



What is Radiant Heat?

Radiant Heat is a system designed to warm floors during the cooler times of the year. It has been growing in popularity in North America in both residential and commercial buildings. Radiant Heating does not use hot air or any type of air circulation since heated air will rise and heat in an upward direction instead of across the floor. Radiant heat is considered “Omni-directional” and heats the entire floor in all directions in a far more efficient and productive way than the use of hot air. The Radiant Heating system typically consists of tubing installed in the concrete or subfloors before the installation of the wood flooring.

How to install Wood Flooring on Radiant Heat

The most important part of successful installation of wood flooring over a Radiant Heat system is the drying of the slab or subfloor prior to installation. The slab or subfloor can be easily dried by running the radiant heating system before installing the floor. For drying, run the system according to the recommendation of the radiant heat supplier and make sure the subfloor or slab is dry by the time of installing the wood flooring.

Subfloors must have proper moisture testing performed according to NWFA moisture test procedures.

Failure to dry the slab before installation will result in expanding and contracting of the floor, cracking, cupping, and bowing.

Once the slab is dry the system must be turned off or turned down to a slab surface temperature of 68°F or 20°C before the material can be glued down. Any time the system is turned on, the heat must be raised gradually so the moisture that was collected in the floor while the system was off will dissipate gradually and the movement of the floor will be minimal.

Radiant Heat and Different Styles of Wood

The primary goal is dimensional stability, to minimize the effects of expansion and contraction. Certain styles and species of wood endure the changes of temperature and moisture caused by Radiant Heating better than others. Engineered wood flooring is more stable than solid wood. Certain species of wood such as American Cherry, American Walnut, mesquite, and teak, are known for their stability and handle the Radiant Heating system better than other species such as maple and Brazilian Cherry. Quarter

sawn or rift sawn flooring is more stable than plain sawn flooring. Finally, narrow boards deal better with movement than wide boards and individually expand and contract less as well. Make sure that the wood flooring product to be used is approved by the manufacturer for installation over radiant heat.

Things to Keep in Mind during Glue down Installation

- Install material only over approved subfloors for that specific flooring material.
- Materials may be glued to approved subfloors, but gluing is not recommended on lightweight concrete without first using a primer.
- Heating system must be turned off at least 24 hours before installing.
- The surface temperature for installation must be between minimum 60° F or 15.5°C and maximum 68 F or 20°C.
- Expect some separation between boards due to seasonal heating.

Installing Over Radiant Heat Using Wakol Adhesives

Follow wood flooring manufacturer's recommendation for each specific wood flooring product. Not all flooring products or species are suitable for installation over radiant heat.

All Wakol adhesives, primers and moisture barrier systems are approved to be used over radiant heated substrates when the surface temperature does not exceed 85°F or 29.5°C.

For installation over lightweight concrete, a primer must be used before adhesive is applied. *See table.*

For concrete and light concrete subfloors where moisture is a concern a moisture barrier must be applied prior to the application of the adhesive; see table below. Do not use any moisture barrier on top of moisture sensitive substrates, since these substrates will be damaged by blocked moisture.

The surface temperature for installation must be between minimum 60° F or 15.5°C and maximum 68°F or 20°C. This process ensures that the adhesive will provide the necessary open time to install the floor. During the installation, occasionally lift a newly installed plank to ensure at least 90% adhesive transfer.

Wakol suggests using a primer on radiant heated concrete to achieve the best installation results.

Adhesives for Wood Flooring on Radiant Heat in Concrete/ Lightweight Concrete

	Primer	Primer 1 Coat	Moisture Barrier
Wood Flooring Adhesive	WAKOL D 3073 Universal Primer*	WAKOL PU 280 Moisture Barrier*	2 Coats WAKOL PU 280 Moisture Barrier*
WAKOL MS 260 Wood Flooring Adhesive, firm- flexible*	not recommended	recommended	Recommended
WAKOL PU 225 Wood Flooring Adhesive*	recommended	recommended	Recommended
WAKOL K 410 Wood Flooring Adhesive*	recommended	not recommended	not recommended

We only recommend installations on radiant heated concrete up to 6 pounds per 1000 sq.ft. / 24 hours as measured by calcium chloride test, even with the use of WAKOL PU 280 moisture barrier.

Adhesives for Wood Flooring on Radiant Heat below OSB/Chipboards/Plywood

	Primer	Primer 1 Coat	Moisture Barrier
Wood Flooring Adhesive	WAKOL D 3073 Universal Primer*	WAKOL PU 280 Moisture Barrier*	2 Coats WAKOL PU 280 Moisture Barrier*
WAKOL MS 260 Wood Flooring Adhesive, firm- flexible *	not recommended	recommended	not recommended
WAKOL PU 225 Wood Flooring Adhesive*	recommended	recommended	not recommended
WAKOL K 410 Wood Flooring Adhesive*	recommended	not recommended	not recommended

* Qualifies for LEED credit 4.1 Low Emitting Adhesives * this information is based on the USGBC v3 2009 rating system and should be checked against any more current information available before use or specifying.