



## NAIL-DOWN INSTALLATION INSTRUCTIONS 3/4" PREFINISHED SOLID (including various widths such as 3 1/4", 3 5/8", 4 3/4", 5")

Thank you for choosing ARK Floors Exotic Hardwood Flooring. ARK Floors feature exotic species that bring a world of distinctive beauty and charm to your home. In order to meet warranty requirements and to ensure a successful installation, review these installation instructions carefully and follow them exactly.

### GENERAL INFORMATION

Hardwood flooring is a natural product and variations in color, grain, pattern and texture occur normally and are not considered defects. ARK Floors recommends hiring an experienced, professional installer to perform the installation. Please note that this information provides specific instructions for experienced hardwood installers. In order to understand how the floor will look after installation, it is important that the installer and owner review the control samples to ensure the owner's expectations are met as to:

**GRADE:** Since grade may vary slightly from batch to batch, the flooring to be installed should be reviewed for the proper grade.

**COLOR/GRAINING:** Do dark/light or exotic grained pieces need to be culled-out to meet owner's expectations?

**COLOR CHANGE:** The owner should be made aware of how wood will change color over time.

**FINISH ISSUES:** Issues with gloss-level and appearance of the finish should be reviewed and the owner should be informed that the finish will scratch and wear over time and proper installation and maintenance are important to maintain its beauty. ARK Floors proudly manufactures all 3/4" hardwood floors within strict tolerances accepted by the industry, which allows for up to 5% defective product (natural or manufacturing related) based on the original hardwood flooring purchase. Be sure to order at least 5% additional flooring material beyond actual square footage requirements to allow for cutting and grading of material. If your installation will be on a diagonal, order 10% - 15% extra material. If you require additional or more detailed information on the installation of hardwood flooring, please contact the National Wood Flooring Association (NWFA) at 800-422-4556 or visit [www.nwfa.org](http://www.nwfa.org).

### INSTALLER/OWNER RESPONSIBILITY

It is extremely important for the owner/installer to inspect the material prior to installation. The Owner/Installer assumes responsibility for the final inspection and quality of the product.

- ARK Floors is not liable for an owner's or installer's lack of judgment, quality of installation, labor, installation, or associated costs for any floor installed with obvious defects or imperfections.
  - Prior to installation, the owner/installer should verify that the job-site and the sub-surfaces involved meet standard requirements. All recommendations from authorities from construction and materials industries as well as local codes should be followed accordingly.
- ARK Floors declines any responsibility for a project that fails due to deficiencies associated with the sub-floor or the environment of the job-site.
- Prior to installation, all hardwood flooring material should be carefully examined for quality acceptance and finish.
  - Flooring with obvious defects or imperfections should be trimmed and used in hidden places or discarded.
  - If unacceptable materials are found, contact the seller immediately and do not install the unacceptable product.
  - Final grade, manufacturing, finish quality checks and final approval of the product are the sole responsibilities of the owner and installer.

### IMPORTANT NOTICE:

**Solid wood flooring is not compatible with below grade installations!**

### INSTALLATION RECOMMENDATIONS

1. Before you begin installing the hardwood floor, cover sub-floor area with 15 lbs. asphalt felt.
2. Stagger the ends of boards at least 6" in adjacent rows. Installation parallel to the longest wall provides best visual effect.

3. Per the NWFA. Installation instruction, the structure should be fully enclosed and interior climate control operating for at least 48 hours to stabilize the moisture conditions of the interior.
4. Establish a starting line by leaving a minimum 1/2" expansion gap around all vertical obstructions.
5. An exterior wall is usually the straightest and best reference line to start the installation, establish a starting point and leaving an expansion gap of 1/2", to set up the baseline of installation. Do the same for the opposite of the starting wall, careful measure and calculate make sure do not end up less than 2 inches in width at the final wall.
6. On the first row of flooring used 6d or 8d flooring nail to top nail surface of flooring and countersink. Nail should hit joist whenever possible. To ensure proper alignment of flooring, make sure the flooring along the working chalk line is straight.
7. After nailing down the first 22 sqft, test to make sure that this section of flooring is firmly affixed.
8. Make sure to properly space nail every 8"- 10" along the length of the board with minimum of 2 fasteners per piece 1-1/2" from each end. Continue across the room until finished: remember to provide adequate spacing for expansion gap. ARK Floors recommends Powernail® manual Model 45 T&G Powernailer and relevant powercleats nails. Powernail® pneumatic Model 445 Powernailer or equivalent may also be used ([www.powernail.com](http://www.powernail.com)).

**CAUTION:** It is extremely important to use the appropriate nailer/stapler and fasteners for installation and ARK Floors is not responsible for damages caused by unsuitable tools or improper use of materials. We recommend Powernail® manual Model 45 T&G Powernailer and relevant powercleats nails. Powernail® pneumatic Model 445 Powernailer or equivalent may also be used. **NOTE: Some exotic hardwoods are more dense than others. Should you experience splitting of the tongue during installation, stop and check the gun. If that does not rectify the situation then consider using a thinner gage. For that we recommend a Power Nail Model 50P, which shoots an 18 gage cleat. Visit [www.powernail.com](http://www.powernail.com) for more information.**

#### SITE FINISHING

- Install or re-install any transition pieces such as moldings, trip thresholds, or reducer strips.
- Thoroughly clean, sweep, and vacuum installed floor before further use.
- If floors are to be covered, do not use plastic; instead, use a breathable material such as cardboard or rosin paper. All hardwood floors will fade, darken or change shades over time. Exposure to sunlight will greatly increase this process. Window treatments are recommended as well as regular rotation of area rugs and furniture. These steps will contribute to your floor aging evenly.

**CARING FOR YOUR FLOORS** The character and elegance of a hardwood floor makes it a favorite among homeowners. By following some common sense care procedures, you will enhance its timeless, natural beauty.

- Periodically clean floors using a leading brand of cleaner made for prefinished hardwood floors (follow directions on bottle). Do not use ammonia or oil-based wax, polish, abrasive cleaners, or furniture cleaners.
- Make sure to install floor protectors under furniture, chairs or other items that may sit directly on your hardwood floor to help prevent scratches, scarring, and dents.
- Regularly, sweep, dust mop and/or vacuum to keep dirt and grit from dulling the shine and scratching the finish. Wipe up all spills promptly with a soft, dry cloth.
- Avoid walking on floors with sharp, stiletto high heel shoes or shoes with soles in need of repair.
- It is important to keep your hardwood floors free from dirt, water, food, grease, and other spills which can damage the floor or finish. If you further questions or comments regarding exotic hardwood flooring, please contact our technical department toll-free at (800) 918-6188.

#### PRE-INSTALLATION SUB-FLOOR REQUIREMENTS

Recommended Sub-Flooring Preferred: 3/4" (19mm) CDX Grade Plywood or 3/4" (23/32") OSB PS2 Rated Underlayment with a minimum 40 lbs. density Minimum: 5/8" CDX Grade Plywood with a minimum 40 lbs. density

## EQUILIBRIUM MOISTURE CONTENT CHART – Temp. Relative Humidity Percent

	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	98
30...	1.4	2.6	3.7	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.4	11.3	12.4	13.5	14.9	16.5	18.5	21.0	24.3	26.9
40...	1.4	2.6	3.7	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.4	11.3	12.3	13.5	14.9	16.5	18.5	21.0	24.3	26.9
50...	1.4	2.6	3.6	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.3	11.2	12.3	13.4	14.8	16.4	18.4	20.9	24.3	26.9
60...	1.3	2.5	3.6	4.6	5.4	6.2	7.0	7.8	8.6	9.4	10.2	11.1	12.1	13.3	14.6	16.2	18.2	20.7	24.1	26.8
70...	1.3	2.5	3.5	4.5	5.4	6.2	6.9	7.7	8.5	9.2	10.1	11.0	12.0	13.1	14.4	16.0	17.9	20.5	23.9	26.6
80...	1.3	2.4	3.5	4.4	5.3	6.1	6.8	7.6	8.3	9.1	9.9	10.8	11.7	12.9	14.2	15.7	17.7	20.2	23.6	26.3
90...	1.2	2.3	3.4	4.3	5.1	5.9	6.7	7.4	8.1	8.9	9.7	10.5	11.5	12.6	13.9	15.4	17.3	19.8	23.3	26.0
100...	1.2	2.3	3.3	4.2	5.0	5.8	6.5	7.2	7.9	8.7	9.5	10.3	11.2	12.3	13.6	15.1	17.0	19.5	22.9	25.6

Do not nail over particleboard or similar products, including gypcrete.

### DO NOT INSTALL THIS FLOORING OVER RADIANT HEAT FLOORING.

*\*All sub-floors must be structurally sound.*

- All Sub-floors must be dry and free of wax, paint, oil, and debris.
- Replace any water-damaged or delaminated sub-flooring or underlayments.
- Scrape smooth and sweep prior to installation.

The sub-floor must be level/flat within 3/16" over 10' and/or 1/8" over 6'. If the sub-floor is concrete, a minimum of 30 days drying time for a reliable moisture reading is necessary.

- DO NOT use gypsum-based (white) patching compounds. Follow the manufacturer's recommendations for applying the leveling compound. Areas containing new leveling compound must be completely dry, (meeting moisture vapor emission tolerances) before proceeding with the installation of the wood floor.
- If the sub-floor is plywood or equivalent, high areas or joints must be sanded flat. If plywood or equivalent, the sub-floor must be structurally sound prior to installation and properly secured with nails or screws every 6 inches along joists to reduce the possibility of squeaking after final installation.
- The owner and installer are responsible for checking the sub-floor. Appropriate moisture tests must be performed as outlined in the "Testing for Moisture Content" section listed below.
- Minimum thickness sub-floor material recommendations are satisfactory for 16" on center joist spacing. Thicker sub-floor recommendations will allow up to 19.2" joist spacing.
- Sub-floor panels should be spaced 1/8" apart to allow for expansion. It is highly recommended that ARK Floors solid floors not be installed over existing glue-down wood floors or over wood floors that exceed 3 1/4" face size. ARK Floors cannot be held liable for any job failure due to sub-floor requirements being met.

### TESTING FOR MOISTURE CONTENT

The determination of moisture content is an essential part of quality control within the flooring installation process. Flooring installers must know the dryness of not only the wood flooring, but its sub-floor and the concrete slab beneath it, if one exists. A moisture meter is a critical tool to determine if floor boards are dry enough for an installation to proceed. Moisture has become one of the most critical tools of the trade. Monitor the flooring and the job-site conditions as they acclimate. If the wood is neither gaining nor losing moisture, an equilibrium condition has been reached. Wood flooring performs best with a relative humidity range of between 35 to 55 percent and a temperature range of 60 to 80 degrees. (Humidity and Temperature control systems is needed.) Sub-floors must not exceed 12% moisture content and the difference between sub-floor and hardwood flooring cannot exceed 4%. If sub-floors exceed this amount, an effort should be made to locate and eliminate the source of moisture before further installation. A moisture barrier (6 mil polyethylene film minimum) may be required in addition to the 15 lbs. asphalt felt. Asphalt felt is not considered a moisture barrier.

### INSTALLING THE FLOOR NAIL-DOWN INSTALLATION

Work from several open boxes of flooring and "dry lay" the floor before permanently laying the floor (but never open more than a few boxes in advance). This will allow you to arrange the varying grains & colors in a harmonious pattern. It also allows you the opportunity to select out very dark/light pieces for use in hidden areas in order to create a more uniform

floor. Remember, it is the installer's responsibility to set the expectations of what the finished floor will look like with the owner.

## **DOORWAY AND WALL PREPARATION**

Undercut or notch-out door casings 1/16" higher than the thickness of the flooring being installed to avoid difficult scribe cuts during installation. Also remove existing base and shoe molding as well as doorway thresholds; each can be replaced after installation is complete.

## **INSTALLATION OVERVIEW**

### **Pre-Installation Job Requirements**

Job-Site Inspection-Installer must determine that the job-site environment and sub-floor surfaces meet all applicable local as well as construction and material industry standards. Laying the floor should be the last step of your installation.

Prior to the delivery of your flooring, make sure that:

- The building is structurally complete and the jobsite is properly enclosed with all doors and windows installed.
- Installer must hold out or cut off defective flooring material during installation.
- Filler or putty stick may be used to correct minor flooring defects during installation and is considered a normal procedure.
- Concrete, plaster, masonry, drywall, paint, wall coverings, and the sub-floor are completely dry so as to not raise moisture (humidity) content within the building.
- That heating or ventilation systems are fully operational; at least 14 days prior to flooring installation and that the conditions inside your home have been maintaining an approximate room temperature between 60-75 degrees Fahrenheit, and at 35%-55% relative humidity.
- Exterior grading should also be complete, with drainage directed away from the structure; all gutters and down-spouts should also be installed and functional. ARK FLOORS Engineered wood products may be installed on grade, above grade, or below grade, subject to appropriate moisture vapor emission levels.
- Wood floors are not recommended in full bathrooms.
- The floor of the crawl space (if there is one) must be 18"- 24" from the ground to underside of joists. A ground cover of 6 mil black polyethylene must be utilized as a vapor barrier. Joints must be overlapped 6" and sealed with moisture-proof tape. The crawl space must also have perimeter air venting equal to 1.5% of the crawl space square footage.

Note: The installer is commissioned and contracted by the owner. Owners should choose their installer carefully by checking references and previous job experience. The contract to install is between the owner and the installer. ARK Floors is in no way responsible for the owner's choice of installer or any failure by the installer to satisfy the owner.

## **MATERIALS AND RECOMMENDED TOOLS**

1. Measuring tape
2. Chalk line reel
3. Rubber mallet
4. 4d-6d Flooring nails
5. 15 lbs. asphalt felt
6. 3-M Blue Tape
7. Broom
8. Putty knife
9. Floor protectors
10. Pencil
11. Jamb saw or portable hand saw
12. Table saw or band saw
13. Crowbar or last plank puller
14. Hammer
15. Powernail manual 45 T&G Powernailer, pneumatic
16. 445 Powernailer or other machines designed or adapted specifically to 3/4" solid wood flooring.
17. Quality moisture meter with manufacturer's relevant
18. Exotic species calibration figures.

NOTE: 3/4" is meant for nail-down or staple-down (with 2" fasteners) installation only.

## **EQUALIZING YOUR WOOD FLOORING**

During the final pre-installation inspection, sub-floors must be checked for moisture content using the appropriate metering device for wood. All solid wood flooring must be properly equalized before installation. Wood is porous material which expands as it picks up moisture in most environments relative to the humidity present in the surrounding atmosphere. It is this movement which can cause cracks, separation, and warping of your wood floor if not properly equalized before installation. Solid wood flooring should be stored in the environment in which it is expected to perform, should be delivered to an environmentally controlled site, and handled with care. All wood will eventually acclimate itself to its environment, reaching the "equilibrium point" or equilibrium moisture content.

### **RECOMMENDATIONS FOR EQUALIZING SOLID WOOD FLOORING:**

- Flooring stored upon "on-grade" concrete floors should be elevated at least four inches to allow air circulation under cartons.
- Hardwood flooring must acclimate for as long as necessary to meet minimum installation requirements for moisture content. Using the equilibrium moisture content chart below, determine the proper moisture content for the installation.
- Always use a moisture meter to determine where the flooring and present job-site conditions are in relation to the projected final equilibrium point taking into account seasonal changes.
- Monitor the flooring and job-site conditions as they acclimate. If the wood is neither gaining nor losing moisture, an equilibrium condition has been reached.

NOTE: No single fixed moisture content is right for all sites as equilibrium points can vary dramatically in different environments. It is the responsibility of the owner and installer to monitor all variables that can impact the target equilibrium point.