



AACER™

**AACER FLOORING
INSTALLATION INSTRUCTIONS**

Engineered Prefinished & Unfinished Flooring



AACER FLOORING INSTALLATION INSTRUCTIONS Engineered Prefinished & Unfinished Flooring

INSTALLER / OWNER RESPONSIBILITY

READ ALL OF THESE INSTRUCTIONS, AS WELL AS THE WARRANTY AND CARE & MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE BEGINNING INSTALLATION. WARRANTY AND CARE & MAINTENANCE INFORMATION CAN BE FOUND ON THE AACER FLOORING WEBSITE. IN ADDITION TO THESE INSTRUCTIONS, WE RECOMMEND THAT THE INSTALLER FOLLOW ALL INSTALLATION GUIDELINES SET FORTH BY THE NATIONAL WOOD FLOORING ASSOCIATION (WWW.NWFA.ORG). WHERE THESE INSTRUCTIONS DIFFER FROM NWFA GUIDELINES, THIS DOCUMENT TAKES PRECEDENCE.

PRIOR TO INSTALLATION

It is the installer's responsibility to ensure that all of these General Conditions are met prior to installation and that all specific installation instructions below for the installation method chosen (Glue Down, Nail Down, or Floating Floor plus, when applicable, Radiant Heat Systems) are followed carefully. When installed according to these instructions, Aacer Flooring Engineered Hardwood Flooring is approved for use above, on and below grade. When installing below grade, use the Floating or Glue Down Floor installation methods. It should be noted, failure to follow these installation instructions may void the warranty.

It is the installer's responsibility to inspect the flooring for proper color, grade, visible manufacturing defects, damage, or otherwise unsatisfactory appearance. **Do not install damaged or visibly unsatisfactory material. Installing a plank constitutes acceptance of its appearance.** After identifying a visible problem, do not open any additional cartons. Contact your local retailer or distributor immediately.

If installing over radiant heat, read the 'Radiant Heat Systems' section below before finalizing product selection or beginning installation. Careful adherence to these guidelines is required for a successful and fully warranted installation. Certain wood species and plank sizes are NOT warranted for installation over any type of radiant heat. Aacer Flooring does not offer a warranty on ANY flooring installed over electric radiant heat systems. Only hydronic (water) systems may be approved. In wood flooring installations over radiant heat, moderate surface checking, cracking (especially at the ends of boards and around knots), shrinkage, gapping between planks, and slight cupping are all to be expected and do not constitute a product defect.

NOTE: When nailing down planks wider than 6", it is strongly recommended to use a full spread adhesive in addition to nails in order to prevent movement and squeaking. Claims will not be accepted for movement or squeaking in floors wider than 6" that were nailed down without a full spread adhesive. Nailing planks wider than 7" wide without a full spread adhesive will void all warranties. (See below under 'Nail + Glue Installation Instructions' for details.)

GENERAL CONDITIONS – ALL INSTALLATION METHODS

Environmental Conditions

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

- All exterior walls, windows, and doors must be in place and the building envelope closed during acclimation and installation.
- All wet work such as painting, drywall, masonry and concrete must be completed and dry.
- Basements and crawl spaces must be dry and well ventilated. Crawl spaces must be a minimum of 18" high from the ground to the bottom of the joist. Dirt floors in crawl spaces should be covered with a 6-10 mil black plastic to reduce moisture migration. Seams should overlap and be sealed with waterproof tape. Plastic should extend 6" up the perimeter walls. Perimeter crawl space cross ventilation should equal 1.5% of the square footage. Vents must remain open year round.
- Exterior grading should be complete and drainage should move away from the building structure with a minimum drop of 3" in 10'.
- Permanent HVAC should be on and operational and maintained between 60-80°F with relative humidity of 30%-50% for a minimum of 7 days prior to delivery, as well as during and after installation of the flooring. Humidity levels below 30% or above 50% may cause movement in the flooring, gapping between pieces, cupping, cracking and other problems. Use of a humidification/dehumidification system may be required to maintain proper humidity levels, particularly over radiant heat.

Acclimation

Ensure that the flooring has been properly acclimated to the site conditions prior to installation. Acclimation time is at the discretion of the flooring installer. An experienced flooring installer is best qualified to decide the precise amount of time that will need to be provided. There is no one scenario that fits all situations. Factors such as time of year, moisture content of the flooring, humidity levels in the project space and what the expected high or low moisture content of the flooring is in relationship to equilibrium must all be considered.

Simply put, flooring having a moisture content at or near its expected high range needs little or no extra acclimation. Conversely, very dry material could require an extended acclimation period. See below under 'Radiant Heat Systems' for details.

Subfloor Conditions

Subfloors must be:

Clean. Subfloors must be scraped clean and free of debris. Sweep and /or vacuum all debris from the subfloor. Debris on the subfloor may cause over-wood and uneven surfaces in the finished floor, poor fit between planks, and poor adhesive bond in glue-down installations.

Flat. Subfloors must be flat to within 3/16" over any 10' radius and 1/8" over any 6' radius. Check the flatness using a straight edge, laser line or string line. Grind, scrape, sand or shim all high or low spots. On concrete subfloors, grind all high areas and fill low areas using a quality cementitious leveling compound. Ensure that all fasteners securing the subfloor are set flush.

Dry. Check and record all moisture and temperature conditions prior to installation. Visually check the jobsite for potential moisture problems. Look for signs of water intrusion around window and doors. Check for mold or fungus on walls and all other areas. Water intrusion may necessitate structural repairs and/or create conditions unsuitable for flooring installation.

- Plywood and composite subfloors should be checked using a calibrated moisture meter. Be sure to use the correct moisture meter setting for the species being checked. Carefully follow the moisture meter manufacturer's operation instructions. Moisture readings should not exceed 10% in any location and the moisture variation between the subfloor and the flooring should not exceed 2% at time of installation.
- Concrete subfloors must be fully cured, at least 60 days old, and should have minimum 6-mil polyfilm between the concrete and ground. Lightweight concrete can hold more moisture and may take longer to dry out to an acceptable moisture content.
- Installations over concrete require the use of a Calcium Chloride test per ASTM F 1869, or an in-situ Relative Humidity test per ASTM testing methods, using probes inserted into holes drilled into the concrete. Test all areas per ASTM testing methods where wood will be installed. The results of the Calcium Chloride tests should not exceed 3lbs per 24 hours per 1000 square feet, and in-situ test results should not exceed 75% RH. Carefully record all results.
- NOTE: These tests give a snapshot of moisture conditions at the time of the test, but do not reflect the permanent year-round condition of the substrate. If Gluing Down on concrete that is on or below grade, it is highly recommended to use a moisture control system approved by the manufacturer of the adhesive you have chosen, even if you believe the concrete is dry. Aacer Flooring is not responsible for site related moisture issues.
- More stringent requirements regarding the dryness of the subfloor apply when installing over radiant heat. See below under 'Radiant Heat Systems' for details.

Structurally Sound. Wood subfloors must be well fastened. Use screws every 6" and replace subfloor panels/boards as necessary to eliminate all movement and squeaking. Acceptable subfloor types:

- CDX plywood - 3/4" thick for joist spacing up to 16" on center, minimum 3/4" thick for joist spacing greater than 16" on center (19.2" maximum). For joist spacing up to 24" on center, minimum 7/8" plywood should be used. Plywood subfloors installed over concrete must be installed in accordance with the guidelines set forth by the National Wood Flooring Association (NWFA) – www.nwfa.org).
- OSB - at least 23/32" thick.
- Existing hardwood flooring over a suitable subfloor as outlined above. Existing floor must be well-fastened, smooth, and for Glue Down installations, unfinished. Install at a 90° right angle or 45° (across grain) of existing hardwood floor.
- Underlayment grade particleboard (minimum 40 lb. density) - Glue Down/Floating Floors only. 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 sub floor and sanded flat.
- Concrete slab - Glue Down/Floating Floors only. Concrete must be at least 3000 lbs. density for Glue Down installations.
- Lightweight concrete (gypcrete) – Floating Floors only. Gluing to concrete that is less than 3000 lbs. density is NOT WARRANTED. Aacer Flooring provides no guarantee that lightweight concrete or gypcrete will remain structurally sound during the life of the floor. Separation of the flooring from the subfloor caused by deterioration or fracturing of the substrate will not be considered a product failure.
- Ceramic tile – Floating Floor only. Tile must be well-adhered and flat to 3/16" over any 10' radius.

- Resilient tile & sheet vinyl - Glue Down/Floating Floors only; for glue-down, tile/vinyl must be new and non-urethane-coated.

Preparing the Perimeter

- Undercut door trim, jambs and casings to the thickness of the flooring plus any adhesives or underlayments you plan to use.
- All wood flooring expands and contracts with changes in humidity. It is essential to install the floor leaving adequate expansion space between ALL sides of the flooring and ALL vertical obstructions, including door trim, jambs, studs, plumbing, cabinets, etc. This space will be covered with base molding. Failure to provide adequate expansion space in any single location can cause damage to the entire floor.
- Minimum expansion space for 5/16" – 1/2" thick flooring is 1/2"

Layout

On wood subfloors, if the subfloor is fastened to joists or trusses, the flooring should be installed perpendicular or at a 45° angle to the joists/trusses. If possible, use an outside wall as the starting wall. Over radiant heat, always run the flooring perpendicular to the radiant tubing.

No contiguous area of installed flooring should exceed 30' across the widths of the planks or 50' along the lengths of the planks. For spaces wider or longer than these dimensions, add expansion space midway through the span and cover with a T-molding or other transition piece.

General Tools and Accessories recommended (all installation methods):

- Pencil • Tape Measure • Safety Glasses • Utility Knife • Moisture Meter • Hammer
- Shim Wedges • Tapping Block • Rubber Mallet • Carpenter square • Dust Mask
- Pry-bar or pull-bar • Wood Filler • Scraper • Rags • Chalk Box & Chalk
- Recommended Saws: power miter saw, table saw, jamb saw

If tape is needed (we recommend avoiding its use if possible), use only delicate surfaces tape, and be sure to remove any tape within 20 minutes of application. Never tape protective covering directly to the floor – only tape it to itself.

Once all of these General Conditions are met, continue the installation using the instructions for the type(s) of installation you have chosen (Nail Down, Nail + Glue, Glue Down, Floating Floor, and Radiant Heat Systems).

NAIL DOWN INSTALLATION INSTRUCTIONS – for planks up to 6" wide

(If nailing down planks wider than 6", follow the 'Nail + Glue Installation Instructions' below.)

Aacer Flooring Engineered Wood Flooring can be nailed to plywood, OSB and existing wood flooring meeting the requirements outlined above under 'Subfloor Conditions.'

For Nail Down Installations, you will need the General Tools and Accessories, plus:

- Nail set - Tack Stapler or 1" roofing nails (for felt)
- 6-d Finish Nails or Pneumatic Finish Nailer with 1 1/4" to 1 1/2" fastener
- Edge or Blind Stapler / Nailer (Manual or Pneumatic) with 1-1/4" to 1-1/2" fasteners for flooring 1/2" thick (always do a test plank to verify that fasteners are seating properly and not causing dimpling on the surface)
- 15 - 30 lb. roofing felt, #15 hardwood floor underlayment felt, or Aqua Bar underlayment paper

CAUTION:

Red Rosin or craft paper is not an accepted underlayment. Foam underlayment pads are not acceptable for nail down floors. Elimination of underlayments in favor of running beads of construction adhesive to increase the holding power to the sub floor has some risks. Underlayments have always acted as a vapor inhibitor. Without the underlayment, the floor is subject to cupping and crowning from moisture intrusion from the sub floor.

Nailing Down the Floor

1. After installing 15 lb. felt or Aqua Bar per the manufacturer's instructions, measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks.
2. 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.
3. Always work from multiple boxes simultaneously and blend the boards throughout the installation. This is especially important with mixed production dates. Aacer Flooring 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.
4. Lay the tongue side of the first row of flooring along the chalk line. Face nail (top nail) the first row of flooring in place. Place the fasteners approximately 3/4" from the wall side (groove side) of the flooring board every 4" to 6". Continue the first row installation blind/edge nailing every 4" to 6" along the tongue and every 2" to 3" from every end joint. Note: Blind/edge nailing of the first row may require the installer to use 6-d finish nails or the pneumatic finish nailer along the tongue.
5. Continue the installation across the room, blind/edge nailing every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 8". Avoid creating "H" patterns (where an end joint is adjacent to another end joint in the second to last row installed). Use cut ends to start the subsequent row, discarding any pieces shorter than 8".
6. Trim the last row of flooring to maintain the minimum expansion space at the far wall.
7. At the far (finish) wall, it may be necessary to face-nail the last 2-3 rows due to the angle of the stapler/nailer. The last row or two of flooring may need to be pulled together using a pulling bar.
8. Sand & Finish per NWFA guidelines. Avoid color techniques that require the application of significant quantities of chemical solvents such as bleach or lye, which can soak into the floor and potentially cause delamination and other problems.
9. Complete the installation by reinstalling or installing new base moldings.

NAIL + GLUE INSTALLATION INSTRUCTIONS - required when nailing down planks over 6" wide, recommended when nailing down all planks over 5" wide.

Aacer Flooring Engineered Wood Flooring can be nailed + glued to plywood, OSB and existing wood flooring meeting the requirements outlined above under 'Subfloor Conditions.'

For Nail + Glue Installations, you will need the General Tools and Accessories, plus:
Premium Wood Flooring Adhesive

- Adhesive Remover recommended by the manufacturer of the adhesive selected
- Adhesive Trowel recommended by the manufacturer of the adhesive selected
- Nail set - Tack Stapler or 1" roofing nails (for felt)

- 6-d Finish Nails or Pneumatic Finish Nailer with 1 1/4" to 1 1/2" fastener
- Edge or Blind Stapler / Nailer (Manual or Pneumatic) 1-1/4" to 1-1/2" fasteners for flooring 1/2" thick (always do a test plank to verify that fasteners are seating properly and not causing dimpling on the surface)

Nailing + Gluing the Floor:

1. 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.
2. Always work from multiple boxes simultaneously and blend the boards throughout the installation. This is especially important with mixed production dates. Aacer Flooring 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.
3. Measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks.
4. Trowel spread the adhesive on the subfloor along the chalk line wide enough to allow the first row of flooring to be installed, being careful not to cover the line. Follow the adhesive manufacturer's recommendations for wet lay times before proceeding to the next step.
5. Lay the tongue side of the first row of flooring along the chalk line. Face nail (top nail) the first row of flooring in place. Place the fasteners approximately 3/4" from the wall side (groove side) of the board every 4" to 6". Once the face nails are set, use 6-d finish nails or the pneumatic finish nailer to blind/edge nail along the tongue of the first row, every 4" to 6" and every 2" to 3" from every end joint. Check to make sure the first row is still straight along the chalk line before proceeding.
6. Trowel spread enough adhesive to install 2-3 more rows.
7. Install the second row by sliding the groove side on to the tongue of the first row. Blind/edge nail it in to place, with fasteners every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 8".
8. Continue nailing and gluing 2-3 rows at a time in this manner across the room. Avoid creating "H" patterns (where an end joint is adjacent to another end joint in the second to last row installed). Use cut ends to start the subsequent row, discarding any pieces shorter than 8".
9. Most adhesives require that the installer clean the adhesive off the flooring boards during the installation. Follow the adhesive manufacturer's recommendations for this procedure.
10. Trim the last row of flooring to maintain the minimum expansion space at the far wall.
11. At the far (finish) wall, it may be necessary to face-nail the last 2-3 rows due to the angle of the stapler/nailer. The last row or two of flooring may need to be pulled together using a pulling bar.
12. Do not allow foot traffic on the floor for 24 hours after installation is complete.
13. For unfinished flooring, Sand & Finish per NWFA guidelines. Avoid color techniques that require the application of significant quantities of chemical solvents such as bleach or lye, which can soak into the floor and potentially cause delamination and other problems.
14. Complete the installation by reinstalling or installing new base moldings.

GLUE DOWN INSTALLATION INSTRUCTIONS – for all plank widths

Aacer Flooring Engineered Flooring can be glued down to concrete, plywood, OSB, underlayment grade particleboard (as noted above under **Subfloor Conditions**), and existing wood floors meeting the requirements outlined above under General Conditions/Subfloor Conditions. Aacer Flooring Engineered Flooring can also be glued to other surfaces such as well-adhered sheet vinyl, vinyl tile, ceramic, etc., but the performance of the adhesive is the responsibility of the adhesive manufacturer and careful adherence to the adhesive manufacturer's installation instructions for that particular subfloor surface is crucial. Aacer Flooring does not warrant the adhesive bond between the subfloor and the wood flooring.

For Glue Down Installations, you will need the General Tools and Accessories, plus:

- Premium Wood Flooring Adhesive
- Adhesive Remover recommended by the manufacturer of the adhesive selected
- Adhesive Trowel recommended by the manufacturer of the adhesive selected
- Masking Tape: Tape rated to be used on Delicate Surfaces

Gluing Down the Floor

1. 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.
2. Always work from multiple boxes simultaneously and blend the boards throughout the installation. This is especially important with mixed production dates. Aacer Flooring 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.
3. Measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks. Install backer boards as guides along the wall side of the chalk line. Anchor the backer boards in place with screws or finish nails. Over concrete subfloors, anchor the backer boards with concrete screws or concrete nails. These boards will be removed later.
4. Lay the first row of flooring, but do not glue into place. Align the tongue side of the flooring boards against the backer board. Dry lay the next two rows of flooring in place, sliding the tongue into the groove. End joints should be staggered by at least 8". Pull the rows of flooring boards out away from the backer board approximately 24" to allow for the glue to be spread.
5. Trowel spread the adhesive on the subfloor along the backer board wide enough to allow the first three rows of flooring to be installed. Follow the adhesive manufacturer's recommendations for wet lay times before proceeding to the next step.
6. Install the first row of flooring, pressing the tongue to the backer board. Slide the tongue of the next row of flooring into the groove of the first row and continue until the first three rows are done.
7. If tape is needed to hold boards together, use tape rated for Delicate Surfaces, and be sure to remove any tape within 20 minutes of application.
8. Trowel spread adhesive and continue the installation across the room. Trim the last row of flooring to maintain the minimum expansion space at the far wall. Be careful not to move the installed flooring out of position. Using knee-boards can help prevent movement. Some flooring boards may need to be tapped or pulled into place with a tapping block or pull bar.

9. Most adhesives require that the installer clean the adhesive off the flooring boards during the installation. Follow the adhesive manufacturer's recommendations for this procedure.
10. Once the room is finished, remove the backer boards at the starter row.
11. Dry lay the first row of flooring to replace the backer board. Trowel spread the adhesive on the back of the flooring boards (not on the subfloor) and install the flooring, sliding the groove onto the tongue of the already installed starter row. Doorways and other openings may require installation of the flooring the same way. Slide the flooring boards under the previously cut door trims and casings.
12. Do not allow foot traffic on the floor for 24 hours after installation is complete.
13. For unfinished flooring, Sand & Finish per NWFA guidelines. Avoid color techniques that require the application of significant quantities of chemical solvents such as bleach or lye, which can soak into the floor and potentially cause delamination and other problems.
14. Complete the installation by reinstalling or installing new base moldings.

FLOATING FLOOR INSTALLATION INSTRUCTIONS

Aacer Flooring Engineered Wood Flooring can be installed as a floating floor system over almost all types of subfloors including Plywood, OSB, Existing Wood Floor, Vinyl, Vinyl Tile, and Ceramic Tile provided they are clean, flat, dry and structurally sound, meeting the requirements outlined above under 'Subfloor Conditions.' Note: Aacer Flooring Engineered Wood Flooring boards must be at least 4" wide to be installed as a floating floor system. It is not recommended to float unfinished flooring that should be sand and finished. Potential movement could cause unintentional chatter or sanding marks.

For Floating Floors, you will need the General Tools and Accessories, plus:

- Tongue and Groove Glue: PVA adhesive or equivalent adhesive
- Adhesive Remover recommended by the manufacturer of the adhesive selected
- Underlayment Pad: ~1/8" thick Two-in-One pad (pad plus vapor barrier) or ~1/8" thick pad with 6 mil polyfilm sheeting
- Masking Tape: Tape rated to be used on Delicate Surfaces

Floating the Floor

1. If installing over underlayment pad plus a separate layer of polyfilm, install the 6 mil poly first, overlapping the edges and taping all seams with waterproof tape, and then install the pad. Roll out the first run of pad from wall to wall parallel to the starter wall. On the installed pad mark two points toward each end of the starting wall and chalk a line the full length of the wall through the marks. This is the starter line.
2. 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.
3. Always work from multiple boxes simultaneously and blend the boards throughout the installation. This is especially important with mixed production dates. Aacer Flooring 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.
4. Lay the first row of flooring using only long boards. The first flooring board and the last flooring board in this row should be a minimum of 12" long and cut to provide the appropriate expansion space on each end. Apply a 1/8" continuous bead of T&G glue

on the bottom side of the groove of each end joint. Align the tongue side of the starter row along the chalk line and engage the end joints together. Use shims along the long wall and at both ends of the row to keep the floor in place and maintain the right expansion space.

5. Lay the second and third row of flooring boards. End joints should be separated by a minimum of 8" from the adjacent row. Spread a 1/8" bead of T&G glue along the bottom side of the long groove and each end joint groove on the second row of flooring. Engage the groove side of the second row with the tongue of the starter row. Engage the end joints at the same time, aligning them and cutting at the end of each row to allow for appropriate expansion space. Continue this procedure for the third row. These three rows must be aligned straight to ensure that the rest of the installation remains straight.
6. Continue using the same procedure. If boards do not easily engage together, use a tapping block or pull-bar. Use masking tape as needed to keep the boards together and rows straight. Remove all tape within 20 minutes of application. Use only tape rated for Delicate Surfaces.
7. Avoid working on top of the installed flooring to prevent breakage of the glue joint.
8. Do not allow foot traffic on the floor for 24 hours after installation is complete.
9. Complete the installation by reinstalling or installing new base moldings.

RADIANT HEAT SYSTEMS

NOTE: the following Acer Flooring products are **NOT WARRANTED** in installations over radiant heat:

- All Hickory products, regardless of plank dimensions
- All products with plank widths greater than 7"

The following products **ARE WARRANTED** for use over hydronic radiant heat:

- White Oak, Red Oak, Ash or Maple with planks not wider than 7"

If the product you plan to install is not described above, please contact Acer Flooring for clarification before finalizing product selection. In all installations over radiant heat, the warranty will be void if any of the following requirements and instructions is not adhered to:

- The radiant heat system must be hydronic (using warm water). **Acer Flooring Engineered Flooring is not warranted over electric radiant floor heat systems.**
- The flooring must be installed running perpendicular to the radiant tubing.
- The heat system must be designed for wood flooring and have an outside temperature sensor and in-floor direct contact temperature sensors.
- The system controller must be designed for wood flooring and have a temperature control mechanism that will not allow the surface temperature of the subfloor to exceed 82°F. At the time of installation, the operation system temperature must be recorded and maintained post installation.
- The system must be kept on and within 15°F of normal operating temperature **AT ALL TIMES.**
- For concrete subfloors, conduct and document Calcium Chloride Tests per ASTM F1869. Test results must not exceed 2.0 lbs. per 1000 square feet per 24 hours.
- For wood subfloors, use a pin type meter to document the moisture content of the subfloor. Moisture readings should not exceed 8% in any location and readings for the subfloor must be within 2% of the flooring at the time of installation.

- Relative humidity at the jobsite must be maintained between 30% and 50% at all times. Failure to maintain proper humidity levels will void all warranties.
- The radiant heat system must be on and operating at normal output a minimum of 14 days prior to the start of the installation and gradually brought up to 70°F.
- Wood flooring must be delivered to the jobsite and acclimated to the installation environment a minimum of 7 days prior to the start of the installation.
- Temperature in the installation area must be controlled between 60°F and 80°F at all times.
- Maximum surface temperature of the wood flooring can never exceed 82°F.
- Excessive heat, rapid heating, and/or failure to maintain humidity levels between 30% and 50% may cause cracking, cupping and other forms of failure and will void the warranty.
- **NOTE: in wood flooring installations over radiant heat, moderate surface checking, cracking (especially at the ends of boards and around knots), shrinkage, gapping between planks, and slight cupping are all to be expected and do not constitute a product defect.**

Once these instructions and requirements are met, continue the installation by following the instructions for your specific installation method as outlined above.

CARE AND MAINTENANCE

- Flooring should be one of the last items installed in a project. In order to protect the floors while other trades are finishing their work prior to final cleanup and turnover to the owner, use a breathable protective covering such as Ram Board. Do not use polyfilm or other non-breathing coverings as they can cause the floor to become damaged from humidity buildup. Clean the floor thoroughly before laying the covering to ensure that no debris is trapped underneath. Tape pieces of protective covering together but do not tape them to the wood flooring.
- Place walk-off mats at all entrances to help collect dirt and debris.
- Install felt floor protectors underneath all furniture.
- Do not allow people to wear spiked heels on the floor, which will damage even the hardest wood floors and finishes.
- Pet claws should be properly trimmed at all times.
- Work boots and shoes that may have pebbles lodged in the soles should be removed prior to entering.
- Sweep or vacuum frequently. Most damage to wood flooring is caused by debris that is walked on.
- All mats or rugs should be cleaned on a regular basis. They should also be moved occasionally to allow natural color changes caused by light to occur evenly in all areas. - Never wet-mop your floor, and always clean up spills and standing water as soon as possible. With water or any other cleaning agent, be sure to thoroughly ring out the applicator or mop prior to applying it to the floor. A damp mop is fine as long as the moisture is limited to an amount that will evaporate almost immediately. Moisture that is allowed to seep into the seams between the planks may cause damage to your flooring. Do not allow soiled mats or rugs to stay on the floor as they can trap moisture on the surface.

- The use of approved maintenance and floor-care products, including but not limited to Acer CourtKleen Cleaners, Bona X Swedish Formula Hardwood Flooring Cleaner and Basic Coating Squeaky Hardwood Floor Cleaner, are highly recommended.
- Do not use oil soaps, liquid or paste wax products or other household cleaners that contain lemon oil, Tung oil, silicon or ammonia, since these warranties do not cover damage caused by non-recommended products. Use of these and other such products will harm the long-term performance of your floor and may also affect its recoat ability.

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