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HAWA CLIC ENGINEERED BAMBOO INSTALLATION GUIDE

PRODUCT USE: Hawa engineered clic bamboo flooring can be installed above, on or below grade. It may be installed over plywood or concrete sub-floor. It can also be installed over existing flooring such as linoleum, ceramic or vinyl tile, marble or wood flooring as long as the these floors meet the requirements and recommendations set out in this guide. This flooring **cannot** be installed over any type of carpeting or other soft flooring or soft underlayment. All HAWA Clic Bamboo Flooring is approved for radiant heat installations. **THIS PRODUCT MUST BE USED AS A "FLOAT INSTALLATION ONLY" AND CANNOT BE ADHERED TO ANY SUB-FLOOR.**

INSTALLER AND OWNER RESPONSIBILITY:

Bamboo flooring is a natural product and may contain minor imperfections in its coloring, grain structure and/or grading. Hawa flooring is manufactured to meet the highest quality standards of the industry, which permit a "defect tolerance" and "grading variance" not to exceed 5%. These defects may be of either manufacturing or natural type. Hawa bamboo spares no effort to ensure that this product is free of manufacturing defects and following strict guidelines, each flooring board is individually and meticulously inspected to select the right pieces for the grade being produced. Prior to installation, the installer/homeowner must make sure that the sub-floor inspection and pre-installation requirement listed in this guide is satisfactorily met or even exceeds minimal specifications.

Final grade, manufacturing, finish quality and approval of product before installation remain the sole and joint responsibility of owner and installer, even if owner is absent at time of installation. The installer must exercise sound judgment (common sense) before and during installation; any board showing glaring defects or imperfections must be trimmed, used in hidden places (closets, under cabinets) or not used at all. Once installed, any board is considered as having being accepted by installer and owner and no claims will be accepted.

When flooring is ordered, it is recommended to add 5%-8% additional sqft to allow for any cutting, waste and or grade/color variation. When in doubt, installer should not install floor boards showing visible grade, manufacturing or glaring defects, if unable to use in hidden places, or trim imperfections. Hawa's liability shall be solely limited to the replacement of defective products (materials only) in excess of the 5% industry accepted norm, excluding trimming waste allowance. Hawa will not be liable in any case for installer's lack of judgment, quality of installation, labor and installation costs.

RECOMMENDED TOOLS, MATERIAL AND ACCESSORIES:

Vacuum cleaner or soft broom	Blue flooring tape
Miter saw	Clear hardwood floor cleaner
Handsaw	Tape measure
Level	Rubber hammer
Leveling compound (optional)	16"x24" T-square
Wood adhesive (last board only)	Chalk line
Underlayment (15lb asphalt paper, Quiet Walk, Insulayment and/or Quiet Warmth, Floor Muffler too.	

PREPARATION:

Pre finished hardwood flooring installation requires a little more time and precaution than un-finished flooring. It needs to be handled with care to avoid scratches and marks on the finish. The flooring needs to be acclimated to the recommended indoor conditions (60 - 80 degrees with a relative humidity level of at least 35% to 65%) in its original cartons for at least 24 hours prior to installation in the area where the flooring will be installed. The environmental systems must be operational BEFORE, DURING and AFTER the actual installation.

PRE INSTALLATION CHECK LIST:

1) Basic requirements:

- A) Hardwood floor installation should be the very last step of any construction or renovation project
- B) Prior to flooring being installed, the HVAC system must be operational and working for at least one week with the flooring on premises but not yet installed.
- C) To avoid any moisture related problems, sub-floor must be totally dry and basement well ventilated (if applicable)
- D) For below grade installations, ensure that area is dry and sealed from any type of moisture seepage.

2) Sub-floor moisture level assessment

- A) Plywood sub-floors and/or existing hardwood floors must not exceed 10% moisture content and differential between flooring and sub-floor must be less than 4%. If any of the above specifications do not fall with advised readings, flooring must not be installed until necessary corrections are made.
- B) Concrete sub-floors should be at least 45 to 90 days old, 30 days being the absolute minimum. Calcium chloride testing is advisable with readings of 3lbs PSI per 1000sqft.

Owner and installer are solely and jointly responsible for all pre installation testing of the sub-floors in order for the conditions and/or specifications listed have been thoroughly met prior to installation of the flooring. All of the above tests results must be retained by the owner in case of any future claims.

- C) Sub-floors requirements are minimum 5/8" (16mm) or 3/4" (19mm) exterior grade plywood or OSB plywood. These sub-floors must be nailed, screwed and/or glued to approve construction grade beams to eliminate squeaks or movement.
- D) Sub-floors must be flat, within 1/16" per 7' area in order to install flooring. Testing should be done with an 8' level to obtain approved results.

- E) All raised nails/screws should be removed or made flat and any other debris removed prior to installing floor.

PREPARATION:

- A) Sketch entire installation to avoid any mistakes or surprises
- B) Decide exact starting point within the room
- C) Decide angle of the layout—straight, diagonal and/or staggered ends
- D) Remove any baseboard, doorsill and old floor covering, if necessary
- E) Trim any doors in order for the flooring to fit without binding
- F) Dry lay flooring to visualize how the finished floor will look

EXPANSION SPACE REQUIRED:

All wood flooring requires a certain amount of room to expand and contract during variations in humidity levels within each home. No part of this floor should be attached to any surface. If any installation is larger than 39'x79', use a "t-molding" every 6' to increase the space required for expansion gap (39'x79' is the absolute maximum width and length possible before t-molding needs to be utilized)

INSTALLATION PROCESS:

- A) It is very important to start off straight and square, so use a chalk line parallel to the starting wall and perpendicular to the adjacent wall
- B) Use several different boxes at once to enhance to floors look to ensure natural variations in color, shade and grading
- C) Never force boards into place and check what might be causing binding (do not hammer into place)

PROCEEDURE:

- A) Use 15lb asphalt paper or the above recommended underlayment from wall to wall to cover sub-floor.
- B) While facing the wall you should start at the left corner with placement of the first board approximately $\frac{1}{2}$ " away from any vertical obstruction(wall and/or door frame) on all sides
- C) As you progress to the right, place the next board in place by inserting tongue into grove of first boards end. Continue to wall and cut where necessary
- D) The ends of the flooring boards should be approximately 6" or more (longer/shorter) than previous row. Staggered ends are suggested in order to have a pleasant visual look in the flooring pattern. Do not have the board ends in a row under each subsequent row of flooring.
- E) You should be able to insert the tongue of the board into the grove of the previous row by holding that board at a 45 degree angle and carefully sliding it into place and apply slight pressure downward to lock into place. Continue the balance of the installation in the same manner until completed
- F) When the last board is reached, a small amount of wood glue should be applied to the groove to hold this final board into place
- G) The final step is to place all transition moldings into place to cover the perimeter expansion spaces.

HAWA BAMBOO FLOORING TRADING CORPORATION—10-02-2009