

# Radiant Heat Guide

AAYERS Hardwoods Flooring Collections is an exceptional choice for installation over hydronic radiant heat systems.

By adopting CARB II compliant plywood and Made in Germany internal glue system, our high-quality engineered flooring systems are very dimensionally stable as opposed to solid hardwood, and is thus ideal in radiant heat applications. Please follow this guideline to guarantee the best performance for your flooring.

## PRODUCTS SUITABLE FOR INSTALLATION OVER RADIANT HEAT

- \*Home Collection -All (Excluding Brazilian Cherry, Tigerwood, Acacia)
- \*Home Style Collection -All (Excluding Acacia)
- \*Advantage Collection -All (Excluding Hickory)
- \*Cosmopolitan Collection -All (Excluding Hickory, Brazilian Cherry, Tigerwood)
- \*Bighorn Collection -All (Excluding Hickory)
- \*Rocky Ridge Collection -All (Excluding Hickory)
- \*Santa Fe Collection -All (Excluding Hickory)
- \*Air Collection -All

**NOTE:** Solid Hardwood Flooring excluded from Radiant Heat Installation Method.

## RADIANT HEAT SYSTEMS

Hydronic radiant heat is a system that uses warm water driven through a tube network. Energy is released to warm the room and cool water returned to the boiler to be reheated.

In-floor heating systems must be water based, and designed to prevent the surface temperature of the hardwood floor from exceeding 80° F. A fail-safe system should be included to ensure this.

**NOTE:** Integrated Temperature Sensors MUST be installed for warranty coverage. Failing to follow this guideline the warranty becomes void for any/all applicable AAYERS Hardwood Flooring engineered flooring.

## BEFORE YOU START

Hardwood flooring should be the last item installed on the project. All windows and doors must be in place and the structure completely weather tight. If the tubing is encased in lightweight concrete, the concrete must be completely dry. Kitchen cabinets must be in place prior to installation of the floor. The relative humidity conditions must be between 35% and 50% (depending on conditions, humidifier or dehumidifier might be required), and the temperature between 60 and 80 degrees F.

## TURNING ON RADIANT HEAT SYSTEM

Power on the Radiant Heat System at least three weeks prior to installation of the hardwood flooring. Gradually brought up to 70° F and then at 80° F for 3 more days. The home should be aired out briefly everyday to allow excess humidity from the thermal mass to exhaust moisture out of the structure.

**NOTE:** Once systems have reached optimum conditions AAYERS Hardwood Flooring should be brought to jobsite, **NOT before.**

## TEMPERATURE/RH REQUIREMENTS

You MUST maintain the environment temperature 60-80 degrees Fahrenheit and the relative humidity between 35-50 percent respectively.

Moreover, make sure that the floors moisture content does NOT go below 6%. It is critical that the relative humidity does not drop below 35%, otherwise you may experience the following condition(s) with your floor: gapping/shrinking, checking, cracking, splitting, warping, bowing and wear-layer delamination.

## THERMOSTATS

It is recommended to have three thermostats: one to control the tubing water supply temperature, one to control the room temperature with different zone controls and one for outside the house.

This three-thermostat system is kindest to wood flooring because it moderates the floor temperature. People tend to crank up the heat inside the structure which could shock your floor resulting in cracking, splitting, wear-layer delamination, shrinking, gapping, cupping, buckling etc. Subtle changes to the setting 2 to 3 degrees up or down in a 24-hour period is recommended, otherwise you may experience the conditions mentioned above.

## FLOORING ACCLIMATION PROCESS FOR RADIANT HEAT

Flooring should be removed from packaging and the floor racked out so the joints are loosely fitted together. Run radiant heat at a temperature and humidity equal to anticipated living conditions. Avoid high and low temperature and humidity swings during acclimation process. Process takes a minimum of 5 days, maximum 10-12 days.

Room temperature should be between 60 and 80 degrees F and not vary more than 15° F season to season, with relative humidity range between 35% to 50% should be maintained.

## RECOMMENDED INSTALLATION METHODS FOR DIFFERENT TYPES OF HYDRONIC SYSTEMS

**NOTE:** AAYERS Hardwoods Flooring recommends floating installation method over radiant heated subfloors. The tongue and groove must be glued together using a D3 rated PVA glue adhesive.

## CONCRETE

If radiant heat system has a concrete subfloor, in addition to underlayment a 6 mil vapor barrier should be installed. Concrete rated at a tensile strength of 3000 psi or greater, you can Glue Down. Adhesive must be approved by adhesive manufacturer for use with radiant heat and follow all adhesive manufacturer's installation specifications. Concrete rated less than 3000 psi tensile strength must use floating installation method.

### **System 1-Lightweight Concrete Thermal Mass:**

The heating tubes are installed and lightweight concrete poured over the tubing. Concrete acts as a radiator to provide even distribution of heat.

The lightweight concrete moisture content must not exceed 1.5% as measured with a Tramax Moisture meter. This is the most traditional method.

**Installation method: Floating only.**

### **System 2- Aluminum Hangers:**

The tubing is suspended in aluminum hangers with channels to accommodate the tubing. An efficient conductor of heat, these aluminum hangers radiate heat evenly and effectively upwards. This system removes the need for a concrete thermo mass and eliminates the corresponding weight and elevation gain it produces.

**Installation method: Floating only.**

### **System 3- Channeled Aluminum Board:**

Wood subfloor panels are channeled and an aluminum transfer sheet vacuum pressed to the surface. The water tubes are then pressed into the channels. The tubing in the channels transfers heat to the aluminum and generates very even results. Since there is less loss of thermal energy, this system is more efficient than others.

**Installation method: Floating only.**

### **System 4- Sleeper System:**

Sleeper system is applied to subfloor. Heat tubing is then run between the sleeper system. A plywood deck/substrate with an aluminum sheet applied to the bottom side (towards tubing) is attached to the sleepers.

**Installation method: Floating only.**

## **FLOATING INSTALLATION ADVANTAGES**

\*No nailing required, eliminating the risk of puncturing the in-floor tubing that exists with nail-down applications.

\* The floor is not glued directly to the thermal mass,

eliminating potential loss-of-bond issues.

\* Floor Muffler or equivalent pads do not add substantial R Value resistance to the installation and keep the system energy efficient. This, combined with the thinner overall thickness, our engineered floors have lower R Values than traditional, solid wood floors.

## **RUG AREAS**

Depending on the thickness of the area rug, a situation can develop where the floor could be overheated. However, a well designed radiant system is usually operating well below the maximum of 80° F. After rugs are in place, ask your radiant heat contractor to turn back the rugs and measure the surface temperature of the floor with an infrared surface thermometer to determine if the rug is making the floor too hot. Make adjustments to turn down the heat down as necessary.

**NOTE:** Just like area rugs, anything that sits on top of the floor can trap heat (examples: book cases and entertainment units). This should not be any more cause for alarm than an area rug.

## **GUIDELINE DISCLAIMER:**

Statement/disclaimer of non responsibility (voids any/all applicable warranties offered by AAYERS) pertaining to labor/material costs and or damages caused to any/all cabinets, furniture, counter tops, built-in ranges/stoves, moldings/trims, fixed furniture/wall units, wall paper, painting, specialized plaster coatings, etc., as a result of removal of the flooring, cupping, buckling, twisting, bowing, shrinking, lifting, moving etc. AAYERS reserves the right to void any/all warranties if and when any of the above mentioned or non mentioned item(s) are installed over the surface of a AAYERS floor where the floor experiences a manufacturer or non manufacturer related failure, which requires the removal of the flooring in part, or in its entirety. AAYERS flooring products MUST NOT be installed prior to the installation of cabinetry and or any other fixed furniture etc., as outlined above. The general contractor/flooring contractor/designer/homeowner/renter etc., assume ALL responsibility for any/all damages/costs incurred if flooring is laid prior to the installation of the above mentioned or non-mentioned items. Said parties absolve AAYERS from any/all liability/responsibility of any claims now or in the future.