



INSTALLATION GUIDE

By BENTHAM PLANK

2022



INTRODUCTION

IMPORTANT:

WE REQUIRE THAT YOU READ AND UNDERSTAND THIS INFORMATION COMPLETELY PRIOR TO RECEIVING/INSTALLING A BENTHAM PLANK SINCE IMPROPER INSTALLATION CAN VOID THE WARRANTY. BY FOLLOWING THESE INSTRUCTIONS AND GUIDELINES YOU WILL ENSURE TO HAVE AND ENJOY THE PRESENCE OF OUR BEAUTIFUL FLOORS FOR YEARS TO COME.

OWNER/INSTALLER RESPONSIBILITY

CAREFULLY INSPECT ALL MATERIAL PRIOR TO INSTALLATION FOR DEFECTS. MATERIALS INSTALLED WITH VISIBLE DEFECTS, DAMAGES, OR OTHERWISE UNSATISFACTORY APPEARANCE ARE NOT COVERED UNDER WARRANTY.

PLEASE NOTE - WOOD IS A NATURAL PRODUCT THAT CAN VARY IN COLOR, GRAIN, AND CONTAINS NATURAL CHARACTERISTICS THAT VARY FROM PLANK TO PLANK AND IS TO BE EXPECTED. WE DO NOT WARRANT AGAINST THESE NATURAL VARIATIONS FROM PLANK TO PLANK OR VARIATIONS FROM SAMPLE TO PLANK. TO AVOID DRAMATIC VARIATION MAINLY CAUSED BY AGING, IT IS RECOMMENDED THAT INSTALLATION BE COMPLETED FROM THE SAME LOT.

REMEMBER

- UPON RECEIPT OF THE FLOORING, OPEN UP TO 5 CARTONS TO INSPECT AND CONFIRM WITH THE JOB SUPERVISOR AND THE BUYER/HOMEOWNER/END-USER THAT THE MATERIAL IS SATISFACTORY.
- IF ANY PROBLEM IS FOUND, DO NOT OPEN ANY ADDITIONAL CARTONS. CONTACT BENTHAM PLANK OR YOUR LOCAL RETAILER OR DISTRIBUTOR IMMEDIATELY.
- DO NOT INSTALL DAMAGED OR VISIBLY UNSATISFACTORY MATERIAL. INSTALLING A PLANK CONSTITUTES ACCEPTANCE OF ITS APPEARANCE BY THE INSTALLER AND BUYER/HOMEOWNER/END-USER.
- ACCEPTING OR REJECTING THE MATERIAL MUST BE DONE ON FULL SHIPMENT OF QUANTITIES ONLY, NOT BUNDLE BY BUNDLE OR PLANK BY PLANK.

If installing over radiant heat, read the 'Radiant Heat Systems' section below before finalizing product selection or beginning installation. Careful adherence to these guidelines is required for a successful and fully warranted installation. Certain wood species and plank sizes are not warranted for installation over any type of radiant heat.

Manufacturer does not offer a warranty on ANY flooring installed over electric radiant heat systems. Only hydronic (water) systems may be approved. In wood flooring installations over radiant heat, moderate surface checking, cracking (especially at the ends of boards and around

knots), shrinkage, gapping between planks, and slight cupping are all to be expected and do not constitute a product defect.

FOR QUESTIONS CONCERNING THE INSTALLATION PROCESS, PLEASE CONTACT OUR AUTHORIZED BENTHAM PLANK DEALER OR EMAIL TO **SUPPORT@BENTHAMPLANK.COM**.

OUR INSTALLATION INSTRUCTION TAKE PRECEDENCE OVER NWFA INSTALLATION GUIDELINES. HOWEVER IN SITUATIONS NOT SPECIFICALLY COVERED BY OUR INSTALLATION GUIDE, NWFA GUIDELINES ARE HIGHLY RECOMMENDED.

JOBSITE INSPECTION AND PREPARATION

Environment Condition

IT IS THE INSTALLER/OWNER'S RESPONSIBILITY TO ENSURE THAT THE JOB SITE CONDITIONS AND JOBSITE SUBFLOOR ARE ENVIRONMENTALLY AND STRUCTURALLY ACCEPTABLE PRIOR TO THE INSTALLATION OF ANY HARDWOOD FLOORING. BENTHAM PLANK DECLINES ANY RESPONSIBILITY FOR FAILURES OR DEFICIENCIES OF HARDWOOD FLOORING RESULTING FROM OR RELATED TO SUB-FLOOR, SUBSURFACE, OR JOB-SITE ENVIRONMENTAL CONDITIONS. ALL SUBSTRATES MUST BE CLEAN, FLAT, DRY, AND STRUCTURALLY SOUND.

Hardwood floor installation should be the very last step of any construction or renovation project.

Exterior grading should be complete with surface drainage offering a minimum slope of 150mm (6") in 3000mm(10') to direct the flow of water away from the structure. All gutters and All outside doors and windows must be in place. All concrete, masonry, plastering and other "wet" work must be complete and thoroughly dry.

Bentham Plank engineered flooring products may be installed below, on or above grade level using recommended installation methods in this guide.

Crawl spaces must be a minimum of 600mm (24") from the ground to the underside of joists. A ground cover of 8mm

Polyethylene film is essential as a vapor barrier with joints lapped 200mm (8 ") and taped. The crawl space

should have perimeter venting equal to a minimum of 1.5% of the crawl space square meters.

These vents

should be properly located to foster cross ventilation. Local regulations may prevail.

To help minimize moisture-related expansion and contraction, verify the following conditions prior to acclimation and installation :

- Permanent HVAC should be on and operational and maintained between 60-75°F with relative humidity of 35%- 55% for a minimum of 7 days prior to delivery, during acclimation and installation, and throughout the life of the floor. Humidity levels below 35% or above 55% may cause movement in the flooring, gapping between pieces, cupping, cracking and other problems. Use of a humidification or dehumidification system may be required to maintain proper humidity levels, particularly over radiant heat and in desert or mountain regions.
- All exterior walls, windows, and doors must be in place and the building envelope closed during acclimation and installation.
- All wet work such as painting, drywall, masonry, and concrete must be completed and dry.
- Basements and crawl spaces must be dry and well ventilated. Crawl spaces must be a minimum of 18" high from the ground to the bottom of the joist. Dirt floors in crawl spaces should be covered with a 6-10 mil black plastic to reduce moisture migration. Seams should overlap and be sealed with waterproof tape. Perimeter crawl space cross ventilation should equal 1.5% of the square footage. Vents must remain open year round.
- Exterior grading should be complete and drainage should move away from the building structure with a minimum drop of 3" in 10'.
- Do not install Bentham Plank flooring boards in full bathrooms.

Subfloors

- Subfloors must be clean and free of dirt, curing compounds, sealers, drywall mud, paint, wax, grease, urethane, or other materials that may affect the integrity of the flooring material or adhesives used to install the flooring.
- All subfloors and subfloor systems must be structurally sound and must be installed following their manufacturer's recommendations. Local building codes may only establish minimum requirements of the flooring system and may not provide adequate rigidity and support for proper installation and performance of a hardwood floor.
- Whenever possible install the planks perpendicular to the floor joists for maximum stability.
- Our warranties DO NOT cover any problems caused by inadequate substructures or improper installation of said substructures.
- The subfloor must be flat, meeting a minimum of 3/16" within 10' or 1/8" in 6'.

Concrete Subfloors

- Grind high spots or use a Portland-cement based leveling material (minimum compressive strength 3000 psi) to fill all low spots.
- Follow the leveling compound manufacturer's instructions.
- Leveling compounds must be allowed to thoroughly cure and dry prior to the installation of wood flooring.

- Moisture testing Before testing a concrete slab for moisture, it should be cured for a minimum of 30 days and 60 days is preferable. Moisture testing must be done and results recorded prior to flooring installation. Always verify compatibility of moisture barrier and adhesive systems with adhesive manufacturers.
Results indicate: 0-3 lb: dry
3-7 lb: moisture barrier required
7+ lb: too wet installation cannot occur
 - Test 1
CALCIUM CHLORIDE TEST * One test per 1,000 s/f for 24 hours.
Minimum two tests per jobsite. Always follow test manufacturer recommendations.
 - Test 2
RH probe such as the Wagner Rapid RH. Please follow all manufacturer instructions. Debris and Cleanliness
 - Concrete must be free of contamination from materials such as paint, oil, wax, grease curing compounds etc. as these can result in unsatisfactory bonding of the adhesive.
 - To remove the contaminants ensure that a solvent based stripper is not used as this will affect the bond of the adhesive.
 - Loose flaky concrete to be sanded with open 20 grit sandpaper.
 - Prior to installation sweep or vacuum.

Wood Subfloors

- Ensure that no creaking, loose edges, sags etc. exist. Repair them as Necessary before starting installation
- Sand down high spots and fill the low spots with a leveling compound or other material approved for use under wood flooring.
- For glue and nail/staple down applications, staples must be able to penetrate for holding power.
- Make sure the wood subfloor is screwed down solid and secure, and nothing loose.
- Walk across the floor to check for squeaks and add additional screws if necessary.
- Ensure that there is proper expansion space (1/8") between the wood subfloor panels.
- The panels can be laid diagonally or perpendicularly with the joists, with an expansion space of 1/8" between panels.
- Fasten panels down at least every 6" and glue them to the joists.
- Ensure that there are no protruding fasteners.
- OSB and plywood must be APA (or equivalent) rated and maintained in a controlled environment OSB is more likely to yield noisy floors.
- Wood subfloors should not exceed 12% and there should result in less than a 4% humidity difference between the flooring and the wood subflooring material. If the subfloor has excessive moisture content, postpone installation, find the moisture

source and correct by raising the heat and increasing ventilation until proper conditions are met.

- Apply a suitable moisture retardant or use an underlayment that also acts as a vapor retardant.
- It is important that the subfloor moisture is correct or the flooring is at risk for cupping. Cupping is not a manufacturing defect.
- Make sure the subfloor is free of debris before beginning installation.

PRIOR TO INSTALLATION

Acclimation

Prior to installation, upon receipt of cartons and confirmation with the end-user that the appearance of the flooring is acceptable, proceed to acclimate all cartons to site conditions. Distribute the cartons into the rooms/areas where they will be installed. South & West facing rooms will generally have different temperature ranges than North & East facing rooms. Only after occupancy-ready site conditions have been established, carefully open both ends of each carton by cutting slits in the packaging, being careful not to tear the packaging in case a return is needed. Do not open the cartons other than the ends, and do not cut the straps inside the carton until acclimation is complete. Removal of the flooring from the cartons/straps prior to installation could result in bowing/bending that could make the flooring difficult to install. When the cartons are first opened, use a pin-type moisture meter and take 20-30 moisture content readings per thousand feet of flooring. Also, use a hygrometer to check the Relative Humidity in the space. Record all readings. Repeat this process every few days until the moisture content has stopped changing and the wood has reached Equilibrium Moisture Content (EMC). Most jobsite conditions will require acclimation time of at least 5 days, but assessment of proper acclimation should be based on moisture content, not time.

ALL INSTALLATION METHODS

Glue down Installation

Glue down installation guidelines, applicable for 15mm (5/8") - 21mm (3/4") thickness.
Radiant heat subfloor - Glue down installation only.

Below level?

A concrete slab is considered below grade when any part of the slab is below ground level, for example, walkout basements are below grade! Install flooring with full spread of Woodstikk 19 (formerly Gekko Woodstikk18) Adhesive according to the manufacturer's specifications.

Before you begin using the following instructions, please refer to the previous Pre-Installation Job Prep information.

1. Select a starter wall. It is recommended to start the installation along an exterior wall; it's more likely to be straight and square with the room.

- Measure out from the wall the width of two planks plus a 15 mm (5/8") expansion gap and mark each end of the room and snap your chalk line.
- Secure a straight edge inside the chalk line before you spread your adhesive to ensure alignment, which is a critical part of the installation. This prevents movement of the planks that can cause misalignment.
- Check along the wall to make sure there isn't too large of a gap.

2. Using the recommended trowel (B11 (23/48) or 1/4"x3/16" V-notched trowel) at a 45° angle to get the proper spread of adhesive applied to the subfloor is important; doing so will produce a proper and permanent bond. Improper bonding can cause loose or hollow spots.

- Spread adhesive from the straight edge out about 750mm. Working in small sections is helpful for this method as it will allow you to reach across the adhesive to install the wood flooring without putting any weight on it and will ensure proper transfer of the adhesive to the wood flooring.

Note: Change the trowel every 185m² (2000'sqft) to 275m² (3000'sqft) due to wear down of the notches. This assures you always get the proper spread of adhesive.

3. Install the first row of starter planks with the tongue side of the plank facing the straight edge and secure into position (make sure the first row of starter planks have a full tongue to ensure you end up with straight rows). Pull in tight together and tape with 3M blue mask tape to prevent movement and continue with the installation.

NOTE: Make sure the planks used for the starter row have full tongues. Proper alignment is critical. Misaligned starter rows can cause side and end gaps to appear in proceeding rows of flooring. When you have the starter rows complete, you can begin the next row

4. Once the starter rows are secure, spread 750mm (2.5') of adhesive along the length of the room.

Never spread more adhesive than can be covered using the open time recommendation listed in the instructions on the adhesive label. If the adhesive has skinned over remove dried adhesive and trowel new adhesive.

- Place tongue into the groove of the planks and press firmly into the adhesive. Never slide planks through adhesive. Never install planks further than you can comfortably reach.
- As you continue working across the floor try to maintain a 24" minimum space between end joints. Randomly install different lengths to avoid a patterned appearance.

NOTE: Use caution when using a rubber mallet to butt material together, as it can burnish the finish and cause marring.

- Test for proper bond by occasionally lifting a board and looking for good coverage (90%), and then replace it into the adhesive.

- Clean any adhesive off the surface, as you work, before it cures using a non-abrasive towel.
- As you approach the end wall it may be necessary to cut the width of the last row – be sure to allow for the expansion space along the end wall. Once the final cuts are made, set planks into place.
- Use 3M 2090 blue mask tape to hold planks securely in place as you are installing and continue the process throughout the installation.
- After the floor is complete remove the straight edge and complete installation in the same manner. Use a pry bar to fit the last row of boards into place and be sure to leave the minimum required 5/8" (15 mm) expansion gap.
- Restrict light foot traffic for a minimum of 10-12 hours and wait 24 hours before permitting moving of furniture onto the floor.
- Clean any wet adhesive from the flooring with a lightly dampened clean cloth. If the adhesive has healed, you may remove it with a plastic scraper and dry, non-abrasive towel, taking care not to damage the finish.
- Flooring that is not flat should be weighted to apply pressure to installed sections while the adhesive is still active (app. 30–60 min.) to ensure proper contact between the flooring and substrate. Use protective padding to avoid damage to the floor surface. When installing unfinished wood flooring, wait a minimum of 72 hours before *sanding*.

Final Inspection

After the floor has been cleaned, inspect the floor for nicks, scratches, gaps or planks that may have moved during installation, as well as any other imperfections that need attention. Touch up nicks and scratches with touch-up products. In typical climates, the new floor can accept foot traffic within 24 hours. In areas where additional curing time is required, more time may be needed.

NOTES:

- Never work on top of the flooring when installing with the glue down method.
- Always remove the 3M 2090 blue masking tape within 4 hours of applying, otherwise the tape may form a permanent bond that can remove the finish.
- When used, acoustic underlayment must be glued down over subfloor prior to gluing down boards using a premium multipurpose adhesive.
- Extremely precise board milling may require use of tapping blocks for better tongue and groove fit.
- Row to row installation requires that no glue seeps into grooves at any time for perfect tongue and groove fit.

Glue & Nail Installation

Required when nailing down planks over 7.5" wide, recommended when nailing down all planks over 5" wide.

This Engineered Wood Flooring can be nailed + glued to plywood, OSB and existing wood flooring meeting the requirements outlined above under 'Subfloor Conditions,' using full-spread adhesive.

For Nail + Glue Installations, you will need the General Tools and Accessories, plus: Premium Wood Flooring Adhesive: Franklin 771, 811, or 821, Bostik GreenForce, BEST, or VaporLock, or Bona R851; Adhesive Remover: Pacific Pride Orange Adhesive Remover; Adhesive Trowel recommended by the manufacturer of the adhesive selected; Nail set; Tack Stapler or 1" roofing nails (for felt); 6-d Finish Nails or Pneumatic Finish Nailer with 1 1/4" to 1 1/2" fastener; Edge or Blind Stapler/Nailer (Manual or Pneumatic) with 1 1/2" - 2" Fasteners for flooring 5/8" – 3/4" thick, or 1-1/4" to 1-1/2" fasteners for flooring 5/16" – 9/16" thick (always do a test plank to verify that fasteners are seating properly and not causing dimpling on the surface); Compressor with hose (if pneumatic tools are used); 15 lb. roofing felt, #15 hardwood floor underlayment felt, or AquaBar underlayment paper.

Nailing + Gluing the Floor:

1. Measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks.
2. Trowel spread the adhesive on the subfloor along the chalk line wide enough to allow the first row of flooring to be installed, being careful not to cover the line. Follow the adhesive manufacturer's recommendations for wet lay times before proceeding to the next step.
3. Lay the tongue side of the first row of flooring along the chalk line. Face nail (top nail) the first row of flooring in place. Place the fasteners approximately 3/4" from the wall side (groove side) of the board every 4" to 6". Once the face nails are set, use 6-d finish nails or the pneumatic finish nailer to blind/edge nail along the tongue of the first row, every 4" to 6" and every 2" to 3" from every end joint. Check to make sure the first row is still straight along the chalk line before proceeding.
4. Trowel spread enough adhesive to install 2-3 more rows.
5. Install the second row by sliding the groove side on to the tongue of the first row. Blind/edge nail it into place, with fasteners every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 8".

6. Continue nailing and gluing 2-3 rows at a time in this manner across the room. Avoid creating “H” patterns (where an end joint is adjacent to another end joint in the second to last row installed). Use cut ends to start the subsequent row, discarding any pieces shorter than 8”.

7. Most adhesives require that the installer clean the adhesive off the flooring boards during the installation. Follow the adhesive manufacturer’s recommendations for this procedure. If adhesive remover is needed, use only the recommended Pacific Pride Orange Adhesive Remover and use it only as needed to remove localized adhesive spots. Never use any adhesive remover to clean large areas.

8. Trim the last row of flooring to maintain the minimum expansion space at the far wall.

9. At the far (finish) wall, it may be necessary to face-nail the last 2-3 rows due to the angle of the stapler/nailer. The last row or two of flooring may need to be pulled together using a pulling bar.

10. Complete the installation by reinstalling or installing new base moldings.

Final Touches

NOTE: ALWAYS REMOVE THE 3M 2090 BLUE MASKING TAPE WITHIN 4 HOURS OF APPLYING THE TAPE. ALWAYS WAIT 10-12 HOURS TO RESUME LIGHT FOOT TRAFFIC AND 18-24 HOURS FOR REGULAR TRAFFIC AFTER INSTALLATION TO ALLOW PROPER CURE TIME FOR GLUE.

- Install transition pieces -i.e. – thresholds, t-moldings, baseboards and quarter round. Nail moldings to the wall, not the floor.
- Sweep or vacuum floor
- Inspect the final floor for nicks – Contact Bentham Plank for approved touch up materials.
- Clean the floor with the correct hardwood floor cleaner and complete initial maintenance in accordance with **Bentham Plank Maintenance & Care instructions**
- Unused material should be left with the owner and stored in a dry place in case future repairs are needed.
- Use plywood or hardboard when moving heavy appliances or furniture across the floor.

PROTECTION, CARE AND MAINTENANCE

General Care – All Coating Types

Flooring should be one of the last items installed in a project. In order to protect the floors while other trades are finishing their work prior to final cleanup and turnover to the owner, use a breathable protective covering such as Ram Board or Floorotex. Do not use Red Rosin paper, and do not use polyfilm or other non-breathing coverings as they can cause damage from humidity buildup. Clean the floor thoroughly before laying the covering to ensure that no debris is trapped underneath. Tape pieces of protective covering together but do not tape them to the wood flooring.

- Temporary floor covering should never be kept in place longer than a few (1-5) days. For installations over radiant heat, covering should never be left in place for more than a few hours. - Place walk-off mats at all entrances to collect dirt and debris that could damage or dull the flooring finish. Mats are also required in areas where people congregate and/or stand for long periods of time, such as in front of ovens, sinks, service counters, and cash registers.
- Install felt floor protectors underneath all furniture. - In food service areas such as restaurants and cafeterias, top-coating a urethane-coated floor will help prevent moisture damage caused by frequent spills. See below for recommendations on how to top-coat the specific flooring product you have selected. - Do not allow people to wear spiked heels on the floor, which will damage even the hardest wood floors and finishes. - Pet claws should be properly trimmed at all times.
- Work boots and shoes that may have pebbles lodged in the soles should be removed prior to entering. - Sweep or vacuum frequently. Most damage to wood floor finishes is caused by debris that is walked on.
- All mats or rugs should be cleaned on a regular basis. They should also be moved occasionally to allow natural color changes caused by light to occur evenly in all areas. Do not allow soiled mats or rugs to stay on the floor as they can trap moisture on the surface.
- Never wet-mop your floor, and always clean up spills and standing water as soon as possible. With oil-finished floors, water left for prolonged periods may cause water-spotting. With water or any other cleaning agent, be sure to thoroughly ring out the applicator or mop prior to applying it to the floor. A damp mop is fine as long as the moisture is limited to an amount that will evaporate almost immediately. Moisture that is allowed to seep into the seams between the planks may cause damage to your flooring.

Natural Wood Color Changes

A Bentham Plank floorboard is an entirely natural product and as a result after a certain period of time, natural color changes can occur. Depending on the intensity in which the floor is exposed to the sun, lighter wood turns darker while darker wood typically becomes lighter (especially during the first 3-6 months).

If you have questions, we encourage you to contact the Bentham Plank Customer Service at any time.