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Guide to Owning THERMORY® Hardwood Floors

Congratulations on becoming the most recent owner of a finely crafted THERMORY® Hardwood Floor. With proper installation and care, you will be able to enjoy the exquisite beauty and reliable performance of your floor for many years to come.

Before attempting to install your THERMORY® Hardwood Flooring product, it is very important to read, understand and apply the manufacturer's guidelines on installation, finishing and use. Failure to do so may result in less-than-optimal performance. Please pay special attention to the detailed instructions on how to measure and interpret the moisture content of your THERMORY® product. If you have questions about your product, please contact your dealer/distributor before beginning installation.

Installation

In order to experience the best results from your THERMORY® Hardwood Flooring product, please give careful attention to the following (especially point 4).

1) Use only an experienced hardwood flooring installation professional.

2) Carefully inspect the product before beginning installation.

3) Follow the NWFA's *Hardwood Flooring Installation Guidelines* for plank floors.

4) Read, understand and apply the "Supplementary Notes on Acclimation". Failure to do so may result in less-than-optimal performance.

1. Use an Experienced Hardwood Flooring Installation Professional

We strongly advise that you entrust installation only to an experienced hardwood flooring installation professional. Please consult your local THERMORY® Flooring dealer for a list of qualified technicians in your area.

2. Carefully Inspect Your Product Prior to Installation

Before installing, finishing or otherwise modifying your THERMORY® Hardwood Flooring product, you are required to remove the product from the package and inspect each plank under adequate lighting.

All THERMORY® Hardwood Flooring products are guaranteed to be on grade and free of manufacturing defects prior to installation and/or modification. (Please note that industry standards allow up to 5% tolerance for milling and grading defects.) Installing, finishing or otherwise modifying defective product will nullify any obligations by Thermory USA, LLC.

Please note that *THERMORY® Rustic Grade* allows a variety of natural wood characteristics including, but not limited to, natural color variation, knots, mineral streaks, and cracks. These are not considered defects as they add to the natural, aged look of the product.

As THERMORY® Hardwood Floors are made from natural wood material (both heartwood and sapwood), color may vary somewhat from piece to piece or within the same piece. Also, the degree of darkening that occurs as a result of the thermal process may differ slightly from piece to piece depending on natural variations in the density or composition of the wood material. While every effort is made to ensure color consistency from pack to pack and load to load, you may notice instances of slight color variation. This is not considered a defect.

3. Follow the NWFA's *Hardwood Flooring Installation Guidelines* for Plank Floors

For nail schedules, jobsite preparation and material handling, we recommend that you follow the *Hardwood Flooring Installation Guidelines* published by the National Wood Flooring Association (NWFA). You can request a copy of these guidelines online through the NWFA website at <u>www.nwfa.org</u>. Regarding acclimation and the measuring of the moisture content of your THERMORY® Hardwood Flooring prior to installation, please pay special attention to the "Supplementary



Notes on Acclimation" below. When performing nail down installation, handle the flooring with care to avoid splitting. We recommend using a pneumatic flooring nailer when blind nailing and pre-drilling when nailing or screwing the face.

We do approve THERMORY® Hardwood Floor over radiant heating and for use on concrete. This is limited to widths of 5" or less for Salsa treatment and 6" or less for Tango treatment levels in Ash only. See limitations for the use of this product over radiant heated flooring in the limitations portion of this handbook.

4. Supplementary Notes on Acclimation

THERMORY® Hardwood Flooring is modified with a state-of-the-art heat treatment process. This process involves only natural wood, heat and steam. There are no chemicals (hazardous or otherwise) used anywhere in the manufacturing of our products.

Through this heat treatment process, the wood undergoes permanent changes that contribute to improved dimensional performance. One of the most important changes is the lowering of Equilibrium Moisture Content (EMC). It is the responsibility of the installer to understand these changes as they apply to the proper acclimation of THERMORY® products. (For tips on correctly interpreting moisture content readings, please see the charts and instructions on pages 3-4.) Failure to properly account for and interpret these differences before, during and after installation may result in lessthan-optimal performance and potentially void any obligations by Thermory USA, LLC.

Like conventionally dried hardwood materials, THERMORY® Hardwood Floors absorb and give off moisture as the humidity of their environment changes. As indoor air becomes more humid, planks tend to swell. As the air becomes more arid, planks tend to shrink. Although the process limits expansion and contractions, extreme environments can cause wood movement to occur, however far less than conventionally kind dried wood flooring.

The difference between THERMORY® products and conventionally dried hardwood flooring is in the amount of moisture the wood absorbs and gives off as well as how much moisture it tends to retain. In general, under identical environmental conditions, THERMORY® flooring will absorb, give off and retain far less atmospheric moisture than most conventionally dried floors. This generally results in lower EMC.

To minimize the effects of dimensional change in service (which include the development of gaps between planks during dry seasons and cupping during more humid seasons), the floor boards should be allowed to acclimate to their in-service environment prior to installation. Failure to allow for adequate product acclimation may result in less than optimal performance.

To minimize shrinking and swelling in use, we recommend that the indoor climatic conditions be kept at

temperatures of between 55°-80°F and a relative humidity of between 25%-65%. Depending on the regional climate and seasonal conditions, it may be necessary to use air conditioners and/or humidifiers to maintain these humidity levels. These temperatures and humidity levels are far more liberal than typical recommendations for a conventionally kiln dried hardwood floor.

As with conventional materials, the jobsite must be properly prepared before the arrival of your THERMORY® Flooring product. The humidity and temperature of the room where the product will be installed must already be at the required settings. The subfloor must be dried and fully acclimated to the indoor (in-service) humidity and temperature conditions prior to installation of the flooring. Moisture content of the subfloor should be checked and confirmed with a high quality moisture meter as per NWFA guidelines. The moisture content should be consistent with the kind of materials used (OSB, plywood, etc.) and the indoor seasonal climatic conditions of the local region. (Consult the NWFA Installation Guidelines and your installation professional for details on proper jobsite preparation.)

In order to ensure proper acclimation of your THERMORY® flooring product, the planks must be removed from the packages and exposed to the surrounding air on all sides prior to installation. At the time of unpacking, check the moisture content of the planks to establish a bench mark for acclimation. Depending on the moisture content of the planks at the time of unpacking and the humidity conditions of the installation environment, 48 hours of acclimation time may be required.

Due to the effects of the high-heat modifying process, THERMORY® Hardwood Floors typically acclimate at a lower equilibrium moisture content than conventionally dried, solid hardwood floors. The reference table and instructions on pages 3-4 will aid you in approximating the appropriate moisture content of your THERMORY® Flooring product relative to the temperature and humidity of the acclimation environment.

Please keep in mind that while these figures are useful as <u>approximations</u>, the actual equilibrium moisture content of individual pieces can vary from the values in the chart. If you are in doubt as to whether or not the moisture content of your product has reached equilibrium, it is best to lengthen the acclimation period. If the moisture content of a plank has not changed for several weeks in a constant temperature and humidity, this usually means that it has acclimated.

As obtaining accurate moisture readings is a critically important step in the acclimation process, **we advise that you use a high-end pinless (not probe) moisture meter**. We recommend model MMC220 manufactured by Wagner Electronic Products, Inc. (<u>www.wwwagner.com</u>). The Wagner MMC220 accurately displays digital moisture readings to a tenth of a percent, provides sufficient range to handle the lower moisture content readings of THERMORY® Flooring, and features an adjustable specific gravity setting that eliminates the need to reference charts for different species.



Interpreting Moisture Content Readings for THERMORY® Manipuri BIRCH

		Α	в	С	D	Е	F	G	н	I	J	ĸ	L	М	Ν	0	Р	Q	R	S	т
	H H	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	98%
1	30	0.9	1.7	2.4	2.9	3.5	4.0	4.5	5.1	5.6	6.1	6.7	7.2	7.9	8.6	9.5	10.6	11.8	13.4	15.6	17.2
2	40	0.9	1.7	2.4	2.9	3.5	4.0	4.5	5.1	5.6	6.1	6.7	7.2	7.9	8.6	9.5	10.6	11.8	13.4	15.6	17.2
3	50	0.9	1.7	2.4	2.9	3.5	4.0	4.5	5.1	5.6	6.1	6.7	7.2	7.9	8.6	9.5	10.6	11.8	13.4	15.6	17.2
4	60	0.8	1.6	2.3	2.9	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.1	7.7	8.5	9.3	10.4	11.6	13.2	15.4	17.2
5	70	0.8	1.6	2.2	2.9	3.5	4.0	4.4	4.9	5.4	5.9	6.5	7.0	7.7	8.4	9.2	10.2	11.5	13.1	15.3	17.0
6	80	0.8	1.5	2.2	2.8	3.4	3.9	4.4	4.9	5.3	5.8	6.3	6.9	7.5	8.3	9.1	10.0	11.3	12.9	15.1	<mark>16.8</mark>
7	90	0.8	1.5	2.2	2.8	3.3	3.8	4.3	4.7	5.2	5.7	6.2	6.7	7.4	8.1	8.9	9.9	11.1	12.7	14.9	<mark>16.6</mark>
8	100	0.8	1.5	2.1	2.7	3.2	3.7	4.2	4.6	5.1	5.6	6.1	6.6	7.2	7.9	8.7	9.7	10.9	12.5	14.7	16.4

Specific Gravity Setting for THERMORY® Birch= 0.52

PLEASE NOTE: Due to the effects of the high-heat aging process, THERMORY® Hardwood Floors typically acclimate at a lower equilibrium moisture content than conventionally dried, solid hardwood floors. The reference table above and the instructions to the right are provided to aid you in approximating the appropriate moisture content of your THERMORY® Flooring product relative to the temperature and humidity of the acclimation environment.

Please keep in mind that while these figures are useful as approximations, the actual equilibrium moisture content of individual pieces can vary from the chart above. If you are in doubt as to whether or not the moisture content of your product has reached equilibrium, it is best to lengthen the acclimation period. If the moisture content of the planks has not changed for several weeks in a constant temperature and humidity, that usually means that the product has acclimated.

To minimize the effects of dimensional change caused by fluctuations in moisture content during use, we recommend that you use air conditioners and/or humidifiers to keep the indoor environment as constant as possible within the range of 60-80°F and 30%-50% RH.

TO GET THE MOST ACCURATE RESULTS, WE RECOMMEND THAT YOU USE A PINLESS (<u>NOT PROBE</u>) METER TO MEASURE THE MOISTURE OF YOUR THERMORY® PRODUCTS.

How to Interpret Moisture Content Readings

- Determine the temperature and relative humidity of the acclimation environment with a thermometer and humidity meter. Using the table above, estimate the target equilibrium moisture content by finding the intersection of the row and column that correspond to the temperature and humidity of the room. (For example, in the case of THERMORY® Manipuri Birch, if the room is 70°F and 35%RH, look for the intersection of row 5 and column G. The corresponding estimate for equilibrium moisture content is 4.4%.)
- Adjust the specific gravity setting on your moisture meter to <u>0.52</u>. If you are unable to input the specific gravity by number, choose a species setting that corresponds to a specific gravity of 0.52. (On many meters, Pitch Pine corresponds to 0.52, but when in doubt, contact your moisture meter manufacturer.)
- 3. Measure the moisture content of the product according to the manufacture's instructions provided with your moisture meter.
- 4. Compare the readings on your moisture meter to the estimate from Step 1 above. The closer the readings are to the estimate in the table, the more likely it is that your flooring is near the appropriate moisture content for that environment. Remember, when in doubt, it is better to err on the side of caution and lengthen the acclimation period. If the moisture content of the planks has not changed for several weeks in a constant temperature and humidity, that usually means that the product has acclimated.



Interpreting Moisture Content Readings for THERMORY® Salsa and Tango ASH

		Α	в	С	D	Е	F	G	н	I	J	κ	L	М	Ν	Ο	Р	Q	R	S	т
	RH																				
	°F	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	98%
1	30	0.8	1.5	2.1	2.6	3.1	3.5	4.0	4.4	4.9	5.3	5.8	6.3	6.9	7.6	8.3	9.2	10.4	11.8	13.6	15.1
2	40	0.8	1.5	2.1	2.6	3.1	3.5	4.0	4.4	4.9	5.3	5.8	6.3	6.9	7.6	8.3	9.2	10.4	11.8	13.6	15.1
3	50	0.8	1.5	2.1	2.6	3.1	3.5	4.0	4.4	4.9	5.3	5.8	6.3	6.9	7.6	8.3	9.2	10.4	11.8	13.6	15.1
4	60	0.7	1.4	2.0	2.6	3.0	3.5	3.9	4.4	4.8	5.3	5.7	6.2	6.8	7.4	8.2	9.1	10.2	11.6	13.5	15.0
5	70	0.7	1.4	2.0	2.5	3.0	3.5	3.9	4.3	4.8	5.2	5.7	6.2	6.7	7.3	8.1	9.0	10.0	11.5	13.4	14.9
6	80	0.7	1.3	2.0	2.5	3.0	3.4	3.8	4.3	4.6	5.1	5.5	6.0	6.6	7.2	8.0	8.8	9.9	11.3	13.2	14.7
7	90	0.7	1.3	1.9	2.4	2.9	3.3	3.8	4.1	4.5	5.0	5.4	5.9	6.4	7.1	7.8	8.6	9.7	11.1	13.0	14.6
8	100	0.7	1.3	1.8	2.4	2.8	3.2	3.6	4.0	4.4	4.9	5.3	5.8	6.3	6.9	7.6	8.5	9.5	10.9	12.8	14.3

Specific Gravity Setting for THERMORY® Ash or Oak = 0.57

PLEASE NOTE: Due to the effects of the high-heat aging process, THERMORY® Hardwood Floors typically acclimate at a lower equilibrium moisture content than conventionally dried, solid hardwood floors. The reference table above and the instructions to the right are provided to aid you in approximating the appropriate moisture content of your THERMORY® Flooring product relative to the temperature and humidity of the acclimation environment.

Please keep in mind that while these figures are useful as approximations, the actual equilibrium moisture content of individual pieces can vary from the chart above. If you are in doubt as to whether or not the moisture content of your product has reached equilibrium, it is best to lengthen the acclimation period If the moisture content of the planks has not changed for several weeks in a constant temperature and humidity; this usually means that the product has acclimated.

To minimize the effects of dimensional change caused by fluctuations in moisture content during use, we recommend that you use air conditioners and/or humidifiers to keep the indoor environment as constant as possible within the range of $55^{\circ}-80^{\circ}F$ and 25%-65% RH.

TO GET THE MOST ACCURATE RESULTS, WE RECOMMEND THAT YOU USE A PINLESS (<u>NOT PROBE</u>) METER TO MEASURE THE MOISTURE OF YOUR THERMORY® PRODUCTS.

How to Interpret Moisture Content Readings

- Determine the temperature and relative humidity of the acclimation environment with a thermometer and humidity meter. Using the table above, estimate the target equilibrium moisture content by finding the intersection of the row and column that correspond to the temperature and humidity of the room. (For example, in the case of THERMORY® Salsa and Tango Ash, if the room is 70°F and 35%RH, look for the intersection of row 5 and column G. The corresponding estimate for equilibrium moisture content is 3.9%.)
- Adjust the specific gravity setting on your moisture meter to <u>0.57</u>. If you are unable to input the specific gravity by number, choose a species setting that corresponds to a specific gravity of 0.57. (On many meters, Black Maple corresponds to 0.57, but when in doubt, contact your moisture meter manufacturer.)
- 3. Measure the moisture content of the product according to the manufacture's instructions provided with your moisture meter.
- 4. Compare the readings on your moisture meter to the estimate from Step 1 above. The closer the readings are to the estimate in the table, the more likely it is that your flooring is near the appropriate moisture content for that environment. Remember, when in doubt, it is better to error on the side of caution and lengthen the acclimation period. If the moisture content of the planks has not changed for several weeks in a constant temperature and humidity, that usually means that the product has acclimated.



Troubleshooting Moisture Content Measurements

As a result of the high-heat aging process, THERMORY® Hardwood Floors typically exhibit lower equilibrium moisture content (EMC) than conventionally dried woods. This is not a defect. Lower EMC is one of the key characteristics that bring about performance enhancements in our product.

Because most conventional moisture meters are optimized to work only within a limited range characteristic of conventionally dried woods, there is little need for them to measure moisture content under 5%. Since THERMORY® Flooring typically equalizes at moisture content between 3.5% and 6%, it is important to be able to obtain moisture readings under 5%.

Before attempting to check the moisture content of your THERMORY® product, confirm that your moisture meter has a sufficient range to measure moisture content as low as 3% for specific gravities around 0.60. Some lowerend meters have difficulty reading moisture contents below 5%.

We recommend that you use a pinless (a.k.a. "dielectric") meter and <u>NOT</u> a probe (a.k.a. "pin") meter. It is very difficult to get meaningful or reliable readings on THERMORY® materials from probe meters.



The Wagner MMC220

Though other pinless meters may work, we recommend model MMC220 manufactured by Wagner Electronic Products, Inc. (www.wwwagner.com). The Wagner MMC220 accurately displays digital moisture readings to a tenth of a percent, provides sufficient range to handle the lower moisture content readings of THERMORY® flooring, and features an adjustable specific gravity setting that eliminates the need to reference charts for different species.

If, after confirming that your moisture meter is suitable, you encounter difficulties, please review some of the tips below.

When the moisture meter shows a reading of 0% or no reading at all...

- Confirm that your specific gravity (species) setting matches the setting recommended on pages 3-4 of your THERMORY® Owner's Guide. If the specific gravity on your meter is set too high, it may calculate an MC below 3% making it unreadable.
- Make sure that the sensor plate on the underside of your moisture meter is in complete contact with the surface of the plank. The meter will display a lower reading if the plate is not flush with the surface.
- Compare the relative weight of the piece to other planks. As with all wood materials, there can sometimes be considerable variation in density from plank to plank. If a plank is less dense than average, the meter will display a lower reading. If the piece feels a bit lighter than the others, try adjusting the specific gravity setting down by a point or two. Often times this is enough to get a reading.
- Consider the orientation of the meter and the location you are measuring on the plank. As the center of the plank is most often drier than the edges, try to position your meter perpendicular to the length of the plank to capture a greater portion of the width. Also, the middle of the plank tends to be drier than the ends. Watch for areas of lower density or dark hardwood, which can also cause lower readings.
- If, after all of this, you still cannot get a reading, set the plank aside and allow it to further adjust to the climatic conditions of the room. Then come back after a few days and try again. Often with a few days of acclimation, you will be able to get a reading.

When the moisture content reading on certain planks is unusually high compared to others...

- Compare the relative weight of the piece to other planks. As with all wood materials, there can sometimes be considerable variation in density from plank to plank. If a plank is denser than average, the meter will display a higher reading. If the piece feels a bit heavier than the others, try adjusting the specific gravity setting up by a point or two. Often times this is enough to get a get a more accurate reading.
- Watch out for knots and pockets of high density in the same plank. These locations will show a higher MC reading than the rest of the piece.



Finishing

THERMORY® Hardwood Flooring is an unfinished product. No surface coating has been applied at the factory. Finish is most typically applied at the jobsite after installation.

We do not recommend using THERMORY® Hardwood Floors in an unfinished state without applying some kind of surface coating. Flooring finish helps to improve the wear ability of the surface and brings out the deep and rich color tones inherent to the wood. It also retards short term fluctuations in moisture content, which can lesson the effects of dimensional change in service.

As each kind of finish has its own pros and cons, you should consult with your finishing contractor prior to installation to select the kind of finish that best suits your practical and aesthetic needs. Although THERMORY® Flooring has proven to be a good substrate for most kinds of finish; site finishing contractors should consult with their coating supplier prior to application to ensure that they select a coating that will perform well on heat-treated wood. Sending sample pieces to the coating manufacturer for testing prior to first-time applications may also be advisable.

THERMORY® Flooring comes cleanly planed and presanded. Nevertheless, as this product has beveled edges, contractors may still find it necessary to apply a light sanding prior to the application of finish to even out any subtle height differences among planks. As the sanding dust is very fine, we recommend that installers use a high quality dust containment system throughout the sanding process and wear a dust mask.

As a result of the all-natural heat treatment process that gives THERMORY® Hardwood Floors their aged look and enhanced performance, the color of the wood darkens. This darkening is a permanent property of the wood itself and not the result of any kind of superficial chemical treatment. The darker color allows you to achieve a richly colored finish without the need for stain. Simply apply a transparent flooring finish to bring out the deep natural colors of the aged wood.

While it is possible to modify the color with stain, the resulting finish tends to cover up the natural beauty of the wood. Also, in the case of the THERMORY® Manipuri Birch product (as with many conventionally dried Birches) you may experience blotchiness after staining due to differences in grain absorbency properties from area to area within the same plank.

Before staining, contractors should consult with their stain supplier and do sufficient testing prior to installation to ensure that the stain will produce the desired result.

The darker color resulting from the thermal process is consistent from surface to core, so you can renew the color of your floor by sanding down and refinishing the surface. Before refinishing, confirm how much wear layer is left on the plank and adjust your sanding depth accordingly to ensure the desired result.

As with all wood floors - conventionally dried or otherwise - the color of the surface will change slightly over time as a result of oxidation and/or prolonged exposure to sunlight. This is not a defect, but a natural property of wood. Different from many conventional hardwoods, the color of THERMORY® products becomes slightly lighter (not darker) over time. To minimize the effects of color change, be sure to consult with your finishing contractor and select a finish that will help to preserve the natural color of the wood over time. While color change to some degree is inevitable, some finishes can slow this process. A finish with a UV protection can be used. It is also a good idea to rotate rugs and furniture to ensure even exposure to light throughout the room. To restore the floor to its original appearance, sand off the finish to reveal the original color from beneath and refinish the floor.

Maintenance and Care

With proper care and maintenance, you can expect to enjoy the beauty and reliable performance of your THERMORY® Hardwood Floor for many years to come.

The better you care for and maintain your wood floor, the longer it will last. Below are some tips that will help you extend the life and beauty of your product.

• To clean and maintain the finish on your floor, be sure to use the cleaning and maintenance products recommended by the finish manufacturer and follow their instructions on long term care. As recommendations differ from manufacturer to manufacturer, be sure to carefully read the product documentation for the finish you are using and keep a copy on file for future reference. Cleaning products made for tile or vinyl floors are rarely compatible with wood floors and finishes. Avoid cleaners that might abrade the finish or the surface of the wood.



- Do not allow your floor to become exposed to water as it may damage the finish, adhesive and/or cause irreparable damage to the wood. Never wet mop your floor. Wipe up spills and standing water as quickly as possible. Make sure to maintain and repair any plumbing, appliances, or structural fixtures that might leak water.
- Install soft protectors on furniture legs to prevent scratching, scuffing and denting. When moving furniture, try to pick it up completely to void scraping the feet across the floor.
- Avoid walking on your floor with athletic cleats, high heals, tap shoes or any footwear in need of repair.
- Keep the floor free of sand and dirt by dry mopping the floor regularly. Lay walk-off mats in front of doorways leading outside.
- Lay down area rugs in areas of high traffic and in front of sinks. Rugs should be moved periodically if area is exposed to regular sunlight to minimize the effects of color change over time.
- Repair damaged areas of your floor according to the instructions provided by the finish manufacturer. Small scratches may be spot sanded and refinished. Larger scratches may require professional repair.
- Maintain proper humidity levels within your home to minimize the effects of dimensional change. We recommend a constant relative humidity within 25%-60%. Use climate control (air conditioners, humidifiers, etc.) as needed.

1. <u>Limitations</u>: Each piece of the flooring is as unique as the trees from which they are made. Samples and/or photos are made available only for representation of the general nature of the flooring and cannot be relied upon as a of product appearance after installation. Natural or unique characteristics of the product such as knots/knot holes, color variations, grain deviations, mineral streaks, cracks, drying shakes and openings in the surface are not defects and will not trigger any obligations by Thermory USA, LLC. No obligations are provided for variations in the product or normal minor differences between color samples and the color of installed floors. a. <u>Failure to Inspect</u>: Given the uniqueness of each piece and each plank of THERMORY® product, the entire delivered product must be inspected by the installer and/or the purchaser prior to installation. Thermory USA, LLC shall have no obligation and no liability resulting from the installation of flooring that is objectionable or undesirable based on the character traits of the wood or on milling defects once it is installed. Installation of the product constitutes acceptance of all character deviations and occurrences in the product and such character deviations and occurrences shall not be considered a failure of the product which would otherwise trigger any obligations by Thermory USA, LLC.

b. Failure to Properly Install: If the original installation of THERMORY® product is completed by anyone other than a professional installation contractor, Thermory USA, LLC shall have no obligation for its products that have been improperly installed. "Improperly installed" shall include, but not be limited to. a failure to follow both the National Wood Flooring Association recommended installation procedures and THERMORY®'s Supplementary Notes on Acclimation included in the Guide to Owning THERMORY® Harwood Floors. These standards include, but are not limited to: (i) proper testing of moisture content of the product and subfloor prior to installations; (ii) proper adjustment of the temperature and humidity of the jobsite prior to delivery of the product; (iii) a 48 hour minimum acclimation period for the product; and (iv) a dry subfloor prior to installation. Given the nature of the product, Thermory USA, LLC shall have no obligation or other liability if the product is installed using a subfloor other than 5/8" thick or greater performance rated plywood, or 3/4" thick or greater performance rated OSB. NWFA approved fasteners must be used in accordance with their recommendations for nail placement. Please reference the recommendations according to the NWFA guidance to installations over concrete subfloors.

c. <u>Improper Environmental Conditions</u>: As a natural product, THERMORY® floors are sensitive to the relative humidity of the environment. The product must be transported and stored in a dry environment. No exposure to moisture of any type should be permitted and the product must not be stored on concrete surfaces which have not have had time to dry and cure properly. If the floor is being installed on concrete, it is recommended that the product have time to acclimate over the concrete floor it is being installed over. Before, during and after installation, the humidity in the



installed environment must be continually maintained in a range of 25%-60%. Air conditioning, dehumidification or humidification may be necessary, to control the environmental humidity as too much humidity may cause excessive board swelling and insufficient humidity may cause excessive board shrinkage. Failure to follow these humidity guidelines will nullify any responsibility by Thermory USA, LLC, including any damage caused by shrinkage or swelling of planks. Minor swelling and shrinkage (possibly resulting in cupping, crowning and gaps between planks) within the range of 25%-60%, even after proper acclimation, is considered normal and is not a defect. Further, normal exposure to sunlight may change the color of the product as it ages. THERMORY® Hardwood Floors naturally lighten with exposure to sunlight and will not be considered a failure of the product. Area rugs should be moved occasionally as they block sunlight and may give the appearance of discoloring under the rug. Such discoloration is not a product defect. We do approve THERMORY® Hardwood Floor over radiant heating and for use over concrete. This is limited to widths of 5" or less for Salsa treatment and 6" or less for Tango treatment levels with Ash only. However we do not approve this product over electric radiant heating systems. If you decide to install this product over a radiant heat system, it should only be a subfloor water system or an in-floor gypcrete system. Water in-feed temperatures should at no point reach temperatures equal to or greater than 100 degrees Fahrenheit for any amount of time.

d. <u>Abuse or Misuse</u>: Thermory USA, LLC shall have no obligation or liability for damage caused by elements including, but not limited to, the following: shoes (high heals, tap shoes, etc.) sports equipment, furniture, cleaning equipment, wet mopping, wheelchairs, impact, pet claws, abrasion or from normal wear and tear. Further, this does not apply to damage caused by moisture penetration, flooding, leaky plumbing, overflowed tubs or sinks, washing machines, dishwashers, weather conditions or any similar damage. Finally, Thermory USA, LLC is not responsible for damage caused by or related to insect infestation of any kind.

e. <u>Alterations or Changes in Composition of Product</u>: Any claims will be nullified by any alterations to or changes in composition to THERMORY® products by anyone including, but not limited to: purchaser and their installers, by whatever means or methods employed by them. This limitation includes any failures of flooring finish or any incompatibilities of flooring finishes with the substrate. 2. <u>Claim Procedure</u>: To file a claim, the original purchaser must first contact the THERMORY® dealer where the original purchase was made. If the dealer is unable to satisfy the claim, contact us at Thermory USA, LLC 1213 Wilmette Ave Suite 208 Wilmette, IL 60091. Claims must be filed within 90 days of original purchase, and information verifying date of purchase, the purchase price and the date of installation will be required along with proof of who installed the Thermory product. Thermory USA, LLC. reserves the right to have a designated THERMORY® representative inspect the floors and remove samples for technical analysis.