

Warranty, Installation & Maintenance

1/2" & 3/4" Superior Engineered Flooring

Take Care Of Your Floors To Ensure Their Value

SuperiorFlooring.ca

Important Information

You have made the right decision by choosing engineered flooring by Superior Flooring by Herwynen Saw Mill. Your engineered flooring is a premium product that is designed to stand up to the challenges of modern-day living.

Superior Flooring by HSL floors is manufactured under hardwood flooring industry standards which permit a defect tolerance of up to 5% of the quantity required. Customers are advised to purchase 5% more than the total square footage required for the application in order to cover cutting, waste, and defect tolerance. All pieces must be inspected before actual installation and any piece which does not meet the installer's or owner's personal standard must not be installed. Pieces not installed because of colour variation, appearance, length, or personal subjective standards are not considered defective.

The installer is considered to have the final responsibility to determine which pieces are actually installed. Once the board is installed, it is deemed acceptable by both parties. The installer or homeowner is fully responsible for all installed hardwood flooring.

Superior Flooring by HSL floors must be installed over industry standard sub-floors and underlayment, which as a minimum standard, must be 5/8" A.P.A. approved C.S.P/D.F.P. plywood C.O.F.I stamped, 23/32" or thicker O.S.B. underlay grade PS2-92, or 5/8" tongue and groove boards. No warranty is extended to any floor which uses particle board as a sub floor.

Limited Structural Warranty

Every piece of Superior Flooring by HSL floor material is subjected to many strict quality control inspections. Superior Flooring by HSL warrants to the original purchaser that it's product in its original manufactured and purchased condition will be free from milling defects for the lifetime of the floor. Damage, if any, sustained by the flooring material due to improper transportation, handling, storage, installation, excessive humidity, excessive dryness, over in-floor heating systems, substandard sub floors, crawl-spaces and any other cause is not covered by this warranty.

This is the only structural warranty extended to the hardwood floor materials manufactured by Superior Flooring by HSL and all implied warranties including statutory warranties of any kind are expressly excluded.

Wear Layer Warranty

General

Warranty Exclusions which normally exist in a single family residence, the finish wear layer of our pre-finished hardwood flooring will not wear through or peel from the wood for thirty-five years with the time calculated from the date of purchase by the original purchaser.

Superior Flooring by HSL warrants to the original purchaser that, under conditions

This warranty is valid provided that regular maintenance as specified in this document is performed on a regular basis on the floor and the floor is properly installed. This warranty is available to the original purchaser of the product and is limited to the repair, refinishing, or replacement of the defective board or boards. If an acceptable resolution is not possible, Superior Flooring by HSL will refund the original purchase price of the defective floor. This is done on a pro-rated basis, based upon the proportion of the floor that is determined by Superior Flooring by HSL, acting reasonably, to be defective. This warranty will be null and void if any replacement or attempts to repair are conducted without the knowledge and approval of Superior Flooring by HSL. Superior Flooring by HSL will not be liable for any consequential or other additional damages beyond those stated above. This is the only finish warranty extended to the hardwood floor materials manufactured by Superior Flooring by HSL and all implied warranties including statutory warranties of any kind are expressly excluded.

This warranty does not extend to or cover scratches, indentations, damage by neglect or any other damage caused by improper handling, storage, installation, environmental extremes, improper maintenance, insufficient protection, misuse or improper alterations of the original manufactured product, water damage, fire, discoloration due to variations in the exposure to sunlight, furniture transfer marks on the floor, spiked heel shoes, pets, and insects. The damaged or otherwise unsatisfactory part of the floor which is subject to a claim under this warranty must not only be easily noticeable but cover at least 15% of the total floor area covered by the hardwood flooring in the application which is to be subject to a claim under this warranty. Checking and cracks caused by improper moisture control is not covered by this warranty as all wood floors will expand and contract with the change of seasons. Your warranty will not be valid if the hardwood floor is installed over a crawl space with an exposed earth floor, over radiant heat, or over an existing floor.



Claim Procedures

Claims are made first by contacting the dealer from whom the product has been purchased. If such dealer is not able to resolve the problem, or they have determined that the issue at hand is a manufacturer's defect, then that dealer must contact Superior Flooring by HSL. Claims will only be considered for review if one of our distributors or retail stores contacts Superior Flooring in this manner.

Superior Flooring by HSL will take the action which may include refinishing, repairing, or replacing that portion of the floor for which the claim is accepted as valid. By making a claim against the warranty, the person claiming shall be deemed to acknowledge the right of Superior Flooring by HSL to attend the premises in which the floor is installed and remove any samples required to determine the cause and condition for which the claim has been made. This warranty will be null and void in the event that the product is not registered within 30 days of the purchase date. The limitations on liability expressed in this document shall nevertheless apply to the relationship between the end user of this product and Superior Flooring by HSL.



Before Installation & Your Final Checklist

BEGIN BY ASSEMBLING THE FOLLOWING TOOLS AND MATERIALS IN APPROPRIATE QUANTITIES:

Safety glasses
Moisture meter
Measuring tape
Chalk Line
Claw hammer
Pry bar
Hardwood floor nailer & cleats
Power drill & bits
Broom/Vacuum
Vapor retarder paper
Square
Handsaw
Nail punch
Matching wood putty
Jigsaw
#8 nails
Hardwood flooring cleaner

Installation & Maintenance

Please read this guide carefully for instructions on the installation and the care required for your new hardwood floor.

Storage & Handling

Your hardwood floor is a natural organic product which is affected by the humidity levels in the air around it. Both before and after installation it will absorb or release moisture. Wood is a natural material that seeks to be in balance with its surroundings. Hardwood destined for use in wood floors are carefully kiln-dried for that purpose. Typically, hardwood will expand during the summer months and shrink in the winter. Acceptable humidity levels of between 35% and 50% should be maintained at all times in the rooms where your floor is installed.

You will receive the wood for your floor in specially designed cartons that have been stored in dry, heated, well ventilated conditions. These conditions must be maintained throughout shipping, installation, and thereafter.

The following considerations are important, and failure to follow them will void your warranty

A) Subfloor Moisture Content

Measure the moisture content of the sub floor and the hardwood to be installed using a moisture meter. The moisture reading of the sub floor must be between 6% and 12% maximum. Hardwood strips must be under 2% maximum difference when compared to the sub floor. If the moisture content of the sub-floor is too low or high, postpone installation. Increase ventilation or use a humidifier or dehumidifier to adjust moisture levels before installation.

B) Subfloor Design

Your hardwood floor must be nailed in place with cleats and the sub floor must consist of plywood or OSB over joists. If the existing sub floor consists of particle board, then it will be necessary to overlay it with at least 5/8" plywood before installation. To comply with warranty requirements, 5/8" plywood and 3/4" OSB underlay can be used for up to 16" centers. 3/4" plywood can be used for up to 19" centers. OSB sub floors must be installed according to manufacturer's instructions.

C) Relative Humidity

Drywall, plaster and concrete must be completely dry and the heating system fully operational with the temperature maintained at 22°C for one to two weeks before the flooring is delivered to the site. All concrete in the structure must have cured for at least 30 days.



Installation

- **1)** Undercut any door-jambs on the bottom of the door frames the thickness of the flooring to permit a hardwood strip to be inserted under them.
- **2)** We recommend that the new floor be installed across the joists at a 90 degree angle or 45 degree angle for support and that the installation be done under natural light conditions.
- **3)** Your starting location should be the longest and straightest wall within the room.

NOTE: Heavy tools or other objects, if dropped on the floor, will damage it. Clean the bottom of any footwear worn during installation.

Nail down installation



1) Preparation instructions

- a) Remove baseboards, quarter rounds, and then screw nail wood sub floors securely to avoid squeaking if necessary. The sub-floor must be clean, dry, smooth and flat.
- b) Use 18 gauge 1 9/16" x ¼" crown staples (Primatech Q180) with ½" thick engineered flooring and 18 gauge 1¾" cleats (Primatech Q550A) or 15.5 gauge 2" staples (Primatech P250AS) with ¾" thick engineered flooring. Test the hardwood nailer on scrap wood to see that the correct pressure is being used to drive and set the cleats without damaging the hardwood strips.

2) Installation instructions

a) Fastener Spacing -

- **a.i)** Blind fastener spacing: Near the ends 1" 3" (2.54 to 7.62cm) and every 8"-10" (20.32 to 25.4cm) in between.
- a.ii) Face nailing spacing: Near the ends 1" 3" (2.54 to 7.62cm) and every 10"-12" (25.4 to 30.48cm) in between.
- **b)** Roll out the vapour retarder paper the length of the room, cut it so it touches the outside walls, over-lap the inside edges 3" to 5" to completely cover the floor space of the room. Vapour retarder paper is the NWFA recommendation as an underlayment for hardwood flooring. We recommend Aquabar "B" or any product with a vapour permeance (perm rating) of greater than or equal to .7 and less than or equal to 10 when tested in accordance with ASTM E-96 method A.



IMAGE 1



IMAGE 2



Nail down installation (continued)

NOTE: Heavy tools or other objects, if dropped on the floor, will damage it. Clean the bottom of any footwear worn during installation.

- **c)** At the starting location, measure out the width of a hardwood strip plus 3/4" (for expansion). Mark this with a chalk line against which you will place the tongue of your starter strip. The groove edge of the first strip is laid 3/4" from the starting wall to leave room for expansion (**see image 1**). The 3/4" expansion will be needed around the perimeter of the room.
- **d)** Lay out the hardwood strips on the floor as they will be installed, picking the straightest boards for the first two rows.
- e) Secure the first row to the floor. For this you should face nail using #8 finishing nails or brad nails 1 1/2'" long. **NOTE:** For face nailing, drill pilot holes at least 1" from the grooved side and 3" from the ends of the strip. The holes should be spaced at between 10" and 12" apart and the nails driven using a claw hammer and a nail punch with the holes eventually filled using matching the wood putty.
- f) For blind nailing the second and third rows of strips, holes will be drilled into the tongue at a 45 degree angle at least 3" from both ends and spaced as above (see image 2). Once again, the nails are driven using a claw hammer and a nail punch.
- g) Use a strip which is at least 6" longer than required in order to finish off the first row. The remainder which was trimmed off the end will be used to start the next row. Make sure that the end joints do not line up with end joints of adjacent strips (see image 3). Once this piece is cut, position the two pieces into place and secure them as above. Then position the strips needed for the second row being careful that the end joints are at least 6" apart from those in the first row. Fasten as per the description above of blind nailing.
- h) The next step is to rack your floor. Loose-lay the boards, starting about 3" away from the secured row. Try to distribute the long and short pieces while insuring that no end joints are within 6" of each other to avoid getting a cluster of end joints in one area (see image 3). Boards should also be arranged based on the natural colour variations of the species to create a random appearance. Install the rest of the floor using your hardwood flooring nailer.
- i) The last two rows against the finishing wall will be face nailed (see image 1). Don't forget to fill all nail holes with matching wood filler. Also, note that holes are less visible in the darker grain of the wood. Use of stain, wax, filler or putty for defect correction should be accepted as normal procedure.
- j) Baseboards and quarter-rounds should be nailed to the wall only and never through the hardwood strips or into the sub floor (see image 1). When you're done, clean the floor as is described in the Care & Maintenance instructions.

IMAGE 3

Glue down installation

Use only moisture-cured urethane or rubber adhesive. Check and follow the manufacturer's recommendations for trowel size, and spread rate to ensure adhesive transfer to substrate and hardwood. Be sure to also check adhesive expiration date. Conduct a moisture test on concrete (refer to the concrete paragraph on the next page). Test a small amount of adhesive on the concrete to ensure adhesion bonding. Be sure to use a metal trowel as the teeth in a plastic trowel will wear down and cause a difference in spreading rate. This will directly affect the hardwood's ability to adhere to the substrate. We recommend a "double glue" application. Using this method, the membrane will be glued to the subfloor, and the flooring glued to the membrane. This will give the best acoustic and stability performance. When your flooring is glued directly on the subfloor it is named "simple-glued".

NOTE: Bostik's Best, BST, Franklin 811, or Acoustitech AD-316 AD-532 adhesives for engineered products work well following their installation guidelines for ½" (13mm) and ¾" (19mm) engineered products. Check with the adhesive manufacturer for applications used with radiant floor systems. Be sure to follow the manufacturer's installation instructions.

Installation

- a) Remove baseboards, quarter rounds, and then screw nail wood sub floors securely to avoid squeaking if necessary. The sub-floor must be clean, dry, smooth and flat.
- b) Start on your longest and straightest wall.
- c) Measure the width of the board. Add the thickness of the boards for your expansion gap. (example: $3 \frac{1}{4}$ " board $+ \frac{1}{2}$ " thickness = $4 \frac{3}{4}$ ") Snap a chalk line on the sub-floor this distance out from the wall.
- d) Spread out the adhesive on the subfloor. Make sure you don't apply more than you can install flooring on before the adhesive sets up. The freshly applied adhesive must leave trowel marks/trowel ridges. Only apply adhesive up to your chalk line and not over it.
- e) Ensure you mix in boards with varied color, grain, and length. This can be accomplished by setting out 3 to 4 boxes of flooring at a time. Place the planks into the wet adhesive with the groove side on the chalk line and facing the outside wall. This is the same direction to that of a nailed/stapled down installation. Ensure that the 1st row is exactly on the chalk line.
- f) Cut off the last piece in your starting row, leaving the proper expansion space of 1/2" (13 mm) from the wall and use it as your 1st piece or starter board for the 2nd row. It is best to not use a piece under 6" (≈15 cm) as they tend to move out of position. Continue on each row, engaging the groove into the tongue along the side 1st, then the end to be engaged 2nd. Try to distribute the long and short pieces while insuring that no end joints are within 6" of each other to avoid getting a cluster of end joints in one area (see image 3 on page 6). If any adhesive comes in contact with the face of planks, use adhesive remover before it dries.
- **g)** The use of painters tape or 3M Blue masking tape will help to keep your planks from moving out of position. Do not use any regular masking, duct, or electrical tapes as these products can leave a film on your new flooring. Apply tape 90 degrees to row direction with approximately a 15-16" (38 to 41 cm) long piece; or long enough for 3-4 rows wide. Lap over or curl up the tape at one end to allow for fast, easy removal. Place tape at 48" (1,20 m) apart or across the rows.
- **h)** Finish the room by installing the rest of the flooring. The last board may need to be cut on your table saw. Remember to leave an expansion gap between the last row and the wall.
- i) Give the adhesive time to setup by avoiding any traffic for 24 hours. If this is unavoidable, use a kneeler board to help distribute the weight and movement.
- j) Clean up your trowel and hands using the adhesive remover.



Glue down installation (continued)



CONCRETE: For new concrete, allow a minimum of 30 days cure time prior to start of concrete moisture tests. Various methods and testing devices exist to check the moisture level of a concrete subfloor.

- Polyethylene test (Astm D 4263), surface test. Tape a plastic film of 2'x2' (60 x 60 cm) over concrete for 48 hours to see if concrete changes color or condensation occurs. This information will indicate that the concrete floor is wet and the wooden floor should not be installed. This method is empirical and is a preliminary test, further analysis will be required.
- Relative moisture test (Astm F 2170), thorough test. Using an ultrasonic sensor, check the relative humidity of the concrete slab to 40 % of its depth. A reading of 75 % RH or less indicates that the concrete slab is ready to receive the wooden floor; a reading between 75% and 85 % indicates that it is preferable to place a waterproof membrane before installing the wood floor. Never install a hardwood floor when moisture level is greater than 85%.
- Calcium chloride test (Astm F 1869), thorough test. A calcium chloride test must be conducted to determine whether the moisture content of the concrete exceeds
 3 lbs./1000 ft2 per 24 hours. If so, but less than 7 lbs./1 000 ft2, one can use an approved waterproof membrane to cover the concrete. Never install a hardwood floor when the calcium chloride test exceeds 7 lbs./1 000 ft2 per 24 hours.

Concrete leveling is a very important point. Concrete must be flat/level within 3/16th over a 10 ft. span (< 5 mm over 3 m).

Floating Floor installation

- a) Roll out the underlayment the length of the room the same direction as the flooring, cut it so it touches the outside walls. Tape the edges together (we recommend tuck tape). For the optimal stability and acoustic performance, we recommend you use vapor-barrier underlayment with a maximum thickness of 1/8" (3mm) and 20% minimum compression.
- **b)** Make sure that your starting wall is straight and perpendicular to the room. Leaving an expansion space between the walls and the flooring is imperative when doing a floating floor installation. Use a spacer or wedges against the starting wall to prevent the floor from shifting or moving during installation. (See next page for more information on expansion gaps)
- c) Apply tongue & groove adhesive to the top of the tongue and the bottom of the groove as you install each board. If you experience glue squeeze out when you assemble the boards, simply wipe it off with a damp cloth. Check with the glue manufacturer for details.
- **d)** Continue along installing the boards for the first row. When you come to the end of the row, cut off the board, leaving enough room for an expansion gap between the floor and the wall. Make sure your off-cut is at least 6" long so that you can use it to start the next row.

Floating Floor installation (continued)

- e) Be sure to glue both the tongue and groove on both the ends and the sides of each board as you install them.
- f) Continue along with the next rows. If the off-cut from the previous row is too short, discard it and get a new piece. Use a tapping block to ensure that the boards are tightly joined. Never hit the groove side or the edge of the board as it may cause damage to the boards. The use of a tool called a board puller may help to get the end joints tight.
- g) Try to distribute the long and short pieces while insuring that no end joints are within 6" of each other to avoid getting a cluster of end joints in one area (see image 3 on page 6).
- **h)** Use a table saw to rip the last row to width. Remember to leave room for the expansion gap.
- i) Inspect and clean your floor as you work. Clean up any glue squeeze out as soon as you can so that it doesn't leave any residue on the finish of your new floor.

Special considerations for floating installation

It is imperative that your new floating floor not be fastened to any surface or submitted to any movement restrictions.

Expansion gaps play a fundamental role in the performance of a floating floor installation. They allow the flooring room to expand and contract freely in relation to changes in ambient humidity and prevent damage that can affect the aesthetics and structural integrity of the floor. When the room humidity varies strongly, cumulative expansion and contraction can become damaging for the aesthetics and durability of the floor.

1/2" (13 mm) minimum expansion gaps are standard for most installations of floating flooring. The expansion gaps must be respected on all walls, columns, doorways, moulding, etc. **(ANY FIXED ELEMENTS)**. The use of spacers during installation insures that appropriate expansion gaps will be respected. *See reference table below.*

REQUIRED EXPANSION GAP	MAXIMUM ROOM WIDTH	MAXIMUM ROOM LENGTH
1/2" (13mm)	Up to 26' (8 meters)	Up to 52' (16 meters)
3/4" (19mm)	Between 26' and 40' (8 to 12 meters)	Between 52' and 80' (14 to 24 meters)

NOTE: The installation of a t-moulding might be necessary for any room exceeding 40' in length or width. The drywall should be undercut to obtain the necessary expansion room.

The following installation and subfloor systems can be used successfully over radiant heat:

- 1. Glue-down
- 2. Floating
- 3. Direct-nail, engineered wood flooring to wood subfloor
- 4. Single layer of plywood on sleepers
- 5. Double plywood floating subfloor

Installing Mouldings

Adequate expansion space must be envisioned for the installation of all mouldings. Never attach mouldings to the floating floor **(see image 1 on page 6).** Take care when installing the moulding to ensure that it will not inhibit the floor's ability to move. Quarter round and baseboards are to be nailed only to the wall and never to the floating floor.

Radiant Heat Installations

Because the heat source in a radiant heating system is directly below the flooring, the flooring has the potential to dry out much faster than with a conventional heating system. With a good understanding of how engineered flooring will react to radiant heating systems, you can install this product over this type of subfloor.

General Radiant Heat Installation Guides

Rapid changes in temperature affect the moisture content of your hardwood floor. To minimize this, Superior Flooring recommends the installation of an outside thermostat. Unlike conventional heating systems which switch on when required, radiant heat systems work most effectively and with less trauma to the hardwood floor if the heating process is gradual and based on small incremental increases in relation to the outside temperature.

Subfloor Moisture Testing

Subfloors should have proper moisture tests according to the moisture testing procedures outlined in the Radiant Heat Compliance Form.

Whether your radiant heating system is made of concrete, wood, or a combination of both, one the most important things to remember when installing wood flooring is to avoid penetrating the heating element. You will need to alter your installation methods depending on the type of subfloor used.

With a concrete subfloor, it is important to turn the heating system on for at least 5-6 days to drive out any moisture that may remain in the concrete. This needs to be done regardless of season and after the concrete has cured. With some installation systems, and particularly with glue-down applications, you may be required to turn the heat down, or even off to avoid excessive curing of the glue. Always test concrete in accordance with the Radiant Heat Compliance Form.

With water-heated radiant-heat systems, a pressure test must be performed and documented by a qualified plumber or the system installer prior to beginning the installation of the wood flooring. Electric under floor systems should also be tested prior to floor installation. Check heat system manufacturer guidelines.

If flooring materials that conduct heat at different rates are on the same circuit or heating zone, check with the HVAC mechanical engineer and Radiant Panel Association before proceeding.

Radiant heat is dry heat. A humidification system may be necessary to maintain wood flooring in its comfort zone.

Subfloor Heat Sensor Installation

All Superior Engineered Hardwood flooring installed over radiant heat systems must have temperature sensors installed at the time of installation. These sensors can be purchased from Superior Flooring. The maximum subfloor temperature should not go over 27° C. or 81° F. One sensor is required for every 300 square feet of flooring, with a minimum of one sensor in each room. An extra boiler outlet sensor is required on the boiler outlet. These sensors must be shipped with ice packs, in a sealed and preferably insulated container.

After Installation and Ongoing Care

Radiant heat systems should be turned on and the temperature increased over an approximate 10 to 14 day period. Regardless of whether the system is new or pre-existing. **NEVER** allow the radiant heat systems temperature to change up or down by more than 2° Fahrenheit per day. During the cold season when radiant heating is working at full power, humidity levels can get very low causing the wood to dry out and cause cracking or splitting. To avoid this type of damage to your flooring, it is highly recommended that the relative humidity in your house remain between 30% and 65%. To ensure humidity levels remain within the recommended range the installation of room humidifiers or a whole house system is strongly advised.

Hardware Floor Maintenance



Follow these simple instructions and you will enjoy your hardwood floor for many years.

- When necessary, regularly vacuum, sweep or dry-dust mop your floor as often as required to remove dust, soil or grit [sand and small stones] which can act like sandpaper and scratch your floor. Do not use a vacuum with a beater bar or power rotary brush head as it will scratch the wood. If your floor needs cleaning from time to time, spray a small amount of hardwood floor cleaner directly on the terry cloth mop head, not onto the floor. Use a back and forth motion with the mop in the direction of the length of the floor boards to prevent streaking. Never wax the floor.
- Never clean your floor with water or any cleaner that must be mixed with water as the same will void this warranty. Wipe up soil and spills promptly using the cleaner and a clean cloth. Water and wood do not mix. Water can and will cause damage to the finish and integral structure of wood flooring. Steam Cleaners contain water, do not use on wood floors.
- Do not place potted plants directly in contact with hardwood floors.
- Floor mats at entrance ways and on all high traffic areas will keep soil and moisture from being tracked on your floor. Use of high quality mats and rugs will prevent damage to or discoloration of the floor. Note however, that when mats and rugs are placed directly onto hardwood flooring, they will abrade the flooring they move around when they are walked on. As dirt and sand build up under the rug the constant movement of the rug will grind those small particles into the wood finish. They also pose an obvious slip, trip and fall hazard in the household. Only those mats with proper gripping backs should be used where elderly or infirm occupants will walk over the area in question. For rugs that do not have a gripping back, rug pads work well to protect your floor and keep rugs from moving around.
- Attach felt pads to all furniture and objects that will rest on your floor. This will help to
 prevent scratches and make your furniture easier to move when you want to clean
 your floor.
- Over time, exposure to sunlight will bring about minor changes in color to the hardwood floor. This colour change is caused by oxidation of the wood fibres, and is not considered a defect. Move your rugs occasionally to avoid uneven colour of your wood flooring due to strong UV light.
- Use protection like a blanket, towel, or carpet face-down underneath all furniture or appliances to be moved in order to avoid scratching and permanently denting the floor.
- Replace narrow hard chair rollers with wide non-marking rubber rollers.
- Never allow persons wearing spiked high heel shoes to walk on this floor.



Maintaining the Correct Humidity Level in Your Home (35-50%)

Important Cupping and Gapping Information and Relative Humidity Information

Relative Humidity is the ratio of the actual amount of water vapour contained in the air at a given temperature to the maximum amount of water vapour that the air at that same temperature can hold, expressed as a percentage.

Wood is a hygroscopic material and always contains water. It constantly exchanges water vapour with the air, picking it up when the relative humidity is high, and giving it off when relative humidity is low. Since wood swells as it absorbs water, and shrinks as it releases water, both its moisture content and its dimensions are controlled by the relative humidity of the surrounding air. Wood moisture content is equal to the weight of water contained in the wood divided by the oven dry weight of the wood, expressed as a percent.

Inside homes however, where the relative humidity of outdoor air is drawn inside and drastically altered by heating it and cooling it without humidification or dehumidification, wide seasonal swings in relative humidity will cause wood moisture content and dimensional changes to occur. Since warm air can hold more water vapour than cold air, the relative humidity of air with a certain absolute humidity can be changed by simply changing its temperature. If in winter, for example, outside air is at 20°F and 65% RH is drawn inside and warmed to 70°F without humidification, its relative humidity drops to about 10%. In summer, outside air at 70°F and 60% RH that flows into a basement at 60°F will end up at 82% RH.

In order to minimize this movement the relative humidity must be maintained between 30 - 65%. Anything higher and the flooring will start to crown, anything lower and the floor will start to cup in winter months.

Although Superior Engineered Flooring is much more stable than solid hardwood, it will react to changes in relative humidity according to the season.

Moisture or lack of it is wood's worst enemy. Superior Engineered Flooring will perform extremely well with high humidity. If however the relative humidity is below 30% for a prolonged period of time, the floor will contract causing the surface of the board to cup. This is called dry cupping and is considered normal when relative humidity is too low. The floor should return to its normal state once the relative humidity is back to normal (30-65%). These variations can be minimized with proper ventilation, humidification or heating. You may need to improve your humidification and/or dehumidification system in order to maintain the required 30-65% humidity levels.

When the relative humidity drops below 30% the face lamella will start to contract. The construction of Superior Engineered Flooring is such that the core material will minimize the face lamella's contraction. If the humidity drops below 20% our core will continue to do its job and minimize the contraction again. However, if the lamella is under too much stress, and the core is not allowing the face to move (minimize cupping) the face lamella has no other choice but to relieve its pressure by stress cracking. Stress cracking is NOT covered under this warranty.