

CORNERSTONE

18mm solid hardwood flooring

PLEASE READ THESE INSTRUCTIONS COMPLETELY BEFORE BEGINNING THE INSTALLATION

KENTWOOD floors must be installed in accordance with the following instructions. Failure to do so may void the product warranty.

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PRODUCT USE & INSTALLATION OPTIONS

This floor may be installed:

- On or above grade
- With nail down installation only
- Over OSB or plywood subfloor

This floor may not be installed over radiant heat if:

KENTWOOD accepts no responsibility for any damage to the floor caused by a radiant heat system. Such damage is not covered by the product warranty.

This floor should **NOT** be installed in a bathroom, laundry room or any area that may experience elevated humidity (sauna, sunroom, etc) Such use will void the product warranty.

KENTWOOD floors are for indoor use only, in residential or light commercial applications. The use of a certified installer is recommended for all installations.

For Technical Assistance in Canada, please call: **1-800-992-3163**

For Technical Assistance in the USA, please call: **1-800-851-3841**

or email techserv@metrofloors.com

BEFORE INSTALLATION

PRODUCT INSPECTION & SITE PREPARATION

INSTALLER'S / CUSTOMER'S RESPONSIBILITY

It is the responsibility of the installer and/or customer to ensure that the KENTWOOD product meets or exceeds their expectations for visual appearance and manufacturing quality.

Because KENTWOOD floors are made from real wood, every piece of KENTWOOD flooring will have a unique appearance, often with naturally-occurring variations in color, texture and grain pattern. Showroom samples and photographic reproductions may not represent the full range of color, texture and grain variations and milling tolerances which can occur in the product itself. It is strongly recommended that, prior to commencing installation, the customer and installer open several boxes of product and loose lay the boards on the floor. Examine the product carefully to ensure that it meets the customer's expectations for appearance, color and visual character and quality before proceeding with the installation.

If the visual appearance or manufacturing quality of the product is deemed unacceptable, it should not be installed. Flooring that has been installed will be deemed to have been inspected and accepted by the installer and customer, even if the customer is not present at the time of installation. Every piece of flooring should be inspected and if any piece does not meet expectations of quality, it should not be installed.

KENTWOOD floors are manufactured in accordance with accepted industry practices which permit a defect tolerance not to exceed 5%. These defects may be the result of manufacturing or naturally occurring characteristics of the material. It is recommended that a minimum 5%

cutting or grading allowance be added to the total square footage when calculating the quantity of flooring required. Boards that are judged to be defective should not be installed or should be installed in an inconspicuous location where they will not be noticeable (e.g. inside a closet).

It is the sole responsibility of the installer to ensure that the job site, subfloor and installation tools and materials meet or exceed these instructions and any applicable industry standards. KENTWOOD accepts no responsibility for problems arising from incorrect or improper site preparation or installation procedures.

For further information on installation standards and guidelines, call

In Canada: 1-800-992-3163:

In the US: 1-800-851-3841

or email techserv@metrofloors.com

SITE PREPARATION

INSTALLATION IN NEWLY-CONSTRUCTED HOME

Installation of wood flooring is one of the last jobs of a new home construction. Prior to installing a wood floor, the following conditions must be met:

- The building is completely enclosed with all outside doors and windows in place and securable, including a door from an attached garage to house interior
- All concrete, masonry, plastering, drywall, texturing, painting, tiling and other wet work is complete and dry basements must be dry, within recommended temperature and humidity ranges, with no standing water and adequate cross-ventilation in accordance with NWFA guidelines

BEFORE INSTALLATION

PRODUCT INSPECTION & SITE PREPARATION

- Crawl spaces must be dry, with no standing water and adequate cross-ventilation in accordance with local NWFA Guidelines. Exposed earth crawl spaces must also have a vapor retarder (ASTM D 1745 Standard) installed to NWFA guidelines
- Gutters and downspouts are in place, directing water away from the building
- Landscaping is directing water away from the building
- HVAC systems are fully operational, enabling heat and humidity levels to be controlled and maintained throughout the home, and have been operating for a minimum of 5 days prior to installation
- Subfloor is properly inspected and prepared for installation in accordance with these instructions
- If installing over radiant heat, ensure that the system is in full working order and has been fully tested and running for a minimum of two weeks prior to installation. The system should be turned off for 24 hours prior to installation in the install zone

INSTALLATION IN EXISTING HOME (RENOVATION)

Installation in an existing home must meet the same conditions as a new home. If part of a larger remodeling project, ensure that all wet work (painting, wallpapering, texturing, etc.) is completed and thoroughly dry before commencing flooring installation. In addition:

- Remove all furniture, artwork and other valuables from installation area
- Remove baseboards and moldings
- Undercut door casings and jambs (use a piece of the flooring as a depth gauge)
- Remove existing flooring, if necessary
- If installing over radiant heat, it is strongly recommended that a radiant heat technician be consulted prior to installation to ensure that the heating system can be operated effectively at temperatures acceptable to the wood flooring. The system should be turned off for 24 hours prior to installation in the install zone

CLIMATE CONTROL

Conditions at the job site must be maintained with the temperature between 60 - 80°F (15 - 26°C) and humidity at 30-50% before, during and after the installation.

In areas with extreme climate conditions it may be necessary to use humidifiers or dehumidifiers to ensure the humidity is kept within the recommended range.

Flooring material should not be delivered to job site until these conditions have been met and maintained for five days prior to installation.

Following installation, these conditions should be maintained at all times to ensure proper performance of the floor. See Warranty for details.

Required interior conditions for hardwood flooring are temperature of 60 - 80°F (15 - 26°C) and relative humidity of 30 to 50%. When these conditions have been established at the job site, material may be delivered to the site. Do not deliver flooring to job site if climate conditions have not been met and maintained as described above otherwise damage to product may result.

When flooring has been delivered to the job site, leave the boxes closed until ready to commence the installation, and then open only as needed.

BEFORE INSTALLATION**PRODUCT INSPECTION & SITE PREPARATION****MOISTURE CONTENT**

All wood flooring must be tested for moisture content prior to installation to ensure moisture content is within allowable limits. When ready to commence installation, open several boxes of product and test and record moisture content of the flooring using a reliable and accurate moisture testing device. Wood flooring should have a moisture content between 6 and 9 %.

SUBFLOOR PREPARATION

The installer is responsible for ensuring that the subfloor is suitable for the flooring application and properly prepared for installation.

All subfloors must be flat, clean, dry, structurally sound, and free of squeaks and protruding fasteners. The subfloor must be flat to within 3/16" over 10 feet, or 1/8" in 6 feet radius.

Plywood or OSB subfloors the minimum acceptable thickness of the subflooring will be determined by the truss/joist spacing.

Truss/joist spacing. (Measured on center)	Minimum acceptable thickness, 4' x 8' sheets
16" (406mm) or less	<ul style="list-style-type: none"> • 5/8" (19/32", 15.1mm) CD Exposure 1 Plywood or • 23/32" Exposure 1 OSB
More than 16", up to 19.2" (488mm)	<ul style="list-style-type: none"> • 3/4" (23/32", 18.3mm) T&G CD Exposure 1 Plywood, glued and mechanically fastened, or • 3/4" (23/32", 18.3mm) Exposure 1 OSB, glued and mechanically fastened
More than 19.2" (488mm) to a maximum of 24" (610mm)	<ul style="list-style-type: none"> • 7/8" T&G CD Exposure 1 Plywood, glued and mechanically fastened, or • 7/8" Exposure 1 OSB, glued and mechanically fastened or • Two layers of subflooring

In addition to meeting or exceeding the minimum acceptable thickness requirement, the subfloor must be secure to the joists, and free of squeaks and protruding fasteners. Subfloor moisture content must not exceed 12%, and the variance in moisture content between the full thickness of the subfloor and the flooring boards must not exceed 3 percentage points, based on a minimum of 20 tests per 1000sf.

Concrete subfloors must be dry, clean and free of non-compatible sealers, waxes, oil, paint, drywall compound, or other bond-breaking substances. (Check for the presence of sealers by applying drops of water to the slab. If the water beads up, there may be sealers or oils.) All slabs must be tested for moisture content using test method ASTM F2170-11 or equivalent and must return a reading of 75% relative humidity or less.

RACKING

Real wood flooring contains natural variations in color and grain pattern. In order to prevent color clustering or repetitive grain patterns in the finished floor, it is recommended that boards be racked (visually sorted) before installation to create a satisfactory and pleasing color arrangement. Immediately prior to installation, unpack several cartons to get a sense of the range of color variation and arrange the planks to achieve a satisfactory appearance.

BEFORE INSTALLATION

PRODUCT INSPECTION & SITE PREPARATION

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When racking, distribute lengths where possible. Avoid 'H' patterns, stair-steps and other discernible patterns in adjacent rows. When racking, a general rule is to stagger the end joints by a minimum of double the board width (e.g. for boards 5" / 125mm wide stagger joints a minimum of 10" / 250mm).

For products 3" to 5" (8 - 13cm) in width do not use boards of less than 6" (15cm) in length.

For products over 5" (13cm) in width do not use boards of less than 12" (30cm) in length.

When racking, inspect all boards for visible manufacturing defects. Boards with manufacturing defects in excess of industry standards (5% of total quantity) may be replaced by the dealer under the terms of the product warranty. Once installed, boards will be considered to have been accepted by the customer and will not be eligible for replacement. (See Warranty for details.)

EXPANSION SPACE

Wood flooring will expand and contract with changes in ambient temperature and humidity. To allow for this, during installation leave a 1/2" expansion space around the entire perimeter of the floor between the flooring and the walls. Also leave expansion space where the flooring will meet any vertical obstruction, such as stairs, pipes, door sills, tiles, cabinets etc.

Wide-Plank flooring has become increasingly popular in recent years and many of our KENTWOOD products feature wide plank designs. Most of these can be successfully installed using the nail-down method, however with some of the challenges installers face with today's subfloors

in the areas of thickness and type, special consideration should be given to using the full-spread glue method in order to reduce the potential for noise related issues. If you have any concerns in this area please contact one of our specialists through techserv@metrofloors.com

NAIL DOWN INSTALLATION

STANDARD WIDTH PRODUCTS (<7"/180MM)

When installing hardwood floors 4 ¾" in width up to 7" in width using the nail-down installation

method, glue-assist applied to the backs of the boards is **recommended**.

Our nail-down installation guidelines are intended to offer the best "Industry Practices" as they are known to be at this point in time. Adhering to them will help minimize (but may not eliminate) the occurrence of objectionable noises. The National Wood Flooring Association (NWFA) acknowledges that some minor noise associated with hardwood flooring should be considered normal.

When installing these products using the nail-down installation method, always follow the recommendations for fastener selection and the nailing schedule for that specific product. Fastener spacing, gauge, length and type are critical, and it is the obligation of the installer to meet these

requirements. Prior to beginning installation, installers are advised to test-nail a couple of pieces of flooring to ensure the nailer/fastener combination is providing a satisfactory result, and to ensure issues such as "dimpling" and "edge-splintering" are not occurring.

Nail down installation requires three different nailing systems:

- A pneumatic or manual blind-nailer
- A pneumatic finish nailer
- A brad nailer for top-nailing

RECOMMENDED FASTENERS & NAILING SCHEDULE**CORNERSTONE 18mm (3/4" thick)**

FASTENER	GAUGE	SIZE	NAIL SPACING	DISTANCE FROM END
Staple	15½"	2"	6" - 8"	2" - 3"
Cleat	16	2"	6" - 8"	2" - 3"

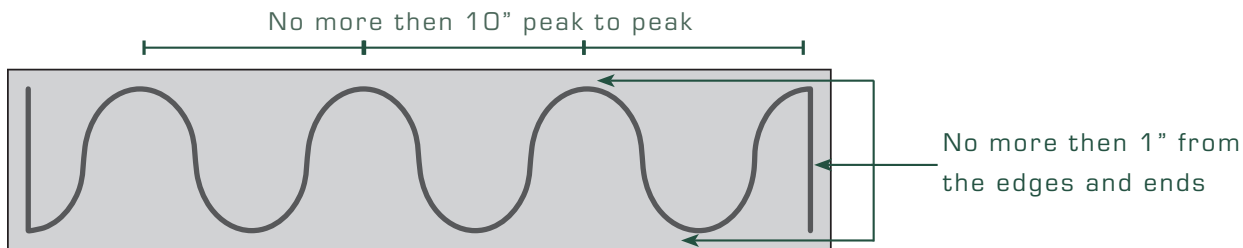
For more information on glue assist techniques, contact techserv@metrofloors.com.

NAIL DOWN INSTALLATION

STANDARD WIDTH PRODUCTS (<7"/180MM)

SERPENTINE GLUE-ASSIST

The correct method for serpentine glue-assist is to apply a bead of elastomeric adhesive directly to the back of the individual boards to be installed. **Do not** apply the bead of adhesive directly to the subfloor. The subfloor should be thoroughly vacuumed and free of debris to ensure proper adhesion of the elastomeric adhesive to the subfloor.



Failure to follow instructions for 'glue assist' may result in squeaking and/or other objectionable floor noise. Such noise is not the result of a product defect and is not covered by the product warranty. Some noise can be expected on all nail down installations

Keep in mind that that by choosing to use the glue-assist method, you will no longer be able to install a Class II perm-rated vapor retarder like AquabarB between the hardwood and the subfloor. If you have concerns regarding vapor migration from below, you may wish to consider applying a roll-on liquid moisture barrier applied to subfloor prior to installation. If you wish additional information in this area please contact one of our specialists through techserv@metrofloors.com

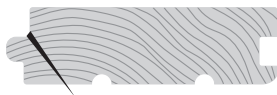
INSTALLATION

For nail-down installation instructions using the recommended glue-assist method, for floors 4 3/4" to 7" wide, please use the following.

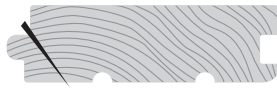
Check nail gun to make sure the depth is set for the appropriate thickness of the flooring. Ensure the nailer is not scratching the floor surface.

Test nail a piece of scrap to make sure the nailer is correctly set up, and that the fasteners are being properly positioned and set.

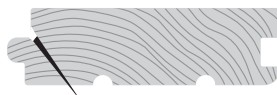
Correct Nail Depth



Incorrect Nail Depth | Protruding



Incorrect Nail Depth | Too Deep



Ensure plywood subfloor is suitable and properly prepared. Verify moisture content of both subfloor and flooring is within allowable limits before commencing installation. Open several packages of flooring and rack and inspect boards. (See Racking, above.)

NAIL DOWN INSTALLATION

STANDARD WIDTH PRODUCTS (<7"/180MM)

Apply adhesive in the serpentine pattern as previously outlined and set the first row in place. If required, snap a chalk guideline to act as a guide. If starting the installation against a wall, place boards with the groove side facing the wall and remember to allow expansion space.

Top nail along the groove edge with the brad nailer using minimum 18g 1½" fasteners set 10 to 12" apart, with a fastener 1 to 3" from each end of each board. Keep the nailer perpendicular to the direction of the flooring and set nails no less 1/4" in from the edge of the board.

Using a pneumatic finish nailer, blind nail along the tongue edge at a 45° angle. Follow the nailing schedule specified above, spacing the recommended fasteners as indicated. Ensure a fastener is placed as indicated near the end of each board.

At the end of the row, cut a board to fit, allowing 1/2" expansion space.

It is a common practice among some installers to use a 'full spread glue down' on the first and last few rows of a nail down installation in order to avoid top nailing. This practice is not recommended by Kentwood for any nail down installation. Any use of full spread glue down on first and/or last rows within a nail down installation will automatically void the product warranty.

Using glue-assist procedures set the second row in place. Use offcuts if lengths are suitable and stagger end joints as required (see above). If working space permits, use the nail gun.

Continue with subsequent rows using the glue-assist method. To avoid a repetitive or predictable board patterns, cut some boards to random lengths to begin rows. Open new packages several at a time and rack and inspect boards as described above. Ensure 1/2" expansion space is maintained at all perimeter walls and other vertical obstacles. Maintain nailing schedule and keep butt joints staggered as described above.

In the last couple of rows, there may not be space to use the nail gun, so revert to using the finish nailer with glue assist as before, blind nailing through the tongue. For the final row, measure the gap to the wall, allowing expansion space, and rip a row of boards to the required width. Top nail the final row into place using brads or finishing nails placed 1/4" in from the edge. Install moldings and transitions as required.

For nail-down installation instructions for floors less than 4 ¾" wide, or if you choose not to use the glue-assist method for floors 4 ¾" to 7" in width, please use the following:

Ensure plywood subfloor is suitable and properly prepared. Verify moisture content of both subfloor and flooring is within allowable limits before commencing installation. Open several packages of flooring and rack and inspect boards. (See Racking, above.)

If the installation is over an uncontrolled (eg: unheated) crawlspace, basement or exterior space (eg: above a carport) a vapor retarder must be used. Before proceeding, place a vapor retarder (with a permeance rating 0.7 – 10, as per NWFA guidelines) over the subfloor. Kentwood recommends AquabarB or equivalent. Wax paper is not an approved vapor retarder. Install according to underlay manufacturer's instructions.

Set the first row in place. If required, snap a chalk guideline on the surface of the vapor retarder to act as a guide. If starting the installation against a wall, place boards with the groove side facing the wall and remember to allow expansion space.

Top nail along the groove edge with the brad nailer using minimum 18g 1½" fasteners set 10 to 12" apart, with a fastener 1 to 3" from each end of each board. Keep the nailer perpendicular to the direction of the flooring and set nails no less 1/4" in from the edge of the board.

Using a pneumatic finish nailer, blind nail along the tongue edge at a 45° angle. Follow the nailing

NAIL DOWN INSTALLATION

STANDARD WIDTH PRODUCTS (<7"/180MM)

schedule specified above, spacing the recommended fasteners as indicated. Ensure a fastener is placed as indicated near the end of each board.

At the end of the row, cut a board to fit, allowing 1/2" expansion space.

It is a common practice among some installers to use a 'full spread glue down' on the first and last few rows of a nail down installation in order to avoid top nailing. This practice is not recommended

by Kentwood for any nail down installation. Any use of full spread glue down on first and/or last rows within a nail down installation will automatically void the product warranty.

Set the second row in place and set the tongue and groove joints. Use offcuts if lengths are suitable and stagger end joints as required (see above).

Continue with subsequent rows. To avoid a repetitive or predictable board patterns, cut some boards to random lengths to begin rows. Open new packages several at a time and rack and inspect boards as described above. Ensure 1/2" expansion space is maintained at all perimeter walls and other vertical obstacles. Maintain nailing schedule and keep butt joints staggered as described above.

In the last couple of rows, there may not be space to use the nail gun, so revert to using the finish nailer as before, blind nailing through the tongue. For the final row, measure the gap to the wall, allowing expansion space, and rip a row of boards to the required width. Top nail the final row into place using brads or finishing nails placed 1/4" in from the edge. Install moldings and transitions as required.

Because some minor collateral damage may occur during the installation of a prefinished floor, minor touch-ups with the use of the appropriate

colored putty, marker-stick or filler is considered acceptable industry practice, provided these repairs pass inspection from a standing position.

AFTER INSTALLATION

NON-NATURAL OILED PRODUCTS

ON COMPLETION OF THE INSTALLATION

- Sweep or vacuum the floor and clean lightly with Therapy by Kentwood Spray Cleanser to ensure the floor is delivered to the customer looking its best
- Use of steam assisted cleaning mops will cause damage and void warranty.
- Ensure the homeowner or site supervisor is cognizant of the need to maintain heat and humidity at the required levels at all times
- Ensure the homeowner or site supervisor has been given a copy of the Kentwood care & maintenance guidelines (available online at kentwoodfloors.com)
- Complete a visual inspection of the installation with the homeowner or site supervisor. Inspect the floor from a standing position in non-reflected light. Touch up nail holes or slight imperfections with appropriate touch up putty or stain according to accepted industry practice.
- Complete the installation record form for future reference

If the floor is not being put into use immediately, the use of a floor protection membrane is strongly recommended. Use a material with a Perm Class 3 vapor permeance rating to avoid trapping moisture/vapor on or within the floor. When using floor protection, be sure to:

- Cover the entire floor to avoid exposing a partial area to sunlight causing an uneven color change
- Overlap the seams of the membrane and tape them to each other. Never tape the membrane directly to the floor.
- Run membrane to the perimeter walls and tape to the base or shoe mouldings using low adhesion masking tape.

24 HOURS AFTER INSTALLATION

- Remove blue tape if necessary
- Install a floor protection membrane where appropriate (see above)
- If the flooring was installed over a radiant heating system, bring the temperature of the system up gradually, in 5°F (2°C) increments per day. Never allow the surface temperature of the floor to exceed 82°F (28°C) 80°F (26°C) and avoid dramatic temperature changes; always adjust the system gradually in 5°F (2°C) increments per day. It is recommended that a dedicated thermostat be installed to allow the temperature of the radiant heating system to be accurately controlled.