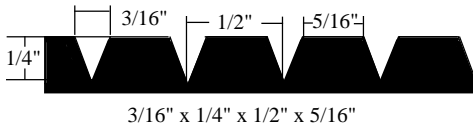


Installation Recommendations for Hartco Embassy Plank Wood Floors Using ProConnect™ or Hartco 57 Urethane Adhesive for Glue Down Installation and Nail-Down Installation

GLUE DOWN

I. GENERAL INFORMATION

- A.** Hartco Embassy Plank is 5-ply engineered product with precisely milled tongue and groove. It can be installed below grade, on grade or above grade.
- B.** Use only ProConnect™ or Hartco 57 Adhesive to install Hartco 9/16" - 5-ply Embassy Plank.
- C.** Hartco Wood Flooring can be installed on concrete, existing wood floors, plywood, underlayment particle board, resilient tile, existing sheet goods (do not install over loose laid or perimeter glued sheet goods), terrazzo, or ceramic tile as long as the subfloors are structurally sound, clean, flat, dry and will remain dry.
- D.** HARTCO WOOD FLOORING IS NOT RECOMMENDED FOR FULL BATHROOM INSTALLATIONS. THE MOISTURE FREQUENTLY ASSOCIATED WITH SUCH LOCATIONS MAY PREVENT SATISFACTORY RESULTS.
- E.** To prevent damage, wood floors should be installed after all other construction is completed.
- F.** Satisfactory performance of wood floors is greatly influenced by its environmental conditions. A temperature of 70°F and a relative humidity between 35-50% are ideal. Temperatures of the subfloor, adhesive and flooring should be over 60°F (16°C) during installation.
- G.** STORAGE: Store Hartco Wood Flooring in a dry place. If stored on-grade, at least a four-inch space must be provided under and around all cartons. Do not store directly upon on-grade concrete or next to outside walls.
- H.** EQUIPMENT NEEDED FOR INSTALLATION: Saw, chalk line, hammer, handsaw, tape measure, and a 3/16" x 1/4" x 1/2" x 5/16" notched trowel to get a spread rate of 50 square feet per gallon. **IT IS EXTREMELY IMPORTANT TO USE THE RECOMMENDED TROWEL TO OBTAIN SATISFACTORY RESULTS.**



- I.** CAUTION: Applying additional finishing or maintenance materials over the factory-applied finish may produce unsatisfactory results. Results obtained by applying any materials other than those recommended by Hartco for maintenance purposes are beyond Hartco's control.
- J.** WOOD SWELLS AND EXPANDS WITH ANY INCREASE IN MOISTURE CONTENT. ALWAYS LEAVE AT LEAST 1/4" EXPANSION SPACE BETWEEN THE FLOORING AND THE WALLS AND NEXT TO ALL VERTICAL OBJECTS TO ALLOW FOR EXPANSION OF THE ENGINEERED FLOORING.
- K.** Do not cover a new installation with protective paper or materials for at least two weeks or until the adhesive has fully cured.

II. SUBFLOORS - GENERAL

- A.** When installing over existing floor coverings, make sure that floor covering is completely secured to the subfloor. No perimeter or loose laid sheet goods are acceptable. Urethane sheet goods less than one year old need the surface abraded so the adhesive will adhere to it.

- B.** Wood subfloors should be underlayment grade that meets APA PS2-92 standards. They can be plywood, particleboard or (OSB) oriented strand board. Solid boards that are nailed down, has tongues and grooves, and is less than 3 1/4" wide can also be used. Any existing squeaks in the subfloor must be eliminated before spreading adhesive. Wood subfloors should not be over 13% moisture content, 8% moisture content is best.
- C.** Concrete slabs containing antifreeze chemicals, admixtures or curing compounds that are hygroscopic are not acceptable subfloors.
- D.** Hartco adhesives should not be spread over subfloors that have had a sealer applied. Any existing sealer should be sanded or ground off. All previous or existing adhesives should also be removed.
- E.** Rubber tile floors are not acceptable subfloor materials for Hartco flooring.
- F.** Hartco 9/16" Embassy Plank can be installed over light weight concrete (3000 p.s.i. or less), radiant-heated subfloors and cork. A radiant heat source needs to be turned off before and during installation to prevent precure of the adhesive.

III. CONCRETE SUBFLOOR MOISTURE TESTS

- A.** To determine if moisture is present in the slab, use the following methods:
1. Chip the surface of the concrete to at least 1/4" deep, the diameter of a dime, in various areas of the slab, particularly around the perimeter next to the outside walls. Apply two drops of 3% phenolphthalein solution in anhydrous ethyl alcohol into each of the chipped areas. If no color change occurs in the solution, there is not enough moisture to affect the installation. You may proceed. If a slight pinkish or reddish tint appears within 5 minutes, moisture is present and further testing must be done with a moisture meter (see Step 2). If a moisture meter is not available, proceed to Step 3.
 2. Use a reliable moisture meter, such as the **TRAMEX CONCRETE MOISTURE ENCOUNTER**. Following the manufacturer's instructions, take moisture readings in several locations within the installation area. If in any area the moisture content is greater than 4.5%, excessive moisture is present. Do not install wood directly over the concrete. Instead, get the concrete dry or install a moisture barrier (see step 3).
 3. Sheet vinyl may be used as an effective moisture barrier if it can be installed properly.

Adhesive Bond Moisture Test:

- This test, (or one recommended by the sheet vinyl manufacturer), should be used to determine if the concrete is sufficiently dry, as well as to determine the compatibility of the vinyl flooring adhesives to the concrete subfloors.
- Remove old adhesives, curing agents, dust inhibitors, oil, grease, paint, varnish, and other special surface treatment. Install 2 1/2' x 2 1/2' panels of the vinyl material in suspected or usual moisture areas throughout the subfloor area. Install the panels with the adhesives to be used in the actual sheet vinyl installations. If the panels are securely bonded after a period of 72 hours, then the subfloor surface is dry and sufficiently clean of foreign materials for satisfactory installation of the vinyl flooring. Panels can be considered "securely bonded" if removal of the panel requires enough force to delaminate the vinyl.
- B.** If the Adhesive Bond and Moisture Test, as described in Step 3, is a failure (the sheet vinyl will not stay), DO NOT INSTALL HARTCO FLOORING.

- C.** If excessive moisture is not detected from the tests described in A1 and A2 above, or anticipated in wetter seasons, proceed to Wood Installation Step 1 - Preparation.
- D.** If moisture was detected, but the adhesive bond and moisture test proves the vinyl installation will be successful, install the sheet vinyl as recommended by the sheet vinyl manufacturer. Continue with the next step.

IV. SHEET VINYL INSTALLATION

- A.** If new sheet goods are to be installed as a moisture barrier, DO NOT use a urethane product.
- B.** When excessive moisture is detected, but Concrete Moisture Test 3 produces a secure bond, vinyl sheet goods should be installed as a moisture barrier prior to installing Hartco engineered flooring. Suitable vinyl sheet goods can be identified in the following manner:
Apply a few drops of iodine solution (USP) on the surface. Allow the iodine to remain on the surface for about 30 seconds, then wipe it off with a damp cloth. If the iodine stains the surface, the vinyl is unacceptable. Do not use it. If the iodine does not stain the surface, the sheet goods may be used.
- C.** If the moisture in the slab is not too high for proper use of vinyl, install the sheet vinyl in accordance with the manufacturer's specifications. **LOOSE LAID OR PERIMETER TYPE INSTALLATIONS OF SHEET GOODS ARE NOT ACCEPTABLE.** Vinyl sheet goods should generally be installed at least 1 day (24 hours) prior to the installation of Hartco engineered flooring.
- D.** Test the sheet vinyl adhesive to be sure it is cured before installing the wood flooring over the vinyl.
- E.** HARTCO FLOORING INSTALLATION - Install engineered flooring by following the installation instructions.

V. WOOD FLOORING INSTALLATION

Step 1 - Preparation

- A.** Check subfloor to make sure no excessive moisture is present. Do not install wood flooring over wet surfaces. See concrete moisture test A.
- B.** SUBFLOORS SHOULD BE FLAT TO WITHIN 3/16" IN 10 FEET OR 1/8" IN 6 FEET. FILL LOW SPOTS WITH PATCHING OR LEVELING COMPOUND. HIGH SPOTS SHOULD BE GROUND LEVEL. LATEX LIQUID AND POWDER LEVELING COMPOUND CAN BE USED UP TO 1/8" IN THICKNESS. LEVELING OR PATCHING COMPOUNDS USED IN AREAS THICKER THAN 1/8" NEED TO HAVE A COMPRESSIVE STRENGTH OF AT LEAST 4000 P.S.I. PATCHING COMPOUNDS MUST THOROUGHLY DRY BEFORE INSTALLING ON THEM.
- C.** Existing floor covering should be surface treated to remove maintenance materials.
- D.** Door casings and jambs or existing moldings should be undercut 1/16" more than the thickness of the flooring so the flooring can be installed beneath them for expansion purposes.
- E.** Thoroughly sweep and/or vacuum the entire area.

Step 2 - Layout

- A.** Layout varies with each installation, but it should be designed to save labor and materials as well as to enhance the appearance of the installation. Expansion space of at least 1/4" must be considered when laying out working lines.
- B.** Hartco engineered flooring can be installed parallel to the room walls, or on a diagonal whichever is preferred.
- C.** Installation should begin next to a wall. An outside wall (which is normally the straightest) is a better reference for establishing a working line than an interior wall. The installer should work from the subfloor when installing and should not work from on top of the flooring.
- D.** Establish the working line for a parallel installation by measuring an equal distance (A & B) from the starting wall at both ends. This distance should be a multiple of 9" plus 1/4" for an expansion space. An example would be 27 1/4". See Figure 1.

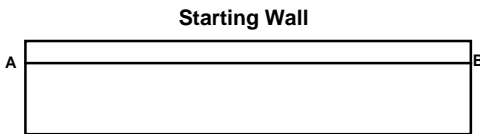


Figure 1

E. Establish the working line for a diagonal installation by measuring 4' to point A & B from the starting corner opposite an exit. See Figure 2.

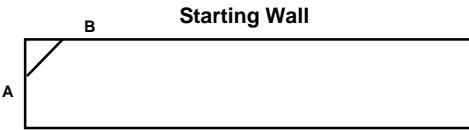


Figure 2

Step 3 - Spreading Adhesive

- A. Use a 3/16" x 1/4" x 1/2" x 5/16" notched trowel.
- B. Hold the trowel at 45° angle to the subfloor to obtain the proper ridges and spread rate averaging 60 square feet per gallon. Spread rate may vary with type of subfloor and how smooth the subfloor may be.
- C. When using ProConnect™ adhesive spread only as much adhesive as can be covered in 30 minutes. (PROVIDE ADEQUATE VENTILATION UNTIL THE ADHESIVE IS CURED.)
- D. Spread the adhesive along the working line, between it and the starting wall.
- E. Keep the adhesive container closed when not using. Evaporation from the container could cause the adhesive to dry prematurely, thereby making it difficult to spread.
- F. ProConnect™ and fresh Adhesive 57 can be removed with Hartco Wipe Clean. Cured Adhesive 57 can be removed with Hartco Adhesive Cleaner.

Step 4 - Laying The Floor

- A. Trowel the adhesive and immediately install the flooring before the adhesive "skins" over and prevents adhesive transfer. This may be less than 60 minutes. Occasionally lift a flooring unit to assure proper adhesive transfer.
- B. INSTALL FROM ON THE SUBFLOOR AS LAYING PROCEEDS, NOT FROM ON THE PLANK SURFACE. DO NOT STAND ON THE FLOORING. Use a knee board if it is necessary to work on top of the flooring such as in closets.
- C. Proper placement of the first unit is important. The groove side of the unit should be aligned on the working line between the working line and the starting wall. A minimum space between adjacent end joints should be at least 4" to prevent clustering.
- D. Continue laying the flooring units until all of the spread adhesive has been covered. Make sure all units along the working lines are properly aligned or else the entire installation will be out of alignment. If units move out of alignment, realign them before going any further.
- E. Complete the installation, area by area, just like the first. All cutting and trimming against vertical objects should be done for each area as you continue.
- F. MAKE SURE THERE IS AT LEAST 1/4" EXPANSION SPACE NEXT TO ALL WALLS AND VERTICAL OBJECTS.
- G. IF THE FLOORING UNITS LIFT OFF THE SUBFLOOR AT THE PERIMETER OR IN DOORWAYS, ANCHOR THEM IN PLACE UNTIL ADHESIVE DEVELOPS ENOUGH STRENGTH TO HOLD THEM DOWN.
- H. Furniture, equipment and traffic should not be allowed on the installation until the adhesive is firmly set. Set up time for the adhesive is normally 24 hours.
- I. Clean the area when finished & leave the Hartco Floor Care Guide and warranty for the consumer.

NAIL DOWN DIRECTIONS

I. GENERAL INFORMATION

- A. Any of the following 3/4" nailing machines with a minimum 1 1/4" fastener length may be used:

Primatch	Porta-Nails
Pownail	Stanley-Bostitch
- B. There should always be at least 1/4" expansion space, left between the flooring and all vertical objects so the flooring can expand somewhat without being restrained.

II. SUBFLOORS

- A. Subfloors can be either CDX plywood or OSB (Oriented Strand Board). Single layered subfloors must be a minimum 3/4" thick plywood or 23/32" thick OSB with 8' length running at a right angle to the subfloor supports, which may be wood joist 16" o.c. or a truss system 19.2" o.c.

When installing the flooring parallel to the subfloors supports or when minimum standards for support span do not exist, 1/2" thick CDX plywood needs to be added to the original 23/32" or 3/4". The subfloor should not contain more than 13% moisture.

- B. Joints of the subfloor need to be level. The subfloor should be flat to within 3/16" in 10 feet.
- C. Existing wood subfloors, such as tongue & groove boards should be overlaid with 1/4" plywood.

III. PREPARATION

- A. The subfloor needs to be clean, structurally sound, flat (3/16" in 10') and dry.

IV. LAYOUT

- A. Most installations have the flooring units running parallel to the longest dimension and across the joist. The first row of flooring should run next to the longest wall with the groove side next to the wall. Strike a chalk line 3 1/4" from the starting wall to use as a guide for installing the first row. Sometimes the installation may begin in the center of the room and a chalk line through the center can be used to align the first row.

V. LAYING EMBASSY PLANK

- A. Be careful when removing the flooring from the carton and when racking so the prefinished flooring is not damaged.
- B. Rack the flooring from several cartons along the starting line about four or five feet deep. Do not cluster the ends. The end joints should be at least 4" apart.
- C. The first row of flooring is face nailed along the chalk line, groove side toward the starting wall. Face nail the first row close enough to the wall so that the shoe molding will cover the nails. Blind or face nail each subsequent row until enough space exists to use the nailer. Counter sink and fill all nail holes with matching Hartco filler. The field is then installed using a nail gun. Every piece should be nailed at least two times. Nails should be driven from 1" to 2" from the ends and about every 8".

VI. FINISHING

- A. Install moldings.
- B. Clean the installation and use matching Hartco filler where needed.
- C. Leave maintenance and warranty information for the consumer.

PREFINISHED HARTCO MOLDINGS

- A. Reducer Strip
- B. Threshold
- C. Stair Nosing
- D. Quarter Round
- E. Combination Base and Shoe
- F. T-Molding

As with all hardwood flooring, it is important to properly clean and maintain this Hartco flooring in order to prevent substances, including but not limited to water, food, and grease from making the flooring slippery.

The above suggested recommendations for the installation are predicated on test believed to be reliable; however, since each application and use is beyond our control, we do not guarantee the results to be obtained.



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