Montserrat
HARDWOOD FLOORING

ENGINEERED TONGUE & GROOVE

Multi-layer & OSB core

INSTALLATION INSTRUCTIONS
7/16", 1/2", 9/16", 5/8"
Float-in / Glue-Down / Nail or Staple

IMPORTANT INFORMATION BEFORE YOU BEGIN

Please read and review installation instructions completely prior to installation. We recommend that the installer follow all guidelines set forth by the National Wood Flooring Association (www.nwfa.org) for the job site, subfloor and general installation recommendations.

Engineered hardwood flooring can be installed on all grade levels; on grade, above grade and below grade. This includes installation directly on concrete, terrazzo and wood sub floors, or over existing ceramic tile, wood and vinyl floors, with the proper pre-installation procedures.

TOOLS & ACCESSORIES

Broom/Vacuum	Saws and jamb saw Hammer
Ear Plugs and Glasses	Pencil
Vapor Retarder	Tapping Block
Underlayment	Rubber Mallet
Tape Measure	Hard Wood Cleaner
Dust Mask	Chalk line
Proper Trowel	Moisture Meter (wood &
Galvanized finish nails	concrete)

Titebond® or other Floating wood or laminate floor specified tongue and groove adhesive for float-in installation

Urethane adhesive for direct-glue installation.
*The flooring installer is responsible for determining if the adhesive to be used is specified for the particular product being installed and proper trowerl and spread rates per adhesive manufacturers' instructions.

For 7/16", 1/2", 9/16", 5/8"

Flooring Stapler: Bostitch EHF1838K or equivalent. Min. 1 3/8" Staple
Flooring Nailer: Powernail 18Gage Nailer or equivalent. 1 ½" Cleat.
*The flooring installer is responsible for determining if the nailer/stapler to be used is specified for the particular product being installed and is adjusted properly to avoid damage to the flooring.

INSTALLER / OWNER RESPONSIBILITY

It is the responsibility of the owner/installer to inspect all flooring prior to installation for defects. It is also the owner/installer's responsibility to ensure the jobsite conditions, including but not limited to the jobsite sub floors as environmentally and structurally acceptable prior to installation.

Carefully inspect all material for visible defects in grade, manufacturing, and finishing. Wood flooring is a natural product that will vary in natural characteristics which is to be expected.

Reactive Stain – Hardwood that is treated with a reactive chemical stain will result in color variation. Carefully selected chemicals interact with the tannins, a natural occurring compound that is linked to color change, in the wood to replicate the oxidative processes that occur in wood when it is exposed to the elements. This results in a naturally aged look that would typically take years and decades for the wood to develop themselves. Depending on how much stain is applied and the grain structure, absorption of the stain will differ from plank to plank, as well as within the same plank. As the color follows the grain, the variation that occurs within the individual planks will collectively blend all of the boards together.

Prior to installation, the owner and or installer are responsible for the final inspection of materials and is encouraged to report any deficiencies in grade, manufacture and finish directly to the seller. Should an individual plank be questionable or does not meet standards, contact your dealer – do not install the flooring – any material installed with visible defects void the warranty. We do not warrant against natural variations from sample to plank or from plank to plank that will occur after installation.

We recommend ordering 5% above the actual square footage requirement to allow for cutting and grading of material. Diaganol, herringbone, or bordered installations do require a higher percentage.

Due to inherent variations with wood flooring product, the installer must work out 4-5 cartons simultaneously to ensure proper blending across the floor.

CAUTION: Wood Dust

The International Agency for Research on Cancer (IARC) has classified wood dust as a natural carcinogen. Sawing, sanding, and/or machining wood products can produce wood dust that can cause respiratory, eye, and skin irritations. Equipment should include a dust collector to reduce wood dust in the air. Sweep or vacuum dust for recovery or disposal. Wear a designated dust mask to reduce exposure to wood dust. Avoid dust contact with eyes and skin. Wear gloves and safety glasses when handling and machining the product. In case of irritation, flush eyes or skin with water for at least 15 minutes. If other side effects occur, request medical assistance immediately.

Attention California Installers and Consumers: The installation of this product is known to the State of California to cause cancer.

ABSESTOS WARNING

Do not sand existing resilient tile, sheet flooring, backing, or felt linings as these products may contain asbestos fibers that are not easily identified. The inhalation of asbestos dust can cause asbestosis or other serious bodily harm. Check with local, state, and federal laws for handling hazardous material prior to attempting the removal of these floors.

JOB-SITE CONDITIONS

1. The building must be complete & enclosed. It is essential that masonry, dry wall, paint and all other 'wet' work to be completed and given time to thoroughly dry as this will affect the moisture content of the job site.

2. The exterior grading should be complete with all gutters, downspouts and drainage directed away from the building. The crawl space must have adequate cross ventilation (equaling 1.5% of the, on grade, total sq. ft.) and a vapor barrier of 6-8 mil polyethylene film (covering 100% of the crawl space), joints overlapped and taped. There must also be a minimum of 24" from the ground to the underside of the joists.

3. Permanent HVAC systems must be working and in operation 7 days prior to installation to stabilize the interior environment to normal living conditions and to acclimate the flooring. The HVAC must also be in operation during and after the installation to ensure a stable environment to protect the hardwood floor. Ideal conditions are a temperature of between 60-80 degrees Fahrenheit (15-26 degrees Celsius) and relative humidity of between 35-60% at all times during and after installation. The use of a humidifier or dehumidifier may be required to maintain these conditions.

4. Engineered wood flooring can be installed on, and above grade level, but should not be installed in full bathrooms or other wet environments.

5. Take special care when transporting & unloading hardwood flooring at the job site. Store the hardwood flooring in a safe dry place making sure to provide a 4" air space under cartons that are stored upon "on-grade" concrete floors. Flooring should be stored in small lots in the rooms where the installation will take place and allowed to properly acclimate/condition to the job environment.

6. Flooring should be allowed to acclimate for a minimum of 72 hours or longer until conditions are at normal living conditions and meet minimum installation requirements for moisture content. **Note: In particularly arid or excessively humid parts of the country, flooring may take as much as two weeks to acclimate & reach equilibrium with the environment.**

7. Moisture content should be checked with the appropriate moisture meter to ensure proper installation conditions. Moisture content of wood sub floor should not exceed 11% and the moisture content of the wood should be within 2% of the sub floor.

8. Concrete sub floors must be fully cured for a minimum of 60 days and dry (3lbs or less/24 hrs./1,000 sq. ft., with a calcium chloride test) or less than 75% with relative humidity probes (in-situ testing)

9. Ensure exterior landscaping is complete and graded away from the foundation. Gutters and downspouts must be in place directing rain water away. Always store wood flooring in a controlled environment of 60 - 80° Fahrenheit (15° - 26° Celsius) and 35% - 60% relative humidity.

Sub Floor Types & Requirements

Sub-Floor Levelness Requirements

Before beginning installation, sub-floor levelness must be checked. It is required that sub-floors be level to within 3/16" in a 10 foot radius. This requirement applies to all types of sub-floors and all installation methods. The performance of flooring that is installed on non-conforming sub-floors will be greatly compromised and will void all warranties.

The owner and/or installer is responsible for ensuring that the proper installation conditions and appropriate sub floors meet or exceed all NWFA industry standards. The sub floor must be clean, flat, dry and structurally sound. Proper installation can be affected by adverse moisture

content in the product, humidity at the job site, acclimation of flooring to local site conditions, preparation of job site, preparation of the sub floor, and flooring layout.

- Subfloors must be completely clean – free of wax, paint, oil, sealers, adhesives, curing compounds, dirt, and other debris.
- Subfloors must be structurally sound. Replace any water-damaged, swollen, or delaminated subflooring or underlayment. Any problems caused by inadequate substructures or improper preparation of substructures void all warranties.
- Subfloors must be dry. An appropriate moisture content test using a pin-type moisture meter must be done and documented. For concrete floors, the slab must be cured for a minimum of 30 days before the moisture test.
- The subfloor must be flat, meeting a minimum of 3/16” within 10” (5 mm in 3 m) or 1/8” in 6’ (3 mm in 2 m). For concrete subfloors, sand high areas or joints, or fill all low spots with a cement-based leveling material (with a minimum compressive strength of 3000 psi). Leveling compounds must also be cured for a minimum or 30 days before the moisture test.

Preferred Plywood Sub Floor: Use 4'x 8' sheets of 5/8 CDX grade Ply- wood underlayment or 23/32" OSB underlayment with joist spacing 16" on center or 19.2 on with floor truss system. If joists are spaced over 16" on center or floor truss system over 19.2" on center, an additional layer of 1/2" CDX laid diagonal or perpendicular with 1/8" spacing will be required between sheets of underlay. Particle board is not an approved subfloor for nail down or glue down applications.

Minimum Plywood Sub flooring Requirements: 4 'x 8" sheets of 5/8" CDX grade underlayment with a maximum 16" on center joist construction. If joist system is spaced over 16" on center an additional layer of 1/2" CDX Plywood underlayment, laid diagonal or perpendicular, will be required.

* Minimum specified materials at maximum span and spacing may result in movement, gaps, and noises.

Solid Board Sub flooring: Should be 3/4"x 5 1/2" Group 1 dense soft- woods, No.2 Common, Kiln dried less than 15% MC.

Concrete: Solid Hardwood Floors can be laid on concrete provided an appropriate sub floor and moisture barriers are installed over concrete.

1. Make sure concrete is clean, flat, dry and structurally sound.
2. Floor should be flat to within 3/16” in 10'.
3. Substrate should be flattened to tolerance.
4. Always use a 6 mil poly moisture barrier when installing over concrete (Floating installation).
5. If a concrete sub floor is lightweight (less than 100 lb.) rule of thumb: Draw a nail across the top of concrete and if it leaves an indentation, it is probably lightweight concrete and cannot be installed using the glue down method. With light weight concrete you must float the wood flooring.

Moisture testing for material and wood subfloors:

Using a pin-style meter, test wood for moisture content. Wood should be between 6% - 9% moisture content prior to installation. The subfloor should be within 2% difference of the hardwood, with the moisture content of the subfloor not to exceed 11%.

Crawl spaces must be cross-ventilated (1.5% of the total sq. ft.). 6-8 mil black poly covering 100% of the ground and a minimum of 24” from the ground to the bottom of the joists.

Test concrete for moisture using one of the following methods:

Calcium chloride test: Follow test manufacturer's directions, performing 3 tests for the first 1,000 s/f and one additional test for every subsequent 1,000 s/f. Moisture emission rate should not exceed 3 lbs. per 1,000 s/f.

Insitu test: Relative humidity probes should read 75% relative humidity or less in all areas.

For further information on moisture testing, follow the guidelines published by the National Wood Flooring Association, www.nwfa.org.

Additional Sub Floor Notes

Sub floor surface must be clean, flat, dry and structurally sound. Manufacturer will not be responsible for any product failure due to poor sub floor conditions or materials. Unsound or damaged sections should be repaired or replaced.

Sub floor surface should be scraped or sanded clean and made flat prior to installation. The surface must also be free of any wax, dirt, paint, oil, grease, sealers, curing compounds and other debris. Sand or grind high spots and fill low spots with an approved floor patch compound.

It is very important to nail or screw any area of loose or moving sub floor that will cause squeaks. Manufacturer recommends the use of nails or screws with panels fastened every 12 inches along the joists or intermediate supports to ensure soundness of floor when complete.

Sub Floor Inspection and Room Preparation

Sub floor must be completely dry. If installing over new concrete slab, allow 60 days or more to dry thoroughly. The installer must test the concrete using recommended testing methods and levels.

Sub floor must be free of any paint, oil, greases, dirt, sealers, curing agents, dust and other residues.

If installing on any wood sub floor, the moisture content difference between wood floor and wood sub flooring should not be more than 2%.

If installing over existing vinyl floor, make sure vinyl is free of waxes, polishes, and is secured to the sub floor and that the underlying sub floor meets sub floor conditions.

Screw down all creaking and loose sub flooring.
Remove doors and existing baseboards, quarter rounds and thresholds.

Door frames and other wooden obstacles should be sawed off at the bottom to allow enough room for the underlayment and planks to slide under.

RADIANT HEAT

EXCEPT FOR THE HICKORY, MAPLE, & ACACIA & EXOTIC SPECIES SELECTIONS, ½" or thicker flooring is warranted for installation over hydronic radiant heat if installed per these instructions. However, flooring is not warranted over *electric* radiant heat systems. Only hydronic systems are approved. Please carefully read the "Radiant Heat" section below before finalizing product selections.
Note: Flooring made with a hickory, maple or acacia or exotic species top layer is exempt from radiant heat warranty coverage.

- Flooring is not warranted for use over radiant heat systems heated by electric elements. Only hydronic systems are approved. Hydronic systems must include infloor temperature sensors and an outdoor thermostat that allows the system to adjust the water temperature according to anticipated heat loss. Flooring installed in multiunit projects where the water temperature is not regulated separately in each unit is not warranted.

- Prior to installation over radiant heat moisture testing must be conducted and documented per ASTM 1869-89 (Calcium Chloride Test) or, for wood subfloors, using a pin type meter. The moisture content for concrete subfloors must not exceed 2.0 lbs. per 1000 square feet per ASTM 1869-89 (Calcium Chloride Test), and the moisture content for wood subfloors must not exceed 12%. If moisture levels exceed these limits, do not install the flooring.

- The surface temperature of the subfloor must never exceed 82°F in any location. The temperature setting must always remain within 15°F of normal operating level, and should never be turned completely off. Excessive heat, rapid heating, and/or failure to maintain humidity levels between 30% and 60% are likely to cause cracking, cupping and other forms of floor failure. Slight surface checking (cracking), particularly at the ends of planks, should be expected in installations over radiant heat and do not constitute a product failure.

- All concrete must be allowed to properly cure and dry for a minimum of 4 weeks prior to the operation of the radiant heat system. The system should then be operated at least 2/3 maximum output for a minimum of 2 weeks prior to installation of flooring to further allow moisture from the subfloor to dissipate and reach equilibrium. This procedure must be followed regardless of the time of year. Four (4) days prior to flooring installation, reduce thermostat to 65°F.

- As always, relative humidity of the jobsite must be maintained between 30% and 60%. Use of a humidification/dehumidification system may be required to maintain the proper humidity levels, particularly over radiant heat. Failure to maintain proper humidity levels will void all warranties.

- Beginning 48 hours after installation, slowly raise the temperature of the heating system to its preferred operating level over a period of 5 days.

For additional information please refer to our Radiant Heat Guide.

GENERAL INSTALLATION REQUIREMENTS

All wet trades such as tiling, drywall, painting etc. must be completed before hardwood is installed or delivered to the site.

1. Evaluate job-site and sub floor condition to ensure proper installation environment.

2. Read the product instructions thoroughly.

3. The completed floor is only as good as the sub floor, and the installer.

4. Allow for an expansion space of 1/2" around all vertical obstructions.

5. Should a piece be doubtful due to manufacturing, color, finishing, grade or having a visual defect, do not install it. Cut it for the wall line or place it in a closet. Work out of multiple cartons for a random appearance.

Never strike the floor with a hammer or mallet as this may damage the finish. In glue down and floating applications, do not use ratchet straps or tape to secure the floor.

For glue down or floating applications, restrict any foot traffic for 12 hours following installation.

Note: Minor occasional noise (such as squeaking) within the flooring is inherent to all installation hardwood flooring applications and can occur as environmental conditions change.

GETTING STARTED

1. Remove all doors and shoe moldings. Undercut all door casings 1/16" higher than the thickness of the flooring and underlayment to be installed. Place a scrap piece of plank and a sheet of underlayment against the door casing to act as a guide and cut the door casing with a hand saw or power jamb saw set to the correct height.

2. Determine the direction to run the length of the planks and measure the width of the room, or the dimension that is perpendicular to the chosen direction of the length of the flooring. The last row of the flooring should be no less than 1 ½" wide; if it is less, cut the width of the starter row to avoid a narrow last row.

3. Select a wall to begin installation. An outside wall is recommended as it is the most likely to be straight and square with the room. Measure out from the wall, at each end, the overall width of the plank plus 1/2" for expansion. If the first row requires ripping then measure from the wall the width of the ripped board plus 1/2" for expansion.

4. First, install Underlayment: Unroll the underlayment, overlap edges by 4" and seal seams with plastic tape. Allow the sheet to run 2" up the wall, which can be trimmed back after completing installation of the flooring. Install 1/8" foam underlayment. Note: Use of a floating floor 2 in 1 underlayment may be used, for which different instructions should be used.

5. Securing a straight piece of lumber or piece of flooring as a guide or starter board to prevent the floor from shifting during installation is advised.

Installing the Floor

6. Insert spacers at walls to maintain the expansion space between the flooring and the wall.

7. Lay the first two rows of flooring dry before beginning to glue them down. From left to right, install the planks so that the groove faces the starter board. When reaching the end of the first row, cut the plank as necessary to fit the room. Stagger end joints a minimum of 16" and then 8" thereafter on the first four rows.

8. Use the remainder of the plank from the first row to start the second row. If the piece is less than 8" long, cut a new plank in half and use that piece to start the second row.

9. Lay the remainder of the planks in the second row. Make sure that the rows are straight and no gapping exists on the sides or ends. Once you have dry laid the first two rows, remove all the planks in order. You are ready to begin.

10. Begin gluing the boards; Run a continuous bead of adhesive along the groove of the short side (width) and the plank's side groove (length). Proper alignment is critical. Misaligned starter rows can cause side and end gaps to appear in proceeding rows of flooring.

11. Install first row of planks with groove facing the straight edge. Work from right to left. Complete the first row. Make sure there are no gaps between the boards. Use a tapping block if needed to lock the boards together. Immediately wipe away any excessive adhesive with a clean, damp cloth.

    CAUTION: Allowing adhesive to dry on the surface can make it difficult to remove after installation and cause a haze on the flooring.

12. At the end wall use an end pry bar, if needed, to pull the ends of the planks tight.

13. Continue to install the floor working right to left, repeating the process until the completion of the floor. Continue to use the spacers on all vertical surfaces to maintain the ½" expansion.

    DO NOT USE laminate straps as they may damage the flooring

14. The last row will most likely require cutting to fit the exact width but should be no less than 1 1/2" wide.

15. Install cut planks and pull into place with a pry bar. Install spacing wedges between planks and wall.

16. Remove the straight edge (starter row) and install the last row using the pry bar. Allow floor to dry for a minimum of 12 hours before removing all spacing wedges and allowing foot traffic.

17. Wait until the following day to install trim and moldings. Install trim and moldings the following day.

FLOATING INSTALLATION
(Exampt for products with OSB core)

Note: Tongue and groove adhesive must be used full length on all joints when utilizing the floating installation method.

1. Determine starting wall and direction to lay boards. An outside wall is normally best as it is most likely straight and square with the room.

2. Lay underlayment in same direction as boards using a combination of polyethylene and foam underlayment or a 2 in 1 combined product making sure to tape the seams and overlap the poly edges by 4" (do not overlap the actual foam pad). The vapor barrier must be continuous without cuts or punctures. Tape any tears, cuts and seams.

3. Begin installing the first row in the right corner of the base wall. Install the first board so the short grooved side is against the expansion shims to your right and the long grooved length of the board is against the expansion shims in front of you.

4. Maintain expansion gap of 1/2" between first board and the wall by using spacers regularly along the length of the wall. Determine straightness of wall by snapping a chalk line. If starting wall is not straight, make notation on first row and saw to shape.

5. Holding the board finished side down, apply 1/8” bead of tongue and groove adhesive to bottom of the groove on the end of the second board. Connect the end of the second board to the end of the first board, making sure the boards are tightly connected and firmly positioned against the shims. Use the hammer/rubber mallet and tapping block to tap the tongue end of the second board to ensure a tight fit. **Never use the hammer or rubber mallet directly on the flooring as this will cause damage to the board.**

6. Continue placing additional boards moving right to left using the same procedure until the first row is complete.

7. You will need to cut off the end of the final board, save the remaining piece for the next row as long as it is at least 6” long. Use the last board Puller to ensure the last board is tight against the preceding board. Place shims between the end of the last board and the wall. Use the shims to wedge the row in tight rendering it immobile.

8. Start each new row on the right side with the remaining portion of the previous row as long as it is at least 6” long; otherwise cut a new starter board. Stagger end joints (at least 6") and randomly install different lengths to ensure natural appearance. Do not create discernible patterns such as “H” or “steps”. Select boards to create a uniform appearance without clusters of short lengths or sections of light or dark planks. Do not install any objectionable boards that have visual defects or are not consistent with the grade being installed.

9. The end joint must be at least 6” from the end joint in the row before it. **A minimum of one end joint is required in every row, regardless of width (e.g. hallways).**

10. Holding the board finished side down, apply 1/8” bead of tongue and groove adhesive to bottom of the short end and long side grooves and position the next board, match the tongue and groove at the end only, then, beginning at the opposite end of the board, tap the board onto the previous row with the tapping block. Move the tapping block back toward the right side of the board until you get near the connections with the previous board. Before you finish tapping the board onto the previous row, you must be sure the end joint is tight. If the end joint is not completely tight you may not be able to do so once the long seam is tight.

11. Continue process across the room. The last board should be sawn to appropriate width allowing for 1/2" expansion space against walls and all vertical obstructions.

12. Do not install floating floors in excess of 30 feet without the use of transitions

13. Use transitions at doorways and other adjacent floors.

14. Do not affix the floor to the subfloor at any point.

Glue-Down Installation

1. Determine starting wall and direction to lay boards. An outside wall is normally best as it is most likely straight and square with the room. Wood should be

installed perpendicular to the joists. In cases of existing wooden floor, boards should be laid crosswise or at a 45 degree angle.

2. Begin installing the first row in the right corner of the base wall. Install the first board so the short grooved side is against the expansion shims to your right and the long grooved length of the board is against the expansion shims in front of you.

3. Maintain expansion gap of 1/2" between first board and the wall by using spacers regularly along the length of the wall. Determine straightness of wall by snapping a chalk line. If starting wall is not straight, make notation on first row and saw to shape.

4. Connect the end of the second board to the end of the first board, making sure the boards are tightly connected and firmly positioned against the shims. Use the hammer/rubber mallet and tapping block to tap the tongue end of the second board to ensure a tight fit. **Never use the hammer or rubber mallet directly on the flooring as this will cause damage to the board.**

5. Continue placing additional boards moving right to left using the same procedure until the first row is complete.

6. You will need to cut off the end of the final board, save the remaining piece for the next row as long as it is at least 6” long. Use the last board Puller to ensure the last board is tight against the preceding board. Place shims between the end of the last board and the wall. Use the shims to wedge the row in tight rendering it immobile.

7. Once the first row has been cut and fit, remove the flooring and set it aside. Snap a chalk line the face width of the wood flooring plus 1/2” for expansion space out from the starting wall. Starting from the edge of the chalk line, apply an even layer of adhesive as instructed by the adhesive manufacturer. Only spread adhesive the width and length of the one row that was dry fit.

1. A NOTE ON ADHESIVE:

2. Follow the adhesive manufacturer’s instructions for use in this application. Wear rubber gloves and proceed carefully during adhesive application. Cured mastic is very hard and sometimes impossible to remove from the flooring as well as the tools. **DO NOT** allow any spilled or excess adhesive to remain anywhere but between the boards and the subfloor at any time during the installation. Clean up spills immediately as recommended by the adhesive manufacturer. **The flooring manufacturer will not be responsible in any way for adhesive that is not removed from the hardwood flooring immediately. Any damage to the flooring caused by the adhesive allowing to cure on the surface will be the sole responsibility of the installation mechanic.**

8. Re-install the pre-cut boards from the dry fit as follows. Connect the end of the second board to the end of the first board, making sure the boards are tightly connected and firmly positioned. Use the hammer/rubber mallet and tapping block to tap the tongue end of the second board to ensure a tight fit. **Never use the hammer or rubber mallet directly on the flooring as this will cause damage to the board.**

9. Continue placing additional boards moving left to right using the same procedure until the first row is complete.

10. Place shims between the end of the last board and the wall. Use the shims to wedge the row in tight rendering it immobile. For best results, allow the adhesive to dry before continuing with the rest of the installation.

11. Start each new row on the right side with the remaining portion of the previous row as long as it is at least 6” long; otherwise cut a new starter board. Stagger end joints (at least 6") and randomly install different lengths to ensure natural appearance. Do not create discernible patterns such as “H” or “steps”. Select boards to create a uniform appearance without clusters of short lengths or sections of light or dark planks. Do not install any objectionable boards that have visual defects or are not consistent with the grade being installed.

12. The end joint must be at least 6” from the end joint in the row before it. A minimum of one end joint is required in every row, regardless of width (e.g. hallways).

13. Trowel adhesive onto the subfloor as recommended by the adhesive manufacturer, place the next board in position, match the tongue and groove at the end only, then, beginning at the opposite end of the board, and tap the board onto the previous row with the tapping block. Move the tapping block back toward the right side of the board until you get near the connections with the previous board. Before you finish tapping the board onto the previous row, you must be sure the end joint is tight. If the end joint is not completely tight you will not be able to do so once the long seam is tight.

14. Continue process across the room. The last board should be sawn to appropriate width allowing for 1/2" expansion space against walls and all vertical obstructions. The last board puller will be used to install the last row.

Staple/Nail-Down Installation

1. Determine starting wall and direction to lay boards. An outside wall is normally best as it is most likely straight and square with the room. Wood should be installed perpendicular to the joists. In cases of existing wooden floor, boards should be laid crosswise or at a 45 degree angle.

2. Lay 30-30 Kraft or 15 lb. asphalt saturated felt (roofing felt) in same direction as boards making sure to tape the seams and overlap edges by 4". The vapor barrier must be continuous without cuts or punctures. Tape any tears, cuts or seams.

3. Begin installing the first row in the right corner of the base wall. Install the first board so the short grooved side is against the expansion shims to your right and the long grooved length of the board is against the expansion shims in front of you.

4. Maintain expansion gap of 1/2" between first board and the wall by using spacers regularly along the length of the wall. Determine straightness of wall by snapping a chalk line. If starting wall is not straight, make notation on first row and saw to shape.
5. Connect the end of the second board to the end of the first board, making sure the boards are tightly connected and firmly positioned against the shims. Use the hammer/rubber mallet and tapping block to tap the tongue end of the second board to ensure a tight fit. **Never use the hammer or rubber mallet directly on the flooring as this will cause damage to the board.**

6. Continue placing additional boards moving right to left using the same procedure until the first row is complete.

7. You will need to cut off the end of the final board, save the remaining piece for the next row as long as it is at least 6” long. Use the last board Puller to ensure the last board is tight against the preceding board. Place shims between the end of the last board and the wall. Use the shims to wedge the row in tight rendering it immobile.

8. After pre-drilling holes, carefully top nail the first row of boards to the subfloor using 6d finish nails where the boards meet the wall (This will be on three sides of the first and last rows of the installation and on the two ends for all other rows). Place the nails as close to the edge of the boards as possible so they will be covered by the transition and/or wall molding. If this cannot be done, set the nails with a nail punch and fill holes with wood filler. Finish nails should be placed at 8” intervals along the wall.

9. With the flooring stapler/nailer, fasten through the tongues of the first row at 8” intervals and 2-3” from the end of each board. If the stapler/nailer cannot be used due to interference with the wall, pre-drill and hand nail through the tongue of the board at a 45° angle. Be sure the nail is positioned in the nail pocket. Set the nail with a punch.

10. Start each new row on the right side with the remaining portion of the previous row as long as it is at least 6” long; otherwise cut a new starter board. Stagger end joints (at least 6") and randomly install different lengths to ensure natural appearance. Do not create discernible patterns such as “H” or “steps”. Select boards to create a uniform appearance without clusters of short lengths or sections of light or dark planks. Do not install any objectionable boards that have visual defects or are not consistent with the grade being installed.

11. The end joint must be at least 6” from the end joint in the row before it. A minimum of one end joint is required in every row, regardless of width (e.g. hallways).

12. Position the next board, match the tongue and groove at the end only, then, beginning at the opposite end of the board, tap the board onto the previous row with the tapping block. Move the tapping block back toward the right side of the board until you get near the connections with the previous board. Before you finish tapping the board onto the previous row, you must be sure the end joint is tight. If the end joint is not completely tight you may not be able to do so once the long seam is tight. With the flooring stapler/nailer, fasten through the tongues of the boards at 8” intervals and 2-3” from the end of each board.

13. Continue process across the room. The last board should be sawn to appropriate width allowing for 1/2" expansion space against walls and all vertical obstructions. The last board puller will be used to install the last row.

14. Top nail the last row with finish nails against the wall as was done with the first row.

COMPLETING THE JOB

1. Fill visible joints and gaps with a non-silicon based filler that blends with the floor color. Helpful hint: Test filler on spare piece of plank.

Note: The use of fillers/putty and stain is a recommended and acceptable industry practice. Full plank replacements are also acceptable forms of repair and do not affect the integrity of the floor when done correctly

2. Install molding and trim making sure not to nail into the hardwood flooring.

3. Sweep and/or vacuum floor then clean with a hardwood flooring cleaner.

Note: You must stay off floor for at least 12 hours when using either floating or glue down methods.

Upon completion, cover the floor with a breathable wrapping to protect the finish if necessary.