

Radiant Floor Heating Guidelines

Only certain collections of NADURRA Bamboo Flooring are warranted over radiant floor heating systems. Please refer to each collection's Installation Guidelines to make your determination.

IMPORTANT: Nadurra Wood Corp. provides guidelines only for radiant heating systems. As there is a wide range of systems on the market, and each has its own characteristics, it is the responsibility of the owner/installer to confirm the suitability of any radiant heat system for the intended end use. The selection and use of any radiant heating system is at the sole discretion and responsibility of the owner/installer.

The following guidelines must be followed:

- 1) Purchase only the specific products that are warranted over radiant floor heat. Please check with your distributor.
- 2) If gluing down, use NADURRA's moisture resistant adhesives ADU-7 or ADU-8. Follow the manufacturer's guidelines carefully.
- 3) Use a professional hardwood flooring installer and follow all manufacturer's installation and special radiant guidelines. Follow NADURRA's relevant Installation Guidelines for your particular product and NADURRA's Care & Maintenance Guidelines. Also follow the NWFA's Radiant Heat Installation Guidelines, Section III, Chapter 8. Your installer should have access to these documents. Look for installers who are members of the Radiant Panel Association: www.radiantpanelassociation.org
- 4) Most radiant heat systems do not have a humidification system. Due to the dry heat that radiant heating systems create relative humidity must be maintained at 35 - 55% all year long in the installation environment. Add humidification to maintain this level and to ensure that the warranty conditions are met.
- 5) Expect some seasonal shrinkage during the heating season. Wood and bamboo are natural products and will expand and contract with changes in temperature, relative humidity and season. This will result in small amounts of gapping to occur in width and length of the flooring boards. This is not a product defect.
- 6) Radiant floor heating systems must never produce temperatures over 27°C (81°F). Note that rugs on the wood or bamboo floor could increase the surface temperature by up to 3°F. The maximum tube temperature out of the boiler should be 54°C (129°F).
- 7) Our products are warranted over hydronic (water) radiant systems only. The system must include in-floor temperature sensors and an outdoor thermostat that monitors for anticipated temperature changes. Temperature controls should be in the zone where the hardwood is installed. In a multi-dwelling situation, each unit's water temperature must be individually monitored. While temperature does not harm the wood, it does affect its moisture content. As the temperature goes up, the moisture content generally goes down. Heating the wood too much will cause it to shrink and gaps will occur between the boards. Once the temperature is lowered, the moisture returns and the gaps close up. This is why a humidifier may be necessary in the room. Operate the system at the lowest possible temperature required to achieve a comfortable living environment. A lower heat setting will also ensure a more even heating throughout the zone.
- 8) Thermal sensor stickers must be installed next to the heating boiler and under the flooring. The installer and homeowner should both keep accurate records with their original proof of purchase that include the installer's contact details, certifications, date of installation, product (flooring, concrete and radiant system) details, dealer from whom the flooring was purchased and a detailed drawing plan of where the sensors are located under the flooring and next to the boiler. Do not remove these sensors. Only an approved inspector from the manufacturer may remove the sensor. The Boiler Sensor must be installed around the main tube coming out from the heating unit inside the home. The Concrete/Subfloor Sensors must be installed face down and on top of the dry and conditioned subfloor prior to installing the vapor barrier, underlay or adhesive. Place 5 sensors per 1000 sqft of flooring installed. One Subfloor Sensor should be placed within a foot radius of the tube that feeds the main heating area and others should be placed various places within 48" of walls and vertical obstructions. If floating the floor, for ease of removal by an inspector, the sensor may be wrapped first in paper, turned faced down, then both wrapped in a long strip of folded over duct tape that runs under the flooring and 2-3" up the wall (to be hidden by the base mouldings). If gluing down, you may place the sensor face down in a folded piece of paper, place a coin beside it and cover both with duct tape. The coin will help the inspector locate the sensor with a metal detector later.

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- 9) New concrete subfloors must be allowed to properly cure for a minimum of 60 days prior to operation of the radiant system. The maximum difference between the moisture content of the subfloor and the flooring material must never exceed 2%. Subfloors should have proper moisture tests according to Moisture Test Procedures in NWWFA's Hardwood Flooring Installation Guidelines; Section V. Tests include the Calcium Chloride, Polyfilm or In-Situ Relative Humidity methods. Moisture content for concrete must not exceed 3lbs/1000 sq.ft per ASTM 1669-89 (Calcium Chloride Test) or 75% RH (In-Situ Relative Humidity Test). Older concrete should have the radiant system turned on for a minimum of 72 hours and then moisture tests performed. The radiant heat system must have been tested and in operation 45 days at 2/3 of maximum output prior to installation, so the concrete can best release moisture.
- 10) Check with radiant floor manufacturer if the system should be shut off or reduced before installation begins, and also when the system should be run after the installation. Please be aware that the instructions might be different if a full-spread or tongue-and-groove adhesive is used. Check with the adhesive manufacturer's instructions. If using NADURRA'S ADU 7 or 8 urethane, the system should be turned off 3 days before and after installation
- 11) Create a temperature and relative humidity (35-55%) environment as close as possible to actual living conditions. In general, reduce the thermostat to 18°C (65°F) four (4) days before installation. Two days after the installation, slowly raise the temperature of the heating system to its normal operation level over a period of seven days.
- 12) Do not raise or lower temperature of subfloor heat system by more than 3°C (5°F) per day when adjusting the temperature of the system after installation or at the beginning of a new heating season. This ensures that the wood acclimates properly and is not adversely affected by the quick introduction of excessive heat. The temperature setting should always remain within 15°F of regular operating level and should never be turned completely off.
- 13) When changing a floorcovering, such as carpet, to bamboo or hardwood flooring and/or using an existing radiant system, make the manufacturers recommended adjustments for the new flooring.
- 14) Please fill out the attached form and return to NADURRA after completion of the installation.

RADIANT HEAT REGISTRATION FORM

I have read and understood the necessary guidelines for installing a NADURRA floor over Radiant in-Floor Heating systems.

Customer Name: Telephone: Email:

Dealer Name: Telephone: Email:

Address of installation:

NADURRA or Dealer Invoice Number: Date of Install:

NADURRA Product and Batch Code:

Concrete Manufacturer and Product code:

Radiant Heat System Manufacturer and Product Code:

Customer Signature: Dealer Signature: