

# Engineered Hardwood (any thickness <5/8" thick)

TAIIHWTGLT5822.1

INSTALLATION INSTRUCTIONS | ENGINEERED HARDWOOD PLANKS (3/8", 7/16", 1/2", or 9/16" thick)



PLEASE READ ALL INSTRUCTIONS CAREFULLY, BEFORE YOU BEGIN INSTALLATION.  
IMPROPER INSTALLATION WILL VOID WARRANTY. FOR ALL INSTALLATION CONDITIONS AND INFORMATION NOT COVERED SPECIFICALLY UNDER THESE INSTRUCTIONS, OR DEFECTIVE MATERIAL, CONTACT MANUFACTURER.

Always check the manufacturer website for the latest installation, maintenance, and warranty information. Read and follow all manufacturer instructions.

**Please Note: Engineered Hardwood is produced from natural materials and is affected by the environment in which it is installed.**

Special attention needs to be given to (but not limited to):

- Wood is subject to normal expansion and contraction due to normal climate fluctuations within a home or building. Normal expansion and contractions can result in squeaks and/or popping sounds. This is inherent in wood flooring and not considered a defect.
- Engineered wood flooring is designed to perform within specific climate conditions within the home environment. The climate conditions must be maintained between 35%-55% RH (Relative Humidity) and 60°-85° Fahrenheit.
- Since engineered wood is a natural product no two boards are alike. It is required that you work out of several boxes mixing product to achieve the desired visual appearance. Dry fit and inspect prior to permanent installation.
- Industry guidelines state 5-10% of wood flooring will require culling (waste factor) for defects, visual irregularities, and blending. Once installed visible defects and abnormalities are not covered under warranty.
- Always allow proper expansion space. An expansion gap must be provided, continuously, at all vertical surfaces, allowing material to expand and contract with no restriction.
- Do not apply baseboard too tight to the flooring or nailing through the flooring ends, resulting in restricted movement.
- Do not restrict movement by installing cabinets, islands, or other heavy objects on top of the flooring. Heavy objects such as pool tables and refrigerators are acceptable as long as they do not exceed 300 PSI onto the floor.

**IMPORTANT:** Engineered hardwood with visible defects and/or abnormalities are not covered under warranty once installed.

## General Guidelines

Always follow the most current installation instructions. For the most current instructions go to the manufacturer website.

Always read the complete installation instructions prior to installation.

Always follow all Local and Federal Building Codes.

Always follow all OSHA regulations for safety.

For information not implicitly covered by these specific installation instructions, please refer to the NWFA (National Wood Flooring Association) current installation guidelines ([www.nwfa.org](http://www.nwfa.org)) for more information.

## Installation Tools Required

Spacers/Shims	Tape Measure	Moisture Meter
Rubber Mallet	Chalk/String Line	Thermo-hygrometer
Hand Saw, Circular Saw, Jig Saw or Other	Squares & Straight Edges	Trowel
Drill	Pull/Pry Bar	Floor Roller
Utility Knife	Scraper/File	Flooring Nailer/Stapler
Pencil/Pen	Dust Collection System	Mechanical Fasteners

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## 1) Pre-Installation Checklist

**NORMAL ROOM CONDITIONS (NRC):** Normal room conditions are defined as; ambient air temperature between 60-85 degrees Fahrenheit; surface temperature between 60-85 degrees Fahrenheit; ambient RH (Relative Humidity) between 35%-55%. Flooring should be the last material installed on a project. Make sure all painting and drywall is done, doors and windows are installed, and HVAC system is installed and operating.

**SITE CONDITIONS:** Flooring products should not be delivered to a project site until the site can achieve and maintain normal room conditions (NRC) for a period of 5 days.

**ACCLIMATION:** Flooring products are designed to perform in normal room conditions (NRC) ambient temperature and surface temperature must be between 60-85 degrees Fahrenheit, ambient relative humidity (RH) must be between 35-55%. Flooring products must achieve and maintain NRC prior to, during, and after installation. Temperature readings must be taken and documented, including ambient room temperature and surface temperature. Acclimate cartons laying flat, not on end or on side, stacked no more than 5 cartons high. Avoid storing flooring direct sunlight. Do not store on radiant in-floor heated areas.

**SUBFLOOR MOISTURE CONCRETE SUBSTRATES:** Moisture levels in concrete substrates must be no higher than 80% Relative Humidity (ASTM F2170) and MVER of  $\leq 3$  lbs./1000 sf in 24 hours (Calcium Chloride Test ASTM F1869). For levels higher than approved levels, additional dry time and/or moisture mitigate with a product designed to reduce moisture level to acceptable level are required. Subfloor pH must be between 5-9 on a pH scale. It is difficult to measure gypsum substrates for moisture. Although Relative Humidity Probes (ASTM F2170) are the recommended method of testing, they are not practical due to the number of tests required and often the thickness of the gypsum. A professional electronic moisture indicator (Protimeter Aquant recommended) can be used to indicate if the substrate is dry enough to receive floor covering. **\*Note: Concrete substrates must be properly cured and meet moisture requirements. All concrete substrates on or below grade are required to have an approved poly film moisture barrier with minimum 6mil thickness properly installed.**

**SUBFLOOR MOISTURE WOOD SUBSTRATES:** Moisture levels in wood underlayment should coincide with required temperature and humidity of installation site and generally shall not exceed 10% moisture determined by a professional electronic pin meter (example: Protimeter Surveymaster). Subfloor pH must be between 5-9 on a pH scale.

**SUBFLOOR CONSTRUCTION:** Subfloors must be clean, dry, and free of any materials that might interfere with unrestricted movement. Subfloors must be soundly constructed to eliminate vertical movement. Subfloors must be flat, no more than 3/16" undulation in 10 linear feet or 1/8" in 6'. Subfloors must meet all Federal and local building codes. Patch subfloor depressions using a portland based patch, grind down high spots following acceptable installation standards.

**\*Note: For wood substrates ensure that there is a minimum of 18" between the subfloor and the ground, the crawl space is ventilated, and there is a minimum 6mil poly sheeting installed over the entire ground surface overlapped and taped.**

**APPROVED SUBSTRATES:** Approved substrates include: properly prepared concrete and cement leveling compounds (minimum 3000 PSI), properly prepared gypsum (minimum 3000 PSI), and underlayment grade plywood/OSB/OFB board. For best product performance results installation on plywood over concrete is not recommended for this product.

**RADIANT HEATED FLOORING:** Flooring is only approved over hydronic (water) radiant heat systems for specific species of engineered wood. Radiant heated floors should never exceed 85 degrees Fahrenheit.

**ADHESIVE RESIDUE:** Never install over adhesive residue. All residue must be completely removed or properly encapsulated.

**INTERIOR ONLY:** This product is designed for interior climate controlled areas only.

**VISUAL INSPECTION:** All flooring must be inspected, in proper lighting, prior to installation. Installed material with visible defects is not covered under the flooring warranty.

**PRODUCT DIRECTION:** Flooring planks shall be installed perpendicular to floor joists. Always work out of 3-5 cartons mixing products from several boxes. Always dry lay prior to final installation to insure best visual results.

**CHAIR PADS AND LEG PROTECTORS:** Chair pads are required under roller castors and leg protectors, a minimum of 1.5" diameter, are required under chair legs.

**FLOOR PROTECTION:** After installation floors must be protected from trade and other damage by a floor protection designed for this purpose.

## 2) Owner/Installer Responsibilities

It is the owner and floor covering installers responsibility to:

- Make sure the latest installation instructions are followed. For the most current instructions go to the manufacturer website.
- Make sure the product is suitable for its intended use.
- Visually inspect all material and remove any visibly defective material. Any visibly defective material installed will not be covered under warranty.
- Industry standards state a 5%-10% waste factor, depending on layout, must be added to the total square footage required. Diagonal installations typically require more.
- Work out of several boxes mixing product for visual appearance. Dry fit prior to installation is the recommended method. Use reasonable selectivity and cull out unsuitable boards.
- The use of stain, putty, or filler for correction of minor irregularities (scratches, scuffs, dings) during installation shall be considered normal procedure.
- Manufacturer recommends an additional 10% square footage or (1) full carton (whichever is greater) be retained for future repairs/replacements.

**WARNING:** Stop any project that does not meet installation guidelines and contact the flooring retailer it was purchased from. Project failures resulting from inappropriate or improperly prepared subfloor, job site environmental deficiencies, improper installation, improper care or maintenance are not covered by product warranty.

### 3) Suitability of Product

This product is approved for climate controlled indoor applications only.

**Approved for use in:**

- Residential applications
- Multi-Family applications - Contact Manufacturer for specific use and installation instructions
- Light Commercial applications - Contact Manufacturer for specific use and installation instructions

**Not approved for use in:**

- Wet areas (such as: full bathrooms, saunas)
- Under cabinets, islands, or other heavy objects. Objects which place less than 300 PSI onto the floor may be considered.
- Areas of heavy rolling loads (such as: hospital beds, electric wheelchairs)
- Heavier traffic areas, entry foyers, or any area where food is prepared or objects are rolled or dragged around
- Commercial applications
- Industrial applications

**IMPORTANT:** Please read warranty for a more complete definition of acceptable use.

### 4) Site Condition Requirements (NRC)

**Normal Room Conditions:**

Normal Room Conditions (NRC) must be maintained prior to, during, and after installation.

The NRC is defined as:

- Ambient air temperature between 60-85 degrees Fahrenheit
- Surface temperature between 60-85 degrees Fahrenheit
- Ambient RH (Relative Humidity) between 35%-55%
- Substrate must be dry: concrete/gypsum-less than 80% RH (Relative Humidity), wood - equal to moisture content of install location not to exceed 4% difference between floor and subfloor (average 8% total) while not exceeding 12% total moisture, and pH levels between 5-9

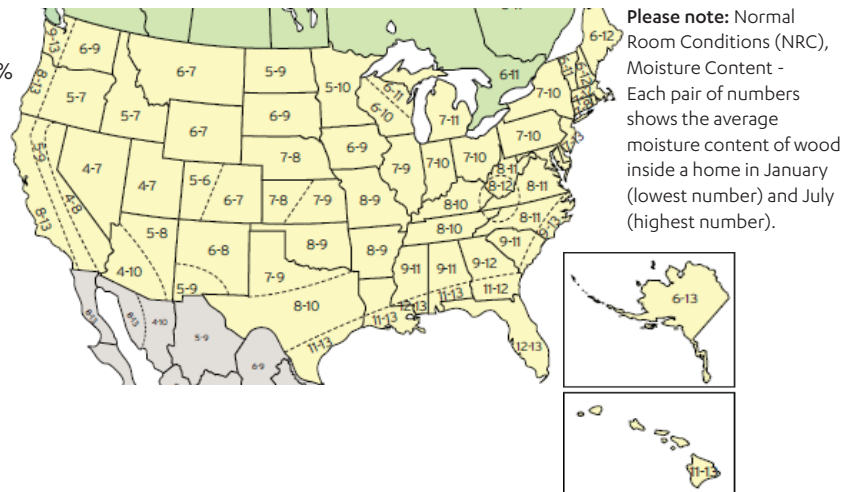
Flooring products should not be delivered to a project site until the site can achieve and maintain normal room conditions (NRC) for a period of 5 days. All flooring products are required to achieve NRC prior to installation.

**Moisture Content:**

Normal room conditions are integral part of retaining the moisture content levels of the engineered hardwood flooring. The values on the accompanying map provide examples of how average moisture content levels can vary from one region to another, and from one season to the next within a region.

Moisture Content (Average/Range):

- Most areas of the United States: Average = 8%, Range = 6%-10%
- Dry southwestern region: Average = 6%, Range = 4%-9%
- Damp, warm coastal areas; Average = 11%, Range = 8%-13%



°F		°C																								
Equilibrium Moisture Content (EMC)																										
EMC is achieved when wood stops releasing or absorbing moisture.																										
30	40	50	60	70	80	90	100	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
30	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
40	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
50	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
60	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
70	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
80	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
90	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
100	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95							

### 5) Acclimation Requirements

**All products must acclimate to the room conditions in which they are being installed.**

Flooring products (including adhesive & trim) are designed to perform in normal room conditions (NRC). Flooring products must achieve and maintain NRC 48 hours prior to, during and after installation. Temperature and Relative Humidity readings must be taken and documented, including ambient room temperature and surface temperature. **NOTE: Acclimation is a measurement of achievement, not just time.**

Acclimate cartons laying flat, not on end or on side, stacked no more than 5 cartons high. Allow air movement between boxes. Avoid storing flooring in direct sunlight. Do not store on operational radiant in-floor heated areas. It is critical to take a surface temperature reading of the plank prior to installation, it must also be at NRC (Normal Room Conditions).

NRC (Normal Room Conditions) must be consistently maintained at:

- Room temperature between 60-85 degrees Fahrenheit
- Surface temperature between 60-85 degrees Fahrenheit
- Ambient RH (Relative Humidity) between 35%-55%, Moisture Content 6-12% dependent on region
- Flooring material must be maintained between 60-85 degrees Fahrenheit

## 6) Subfloor Flatness Requirements

### Subfloor Flatness:

- Subfloor must be flat, with no undulation exceeding 3/16" in a 10' radius (or 1/8" in 6'). Grind high spots down and/or fill low spots with a quality cement patching compound. Allow patch to completely dry prior to installation. Follow patch manufacturer's installation guidelines.
- Follow all local build regulations and OSHA procedures when grinding. Some substrates might contain harmful contaminants; such as silica sand or asbestos. It is critical that you determine prior to grinding if there are any harmful contaminants in the subfloor.

**WARNING:** Follow the National Wood Flooring Association (NWFA)([www.nwfa.com](http://www.nwfa.com)) recommended practices whenever grinding a substrate, existing flooring, or adhesive residue. These surfaces may contain Asbestos or other harmful contaminants.

## 7) Subfloor Construction Requirements

### Subfloor Construction must meet all Local and Federal Building Codes:

Subfloors must be soundly constructed to eliminate vertical movement. Subfloors must be flat, not to exceed undulations exceeding 3/16" in 10' or 1/8" in 6 feet. It is the floor covering installers responsibility to ensure that subfloor conditions are suitable. Failure to meet these requirements may result in issues including noisy floor syndrome, cracking, and/or flooring failure which are not covered by warranty.

### Approved Subfloors:

- Concrete, properly prepared concrete, cement patch and leveling compounds (minimum 3000 PSI). Substrate thickness 4"-6". Must not exceed 80% RH (ASTM F2170), must not exceed MVER ≤3lbs/1000 sf in 24 hours (ASTM F1869), and pH levels must be between 5-9.
- Gypsum, properly prepared gypsum (minimum 3000 PSI). Must be dry based on gypsum and adhesive manufacturer standards, maximum 80% RH (ASTM F2170).
- Wood, properly prepared wood (underlayment grade plywood, OSB & OFB). Joist spacing recommendation is glued & fastened at ≤16" on center (O.C.). Joists >16" O.C. are required to be glued and fastened at joist (ASTM D3498). Minimum substrate thickness 19/32" underlayment grade plywood or 23/32" OSB. Subfloor must have a minimum 18" clearance between the bottom of the joist and the ground. Ground must be covered 100% with 6-mil poly film.
- Existing floor covering that is firmly bonded to the substrate; dense, not cushioned, and only one layer thick.
- Double-Layer Subfloor Systems are required if joist and layer thickness combinations on existing installations do not meet minimum guidelines.

### Non-Approved Subfloors:

- Sleeper/Screed type floor systems.
- Plywood installed directly over a concrete slab.
- Soft plywood, Luan, pressure treated, or plywood not approved as "Underlayment Grade" certified by the Plywood Association.
- Masonite or hardboard.
- Contaminated surfaces: abatement chemicals, paint, oil, mold, mildew, grease or any containments.
- Strip or Solid-board plank wood.
- Uneven (3/16" in 10') or unstable substrates.

**On Grade and Below Grade Substrates:** Below grade substrates require a 6mil polyethylene film be applied to the substrate or a permanent moisture mitigation product must be applied. On grade substrates where moisture exceeds 80% RH must have a 6mil polyethylene film must be applied.

**IMPORTANT:** For any substrates not mentioned above check with the manufacturer before proceeding with the installation.

## 8) Radiant Heated Floors

### Radiant Heated Substrates:

Engineered hardwood flooring is, in general, more dimensionally stable. However, not all engineered wood is recommended or approved for use over a radiant heating system.

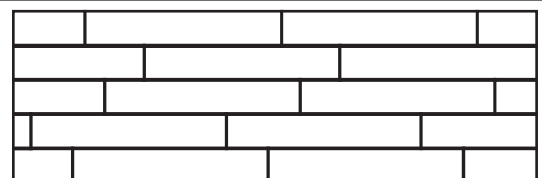
Installation over hydronic (water) radiant heat systems is approved for Maple, Oak, and Birch species only. All other species of wood flooring are not approved for use with a radiant heating system.

Please reference the National Wood Flooring Association ([www.nwfa.com](http://www.nwfa.com)) and Radiant Panel Association ([www.radiantpanelassociation.org](http://www.radiantpanelassociation.org)) for specific requirements, guidelines, and installation instruction. Refer to the radiant heat system manufacturer's recommendations for additional guidance.

**IMPORTANT:** It is the responsibility of the owner and/or installer to confirm the suitability of radiant heating system for intended end-use. The selection and use of any radiant heating system is at the sole discretion and responsibility of the owner.

## 9) Layout

- It is best to lay flooring parallel to light source (such as a window) or exterior wall and perpendicular to floor joists.
- Determine the center of the room by marking the center of each end wall. Snap a chalk line between these two points. Recommended measurements 3-1/8" from starting wall and 12"-18" from corners.
- Dry lay rows to wall, if the plank to the long wall will be less than 2" adjust the center line to make the long wall plank over 2". Balance the cuts in the room.
- Stagger end joints by a minimum of twice the width of the plank (5" wide plank, stagger end joints 10") or up to maximum of 12" on a random basis, avoiding "H" patterns.



Staggered Joint Design

## 10) Expansion Space and Transitions

### Expansion Space:

Flooring expands and contracts with normal climate changes. This product must be allowed an expansion space at all vertical surfaces (walls, cabinets, door frames, pipes, floor vents, etc.) to expand and contract.

- At all vertical surfaces in areas of installation a 1/2" expansion space is required.
- Undercut door casings and other vertical surfaces 1/16" higher than flooring assembly to allow flooring to freely fit underneath.
- At vertical surfaces that will not be receiving wall base or other expansion trim (such as sliding glass doors, pipes); allow a minimum 1/2" expansion gap and caulk gap with a flexible caulking (Silicone).
- Double-layer Subfloors Systems, if applicable, require a 3/4" expansion space.
- Do not fit flooring full or under compression.

### Expansion Transition Trim:

Transition trim must be used in the following:

- Areas with rooms which do not join symmetrically or adjoin to other type of flooring.
- Between areas of uneven heating, where one areas temperature might be maintained differently than an adjoining area.
- At doorways and sliding glass doorways, use an end cap square edge transition.
- Use transition trim in adjoining areas of irregular shape, such as but not limited to: L-Shape, U-Shape, T-Shape.
- Do not nail or staple trim so that it restricts floor movement such as nailing into floor or too tightly against floor surface.

## 11) Trim



**End Cap**

Use at sliding glass doors, entry doors, fireplaces, carpet, etc .



**T-Mold**

Use between two products close in height.



**Reducer**

Use when transitioning to hard surface.



**Stair Nose**

Use at stair nose.



**Quarter Round**

Use at wall base to extend coverage.

Trim profiles are approximate and may change without notice. Trims are coordinating, color or graining may not be exact.

## 12) Installing on Stairs

- When installing on stairs, a stair nosing must be used.
- When adhering flooring to stairs use a permanent bonding adhesive (urethane adhesive or solvent-free construction adhesive).

## 13) Installation Methods

### Installation recommendations and requirements

Based upon the manufacturer's approve and non-approved subfloors the following are the recommended installation methods. The use of the non-approved installation methods are not strictly prohibited, but will render the product warranty void. Contact manufacturer prior to installation if there are concerns or questions regarding any of the installation methods.

### Approved Installation Methods:

- Mechanically Fastened (Nail/Staple)
- Glue-Assisted Mechanical Fastening (Primary installation method is Nail/Staple and adhesive is applied as well to increase performance.)
- Full Spread Glue

### Non-Approved Installation Methods:

- Floating
- Edge-Glued Floating
- Full Spread Glue with Nail Assist

### Recommendations/Requirements:

- **Concrete/Gypsum** - Recommendation: Full Spread Glue
- **Wood** - Recommendation: Full Spread Glue or Glue-Assisted (with planks ≤5.5" wide), Required: Glue-Assisted (with planks >5.5" wide)
- **Existing Installation** - Material type and overall thickness of existing installation will determine the best installation method to be used within the approved methods above.

**IMPORTANT:** For any installation method or substrates not mentioned above check with the manufacturer before proceeding with the installation.

## 14) Mechanically Fastened (Nail/Staple)

### STARTING YOUR INSTALLATION

Work from several open boxes of flooring and "dry lay" the floor before permanently laying the floor. This will allow you to select the varying grains & colors and to arrange them in a harmonious pattern. Remember, it is the installers' responsibility to determine the expectations of what the finished floor will look like with the end user first and then to cull out pieces that do not meet those expectations.

**IMPORTANT:** Manufacturer is not responsible for any damage due to mechanically fastened installation method.

## Nail/Staple Continued

**Inspection:** Prior to installation, inspect planks in daylight for visible faults/damage. Check if subfloor/site conditions comply with the specifications described in these instructions. If you are not satisfied, do not install, and contact your supplier.

Ensure the tongues on long edge joint and end joints are facing the wall. Begin installation next to an outside wall. This is usually the straightest and best reference for establishing a straight working line. Establish this line by measuring an equal distance from the wall at both ends and snapping a chalk line. The distance you measure from the wall should be the width of a plank.

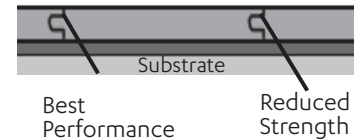
### Asphalt Saturated Felt Paper:

- Install 15 lb. Asphalt Saturated Felt or Resin Paper on the wood subfloor prior to installation; roll out the material in the same direction as the flooring will be installed; allowing the Felt Paper to extend 3"-4" up the walls.
- Position the Felt Paper so that the chalk line can be seen clearly (you may need to cut the Felt Paper back from the wall just enough to see it).
- Staple or tape at the corners to hold the Felt Paper in position.
- Overlap the felt paper by 4" and duct tape the seams. NOTE: While 15 lb. Asphalt Saturated Felt Paper is an excellent vapor barrier, it is NOT considered a moisture barrier. If a moisture barrier is needed, a 6 mil polyethylene film is required with the edges overlapped 18" and taped.

### Fastener Schedule:

WOOD FLOORING TYPE	FASTENER TYPE	FASTENER SPACING
Engineered T&G wood flooring <math><5/8\text{''}</math> thick	18g-20g cleat or narrow crowned (1/4") 18g staple. Not less than 1 1/4" length.	3"-4" intervals along length of each board. 1"-2" from each end-joint of every board. Minimum 2 fasteners per board.

**IMPORTANT** - There is industry evidence that when staples penetrate the bottom of the substrate there is a weakening of the holding power. It is recommended that you choose the longest length possible without penetrating the bottom of the substrate.



### Air Pressure Requirements:

- Air pressure should be sufficient enough to drive the fasteners flush with the surface of tongue, but not drive the fasteners too deep or through the core material.
- Using improper adapters and pressure settings can cause severe damage to the flooring while using a nail/staple-down installation. Using the correct adapter and pressure will set the nail/staple correctly in the tongue. It is vital that the tool is adjusted properly so the nails/staples/cleats are being positioned at the proper angle. Air pressures set too high can cause damage to the tongue, putting blisters on the face of the flooring and making it difficult to install adjoining boards. A good test is to set the pressure initially at 70 PSI and adjust it until the fastener properly sets in the tongue.
- If a nail/staple/cleat needs to be removed due to going in crooked, do not pull straight up from the tongue. This will damage the surface of the board. Instead, pull out the fastener from the tongue at the front of the board with all pressure from the hammer's head directed into the subfloor.
- Make sure that there is downward pressure on the board to ensure it is in direct contact with the subfloor as fastening.



### INSTALLATION GUIDE

- Make sure to use the straightest, longest boards available when installing the first two rows. Begin installing with several different rows at a time, securing each board with at least two fasteners. Make sure you press firmly together before fastening to eliminate gaps between the boards.
- Line up the tongue of the first row with the starting point chalk line. The groove of the boards should be facing the starting wall.
- Using a pneumatic brad nailer, face-nail the groove side of the boards (**first row only**) 1/2" from the edge at 6" intervals and 1"-2" from each end; then at a 45° angle down through the nailing pocket on top of the tongue. Another option is to pre-drill the face-nail holes 1/2" from the groove edge of the first row, 1"-2" from each end, and at 6" intervals. Pre-drill at the same intervals at a 45° angle down through the nailing pocket on top of the tongue. Face-nail the groove side where it is pre-drilled. When the face-nailing is complete, blind-nail at a 45° angle using 4d or 6d nails. Countersink all nails to ensure the next boards install smoothly. Make sure to use a nail set to countersink the nails; failure to do so can damage the surface of the wood. Keep blind-nailing the following rows until the stapler can be used.
- As listed above in Layout section, distribute lengths, avoiding "H" patterns and other discernible patterns in adjacent runs. Stagger end joints of boards row to row a minimum of 10" for planks wider than 5" for better visual effects and structural stability on mechanically fastened installation.
- Make sure you are using the correct staple gun, adapter, fasteners, and PSI setting on the compressor.
- Practice installing on an extra piece of wood, check for any damage to the board (surface damage, tongue damage, etc.). Make any adjustments and corrections BEFORE you start installing the rest of the floor. Once you have made your adjustments, discard the "practice" board.
- Proceed with installing the rows placing fasteners 3"-4" apart along the body of the side joint and 1"-2" from the end joints.
- REMINDER: Take boards from multiple boxes while installing. Do not install 2 pieces from the same box in a row - mix the colors and shades while installing to get a more favorable overall look.

## 15) Glue Assisted

### STARTING YOUR INSTALLATION

Glue-Assisted Mechanical Fastening is where the primary installation method is Nail/Staple and adhesive is applied as well to increase performance. This installation method can reduce floor noises experienced in expansion, contraction, and other normal floor movement. Note: There is no installation that will eliminate noises, creaks, and pops completely as they are inherent to hardwood products. Manufacturer recommends Glue-Assisted installation method when installing over approved wood substrates.

**Recommendation:** Glue-Assisted (with planks  $\leq 5.5$ " wide), **Required:** Glue-Assisted (with planks  $> 5.5$ " wide)

#### Vapor Retarder:

- Traditional sheet-good vapor retarder is not required in fully conditioned spaces.
- Use liquid applied or similar Class II vapor retarder in unconditioned spaces. Ensure to select a vapor retarder compatible with manufacturer recommended adhesives.

#### Fastener Schedule:

- Schedule shall remain the same as indicated for Mechanically Fastened (Nail/Staple) installations. Glue-Assisted installation does not alter the required fastening patterns.

#### Adhesive/Trowel:

The adhesive used should be a wood flooring adhesive with elastomeric qualities to allow for normal movement within the flooring system. The adhesive must also be compatible with the wood flooring, subflooring, and any liquid-applied vapor retarder system used. The wood flooring adhesive may be applied to the subfloor or the backside of the board to supplement the mechanical fasteners.

**Recommendation:** WF Taylor Ridgeline (or equivalent)

Always follow the adhesive manufacturers trowel notch recommendations based on the substrate and wood flooring construction. It is the installers responsibility to maintain proper trowel notching during installation.

### INSTALLATION GUIDE

- Test the adhesive to determine the most effective application method, and for compatibility with the subfloor.
- Use a notch trowel, or apply a continuous, minimum  $1/4$ " wide, uniform bead of adhesive directly to the subfloor, or to the back of the board using a glue gun to dispense the adhesive. Adhesive should cover entire width and length of each plank, to within a minimum of 1" from the edges and ends of each board. Common applications: Serpentine, Parallel Stripes, End and Groove, or Lengthwise Parallel Stripes.

SERPENTINE (SINE-WAVE) PATTERN



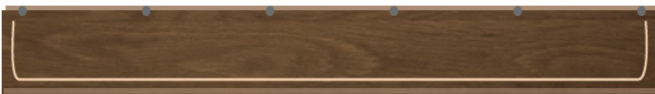
The serpentine (sine-wave) pattern, where the full curve (peak-to-peak) is performed approximately twice the width of the board. The adhesive should cover the entire length and width of each board.

PARALLEL STRIPES PATTERN



The parallel stripes may run perpendicular to, or on diagonal to, the length of each plank being installed. Each stripe should be placed at approximately 6"-8" intervals.

ENDS AND GROOVES PATTERN



Adhesive is applied to the subfloor or to the underside of the board in the location within 1" from both ends of the board and along the full length of the back, groove-side of the board.

LENGTHWISE PARALLEL STRIPES PATTERN



Adhesive is applied to the subfloor or to the underside of the board in the location within 1" of each long side edge and down the middle of the board.

- Once best application method has been determined continue with Mechanically Fastened (Nail/Staple) installation instructions and Glue-Assisted application.

## 16) Full Spread Glue

### STARTING YOUR INSTALLATION

Work from several open boxes of flooring and "dry lay" the floor before permanently laying the floor. This will allow you to select the varying grains & colors and to arrange them in a harmonious pattern. Remember, it is the installers' responsibility to determine the expectations of what the finished floor will look like with the end user first and then to cull out pieces that do not meet those expectations.

**Inspection:** Prior to installation, inspect planks in daylight for visible faults/damage. Check if subfloor/site conditions comply with the specifications described in these instructions. If you are not satisfied, do not install, and contact your supplier.

Ensure the tongues on long edge joint and end joints are facing the wall. Begin installation next to an outside wall. This is usually the straightest and best reference for establishing a straight working line. Establish this line by measuring an equal distance from the wall at both ends and snapping a chalk line. The distance you measure from the wall should be the width of a plank.

### Adhesive/Trowel:

The adhesive used should be a wood flooring adhesive with elastomeric qualities to allow for normal movement within the flooring system. The adhesive must also be compatible with the wood flooring, subflooring, and any liquid-applied vapor retarder system used. The wood flooring adhesive may be applied to the subfloor or the backside of the board to supplement the mechanical fasteners.

**Recommendation:** WF Taylor Ridgeline (or equivalent)

Always follow the adhesive manufacturers trowel notch recommendations based on the substrate and wood flooring construction. It is the installers responsibility to maintain proper trowel notching during installation.

### INSTALLATION GUIDE

- Make sure to use the longest boards available when installing the first two rows.
- Line up the groove of the first row with the starting point chalk line. The tongue of the boards should be facing the starting wall. Align and securely seat the first row in the adhesive-all additional rows will be pushed back to this row. It must be straight.
- When installing individual pieces, connect the end-joints first as close to the long tongue and groove as possible. Then slide (push) the long tongue and groove together as tightly as possible. Try to avoid sliding the pieces through the adhesive as much as possible-this will help negate memory pull-back (boards pulling apart once they are in position) and adhesive bleed-through (excess adhesive squeezing out vertically through the joints). You may need to use a scrap piece of the same product as a tapping block to help align the plank.
- If the first row needs help staying in place, a stabilizing row can nailed on the dry side of the starting chalk line.
- Double check the edges and ends of your installed planks-they should all have a tight fit.
- Remember to stagger the end-joints of adjacent rows at least 10" (2x width of plank or maximum 12") to create a more appealing look for the floor.
- Be sure not to spread your adhesive too far ahead of your work area! If the adhesive skins over and starts to dry, preventing a proper bond between the floor and the wood, remove the old and spread new adhesive. You must have adequate adhesive transfer to ensure the floor will be installed correctly. Double check the holding strength of the adhesive by occasionally lifting a board and checking the transfer of the adhesive.
- Continue with this method while installing the rest of the floor. Rip the final boards in last row to fit and allow at least 1/2" of expansion space.
- Once the boards are tightly fitted together, use the 3M 2090 Blue Painter's Tape to hold the planks together while the adhesive dries. BEFORE applying the tape be sure to clean any urethane adhesive off of the surface of the wood with mineral spirits or urethane adhesive remover. If the adhesive dries on the surface of the wood it is VERY difficult to remove. NOTE: Do not use Masking Tape, as it leaves a sticky residue on the surface of the wood which is very difficult to remove.
- After the installation is complete and withing 24 hours, remove all of the Blue Painter's Tape from the surface of the flooring; thoroughly clean the floor using a hardwood cleaner. Recommendation: WF Taylor Fresh Floors
- Install any moldings, door trim, end caps, etc. to complete the job. Reminder: Do not nail molding directly into the floor or molding to snug to floor surface.
- To prevent surface damage to the floor, avoid rolling heavy appliances and furniture across it. Use cardboard, plywood, or airlifts if possible.

## 17) Post Installation

### Floor Protection:

- If other trades are working in the installation area, protect flooring with an approved breathable floor protection material such as a builder board or reinforced 60lb Kraft paper.
- NEVER use plastic, solid rubber, or polyethylene film to cover the installed floor since they both trap moisture and will damage the installed hardwood (creating cupping or swelling issues).
- Always use chair pads under rolling caster chairs and chair leg protectors, minimum of 1.5" diameter, under furniture legs.

## 18) Maintenance

### Initial Maintenance

- Always use a neutral pH cleaner, such as WF Taylor Fresh Floors.
- Allow flooring to dry completely prior to foot traffic.

### Daily & Weekly Maintenance

- Sweep, dust mop, or vacuum the floor as needed to remove loose dirt and grit. Do not use a vacuum with bristles or a beater bar.
- Recommend cleaning liquid spills immediately.
- Damp mop (do not flood floor) as needed.

### Preventative Maintenance

- Chair pads are required under roller castor chairs.
- Furniture leg protectors, minimum 1.5" diameter, are required under all furniture legs.
- Use protective boards when sliding heavy furniture across flooring.
- Never apply rubber mats directly on top of vinyl flooring.
- Place walk off mats outside entry doors to prevent dirt and sand from entering into the installation.
- Protect flooring from direct sunlight with window and glass door coverings to prevent fading.
- Any additional floor finishes are not required and not approved. The application of any additional floor finishes will void all warranties.

**IMPORTANT** - Refer to Engineered Hardwood Maintenance Guide for full list of maintenance requirements and best practices.