INSTALLATION INSTRUCTIONS

3/8" 7/16" 1/2" 9/16" 5/8"
10mm 11.1mm 12.7mm 14.2mm 15.8mm

Engineered Flooring
Staple Down Installation

STAPLE/NAIL DOWN INSTRUCTIONS

ATTENTION
Inspect **ALL** materials carefully **BEFORE** installation. Warranties **DO NOT** cover materials with visible defects once they are installed. It is recommended that all engineered products acclimate for 2 days.

It is the responsibility of the installer/owner to determine if the job site subfloor and job site conditions are environmentally and structurally acceptable for wood floor installation. Flooring manufacturer declines any responsibility for wood floor failure resulting from or connected with subfloor, subsurface, job site damage or deficiencies after hardwood flooring has been installed.

STAPLE/NAIL DOWN INSTALLATION
Tools:

- 3/8" & 7/16" Staple Down using 1 1/4" to 1 1/2" long staples or 20 gauge cleats depending on the flooring product
- 1/2" & 5/8" Staple Down using 1 1/2" long staples or either 15 gauge or 18 gauge cleats depending on the flooring product

SUBFLOOR:
- **5/8" minimum thickness, preferred 3/4" or thicker plywood** installed with long edges at a right angle to the 16" on center floor joists and staggered so that the end joints in adjacent panels break over different joists. Nail at each bearing with 6d threaded or 8d common nails spaced 10" on center along intermediate joists.
- **1" x 4" to 6" wide, square edge, kiln dried coniferous lumber**, laid diagonally over 16" on center wooden joists. The ends of all boards are to be cut parallel to the center of the joists for solid bearing. Face nail each board solidly at every bearing on the joists with two nails (7d threaded or 8d common).
- **23/32" minimum O.S.B. on 19.2-inch minimum** center floor joists with system properly nailed or minimum 7/8" subfloor with 24" on center floor joists or trusses.
- Baseboards should be installed so that their lower edge is slightly above the level of the finished floor, but not nailed into the finished floor.
- Basement and crawl spaces must be dry and ventilated when plank or strip flooring is to be installed over them. In crawl spaces a vapor barrier should be provided. Black vapor barrier must be provided below subfloor on the ground. (6 mil. black)
- Subfloor should be flat or made to be flat to 3/16" in a 8' ft. radius.
- Particle board of any thickness is NOT ALLOWED!
- Adequate and proper nailing as well as soundness of the subfloor should be ascertained. Foreign material shall be removed from the subfloor surface and swept clean.
- The clean subfloor shall be covered wall to wall with one of the following: 15lb. asphalt saturated felt, moisture mat or Aquabar® B (no rosin paper). Butt the edges when positioning one or the above mentioned moisture retarder. Double the felt around heat ducts that may be in the floor.

Wood type subfloors should also be checked for moisture using a reliable moisture meter. Wood or plywood subfloors should not exceed 14% moisture content, the moisture content difference between hardwood flooring and subfloor should not exceed 4%. Check with your local distributor for your geographical variances.

General Staple/Nail Down Installation Instruction:

- Time at which to install hardwood flooring: Lay only after sheetrock and tile work are thoroughly dried and all but the final woodwork and trim have been completed. The building interior should have been dried and seasoned and a comfortable working temperature (at least 60° F) and a relative humidity of 35 – 55% should exist during installation.
  - **DO NOT open until ready to install.**

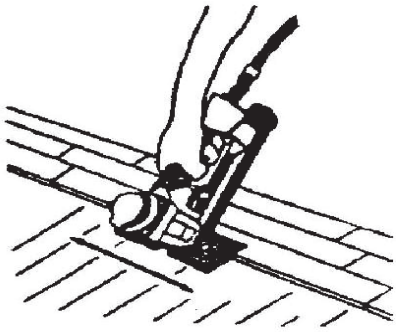
  Preparation of subfloor: Subfloor irregularities and undulation may cause any wood flooring installation to develop hollow spots between the flooring and subfloor and/or lead to noise, i.e. squeaking, popping or crackling. These hollow spots are NOT the result of any wood floor manufacturing defect and are NOT covered by the flooring manufacturer warranty.
- Adequate and proper stapling as well as soundness of the subfloor should be ascertained. Foreign material shall be removed from the subfloor surface and swept clean.
- The clean subfloor surface shall be covered, wall to wall, with 15 lb. asphalt saturated felt, Aquabar® B, or moisture mat (no rosin paper). Butt the edges of this felt when positioning it.
- Laying direction for plank flooring: Flooring should be laid at right angles to the floor joists and, if possible, in the direction of the longest dimension of the room.

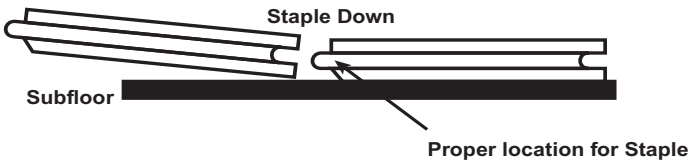
Note: Normally, expansion space around the room should be the same distance as the thickness of the hardwood flooring.

- The floor should be installed from several cartons at the same time to ensure color and shade mix.
- End joints should never be closer than 4" to 6" from each other.
- Staple or Nail Engineered Plank Hardwood Flooring: The first and last row of flooring should be face nailed and filled,as well as staples placed at Tongue. Staple each board along the tongue every 4 to 6 inches apart and within 2 inches of each end joint. This should be done to the entire floor.

Notes:

- To avoid movement in hardwood floor relative humidity should be maintained year round at 35-55%
- The use of flooring putty to cover small cracks or face nail holes should be considered normal in hardwood flooring installation.





RADIANT HEAT (OAK ONLY) - See below.

Concrete or Plywood: Radiant Heat (Oak ONLY)
- Radiant Heat Subfloors on or above grade.
- The maximum temperature of subfloor under normal use should not exceed 80°F (Check with heat system manufacturer.)
- For correct water temperature inside heating pipes, check with manufacturer's suggested guidelines.
- Heating pipes must be covered with 1 ¼" of concrete or minimum of 1/8" below bottom side of plywood subfloor.
- Before installation of hardwood flooring, heat system must be operated at normal living temperature for a minimum of 14 days. One to two days before the flooring is laid, switch off heating unit. (At time of installation, subfloor should be 64°F to 68°F)
- Room temperature should not vary more than 15°F season to season. Flooring manufacturer approved systems must not exceed 8 watts per square foot heating.

FOR UNFINISHED PRODUCTS
- Do not start sanding product until adhesive has cured.

FLOATING INSTALLATION
- 3/8", ½", 9/16 or 5/8 product **3" width or wider** can be floated in some, not all, installations. If necessary call your supplier for details.

IMPORTANT HEALTH NOTICE FOR MINNESOTA RESIDENTS:

SOME OF THE BUILDING MATERIALS USED IN THIS HOME (OR THESE BUILDING MATERIALS) EMIT FORMALDEHYDE. EYE, NOSE, AND THROAT IRRITATION, HEADACHE, NAUSEA AND A VARIETY OF ASTHMA-LIKE SYMPTOMS, INCLUDING SHORTNESS OF BREATH, HAVE BEEN REPORTED AS A RESULT OF FORMALDEHYDE EXPOSURE. ELDERLY PERSONS AND YOUNG CHILDREN, AS WELL AS ANY-ONE WITH A HISTORY OF ASTHMA, ALLERGIES, OR LUNG PROBLEMS, MAY BE AT GREATER RISK. RESEARCH IS CONTINUING ON THE POSSIBLE LONG-TERM EFFECTS OF EXPOSURE TO FORMALDEHYDE.

REDUCED VENTILATION MAY ALLOW FORMALDEHYDE AND OTHER CONTAMINANTS TO ACCUMULATE IN THE INDOOR AIR. HIGH INDOOR TEMPERATURES AND HUMIDITY RAISE FORMALDEHYDE LEVELS. WHEN A HOME IS TO BE LOCATED IN AREAS SUBJECT TO EXTREME SUMMER TEMPERATURES, AN AIR-CONDITIONING SYSTEM CAN BE USED TO CONTROL INDOOR TEMPERATURE LEVELS. OTHER MEANS OF CONTROLLED MECHANICAL VENTILATION CAN BE USED TO REDUCE LEVELS OF FORMALDEHYDE AND OTHER INDOOR AIR CONTAMINANTS.

IF YOU HAVE ANY QUESTIONS REGARDING THE HEALTH EFFECTS OF FORMALDEHYDE, CONSULT YOUR DOCTOR OR LOCAL HEALTH DEPARTMENT.

WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.
For more information go to **www.P65Warnings.ca.gov/wood**

COMPLIES WITH EPA TSCA Title VI and CARB ATCM PHASE 2 COMPLIANT for FORMALDEHYDE