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## **INSTALLER/OWNER RESPONSIBILITY**

When job site conditions are satisfactory, have the flooring delivered and boxes placed into small lots and stored in the rooms where it will be installed. Bamboo flooring should be acclimate and allow 72 hours or more, for the flooring to become acclimated to job site conditions.

Bamboo floors are a product of nature and therefore, not perfect. Our Bamboo floors are manufactured in accordance with accepted industry standards, which permit a defect tolerance not to exceed 5%. The defects may be of a manufacturing or natural type.

- The installer assumes all responsibility for final inspection of product quality. This inspection of all flooring should be done before installation. Carefully examine flooring for color, finish and quality before installing it. If material is not acceptable, do not install it and contact the seller immediately.
- Prior to installation of any Bamboo flooring product, the installer must determine that the job-site environment and the sub-surfaces involved meet or exceed all applicable standards and recommendations of the construction and materials industries. These instructions recommend that the construction and subfloor be dry, stiff and flat. The manufacturer declines any responsibility for job failure resulting from or associated with sub-surface or job-site environment deficiencies.
- Prior to installation, the installer/owner has final inspection responsibility as to grade, manufacture and factory finish. The installer must use reasonable selectivity and hold out or cut off pieces with defects, whatever the cause.
- Use of stain, filler or putty stick for defect correction during installation should be accepted as normal procedure.
- When flooring is ordered, 5% must be added to the actual square footage needed for cutting and grading allowance.

- Should an individual piece be doubtful as to grade, manufacture or factory finish, the installer should not use the piece.
- Use of appropriate products for correcting subfloor voids should be accepted as a normal industry practice.

## TOOLS & ACCESSORIES NEEDED

WARNING: Metal wires are embedded in solid oak parquet flooring and extreme care and caution should be used when cutting or trimming this flooring to avoid the risk of personal injury. Do not use circular saws. Approved safety goggles or glasses should be worn at all times.

- Broom
- Band Saw or Saber Saw
- Recommended Adhesive & Adhesive Remover
- Tape Measure
- Moisture meter (wood, concrete or both)
- Recommended Hardwood Flooring Cleaner
- Chalk line & chalk
- Carpenter Square
- Recommended Trowel
- Hand saw
- Hammer

## PRE-INSTALLATION PROCEDURES

### Job Site Inspection

The building should be closed in with all outside doors and windows in place. All concrete, masonry, framing members, drywall, paint and other "wet" work should be thoroughly dry.

- The wall coverings should be in place and the painting completed except for the final coat on the base molding. When possible, delay installation of base molding until flooring installation is complete.
- Exterior grading should be complete with surface drainage directing water away from the building. All gutters and downspouts should be in place.
- Solid oak parquet may be installed on or above grade level only. Do not install in full bathrooms.
- Basements and crawl spaces must be dry and well ventilated.

- Crawl space must be a minimum of 24" (600 mm) from the ground to underside of joists. A ground cover of 6-8 mil black polyethylene film is essential as a vapor barrier with joints lapped six inches and taped. The crawl space should have perimeter venting equal to a minimum of 1.5% of the crawl space square footage. These vents should be properly located to foster cross ventilation (see figure #1).
- Subfloor must be checked for moisture content using the appropriate testing method.
- Permanent air conditioning and heating systems should be in place and operational. The installation site should have a consistent room temperature of 60-75° F and humidity of 35-55% for 14 days prior, during and until occupied, to allow for proper acclimation.

## STORAGE AND HANDLING

Handle and unload with care. Store in a dry place being sure to provide at least a four-inch air space under cartons which are stored upon "on-grade" concrete floors. Flooring should not be delivered until the building has been closed in with windows and doors in place and until cement work, plastering and all other "wet" work is completed and dry. Concrete should be at least 60 days old. Bamboo flooring should be stored in the environment in which it is expected to perform. Air conditioning/heating systems should be in place and in operation at least 14 days prior, during and after installation of the flooring. Check adhesive label for storage limitations.

## SUBFLOOR REQUIREMENTS

### SUBFLOORS MUST BE:

- CLEAN - Scrape, broom clean, and smooth. Free of wax, paint, oil, sealers, adhesives, curing agents and other debris.
- LEVEL/FLAT - Within 3/16" in 10' and/or 1/8" in 6'. Sand high areas or joints, fill low areas (no more than 1/8" at a time) with a cementitious leveling compound or milk additive latex patch of 3,000 PSI minimum compressive strength. Follow the instructions of the leveling compound manufacturer. Leveling compounds must be tested for moisture to ensure they are properly cured and within the manufacturer's specified requirements for proper installation.

- STRUCTURALLY SOUND - Nail or screw any loose areas that squeak. Replace any water-damaged, swollen or delaminated subflooring or underlayments. Avoid subfloor with excessive vertical movement unless they have been properly stiffened prior to the installation of the wood flooring.
- DRY - Check moisture content of the subfloor with a reliable moisture meter.

#### RECOMMENDED SUBFLOOR SURFACES

- PREFERRED: 3/4" (19 mm) CDX grade plywood 3/4" (23/32") OSB PS2 rated underlayment MINIMUM: 5/8" CDX grade plywood
- Existing solid wood flooring · Concrete slabs
- Acoustic concrete
- Vinyl, resilient tile, cork flooring
- 3/4" chip, waferboard, particleboard · Ceramic, terrazzo, slate and marble
- Acoustic Cork
- Metal

#### CONCRETE SLABS

Bamboo flooring can be glued directly to concrete. Do not use a concrete sealer nor install over one. Surface preparation using mechanical methods such as sanding or scouring with open coat paper or a titanium disk is preferred. The concrete must be of high compressive strength. All concrete subfloors should be tested for moisture content. Visual checks are not reliable. Acceptable test methods for subfloor moisture content include:

NOTE: Test several areas, especially near exterior walls and walls containing plumbing.

- A 3% Phenolphthalein in Anhydrous alcohol solution. Chip the concrete at least 1/4" deep (do not apply directly to the concrete surface) and apply several drops of the solution to the chipped area. If any color change occurs, further testing is required.

- Calcium Chloride test. The maximum moisture transfer must not exceed 3 lbs./1000 square feet with this test.
- Tramex Concrete Moisture Encounter meter (figure #2). Moisture readings should not exceed 4.5 on the upper scale. (Figure #2 shows an unacceptable reading of over 4.5)

A "DRY" SLAB, AS DEFINED BY THESE TESTS CAN BE WET AT OTHER TIMES OF THE YEAR. THESE TESTS DO NOT GUARANTEE A DRY SLAB. ALL CONCRETE SLABS SHOULD HAVE A MINIMUM OF 6 MIL POLY FILM MOISTURE BARRIER BETWEEN THE GROUND AND THE CONCRETE. Moisture Barrier System: If moisture is present, inexpensive sheet vinyl or "slip-sheet" (PVC) may be installed. Use a premium grade, alkaline resistant adhesive and a full spread application system to properly bond the vinyl to the subfloor. Follow the sheet vinyl manufacturer instructions for installation procedures. A patch test may be required as an adhesion test. Install several small areas (3' x 3') and allow the vinyl to set for 72 hours. Remove the vinyl; if the backing remains attached to the concrete, the subfloor should be acceptable for sheet vinyl installation. If you have any questions regarding installation or the handling of moisture problems, please contact the distributor/retailer from whom the goods were purchased.

#### ACOUSTIC CONCRETE

Acoustic concrete normally contains large quantities of gypsum that may inhibit the adhesive's capability to properly bond. Acoustic concrete must be primed with the concrete manufacturer's recommended primer/surface hardener.

#### WOOD SUBFLOORS & WOOD STRUCTURAL PANEL SUBFLOORS

Plywood: Must be APA grade rated sheathing or CDX minimum.  
Oriented Strand Board (OSB): Must be PS2 rated installed sealed side down.

Particleboard: Must be a minimum 40-LB density, stamped underlayment grade and  $\frac{3}{4}$ " thick.

Make sure existing floor or subfloor is dry and well nailed or screwed down every 6" along each joist to avoid squeaking or popping before the floor is installed. The wood subfloor must not exceed 13% moisture content. Measure moisture content of both subfloor and wood flooring to determine proper moisture content with a reliable wood

moisture meter (figure #3). The difference between the moisture content of the wood subfloor and the wood flooring must not exceed 4%.

Optimum performance of Bamboo floor covering products occurs when there is no horizontal or vertical movement of the subfloor. The MINIMUM subfloor recommendations described above are for 16" O/C joist spacing. The thicker, PREFERRED subfloor recommendations described above will allow 19.2" joist spacing if the joist manufacturer's recommended span is not exceeded. Spacing in excess of 19.2" O/C may not offer optimum results. Install flooring perpendicular to the floor joists when possible. Installations should not be made parallel to the floor joists or on joist spacing that exceeds 19.2" O/C unless the subfloor has been properly stiffened. Stiffening may require the addition of a second layer of subflooring material to bring the overall thickness to at least 1-1/8".

All underlayment panels should be spaced 1/8" apart to insure adequate expansion space. This can be achieved by using a circular saw set at the depth of the underlayment and cutting around the perimeter of the panel. T&G panels normally have built in expansion; DO NOT cut around the perimeter of T&G panels. Do not install over existing glue-down wood floors. Do not install over nailed floors that exceed 3-1/4" in width. Wide width floors must be overlaid with plywood. When installing over existing wood floors parallel with the flooring, it may be necessary to install an additional 1/4" layer of plywood to stabilize the flooring or install the wood floor at right angles. Applicable standards and recommendations of the construction and materials industries must be met or exceeded.

#### VINYL SLIP SHEET

Clean the surface thoroughly with a good quality household detergent. If vinyl appears to have a coating of wax or other maintenance materials, it must be removed with the appropriate floor stripper. Allow ample drying time. (Note: Do not sand any resilient products for they may contain asbestos fibers, which may be harmful.) Do not install over floors that exceed two layers

#### DOORWAY AND WALL PREPARATION

Undercut door casings. Remove any existing base, shoe mold or doorway thresholds. These items can be replaced after installation. All door casings should be notched out (figure #4) or undercut to avoid difficult scribe cuts.

## GENERAL INFORMATION ON NIKZAD URETHANE ADHESIVE

NOTE: When installing Bamboo flooring, allow a minimum of 72 hours adhesive curing time before applying seals, stains and finishes to unfinished flooring. Trowel filling and fillers are required to reduce the possibility of panelization caused by the finish "gluing" the slats together. Test the moisture content of the wood in accordance with the stain/finish manufacturer's recommendations. Avoid installing from the surface of the flooring. If necessary distribute weight using a kneeler board.

- Nikzad Urethane Adhesive – 60 - 90 minutes (Always read container label before proceeding)

Spread sufficient amounts of recommended Nikzad Urethane adhesive (shown in header on page 2) with the recommended trowel (figure #5) in an area that can be covered in 60-90 minutes.

- Hold the trowel at a minimum 45° angle (figure #6) firmly against the subfloor to obtain a 50-60 sq. ft. per gallon spread rate.
- When not in use, keep the adhesive container tightly closed to prevent thickening. Thickening of the Nikzad Urethane will cause difficulty in spreading the adhesive.
- Proper ventilation within the room must be provided. An electric fan is helpful.
- The floor should be installed from several cartons at the same time to ensure good color and shade mixture.

## INSTALLING THE FLOOR

### STEP 1: ESTABLISH A STARTING POINT

- In at least two places 12"-16" from the corner, measure out and establish a chalk line parallel to and 24½" away from the starting wall opposite the entrance doorway. THE ½" IS FOR EXPANSION SPACE (figure #7).

Snap a second chalk line 90° to the first chalk line, 24½" away from the right angle wall (figure #7). THE ½" IS FOR EXPANSION SPACE. Check accuracy with builders square.

- Make any necessary adjustments to allow for crooked walls before proceeding.

## STEP 2: SPREADING THE NIKZAD URETHANE

- After both chalk lines (at 90° to each other and 24½" from the wall) have been snapped, start spreading the adhesive in the 24½" wide area next to the starting wall.
- Continue spreading the adhesive along the entire length of the starting wall. Be careful not to spread adhesive beyond the 24½" chalk line.

NOTE: Clean adhesive from the surface of the floor frequently using the recommended adhesive cleaner. Use clean towel, changed frequently to prevent haze and adhesive residue.

## STEP 3: INSTALLING THE BAMBOO FLOORING

- Immediately lay the Bamboo planks on the newly spread adhesive. DO NOT lay the Bamboo floor on dry adhesive (Always lay the Bamboo floor on wet adhesive). If the adhesive becomes too dry, scrape up the old adhesive and spread more. Installing on wet adhesive eliminates rolling the floor with a heavy roller. The working time for the adhesive is 60-90 minutes. Working time will vary depending on the job site conditions. IMPORTANT: Stand or kneel on the subfloor during the installation to avoid shifting the Bamboo floor.
- PROPER PLACEMENT OF THE FIRST FLOOR TILE IS THE KEY TO THE ENTIRE INSTALLATION. Carefully place a 12" x 12" Bamboo plank at the intersection of the two chalk lines (figure #8). Do not use the edge of the tongue for aligning the Bamboo on the chalk lines.
- Lay the second Bamboo plank ahead of the first Bamboo plank to fit ½" from the starting wall. Gently lock in the tongue and groove between the first and second Bamboo plank (figure #9).
- Re-check to be sure both floor tiles are properly lined up with the chalk line. This is to assure a square starting area (see figure #9).
- Continue laying the balance of the 12" x 12" floor tiles along the starting wall area (see figure #9). Put each Bamboo plank in place and gently push the floor tiles together to interlock the tongue and groove. Align each floor tile squarely.

- Do not push or shove the Bamboo plank too strenuously as this could cause the first and second Bamboo planks to move. Simply realign them and proceed with the installation.
- Avoid hammering or forcing the Bamboo plank together as this will destroy the built-in expansion spaces and may destroy the squareness of the Bamboo plank.
- After laying the Bamboo plank across the first 24½" starting area, trim the last Bamboo plank as needed to obtain the proper ½" expansion space next to the walls. Use a small band or saber saw for final trimming. Firmly secure each Bamboo Plank when cutting with a saber saw.
- During the installation, occasionally remove a piece of flooring from the subfloor and inspect the back for proper adhesive transfer. Adequate adhesive transfer is necessary to ensure sufficient holding strength.

#### STEP 4: COMPLETING THE INSTALLATION

- When the starting area has been completed, including cutting to the wall, proceed to the second laying area.
- The second laying area is quite simple as you now have sufficient Bamboo installed to resist floor tile movement.
- Again, cut the last Bamboo to allow a ½" expansion space from the end wall.
- Proceed by laying areas 3,4,5, etc., repeating the installation procedure of the starting area. Trim out each laying area before proceeding to the next area.
- Maintain the ½" expansion space around the perimeter of the room and around all fixed objects.
- Avoid pressing heavily or stepping on the recently Bamboo Floor as this may destroy the ridging of the adhesive and positioning of Bamboo floor.
- Allow a minimum of 24 hours drying time before moving furniture or walking on the newly laid parquet floor.

## i INSTALLERS - ADVISE YOUR CUSTOMER OF THE FOLLOWING

### SEASONS: HEATING AND NON-HEATING

Recognizing that Bamboo floor dimensions will be slightly affected by varying levels of humidity within your building, care should be taken to control humidity levels within the 35-55% range. To protect your investment and to assure that your floors provide lasting satisfaction, we have provided our recommendations below.

- Heating Season (Dry) - A humidifier is recommended to prevent excessive shrinkage in wood floors due to low humidity levels. Wood stoves and electric heat tend to create very dry conditions.
- Non-Heating Season (Humid, Wet) - Proper humidity levels can be maintained by use of an air conditioner, dehumidifier, or by turning on your heating system periodically during the summer months. Avoid excessive exposure to water from tracking during periods of inclement weather. Do not obstruct in any way the expansion joint around the perimeter of your floor.

### ALL INSTALLATIONS

#### STEP 5: COMPLETING THE JOB

- Clean floor with the recommended Bamboo flooring cleaner.
- Re-install any transition pieces that may be needed, such as Reducer Strips, T-moldings, or Thresholds. The products are available pre-finished to blend with your flooring. (See moldings below)
- Re-install all base and/or quarter round moldings. Nail moldings into the wall, not the floor. Inspect the floor, filling all minor gaps with the appropriate blended filler.
- If the floor is to be covered, use a breathable material such as cardboard. Do not cover with plastic.
- Leave warranty and floor care information with the owner. Advise them of the product name and code number of the flooring they purchased.

- To prevent surface damage avoid rolling heavy appliances and furniture on the floor. Use plywood, hardboard or appliance lifts if necessary.

## MOLDINGS

- Reducer Strip: a teardrop shaped molding. Used around fireplaces, doorways, as a room divider, or as a transition between Bamboo and adjacent floor coverings that are thinner. Fasten down with adhesive or double-faced tape.
- Threshold: a molding undercut for use against sliding door tracks, fireplaces, carpet, ceramic tile, or existing thresholds to allow for expansion space and to provide a smooth transition in height difference. Fasten to subfloor with adhesive and/or nails through the heel. Predrill nail holes to prevent splitting. Always leave expansion beneath the undercut.
- Stair Nosing: a molding undercut for use as a stair landings trim, elevated floor perimeters, and stair steps. Fasten down firmly with adhesive and nails or screws. Predrill nail holes to prevent splitting.
- Quarter Round: a molding used to cover expansion space next to baseboards, case goods, and stair steps. Predrill and nail to the vertical surface, not into the floor.
- Combination Base and Shoe: a molding used when a base is desired. Used to cover expansion space between the floor and the wall. Predrill and nail into the wall, not the floor.
- T-Molding: a molding used as a transition piece from one flooring to another or to gain expansion spaces. Fasten at the heel in the center of the molding. Leave expansion beneath the undercut on both sides.