfloor panels over the existing wood floor.
- When floating a new wood floor over an existing wood floor, the direction of the new floor does not matter.
- If the existing wood floor was installed directly to the joists/trusses, install new wood flooring perpendicular or on a diagonal to the direction of the existing floor, or install an overlay of a minimum of 11/32" (9.5mm) subfloor panels over the existing wood floor.
- The existing wood floor should be flat to within 1/8" in 6' and 3/16" in 10'. Sand any high spots in the existing floor. Check existing flooring to make sure it is properly adhered to the current subfloor.
- The existing wood floor and the new wood floor should be within 2% MC for plank flooring (flooring greater than or equal to 3" in width) and within 4% difference in strip flooring (less than 3" in width). Check the moisture content with a wood moisture meter set on the appropriate species setting.
- When installing a new floor over an existing glue-down floor, glue the new floor to the existing wood floor. Do **not** install over wood flooring that is glued to concrete.
- Do **not** install a new Forest Accents engineered wood floor over an existing floating wood floor.
- When floating new flooring over an existing wood floor, the flooring should be installed at right angles to the existing wood floor.

Installation over other Existing Types of Floors

- VCT, and rubber floor tiles are **not** acceptable as underlayment for Forest Accents engineered hardwood flooring.
- Full-spread glue down vinyl tiles are acceptable if they are secured to the subfloor. Do **not** install Forest Accents engineered wood flooring to perimeter-glued resilient vinyl, vinyl tiles, or sheet vinyl floors. Do **not** install over more than one layer of vinyl that is greater than 1/8" in thickness.
- Ceramic tiles and Terrazzo are only suitable for glue-down or floating applications.
- Cork floors must be well-bonded to the subfloor and all sealers and surface treatments must be removed. Only use glue-down method over existing cork floors. Test areas to ensure good bond adhesion.

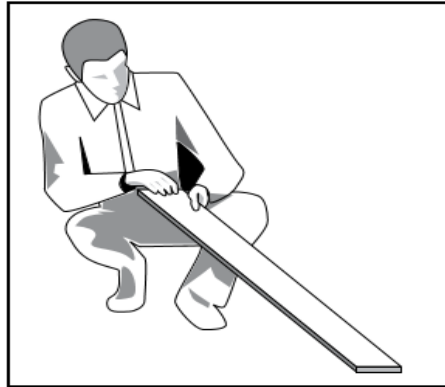
- The existing floor should be flat to within 1/8" in 6' or 3/16" in 10'. The existing floor covering materials must be well-bonded to the subfloor/underlayment with full spread adhesive and can be no more than one layer thick and cannot be more than 1/8" thick. Remove any loose areas.
- The surface of these substrates should be thoroughly cleaned with all existing sealers and surface treatments removed.
- Any loose grout or tile must be removed. All grout joints and broken corners that exceed 3/16" must be filled with a cement-type leveling compound with a primer for proper adhesion. All compounds used to repair the substrate must be given time to thoroughly dry.
- If any existing subflooring is in poor condition, such as, loose tiles, or broken pieces, the floor must be overlaid with a minimum of 11/32" underlayment directly over the flooring materials.
- For glue-down installation, clean the flooring materials thoroughly to create optimal conditions for a good adhesive bond. Test for appropriate bond adhesion prior to installing the wood floor.
- PVA glues are not recommended over vinyl, resilient tile, or cork.
- Be sure to read all the chosen adhesive manufacturer's recommendations. Some adhesive manufacturers require the use of a primer or vinyl blocker when installing over sheet vinyl, vinyl tiles, and cork flooring.
- Forest Accents engineered wood flooring should **never** be installed over an existing floating floor.
- Do **not** install Forest Accents engineered wood flooring over carpet.

Fasteners and Fastener Schedule

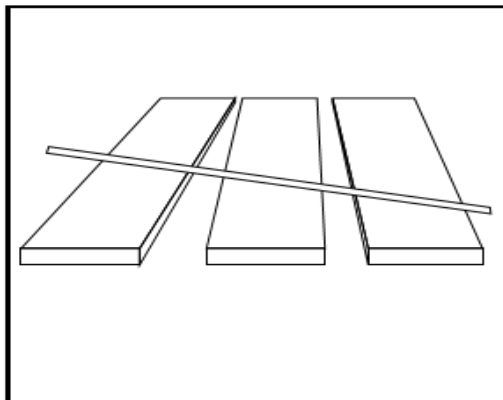
- Forest Accents hardwood flooring can be installed using cleats or staples that are specifically designed for the installation of engineered hardwood flooring.
- Wood flooring cleats are available in 16, 18, and 20 gauge; ranging in length from 1"-2".
- Wood flooring staples are available in 15.5 gauge, and 16 to 20 gauge; and in lengths ranging from 1-1/4" to 2".
- It is important to use a flooring nail or staple gun specifically designed for the type of wood flooring being installed. The flooring gun should drive the fastener through the top of the tongue, into the nail pocket, along the length of the board, with the crown or the head of the fastener seated flush.
- Forest Accents engineered T&G Flooring that is less than 5/8" thick requires a 18 - 20 gauge cleat or narrow crowned (1/4") 18 gauge staple, not less than 1-1/4" in length spaced at 3"- 4" intervals along the length of each board and 1" to 2" from the ends of each board with a minimum of 2 fasteners per board.
- Forest Accents engineered T&G Flooring that is equal to or greater than 5/8" thick requires a 15.5 gauge staple, 16 gauge or 18 gauge cleat, not less than 1-1/2" in length spaced at 6"-8" intervals along the length of each board and 1"- 3" from the ends of each board with a minimum of 2 fasteners per board.
- **Forest Accents engineered T&G flooring that is wider than 5" requires the addition of the glue-assist nail down method. See specific about glue assist method under Step 2 of *Nail Down Installation*.**
- Improper use of nails and staples can cause much damage to a floor. Staples and cleats not properly fastened to the floor can cause a floor to squeak, pop, or crackle. **Squeaking, popping, and crackling noises are not considered a manufacturer defect and are not covered under the Forest Accents warranty.**

General Installation Guidelines

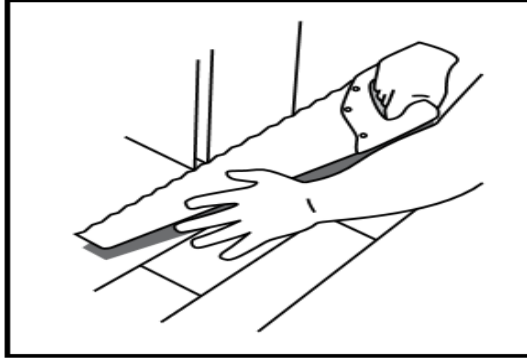
1. **Inspection of boards...** Visually inspect all boards for any defects prior to installation. Verify that the homeowner has seen the product and approves of the installation. Installation of Forest Accents constitutes acceptance of the floor's grade, color, milling, sheen, and finish.



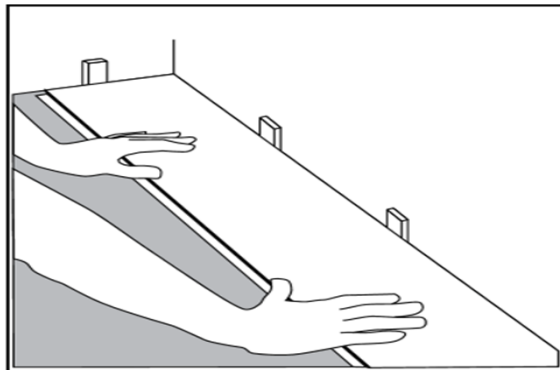
2. **Install flooring last...** Hardwood floors should be the last trade in the house and installed just before the baseboards. All wet work including cement, masonry, plastering, drywall, painting, and all other “wet” work must be completed and dry. This includes any wall coverings, and painting except for the final coat of paint on base molding. Concrete work must be at least 60 days old. Covering a floor while other trades are in the house can lead to moisture issues, scratches, dents, and other damage. Coverings that are held in place by tape for more than 24 hours can result in damage to the floor's finish. Never tape directly to the floor.
3. **Cabinets and built in appliances...** Cabinets and built in appliances should be installed prior to the installation of Forest Accents flooring. Cabinets and built in appliances must **not** be installed on top of the Forest Accents flooring that is installed using the floating method.
4. **Molding Selection...** Before you start to install the floor, open multiple boxes of the flooring and examine the boards to see how they blend with the moldings. Set aside those boards that blend best with the moldings so you can use them when needed.



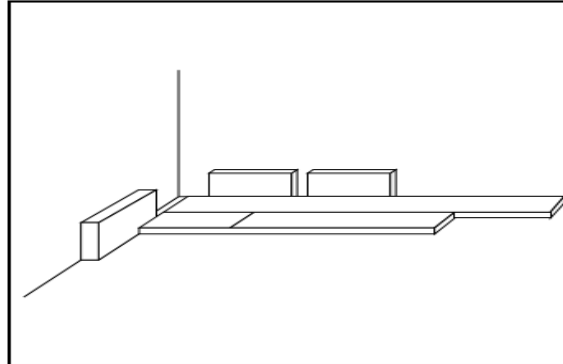
5. **Undercut door casings and moldings...** Undercut door casings and remove any existing base molding, shoe molding, or doorway thresholds. All door casings should be notched out or undercut to avoid difficult scribe cuts. Use scrap piece of flooring to establish height of cut. Remember to account for height of underlayment.



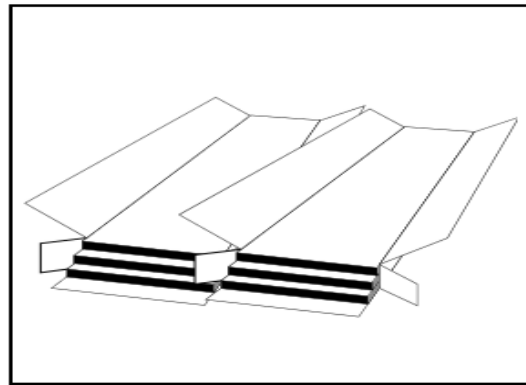
6. **Choose an Underlayment** ...Aquabar “B”, HWD15, 15lb., or 30lb. roofing felt are acceptable underlayments for nail down applications. Eco- silencer is an acceptable underlayment for floating floor applications. A 6mil polyethylene film is **required** over concrete subfloors that are on or below grade. For nail down installations, the underlayment should be installed on top of the subfloor before beginning installation of the wood flooring. Lap the joints 6” and staple in place. For floating installations, lap the joints 6” and tape in place. No underlayment is required for glue-down applications; however, we **highly recommend** that you choose an adhesive with moisture vapor barrier properties. The use of a moisture vapor barrier sealer, such as Wakol PU280 or Bona R540, is also **highly recommended**. Be sure to check with adhesive manufacturer to determine compatibility of products used.
7. **Choose a starting point....** Take into consideration the most important aesthetic or architectural elements in the room. The starting wall is usually the longest continuous exterior wall in the room. Check to make sure that the wall is straight and square. The flooring should be installed perpendicular to the flooring joists unless the subfloor has been stiffened.



8. **Expansion Space...** Maintain proper expansion space at all side and end walls, and at all vertical obstructions. The expansion space is generally equal to the thickness of the flooring. Maintain 1/2" expansion space for Forest Accents 1/2" engineered hardwood flooring. The use of spacers may be helpful in maintain a straight working line.



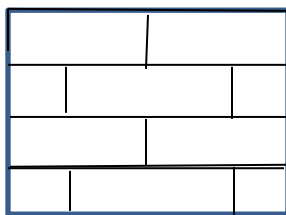
9. **Laying out the floor...** Be sure to work from multiple boxes simultaneously as you install the flooring to ensure variation and good blending of the boards throughout the entire installation. ***Forest Accents warranty does not cover materials with visible defects once they are installed. Installation is acceptance of product.***



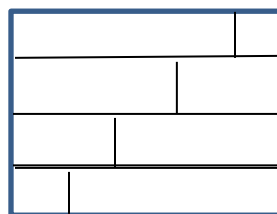
Nail Down Installation

After careful completion of the pre-inspection procedures, acclimation, moisture testing, and appropriate subfloor preparation, installation of your Forest Accents flooring can begin. Remember that **INSTALLATION OF FOREST ACCENTS CONSTITUTES ACCEPTANCE OF THE FLOOR'S GRADE, COLOR, MILLING, SHEEN, AND FINISH.** Random noises are inherent within a floor that is nailed or stapled down and will change as changes in the environment occur. These noises are not a defect and are not covered under the Forest Accents warranties. Subfloor soundness, subfloor cleanliness, proper nailing schedule, and proper calibration of flooring nailer/stapler will all contribute to reducing noises within a nailed or stapled down floor.

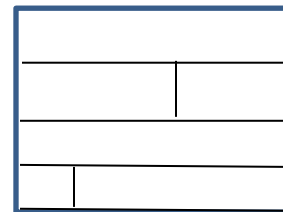
- **Step 1 – Installation of underlayment** ... The underlayment should be installed on top of the subfloor before beginning installation of the wood flooring. Lap the joints 6” and staple in place. If using the glue-assisted nail down method, no underlayment should be used. See Step 2.
- **Step 2 – Glue-Assisted Nail Down... Forest Accents requires using the glue-assisted nail down method for wood flooring that is greater than 5” in width.**
 1. A traditional sheet good vapor barrier cannot be used when using the glue-assisted nail down method. Forest Accents highly recommends the use of a liquid-applied vapor barrier that is compatible with the flooring adhesive to allow for a glue-assist installation directly to the subfloor. The living space where the wood floor is being installed must be conditioned and maintained as the interior living space. **Never** install a wood floor over a known moisture issue.
 2. When mechanical fasteners are the primary fasteners used on a nail-down installation, the nailing schedule remains the same as normal. The addition of the adhesive via the glue-assist method is not intended to be a replacement for the mechanical fasteners but instead is to be viewed as a supplement to the mechanical fastener.
 3. If adhesive is applied using a full spread application, then the mechanical fastener schedule is not to be deemed as the primary fastening method.
 4. Only use a wood flooring adhesive that is elastomeric that will allow for normal movement within the floor system. The adhesive must be compatible with the subflooring and the liquid vapor barrier.
 5. The wood subfloor must be thoroughly cleaned by vacuuming. The subfloor must be entirely free of any debris. A clean subfloor ensures proper adhesion. Test the application of the adhesive to determine the most effective application. The application of the adhesive should supplement the fastening system. The adhesive may be applied to the subfloor or to the back of the board. Use a notch trowel to apply the adhesive directly to the subfloor. For application to the back of the flooring board, use a glue gun and apply a minimum 1/4" bead of adhesive. Make sure you cover the entire width and length of the board up to a minimum of 1” from each edge and each end of each board.
 6. When using a trigger activated floor nail gun with the glue-assist method, the installer must either stand on the floor or apply a downward pressure to the surface of each board as it is being nailed. This will ensure that there is no unwanted movement or hollow noise.
- **Step 3 – Laying out the floor....** Plan the layout to determine overall desired appearance, transition placement, and to avoid the final row being too narrow. Determine the direction to run the flooring and then measure the width of the room (the dimension perpendicular to the direction of the flooring), divide by the width of the flooring planks. The last row of the flooring should not be less than 2” wide. If the last row is less than 2”, cut the width of the starter row to avoid a narrow last row. Dry lay materials to cover approximately 2/3 of the entire room. Be sure to work from multiple boxes to ensure variation and good blending of wood flooring. Avoid laying out in “H” patterns or any discernible pattern. See figure below.



Incorrect



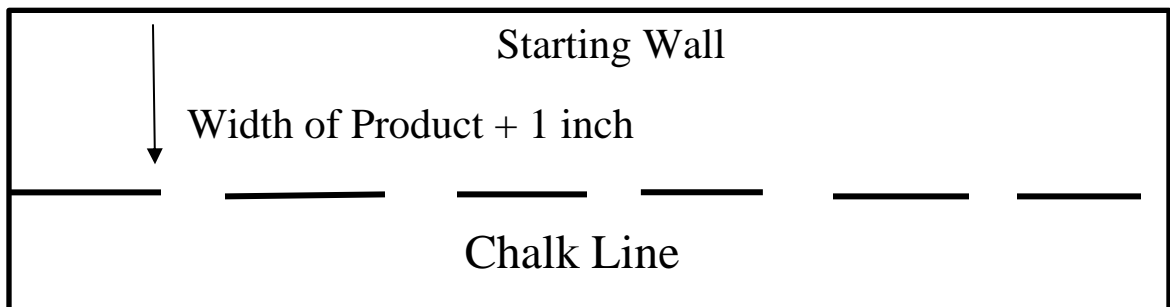
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Correct

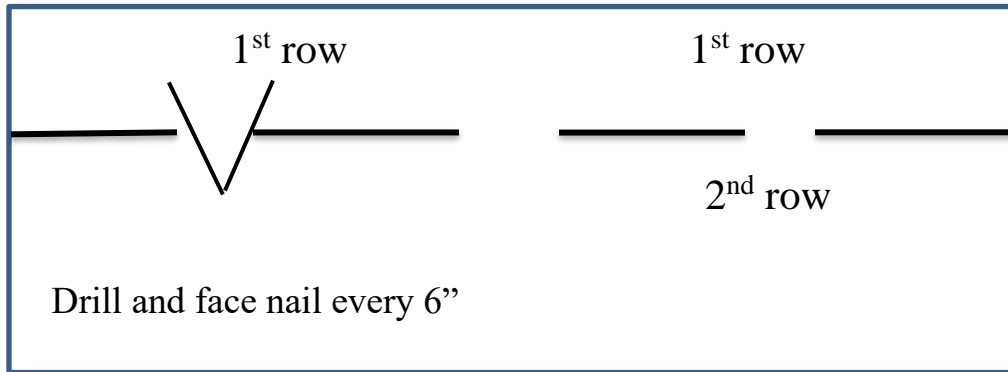
Cutting starter boards from full length boards will help you to randomize joints in products where the lengths are equal or limited. Begin dry laying 6" from the edge of the previously installed row. Be sure to stagger the end joints of adjacent boards, A general rule is to stagger the end joints row-to-row at a minimum of twice the width of the flooring. For example, there should be a 6" stagger for 3" wide flooring.

- **Step 4 – Set your flooring nail gun or stapler...** Make sure that your air compressor for the flooring gun or stapler is set at the recommended PSI setting for the wood species being installed. If the air pressure is too high for the species, the nails or staples could be driven below the nail pocket which will result in splitting of the tongues and a less than desirable fastening.
- **Step 5 – Establish your starting point...** The starting wall is usually the longest continuous exterior wall in the room. Check to make sure that the wall is straight and square. The flooring should be installed perpendicular to the flooring joists unless the subfloor has been stiffened. Measure the width of the product being installed. For random or alternate width products, use the widest plank measurement for the first row. Add 1" to allow for the 1/2" expansion and the width of the tongue. Using this measurement in at least 2 places, measure out equal distance from the starting wall and 12" to 18" from the corners (see Figure below) and snap a chalk line.



- **Step 6 – Installing First Rows...** Use the longest and straightest boards available for the first 2 rows. Align tongue of first row on chalk line. The groove should be facing the starting wall. Pre-drill the nail holes 1/2" from back (groove) edge, 1"-2" from each end, and at 6" intervals. Face nail the groove side where pre-drilled. When complete, blind nail at a 45° angle through the tongue of the first row 1"-2" from the ends and every 6" along the length of the starter board. Countersink nails to ensure flush engagement of groove. Avoid bruising the wood by using a nail set to drive the nails at least 1/4" into the tongue. Continue blind nailing using this method with following rows until a nail gun or stapler can be used. Beginning rows may be blind nail where clearance allows using a pneumatic finish nail gun or stapler. Flooring mallets, tapping blocks, and pull bars may be used to help tighten the flooring during installation. Be sure the mallets, blocks, and bars are clean and free from residue when using. Be sure to keep the runs of the flooring straight. The deviation from a straight line should not be more than 3/16" in 10'. Deviations can cause side and end gaps to occur in subsequent rows. End joints of adjacent rows should be staggered a minimum of 6" to ensure a more favorable overall appearance. See figure below.

Starting Wall



- **Step 7 – Installing the Floor...**Once you have installed the first few starter rows, stop and check to make sure you are maintaining straight rows. Continue installing several rows at a time, fastening each board with at least 2 fasteners. Use the fastener schedule as detailed on page 11 of these instructions. Make sure your pneumatic nail gun or stapler is calibrated appropriately to ensure the fastener is going in at the proper angle and is flush with the nail pocket. You may find it necessary to use a tapping block to tighten boards to help engage the boards and reduce gaps before fastening. Never strike the flooring directly with a rubber mallet or hammer as you will damage it. Be sure to stagger the end joints of adjacent boards and to install varying lengths to achieve a more overall favorable appearance. The last 1-2 rows will need to be face-nailed where clearance does not permit blind nailing with nail gun or stapler. Be sure to allow for expansion space along the end wall. Pre-drill and face-nail on the tongue side following the nailing pattern used for the first row. Rip the final row to fit and face-nail. Countersink the nails and fill with appropriate wood filler.
- **Step 8 – Completing the Job...**Install all needed base boards, transitions, including shoe or quarter round moldings. Inspect the floor, filling all gaps as needed with the appropriate filler. Clean the floor by thoroughly vacuuming. Vacuum with a soft brush attachment. Be sure not to use a vacuum with the beater bar engaged. Next, clean the floor with Bona Professional Hardwood Cleaner products or the equivalent products. Be sure to leave the homeowner with maintenance instructions and warranty information.

Glue Down Installation

After careful completion of the pre-inspection procedures, acclimation, moisture testing, and appropriate subfloor preparation, installation of your Forest Accents flooring can begin. Remember that **INSTALLATION OF FOREST ACCENTS CONSTITUTES ACCEPTANCE OF THE FLOOR'S GRADE, COLOR, MILLING, SHEEN, AND FINISH.**

- **Step 1 – Installation of underlayment** ...Forest Accents **highly recommends** the use of a moisture vapor barrier, such as Wakol PU 280 or Bona R540. If you chose to use such a product, follow the manufacturer's recommendations.

- Step 2 – Laying out the floor....** Plan the layout to determine overall desired appearance, transition placement, and to avoid the final row being too narrow. Determine the direction to run the flooring and then measure the width of the room (the dimension perpendicular to the direction of the flooring), divide by the width of the flooring planks. The last row of the flooring should not be less than 2” wide. If the last row is less than 2”, cut the width of the starter row to avoid a narrow last row. Choose a starting wall being sure to consider the most important aesthetic or architectural elements in the room, such as, fireplaces, doorways, cabinets, windows, etc. The starting wall is usually the longest continuous exterior wall in the room. Check to make sure that the wall is straight and square. Measure out from the wall at each end, the overall width of the plank plus 1/2” for expansion space. Snap a chalk line. Place a starter board on the inside of the chalk line. The starter board should act as a straightedge to give you a guide and to prevent the rows of flooring from drifting during installation. This can be a straight piece of lumber or even a piece of flooring. You will remove this prior to the completion of the installation. Place spacers at all walls to maintain proper expansion space during installation. Dry lay the first row. The tongue side of the flooring planks should face the starter board. When you reach the end of the first row, cut the flooring plank as needed. Use the remainder of that cut board to start the second row only if it is longer than 8”. If not, cut a new board in half and use that to start the second row. Dry lay the boards for the second row. Be sure to keep the rows straight and check for gaps on the sides and the ends of the boards as you are working. Be sure to dry lay the 1st two rows before applying any adhesive. To create a more aesthetically pleasing looking floor, the end joints should be staggered a minimum of twice the width of the flooring being installed. So, for example, stagger 3” wide boards a minimum of 6”. Work from multiple boxes to ensure variation and good blending of wood flooring. Avoid laying out in “H” patterns or any discernible pattern.
- Step 3 – Installing the flooring** Now that you have dry laid the first two rows, remove all the boards, keeping them in order. Read the adhesive manufacturer instructions in entirety. Spread the adhesive with the appropriate trowel, starting from the chalk line and working to about the width of two planks of the flooring. Hold the trowel at a 45° angle for proper adhesive spread. Do **not** spread more adhesive than can be worked within the adhesive’s open-time period. Lay the flooring into the adhesive in the same board order as you did when you dry laid it. Correctly position each board and press down firmly. Make sure you keep a straightedge as you work. The installed wood flooring should not deviate more than 3/16” in 10’. Misaligned rows can lead to gaps in subsequent rows. Periodically lift boards up immediately after installation and at regular intervals to ensure proper adhesive transfer. Tapping blocks, straps, and pull bars may be used to help tighten the flooring during the installation. Be very careful not to damage the flooring with these tools. As you install, immediately wipe away any adhesive that has been deposited on the finished surface of the boards. **Note: Adhesive that is left to dry on the flooring can be very difficult to remove and can result in a haze look on the flooring.** When the first two starter rows are complete, continue working right to left to begin the next row. Continue to install the flooring working in sections until you are finished. Use spline anytime the flooring direction changes. Never spread more adhesive than you can work within 20 – 30 minutes. Once you have worked all the sections from the starting board out, remove the starting board, spread the adhesive and complete the area from the starting board to the wall. It may be necessary to cut the boards of the last row to accommodate for the width. Be sure to allow for the proper expansion space along the end wall. If recommended by the adhesive manufacturer, roll the floor with the proper weight roller. Follow the adhesive manufacturer’s recommendation for curing time.

Floating Installation

After careful completion of the pre-inspection procedures, acclimation, and appropriate subfloor preparation, installation of your Forest Accents flooring can begin. Remember that **INSTALLATION OF FOREST ACCENTS CONSTITUTES ACCEPTANCE OF THE FLOOR’S GRADE, COLOR, MILLING, SHEEN, AND FINISH.**

- Step 1 – Installation of underlayment** ...Underlayments for floating floors can provide sound absorption control and/or moisture control. Forest Accents **requires** that a moisture control underlayment, specifically a 6-8 mil polyethylene film, be installed on a concrete substrate, whether a sound control product is used or not. Place the polyethylene film down overlapping the joints by 6” and securing seams with tape. Allow the poly film to run 2” up the walls and trim it back after installation. Over wood substrates, a moisture control product is not necessary but is **highly recommended**. Note: Forest Accents will not warrant any floor failure issues arising from moisture related issues. If you choose to use a sound control underlayment, it should have an IIC rating. Install a 1/8” foam padding over the 6mil polyethylene sheeting. A product, such as, Eco Silencer may be used; it has a film and a pad. Follow the foam manufacturer’s recommendations for the installation of the pad.
- Step 2 – Laying out the floor**...Plan the layout to determine overall desired appearance, transition placement, and to avoid the final row being too narrow. Determine the direction to run the flooring and then measure the width of the room (the dimension perpendicular to the direction of the flooring), divide by the width of the flooring planks. The last row of the flooring should not be less than 2” wide. If the last row is less than 2”, cut the width of the starter row to avoid a narrow last row. Choose a starting wall being sure to consider the most important aesthetic or architectural elements in the room, such as, fireplaces, doorways, cabinets, windows, etc. The starting wall is usually the longest continuous exterior wall in the room. Check to make sure that the wall is straight and square. Measure out from the wall at each end, the overall width of the plank plus allow for the expansion space. The expansion space should be equal to the thickness of the material being installed. For example, a 1/2” thick floor would require a 1/2” expansion space. If the first row needs to be ripped down, then measure out from the wall the width of the ripped board plus the appropriate expansion space. Snap a chalk line. Secure a straightedge starter board inside the chalk line to give you a guide and to prevent the rows of flooring from drifting during installation. This can be a straight piece of lumber or even a piece of flooring. You will remove this prior to the completion of the installation. Place spacers at all walls to maintain proper expansion space during installation. Dry lay the first row. The groove side of the flooring planks should face the starter board. When you reach the end of the first row, cut the flooring plank as needed. Use the remainder of the that cut board to start the second row only if it is longer than 8”. If not, cut a new board in half and user that to start the second row. Dry lay the boards for the second row. Be sure to keep the rows straight and check for gaps on the sides and the ends of the boards as you are working. Be sure to dry lay the 1st two rows before applying any adhesive. To create a more aesthetically pleasing looking floor, the end joints should be staggered a minimum of twice the width of the flooring being installed. So, for example, stagger 3” wide boards a minimum of 6”. Work from multiple boxes to ensure variation and good blending of wood flooring. Avoid laying out in “H” patterns or any discernible pattern.
- Step 3 – Installing the flooring** Now that you have dry laid the first two rows, remove all the boards, keeping them in order. Read the adhesive manufacturer instructions in entirety. Run a continuous bead of glue along the groove of the short side (width) and the plank’s side groove (length) of each board as you work. Be sure not to use too much adhesive as that could keep the boards from fitting together properly. A Poly Vinyl acetate (PVAc) waterproof glue is required. Install first row of flooring planks with groove facing the starter board. Working from right to left, install the flooring being sure to keep a straightedge. The installed wood flooring should not deviate more than 3/16” in 10’. Misaligned rows can lead to gaps in subsequent rows. Start each subsequent row with the cut-off end of the last board from the previous row if possible. Do not use cut off pieces less than 12” in length. Tapping blocks and straps may be used to help tighten the flooring planks together. Be very careful not to damage the flooring with these tools. As you install, immediately wipe away any adhesive that has been deposited on the finished

surface of the boards. **Note: Adhesive that is left to dry on the flooring can be very difficult to remove and can result in a haze look on the flooring.** When the first two starter rows are complete, continue working right to left to begin the next row. Continue to install the flooring working right to left until you are finished. Remove the starter board. It may be necessary to cut the boards of the last row to accommodate for the width. The width of the last row should not be less than 2". It may be necessary to use an end pry bar to pull the last row into place tight. Follow the adhesive manufacturer's recommendation for curing time. Do not install cabinets, built-in appliances, or walls on top of floating floors.

Note: Be sure to allow for the appropriate expansion space at all vertical obstructions. Larger rooms require additional expansion space. For rooms that are over 25', add 1/16" expansion space to the width for every 3' the room extends beyond 25'. For rooms exceeding 40' in length or 20' in width, and at any doorways less than 4' in width, transition pieces built into the floating floor system should be used. All trim pieces, including baseboard, shoe, and quarter round must not come into contact with the floor or be fastened to the floor. Such trim pieces should be off the floor a minimum of 1/16".

Completing all Installations

- Remove expansion spacers, if used. Cover all expansion gaps along walls with base boards, quarter round, or shoe molding. Nail moldings to the wall not to the floor.
- Vacuum or sweep the installed floor. Be sure to use a vacuum without the beater bar engaged.
- Clean the floor with the Bona Hardwood Floor Cleaner or similar PH neutral floor cleaner.
- Use of stain, wood fillers, and putty for correction are acceptable for use.
- Forest Accents does not recommend that you cover the flooring with a protective covering after installation. If you choose to do so, be sure to cover the floor completely. Many species of wood are light sensitive and uncovered areas can undergo color changes. Do **not** use plastic or any other material that is considered a vapor barrier for the covering.

Care and Maintenance

To ensure the full benefit of warranties and to extend the beauty of your new hardwood floor, we recommend the following preventative maintenance steps for your hardwood floor. Regular and appropriate maintenance will also help to ensure proper performance of your floor.

1. Preventative Maintenance

- Always protect floors when moving heavy objects, such as furniture and appliances, to prevent scratches and possible scratches and dents to the flooring. The use of plywood and an appliance lift can be useful in such situations.
- Use appropriate floor protectors under all pieces of furniture, including tables, chairs, desks, etc.... Non-staining felt pads and non-pigmented floor protectors are recommended. Area rugs are recommended in high traffic areas and at sinks. Do not use mats backed with latex or rubber as discoloration may result. Rug pads are also recommended under all area rugs. Felt rug pads are recommended. Do not use latex or rubber rug pads. Use floor mats at all entrances to help keep dirt and moisture from being tracked in.
- Be aware that area rugs placed on a wood floor do protect it from UV sun exposure which will result in color differences between the covered area of the flooring and other uncovered areas of the flooring.
- Remove high heels or shoes that need repair prior to entering rooms with the hardwood flooring installed. Some high heels and shoes that need repair can cause damage to the surface layers of the wood flooring.
- Do **not** tape anything, with any kind of tape, painter's blue tape, or otherwise to a finished floor.

- Climate and humidity control is very important to the overall performance of the flooring. Forest Accents flooring performs best at a temperature of 60-75 degrees Fahrenheit and relative humidity between 30-50%.

2. Routine Maintenance

- Daily removal of dirt and dust is important to prevent particles from abrading the floor's surface. Vacuuming with a soft brush attachment or dust mopping is recommended. Be sure **not** to use a vacuum with the beater bar engaged.
- Periodic damp cleaning is recommended. Damp cleaning does not refer to soaking the floor with water. Damp cleaning refers to the use of Bona Professional hardwood cleaner products or the equivalent products, to clean the floor. Be sure to vacuum or dust mop the floor before using any floor cleaner.
- **DO NOT USE** oil soaps, pastes, waxes, or cleaners containing lemon oils, tung oils, ammonia, vinegar, or silicones. Use of these types of cleaners will invalidate the warranty.
- Periodically inspect felt pads used on furniture and rug pads used on area rugs to ensure they are in good condition.
- Keep nails of pets well-trimmed and their paws free of dirt, gravel, grease, and other abrasive and/or staining material. Pet urine, feces, and vomit should be cleaned up immediately
- Clean up spills immediately. Wipe up spills using a soft cloth and then use the Bona Hardwood Cleaner or similar PH neutral cleaner to remove any remaining residue.
- **DO NOT USE** String mops, wet mops, sponge mops, or steam cleaners to clean the Forest Accents flooring.
- **DO NOT USE** treated commercial dust mops as they contain petroleum-based solvents that can leave a chemical residue.
- **DO NOT USE** cleaning products that claim to restore, refresh, polish, add shine, or rejuvenate without first consulting with your Forest Accents dealer.