

Radiant floor heating and thermal performance

Every type of Bauwerk parquet can be installed over radiant floor heating.

Wood is a poor conductor is therefore has an insulating effect. As a result, floors with radiant heating are warm to the touch. Therefore, we suggest using bonding for an optimal heat flow.

Radiant floor heating systems are offered by the producers as complete systems. They are also suitable for the installation of parquet. The system must be equipped with a dew point sensor and the minimum surface temperature in cooling mode mustn't fall below 19 °C (also to ensure the thermal comfort of the room).

Shrinking and swelling / moisture

Moisture is harmful to every kind of wood floor. The subfloor's moisture content must be checked before installing the parquet. Due to their open cell structure, certain types of wood have a higher capacity to absorb and release moisture than others. Beech and maple belong to this group. It is important to keep this characteristic in mind when cleaning installed floors. It is generally recommended to apply polish to lacquered surfaces and hardening oils on oiled floors maintenance to protect the floor.

Parquet and radiant Floor Heating Systems

Bauwerk parquet is suitable for installation over electric as well as warm water heated floors.

However, the surface temperature must be controllable and must not exceed a temperature of 27°C (80°F) in any part for the entire life-span of the parquet.

Wood does not draw warmth away from the feet, as you may experience with tile floors, guaranteeing maximum comfort. This is what makes wooden floors so comfortable.

For types of wood highly susceptible to shrinkage and swelling (e.g. beech and maple), larger gaps and holes may appear during seasons when the heat is turned on. By maintaining a healthy room climate of 20-22°C (68-72°F) and a relative humidity level of approx. 40-50% these effects may be prevented or minimized. The use of an air humidifier when the heating system is in use is also recommended for the well-being of the occupants.

Choosing a wood floor

Multi-layer parquet floors are less liable to shrinkage and swelling than solid wood floors. All bonded and floating parquet floors from Bauwerk are suitable for installation with radiant floor heating systems. Without the use of special installation techniques, floors with a thermal resistance of $R \leq 0.15 \text{ m}^2 \text{ K/W}$ are suitable.

Special considerations when laying parquet over radiant floor heating systems

Follow the general installation instructions for Bauwerk parquet :

- » The room temperature must be at least 18 °C (64°F) and the minimum subfloor temperature 15 °C (54°F).
- » For three days after the installation of the parquet, the floor temperature must be exceed 20 °C (68°F).
- » Before and after installation, the relative air humidity must remain below 75%.
- » During the operation of the radiant floor heating system, the temperature of the floor surface must never exceed 27 °C (80°F). High temperatures and/or overly dry and poor room climates will damage the parquet and may lead to gaps, deformations or even the appearance of cracks.

Guidelines for installing parquet on new cement screeds

Test the recently installed radiant floor heating system to ensure it is functioning properly: the installation company must control and record the functioning of the heating system.

However, in this test only the proper functioning of the system is documented. Under no circumstances should the screed be dried for installation based on the required moisture levels (ready for installation).

The floor heating and CM measurements in large part follow specific national requirements (DIN standards, Ö standards, etc.). Therefore, they are imperative in every circumstance.

The following points must be followed in accordance with manufacturing standards and SIA norms:

- » Once the subfloor has reached its final hardness level, the heating system must be turned on for at least 14 days. Subsequently it will be sufficient to run the system at approx. ⅔ of the maximum temperature.
- » Halfway through the preheating period, the heat must be turned up to the maximum temperature for at least two days.
- » One or two days prior to installation, turn off the heat or turn it down, based on the outdoor temperature, so that the surface temperature of the floor does not exceed 20 °C.
- » 1–2 days after the prefinished parquet is installed and approx. 1–2 days after the unfinished parquet has been treated, the heat can be gradually turned up each day by approx. 5 °C. During the installation process the structural expansion joints deemed necessary by the heating engineer must be taken into account.

General instructions

- » Some wood species have a higher level of shrinkage and expansion than others (e.g. Beech, Maple). Gaps may form during the winter season, especially when installed over a radiant floor heating system. This occurrence can be controlled by maintaining a proper room temperature of 20–22 °C (68°- 72°F) and a relative air humidity of approx. 40–50%, especially through the use of an electrical humidifier.
- » Intense sunlight can lead to a natural change in the colour shading of the wood (darkening or lightening).
- » Newly installed exotic woods offer an extremely wide array of shades. However, natural processes such as aging and oxidation will cause these colours to be subdued over time, i.e. the wood darkens and the colour contrasts decreases.