



commercial hardwood installation instructions

Attention:

Before starting installation, read all instructions thoroughly. Should any questions arise, please contact your local Hallmark Hardwoods dealer or phone Hallmark Hardwoods direct at 888 551-0888. All installation instructions must be followed for warranties to be considered valid.

Owner/Installer Responsibility

Inspect all materials carefully prior to installation. Warranties do not cover materials with visible defects once they are installed. Inspect the hardwood flooring in well lighted conditions to ensure proper identification of any potential problems. Carefully inspect the flooring for grade, color, finish, and quality. If the flooring is not acceptable, contact Hallmark Hardwoods and arrange shipment of replacement material. Defective product will be replaced. Material that is subjectively viewed as unacceptable but falls within Hallmark Hardwoods grading norms will not be replaced. Prior to installation of any flooring, the installer must ensure the job site and sub-floor conditions meet the requirements specified in these instructions.

Caution: Wood Dust

Governmental agencies have determined wood dust to be a nasal carcinogen. The sanding and sawing of wood flooring can produce wood dust that can cause eye, nose, skin, and respiratory irritations. All sanding and sawing equipment should be fitted with dust collection systems to reduce airborne dust. Wear appropriate NIOSH designated dust masks to reduce the risk of dust inhalation. Wear proper eye protection and avoid prolonged contact with eyes and skin. In the event of skin or eye irritation, flush with water for 15 minutes and seek medical attention!

Storage and Handling

Handle and unload wood flooring with care. Store in a dry place; make sure to provide at least a four-inch space (using dry 4" x 4" stickers or a dry pallet that provides enough clearance) under boxes for proper air movement. Prior to delivery of flooring, outside doors and windows must be in place. All concrete, masonry, plastering, and other "wet" work must be complete and thoroughly dry. Roofing and the exterior shell of the structure must be finished and weather tight with doors and windows installed. The wall coverings should be in place and all painting completed—except for the final coat on the base molding. Room temperature and humidity should be consistent with year-round conditions for at least one week prior to installation. When possible, install base molding after floor installation is complete. HVAC must be running with a room temperature of between 60° F to 80° F and relative humidity constant between 30 and 50%.

Pre-Installation Inspection

Visual Inspection

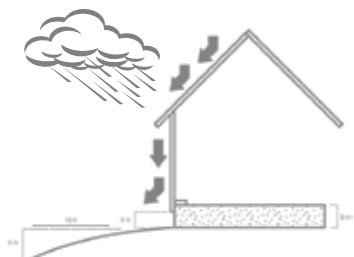
The first inspection is visual and basic. Is there water in the building?

Exterior Checks

Is exterior soil elevation 6" below edge of flashing?

Does exterior slope away from foundation at a rate of 6" drop in 10' for soft-landscaped areas and 3" drop in 10' for hard-paved areas? Proper drainage away from the structure is absolutely critical to ensure weather tight conditions and crucial to proper hardwood flooring performance.

If structure is near a hill, the lot should be graded with a swale to move moisture off the lot and prevent it from coming in contact with the foundation.



Crawl Space Ventilation

If home has raised foundation, does it have proper cross-ventilation? Crawl space clearance must be a minimum of 24" between the ground and the bottom of the floor joists.

Soil should be covered with 6-8 mm black plastic to provide a vapor barrier as specified by NWFA. Plastic must be overlapped at joints by a minimum of 8 inches and fully taped with high-quality, moisture-proof duct tape.

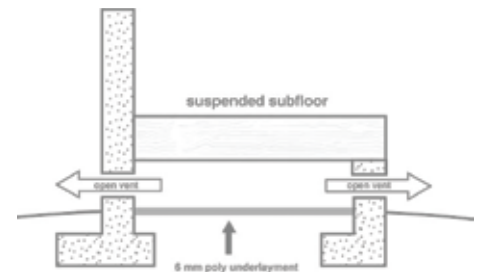
Size of available vents should equal 1.5% of the square footage within the crawl space. Relative humidity should be consistent with interior of home. Moisture content of sub-floor should not vary more than a 2% MC from the top of the subfloor to the bottom.

It may be necessary to install temperature/humidity activated exhaust fans to create more movement in the crawl space.

Uncontrolled humidity and moisture in crawl space will lead to mold and damage to the structure as well as the hardwood floor. In these events a contractor specializing in dehumidifying systems will need to be contracted to keep crawlspace humidity within proper norms. This is more likely in high humidity areas.

Ensure that clothes driers are properly vented to the outside of the foundation.

Check for signs of plumbing, both pressurized and non-pressurized/drain leaks.



Basement Moisture & Humidity Control

Basements should be completely weather tight and proper drainage away from the foundations walls in place to insure that basement remains dry.

1. Rain gutters must be in place to carry moisture away from the house. French drains are recommended, and basement walls should be properly sealed.
2. Relative humidity of basements should not be more than 10% higher than the upper floors.
3. Humidity control of the basement is vital to help control mold and prevent damage to the structure and hardwood flooring.
4. Basement walls should be inspected for cracks and excessive moisture content.
5. Drains must be placed at basement windows.
6. Direct sprinklers and irrigation systems away from the foundation.
7. Sprinklers spraying the foundation edge can lead to moisture intrusion into structure. Drip irrigation systems for plant beds is recommended.



Subfloor Moisture Testing-Concrete

Calcium Chloride: ASTM F1869

NWFA standards specify that the slab should not be emitting more than 3 lbs. per 1,000 square feet per 24 hour period. Carefully follow the instructions in the test kit to ensure that you get accurate results.

NOTE: The slab emissions can vary based on soil humidity and room temperature. Consult adhesive manufacturer's directions for the moisture abatement system they recommend.

Humidity Probe & Digital Meter: ASTM F2170

Widely used in Europe, this test determines the amount of humidity in the slab. This is an effective way to determine a slab's potential for emitting moisture.

NOTE: Refer to adhesive manufacturers required testing methods. Adhesive manufacturer's offer moisture warranties that may be conditional. Follow their directions closely to ensure compliance and full warranty coverage.

Subfloor Moisture Testing-Wood

Probe-type (pin) meters are considered the best method of testing. Remember: the top and bottom of the subfloor should vary no more than 2%. Wood substrates must have a moisture reading of no more than 10% when using Tramex, Delmhorst, or equivalent moisture meter and be within 4% of the moisture content of the flooring to be installed.

Subfloor Preparation Concrete

New concrete slabs require a minimum of 60 days drying time before covering them with a wood floor. The slab must be fully cured.

Slab must be comprised of Portland-based mix with 3,000 P.S.I. of compressive strength. Glue-down application over gypsum or lightweight concrete mixes of lesser strength is not acceptable. (see floating installation section for installation over lightweight substrates).

Remove all paint, oil, existing adhesives, wax, grease, dirt, sealers, and curing compounds. Do not use solvent-based strippers under any circumstances because residual solvents can prevent the satisfactory bonding of the vapor barrier and adhesive systems. It is important to ensure a long lasting bond between the adhesive, the concrete, and the boards.

Use sanding system with 20 grit # 3-1/2 open-face paper to remove loose, flaky concrete. For heavy surface contamination, it may be necessary to bead-blast the concrete surface.

Subfloor tolerance for a flat and level surface is 3/16" within a 10' radius and 1/8" in a 6'. These are industry standards established by NWFA.

Use a straight edge to determine if sub-floor requires grinding or filling. NOTE: A quarter is approximately 1/16" of an inch thick and can be used as a thickness gauge. Grind high spots and fill low spots with Portland-based filler. NOTE: Use the filler recommended by the adhesive manufacturer.

Caution: Concrete Dust

Governmental agencies have determined concrete dust to be a nasal carcinogen. The sanding grinding of concrete can cause eye, nose, skin and respiratory irritations. All equipment should be equipped with dust collection systems to reduce airborne dust. Wear appropriate NIOSH designated dust mask to reduce risk of dust inhalation. Wear proper eye protection and avoid prolonged contact with eyes and skin. In the event of eye irritation flush with water for 15 minutes and seek medical attention!

Caution: Asbestos

Governmental agencies have determined that asbestos is a respiratory carcinogen. Avoid sanding or scraping of old vinyl floors as they may contain asbestos. Take proper precautions and contact an asbestos abatement company to remove any old vinyl or vinyl tile floors.

Clean The Subfloor

After all prep work is completed, sweep and/or vacuum the subfloor. Dust and dirt can affect the adhesive or vapor barrier's ability to adhere to the slab.



Installing Over Existing Floor Coverings On Concrete

Perimeter-glued resilient vinyl and rubber tiles are not acceptable underlayments and must be removed.

Terrazzo, tile, and full spread glue-down vinyls that are dry, structurally sound and level (as described above) are suitable as a sub-floor for installation. See adhesive manufacturer's guidelines.

As indicated above, the surface must be sound, tight and free of paint, oil, existing adhesives, wax, grease and dirt.

Terrazzo and ceramic tile must be sufficiently scuffed to assure adhesion.

Existing hardwood flooring must be removed prior to the installation of a new wood floor on concrete.

Subfloor Preparation WOOD

Wood subfloors need to be well nailed or secured with screws. Nails should be ring shanks, and screws must be counter sunk.

The wood sub-floor needs to be structurally sound (i.e. without loose boards, vinyl, or tiles). Subfloor must be ANSI-rated plywood, OSB (oriented strand board), or sound lumber, a minimum of 3/4" thick, and dry.

Subfloor tolerance for a flat and level surface is 3/16" within a 10' radius and 1/8" in a 6' radius. These are industry standards established by NWFA.

No fiberboard or particle board panels acceptable for nail down installation. Underlayment/industrial grade particle board sheeting over existing wooden subfloor usually suitable for glue down applications. See adhesive manufacturer's specifications to ensure adhesive is suitable for use over underlayment/industrial particle board sheeting.

Counter sink all screws/nails and sand any uneven edges smooth. High spots should be sanded smooth and low spots shimmed with plywood that is secured to the subfloor and sanded flat. NOTE: Do not use cement-based patch to correct any wooden subfloor problems in preparation for nail down. In the event of moisture, determine source, eliminate, and allow subfloor to dry.

Particle board sheeting of existing wood subfloor and leveling compounds are acceptable for glue-down or floating applications only (they are NOT suitable for nail-down applications).

If sub-floor is less than 3/4" thick, or sanded to thickness less than 3/4" add a single cross layer of CDX or better grade veneer core plywood for strength and stability (minimum 5/16" thick for a total 1" thickness)

When installing over an existing hardwood floor already attached to the wood subfloor, ensure that the existing floor is sound and firmly attached to sub-floor. Install material at a right angle (across grain) of existing hardwood floor. NOTE: Do not install in the same direction as existing floor.

Below Grade Installation

A concrete slab is considered below grade when any part of the slab is below ground level. For example, a basement with a walk out is considered below grade. A house cut into a hill is also considered to be below-grade if it isn't properly graded to create a drainage swale on the lot. Below-grade slabs must be carefully tested. Diligently follow all adhesive manufacturer's or underlayment pad system's instructions for below grade installation. Nail-down installation is not suitable for below grade installation.

Installation Tools GLUE DOWN

Tape measure, pencil, chalk line, table saw, cut-off saw, jamb saw, tapping block, pull bar, spacers, hammer, safety glasses, hearing protection, utility knife, specified notched trowel, wall spacers, straight edge, broom, speedy square, hardwood floor cleaner, pin/finish nails, air compressor, and shop vacuum.

Installation Tools FLOATING

Tape measure, pencil, chalk line, table saw, cut-off saw, jamb saw, tapping block, pull bar, spacers, hammer, safety glasses, hearing protection, utility knife, specified-notched trowel, wall spacers, straight edge, broom, speedy square, hardwood floor cleaner, pin/finish nails, air compressor and shop vacuume, straps, tapping blocks, and D-3 rated PVA glue.

Installation Tools NAIL DOWN

Tape measure, pencil, chalk line, table saw, cut-off saw, jamb saw, tapping block, pull bar, spacers, hammer, safety glasses, hearing protection, utility knife, specified-notched trowel, wall spacers, straight edge, broom, speedy square, hardwood floor cleaner, pin/finish nails, air compressor, shop vacuum, tapping blocks, and approved nail/staple gun.

Getting Started

1. Select Installation Type

Above-Grade Wood Subfloor: Glue, Nail, Float.

Above-Grade Concrete: Glue, Float

On-Grade Concrete: Glue, Float

Wood Subfloor with Crawl Space: Glue, Nail, Float

Wood Subfloor with Basement: Glue, Nail, Float

Above-Grade Light-weight Concrete: Float

Radiant Heat: Float

NOTE: Floating systems must use good quality underlayment pad with moisture barrier. If using over radiant heat make sure pad manufacturer authorizes their product for radiant installations.

2. Cabinets & Appliances

Cabinets and built in appliances (sub-zero refrigerators & dishwashers) must be installed prior to the installation of the hardwood floor.

Cabinets and built in appliances should never be installed on top of the wood floor. Hardwood flooring should be installed at the same time as carpet, and after the following: finishing walls, cabinet installation, appliance installation, tile & countertop installation.

Standard refrigerators and kitchen oven/range are acceptable for placement on top of the wood floor. Use caution when moving appliances by using a proper furniture dolly, air sled, 1/8" Masonite with glossy side down, or plastic glides designed for movement of heavy appliances. Failure to follow these precautions will damage the floor.

3. Undercut All Door-Jambs/Moldings

Remove all shoe and base molding to ensure adequate expansion space. Use scrap piece of flooring to establish height of cut. Make allowances for adhesive or underlayment thickness when establishing height of cut.

4. Visual Inspection of Boards

Visually inspect boards for any defects prior to installation. Verify that homeowner has seen product and approves proceeding with installation of the floor.



5. Open Multiple Boxes

Always work from multiple boxes simultaneously and blend the boards throughout the installation. This is especially important with mixed production dates. Hallmark has very good color consistency, and mixed production dates are acceptable for installation. Working from multiple boxes/production dates helps achieve a good blend of color.

6. Blend Boards to Moldings

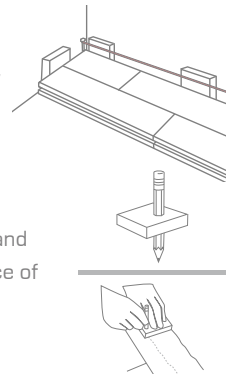
Before you get started, open multiple boxes and check how the boards blend with the moldings. At beginning of installation, set aside those boards that best blend to the transition moldings on job.

7. Select a Starter Wall

It is recommended to start the installation along an exterior wall. Check to make sure the wall is straight and square to the room.

8. Starting Line

Cut blocks to use against side and end walls to maintain 1/2" minimum expansion space. Use of adjustable spacers may be needed to help maintain a straight line.

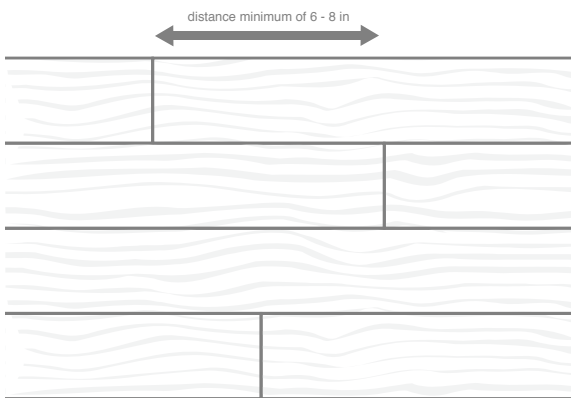


9. Irregular & Out of Square Walls

Scribe cut the first row to match variations in the wall. A scribe can be created by drilling a hole in a scrap piece of wood and inserting a pencil. The starting row can then be cut to compensate for an irregular wall or to help minimize the appearance of an out-of-square room by splitting the difference between the two walls.

10. Establishing End/Joint Spacing

Applicable for all three methods of installation (glue-down, nail-down, float). Each box contains random length boards. Use these boards as well as making some random cuts to establish a random pattern. Maintain a minimum distance between endjoints of 6-8" for both nail/staple down and float.



INSTALLATION ALERT:

Do not use rubber mallets or hammers on the finished edge of the floors. Do not kick, the floor into place. Mallets and hammers damage the finished edge and kicking can scratch the floor.

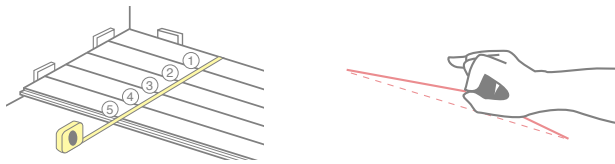
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Glue-Down Installation

11/GD Starter Rows

Measure the equivalent of four to five rows, mark subfloor at both ends of run and snap a chalk line. Spread adhesive to chalk line. Repeat this process on all subsequent rows of material throughout the balance of installation.

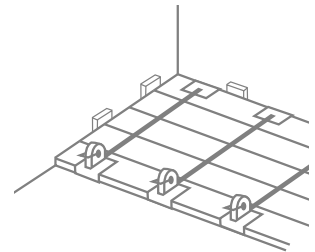


12/GD Lead with Groove

Cut off tongue on very first row to be installed and lead with the groove. This enables the tongue to be partially inserted into the groove before the back of the board makes contact with the adhesive bed.

13/GD Tape/Strap Starter Rows

Once starter rows are installed up to chalk line/edge of adhesive bed, strap or tape across the grain. Allow adhesive to set up long enough to have a firm hold. Use the flat side of the trowel to flatten any adhesive at edge of the leading board. Once the boards are firmly seated, proceed to work across the floor.



14/GD Check Straight Lines

15/GD Trim Last Row

Cut last row and snugly into place using pull tool.

16/GD Install Moldings

Install moldings using urethane glue or high-quality construction adhesive. It may be necessary to place the weight on edge to ensure molding level is flush with flooring.

Nail-Down Installation

Approved Nail/Staple Systems

Power Nail pneumatic Model 50P Flex 18 gauge, Cleat 1 1/2".

Use 12 oz. rubber hammer to activate gun

Gun adjusts to nail 3/8", 1/2", 9/16", 5/8"

Porta Nail pneumatic Model 4614

18 gauge, 1/4" crown x 1 1/2".

Trigger activated

Gun adjusts to nail 3/8", 1/2", & 9/16"

Bostitch pneumatic Model EHF1838K

18 gauge, 1/4" crown x 1 1/2"

Trigger activated.

Gun adjusts to nail 1/2", 9/16", & 5/8"

Not approved for installing 3/8"

Primatech pneumatic Model Q550R

Adjustable adjustable base plate and surface rollers

18 gauge, L cleat x 1 1/2"

Adjusts to nail 3/8", 1/2", 9/16", & 5/8"

Power Nail air driven Model 200

20-gauge/e-cleat 1 1/2".

Use 12-oz. rubber hammer to activate gun.

Gun adjusts to nail 3/8", 1/2", 9/16", & 5/8"

11/ND Underlayment

It is necessary to use 15 to 30 lb. roofing felt when doing a nail-down installation. Staple in place and then proceed to install the floor.

12/ND Starter Rows

Nail-down method requires that installation be done by leading with the tongue. When starting at the wall, trim groove off the back of the boards being used for the starting row. Face nail the back edge of the board with 18-gauge nails. Then blind nail into the pocket above the tongue with one of the above approved nail/staple systems.

13/ND Nail/Staple Spacing

Nail/staple spacing needs to be 8" apart and within 2" of board ends.

Warning: Nailing too close to end could fracture the corner of the plank.

14/ND Check Straight Line

After three rows of flooring have been installed, take a six-foot level and check the leading edge to be sure floor is on a straight line. Lay the level on its back and glide bottom edge along the tongue. Failure to stay on a straight line will cause irregular gaps in floor on sides and ends.

15/ND Trim Last Row

Cut the last row and snug into place using a pull tool. Face nail with 18-gauge nails at edge of last row.

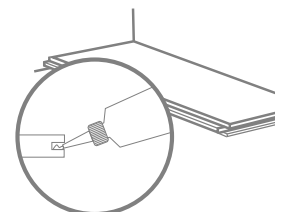
Floating Installation

11/FL Underlayment

Eternity Premium Underlayment pad or comparable is recommended. Follow pad manufacturer's installation instructions. Always use a high quality, firm underlayment pad with a built-in moisture membrane.

12/FL Lead With Groove

Cut off tongue on very first row to be installed and lead with the groove. This enables the tongue to be partially inserted into groove before coming into contact with the underlayment. Place a bead of PVA glue into the bottom of the groove



13/FL Use Tapping Block

When tapping floor together with block start tapping from lead end and work back towards where the two end joints are coming together. Tapping back towards the floor tightens the end-joint.

14/FL Tape/Strap Starter Rows

Once starter rows are installed, strap or tape them into place and allow PVA glue to develop a harder set.

15/FL Check Straight Line

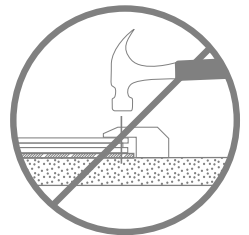
16/FL Cut In Last Row

Trim last row to fit and pull into place with pull tool. Tape last several rows in place to prevent accidental movement and opening of side joints.

17/FL Install Lip/Over Transition Moldings

CAUTION: Do not attach lip/over moldings directly to the edge of the floor. Attach to subfloor only.

Fasten transition moldings to the subfloor only. Attaching the lip/over to the edge of the floor prohibits the free movement of the floor.



Clean Up

A.

Clean up any adhesive or glue residue immediately. If glue or adhesive is allowed to dry on the floor's surface, it can damage the finish when it is removed.

B.

Completely remove any painter's tape (never use masking tape) within 48 hours of application. If direct sunlight is hitting tape, it must be removed within 12 hours.

C.

Adhesive residue, glue residue, and shoe marks can be removed with a little mineral spirits.

NuOil: Follow immediately with NuOil® ReNu to remove any mineral spirit residue.

TrueMark: Follow immediately with TrueClean® Floor Cleaner to remove mineral spirit residue.

D.

Remove dust and dirt regularly during installation and upon completion with a soft brush attachment on a shop vacuum.

E.

Move refrigerators with a soft wheel dolly or glides to avoid denting floor. Do not install stiff copper tubing from water source to ice maker. Use flexible braid tubing instead. A braided hose is much more durable and less prone to leak.

Scratch Repair: NuOil®

1. Light Surface Scratches: First apply NuOil® Natural Cleaner to a clean white cloth and rub in cleaner in the direction of the grain. If scratch remains apply a small amount of NuOil® ReNu to a clean cloth and rub with direction of the grain.

Scratch Repair: Truemark® Polyurethane Finish

None of these methods are magic. However, they can help camouflage superficial scratches.

1. Light Surface Scratches: Furniture marking pens can be very helpful in minimizing the appearance of white edges that occur when urethane is scratched. Simply mark the scratched edge with a color similar to the floor and immediately wipe with a rag to remove any excess.
2. Moderate Surface Scratches: Tibet Almond Stick™ or a blending color marker can also minimize the appearance of scratches. This product was originally designed for furniture repair. Fix it™ and Scratch Away™ also do a good job of hiding scratches. These products are only offered as potential solutions for repairing minor finish damage, but are not officially endorsed by Hallmark.

Refer to www.hallmarkfloors.com for the latest, updated information.



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