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INSTALLATION INSTRUCTIONS

INSTALLER/OWNER RESPONSIBILITY:

Inspect all flooring material carefully for correct product and visible defects BEFORE INSTALLATION. Warranties do not cover visible defects once they are installed (a defect/irregular tolerance of up to 10% is allowed). As all wood is unique, with no two pieces alike, review and compare the new flooring with the “sample board” from which the floor was selected to ensure it meets the homeowners’ expectations prior to the installation. If flooring is not acceptable, contact your distributor immediately and arrange for replacement. It is the responsibility of the installer/owner to ensure subfloor and jobsite conditions are environmentally and structurally acceptable for wood floor installation. Problems or failures related to deficiencies in subfloor or job site damage after installation are not covered by our warranty.

- Receive the floor and make sure it meets owner’s expectations.
- Grade out and separate any pieces with visible defects/irregularities.
- Test the subfloor and jobsite itself, including ambient temperature/relative humidity and all other variables that may adversely affect a wood floor.
- Record the flooring moisture content upon delivery and at time of installation - **RETAIN THESE RECORDS**
- Acclimate flooring to appropriate site conditions. Follow NWFA Installation Guidelines for Acclimation on Jobsite (Section I, Chapter 2)

ADM flooring products are designed to perform within a typical residential environment. Wood installed in areas where relative humidity is below 30% may cup and shrink (a humidifier may be necessary to keep the relative humidity within recommended levels of 30% to 50% year-round).

Flooring installed on wet subfloors may crown and buckle. **CORRECT ANY OVERLY DRY OR WET CONDITIONS BEFORE INSTALLATION.**

PRE-INSTALLATION/JOBSITE REQUIREMENTS

ACCLIMATION IS CRITICAL. Allow floors to acclimate to the appropriate jobsite conditions. Proper acclimation is particularly important in extremely dry climates (e.g. Utah, Arizona,



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Nevada, Idaho, Colorado). See NWFA Installation Guidelines, Section I, Chapter 2 for more acclimation details.

Upon delivery, check wood flooring moisture content (MC) with a moisture meter to establish a baseline for required acclimation. Record MC at time of delivery AND at time of installation. **RETAIN THESE RECORDS.**

Out of the box acclimation is the most effective and recommended by ADM Flooring Inc. If out-of-box acclimation is not possible, open boxes at both ends to allow air to circulate through planks. If planks are covered with plastic wrap, cut plastic at both ends to allow for proper air circulation. Allow planks to lay flat for a minimum of 5-7 days, or as long as necessary for the planks to meet the job site moisture conditions. Use a moisture meter to monitor the flooring and job-site conditions as they acclimate. The equilibrium moisture content (EMC) for ADM Flooring is between 6% and 9%. If plywood is used for subfloor, the MC should be no more than 2% between the wood flooring and plywood subfloor.

HANDLING AND STORAGE

Hardwood flooring should be one of the last items installed on any new construction or remodel project. All work involving water or moisture should be completed before installation of flooring.

Do not deliver wood flooring to the job site until the building is entirely closed and until appropriate temperature and humidity conditions have been achieved. Appropriate temperature and humidity conditions are defined as those conditions to be experienced in the building after occupancy. Temperature and humidity of installation areas should be consistent with normal, year-round living conditions for at least ONE WEEK before the installation of wood flooring. Room temperatures of 60° - 80°F and a humidity range of 30% to 50% should be maintained year-round.

HVAC should be in operation before, and during installation (refer to NWFA Installation Guidelines Section I, Chapter 1, Part 1 for further information). Room temperature and humidity of installation areas should be consistent with normal, year-round living conditions for at least ONE WEEK before installation of wood flooring. Room temperatures of 60° - 80°F and a humidity range of 30%-50% is recommended year-round.

KEEP FLOORING DRY: Protect flooring from moisture during storage and transportation. Store material in a flat, dry and totally enclosed area. Garages, exterior patios, for example are not



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acceptable areas to store wood flooring. The moisture content (MC) of hardwood should generally be between 6% and 9%. For wide width flooring (3 1/4" or wider), there should be no more than 2% difference in moisture content between properly acclimated wood flooring and wood subfloor.

SUBFLOOR TYPES AND CONDITIONS

Types: (Refer to NWFA Installation Guidelines, Section II for Subfloor Information)

- CD: Exposure 1 plywood, minimum 3/4" thick.
- Solid board: 1" x 6" wide, square edge, kiln dried.
- OSB: Exposure 1 (minimum 3/4" thick).
- Concrete (Refer to NWFA Installation Guidelines, Section II, Chapter 5 & 6).

The subfloor must be clean, dry, and flat to within 3/16" per 10' radius. If necessary, sand or plane high spots, and fill low areas using a cement based patching/leveling compound. Secure any loose boards or panels to prevent squeaking. The surface temperature of the subfloor, at time of installation should be at least 59°F but never exceed 80°F.

Damage due to moisture issues is not a product failure and is not covered by our warranty.

BASEMENT AND CRAWL SPACES: Keep dry and ventilated. Crawl spaces must be a minimum of 18" from ground to underside of joists. Exposed earth should be fully covered by a minimum 6 mil black polyethylene vapor barrier with joints overlapped and sealed with a moisture resistant tape.

CONCRETE SUBFLOOR: New concrete should be completely cured for at least 50-60 days. Test for excessive moisture. A reading of over 3lbs./1000 sq. ft. by Calcium Chloride test requires the application of a vapor retarder. Ensure concrete has a minimum of 3000 PSI Compression. Over a lightweight concrete (less than 3000 PSI) use a floating installation. To check for lightweight concrete, draw a nail across the top. If it scratches or indents, it is probably a lightweight concrete.

WOOD SUBFLOOR: When floating over a wood subfloor, cover wall to wall with an underlayment overlapped 8" at seams. It is recommended to tape overlapped edges with a low adhesion painters tape. To prepare wood subfloor for installation, re-nail any loose areas to prevent squeaking. Sand or plane high spots and fill low areas. The moisture content (MC) of a wood subfloor should not exceed 12%. In general, the moisture content of hardwood flooring is



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between 6% and 9% and the MC difference between the subfloor and flooring should not exceed 2% on a 3 ¼" or wider flooring.

GENERAL INSTALLATION

REFER TO NWFA INSTALLATION GUIDELINES, SECTION III, CHAPTER 9

ADM Flooring Inc. products can be installed above, on-grade or below-grade. Installation methods can be either: Direct Glue, Floating or Nail/Staple. ADM recommends to use glue and nails, if possible.

Due to the extra width and length of planks, it is recommended to glue all end joints, regardless of the installation method. This can reduce excessive seasonal gapping. Plan the layout: "Rack" out (dry-lay) the flooring before installing to avoid close end joints and to blend color and grain patterns. To blend the visual differences from board to board it is recommended to work from several cartons alternatively. Leave ½" gap at all vertical objects, undercut all door jams.

GLUE DOWN METHOD

ADM Flooring Inc. recommends ADM's urethane adhesives (FA-5 and FA-25) for the end joints for the installation of our products. Carefully read and follow the instructions provided by the adhesive manufacturers for the use and application of their product. The recommended trowel size is a V-notch ¼" x ¼". Check with your flooring retailer for other adhesives and sealers that are compatible with engineered floors. Adhesive that is allowed to dry to the plank surface can be difficult to remove and may leave a haze. Be sure to clean any surplus adhesive off surface of plank as you go. Use a Urethane Adhesive remover for this purpose. Do not use a urethane adhesive remover on floors that are finished with either oil or wax.

The first step is to find a starting line from the wall the width of 2 or 3 boards plus a ½" expansion space. Nail or fasten a holding board, i.e. 1" x 2' (1-inch x 2 feet) or 1" x 4' (1-inch by 4-feet) length of straight wood along the line, this will help keep the first rows straight and firmly in place. Apply the adhesive to the subfloor (including the T&G adhesive in end joints) and place the first plank down up against the holding board with the groove side facing the wall. Continue laying the first row using the tongue and groove method. Tighten all joints by the use of a wooden or plastic tapping block and soft mallet. Gently knock the boards in from the



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tongue side. Never use a hammer directly on the plank as this can cause damage to the finish. Use a pull-bar to pull the last row into place and tighten joints. Remember to clean surplus adhesive as you work. Continue laying the second row, staggering end joints of boards from row-to-row a minimum of 16" apart. If necessary use blue installers tape to maintain a tight floor (remove within 3 hours). Repeat row-by-row using the same method until the entire section is complete. Remove the holding boards and complete the area from the starting boards to the wall.

COMPLETING THE JOB: Roll every 2 to 3 hours and on completion with a 100lb. to 150lb. roller to ensure all planks are flat and in contact with the adhesive. Remove any spacer wedges. Cover all expansion spaces along walls with moldings. Always nail moldings to the adjacent wall, not the flooring! Clean, sweep, and vacuum installed flooring before use.

FLOATING METHOD

When choosing the floating method for engineered wood, it is critical that the subfloor is flat to within 3/16" per 10' radius. ADM Flooring Inc. will not honor warranty claims for products damaged due to plank movement or flexing due to an uneven floor. For floating installation, a 6 mil., age-resistant polyethylene plastic sheet is required as a moisture barrier. Lap up walls 4". It is also required that a 15lb. asphalt saturated felt (rag paper) be used as an underlayment above the moisture barrier to reduce sound. You can also use a 2 in 1 product that incorporates both a moisture barrier and sound barrier in ONE sheet, e.g. Volara foam ¼" or Floor Muffler products. Follow underlayment manufacturer's instructions. Decide which direction the flooring will run. Install cushioning underlayment running same lengthwise direction that you plan to install the flooring. Starting from left to right across the floor, begin by snapping a chalk line the width of the plank (e.g. 9 ½") plus the ½" expansion space, off the starting wall. Nail a series of holding boards (i.e. 1" x 4" lengths of wood) along the chalk line, this will help keep the first rows straight and firmly in place. Lay the first plank and align with chalk line, up against the holding boards with groove side facing the wall. Take second plank and apply a tongue and groove wood adhesive i.e. ADM's urethane adhesives (FA-5 and FA-25) made for flooring (follow adhesive manufacturer's instructions) to the groove on boards end, and join to first plank. Continue same steps until first row is completed. When reaching the end of the first row, cut the last board to fit; use spacing wedges to maintain a ½" expansion space between wall and end of plank. Make sure all end joints are tight and square. Remember to clean adhesive as you work. Begin the second row by cutting board - if necessary - to ensure a staggered end joint of approximately 16" between end joints of adjacent planks. Apply tongue and groove adhesives



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to end and side grooves; join to first row, repeat until second row is complete. The floor can be installed in successive rows or with a stair-step approach. The stair-step approach ensures a tighter fit for the first few rows and limits board separation during the initial set-up. Always use a random pattern to begin installation. Tighten all joints by the use of a wooden tapping block to gently knock the boards in from the tongue side. Do not use excessive force and never use hammer directly on the plank. Use special pull bar to tighten joints from the sides. Use clamps or blue installers tape to hold joints together (remove blue tape within 3 hours and remove any tape adhesive residue). Undercut door jams and slide plank under the cut for a cleaner look. Repeat all steps and install the rest of the floor. The last row may need cutting lengthwise to fit (remember to allow expansion space). Use a pull-bar to pull last row in place and tighten joints. Use spacing wedges to maintain the space.

COMPLETING THE JOB: Allow finished floor to be free of traffic for a minimum of 8 hours and before spacing wedges are removed. Be sure all expansion spaces are covered with appropriate moldings. Always nail moldings to the adjacent wall, not the flooring! NEVER attach any molding to a floating floor. Clean, sweep, and vacuum installed flooring before use.

STAPLE/NAIL DOWN METHOD

Due to extra width and length of planks, it is recommended to glue end joints. Staple/nail down installation uses supplemental adhesives. All end joints should be glued with ADM's urethane adhesives (FA-5 and FA-25). Carefully remove any baseboard trim around the perimeter of room. Save for replacement after floor is installed. Cover wood subfloor wall to wall with the vapor retarder or 15 lb. asphalt saturated felt. Overlapped 4" at seams. This will not only retard moisture, but may help prevent squeaks. Snap a working line along the longest continuous wall allowing 1/2" expansion space. Direction of the planks should be at right angles to the joists for highest strength of flooring. Lay one row of planks along the entire length with groove facing the wall. If necessary, use spacing wedges to maintain expansion space. Top nail the first row, placing nails perpendicular to the surface as close as possible to the wall so that after completion the head of the nail will be hidden by the base molding. Apply ADM's adhesives to all end joints. Remember to clean surplus adhesive as you work. Blind nail the other side of the plank through the tongue (use 1 1/2" length nails with a 3/4" ply subfloor) with the nail slightly inclined and the head driven flush. Staples should be placed 3"-4" apart and cleats every 4"-6" apart. All fasteners should be placed 1"-2" of end joints. Hand nail the first row if necessary, then a nailing machine can be used.



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Start second row in the same manner. If necessary, cut the first board to stagger end joints of boards a minimum of 16" from row-to-row. From second row onward nailing is done on the tongue side only. Use a tapping block or soft-head mallet to engage tongue & groove. A hard-head mallet can damage the milling of the plank. The last row usually requires cutting the plank lengthwise to fit the space (remember to maintain the expansion gap). Nail the last row in the same manner as the first.

COMPLETING THE JOB: Once the nailing is complete, remove any spacing wedges and install the base molding. Always nail moldings to the adjacent wall, not the flooring! Clean, sweep and vacuum installed flooring before use. Inspect the completed floor for any scratches, nicks and minor gaps. Use touch-up kit, filler or wood putty as needed.

Stapled or nailed down products are not warranted against squeaking or popping sounds.

OVER RADIANT HEATED FLOOR: Prior to installation over radiant heat systems, it is important to refer to the NWFA Installation Guidelines Section IV. Appendix H. Failure to follow these guidelines can void your warranty and may produce unsatisfactory results. Use only over water-heated or electrical systems. ADM Flooring Inc. accepts no responsibility for flooring damaged as a result of improperly installed heated flooring systems.

NWFA - National Wood Flooring Association: 800-422-4556 (USA) / 800-848-8824 (Canada).

Radiant Heat Subfloors can be concrete, wood or a combination of both. The type of subfloor determines the subfloor preparation. If the Radiant Heat subfloor is concrete the system should be fully operating at a normal temperature for a minimum of 21 days prior to floor installation, to dry out residual moisture. The system **MUST** then be turned off 24 hours prior to installation and must remain off for 24 hours after installation so that the adhesive does not cure excessively fast. After the 24 hours, the system temperature can be gradually raised again (over a 7-day period) up to the desired level. The maximum allowable subfloor surface temperature over radiant heat is 85°F. Radiant heat is a dry heat. A humidification system is recommended to maintain wood flooring in its comfort zone (refer to warranty temperature and moisture requirements). Surface checking, excessive gapping, etc. can be expected if the proper humidity level is not maintained between 30-50% year-round, or the surface temperature exceeds 85°F. To minimize the effect that rapid change in temperature will have on the moisture content of the wood floor, an outside thermostat is recommended.

INSTALLATION METHODS: The following recommended installation methods can be used over radiant heated floors as well.



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FLOATING - Install over approved subfloor. A minimum 6 mil poly vapor retarder should be used over a concrete subfloor. In some cases, this may be part of the flooring underlayment. A foam or resilient approved underlayment must be installed prior to installation of wood flooring. Use Dri-Tac 8100 or Titebond T&G glue for tongue and groove connections.

GLUE DOWN - Use over an approved subfloor. Use only approved adhesives – ADM Flooring Inc. recommends ADM's urethane adhesives. For any floors being installed over radiant heat, consult with the appropriate manufacturer for their recommended adhesives. Do not use a urethane adhesive remover on floors that are finished with either oil or wax.

STAPLE / NAIL DOWN - Install over approved subfloor. Use Dri-Tac 8100 or Titebond T&G glue for tongue and groove connections. Be sure fasteners do not penetrate the heat source during installation. Air-Stapler/Nailer with appropriate nail down adapter. Use a cushioned foot to protect finished edges.

NOTES: For areas larger than 20' x 20', more spacing between rows may be needed depending on geographical area, site environment and time of year.

(Refer to NWFA Installation Guidelines, Section III, Chapter 9).

RECOMMENDED TOOLS: Tape Measure, Wooden Tapping Block, Non-skid Rubber Mallet, Power Saw, Low Adhesion Blue Painters Tape, Wood or Plastic Spacers, Pry Bar, and Chalk Line.

IMPORTANT: AFTER INSTALLATION, ANY PROTECTIVE COVERING USED SHOULD BE TAPED DOWN USING A LOW ADHESION TAPE. ATTACH TAPE TO BASE SHOE OR MOLDING, AVOID TAPING DIRECTLY TO FLOOR SURFACE AS MANY TAPES CAN DAMAGE THE FINISH. BE SURE TO COVER ENTIRE ROOMS AT A TIME TO ASSIST WITH PREVENTING SHIFTS IN COLOR BETWEEN COVERED AND UNCOVERED AREAS.