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## Manual for installing Pergo Wood Parquet over floor heating/cooling

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### **General guidelines**

Pergo Wood Parquet can be used in conjunction with ‘low temperature’ floor heating. This is true for underfloor heating systems with heating components - hot water or electric – embedded in the floor.

Pergo Wood Parquet beech and ash floors are NOT suitable for laying on floor heating.

The floor heating must be installed in accordance with the supplier’s instructions and the generally accepted instructions and rules. Of course, the general laying guidelines for parquet flooring without floor heating still fully apply.

The sub-floor must be sufficiently DRY across its complete thickness when installing the floor covering. This is maximum 1.5% according to the CM method for cement-bound floors and maximum 0.3% for anhydrite-bound screed. (Attention! With the latter, the anhydrite ‘milk-skin’ must be removed mechanically before the parquet is glued.) The humidity level will only be achieved by turning on the heating beforehand. In the case of a new building, you must wait at least 21 days between spreading the screed/floor-finish and starting the heating. With newly-spread screed/floor-finish, follow the guidelines of your installer. It should be possible to present a heating record. Ask for it if necessary.

Start the floor heating at least two weeks before laying your parquet. Raise the water temperature in the boiler gradually by no more than 5°C per day to 50°C. If you can leave the heating on for longer, this would certainly be better.

Turn off the heating completely before laying, until the floor temperature has dropped to 18°C.

AFTER laying your floor, you must wait AT LEAST 48 hours before restarting the heating, gradually (5°C per day).

The maximum permitted contact temperature of the parquet is 27°C. The maximum hot water temperature at the boiler outlet is 50°C (if applicable).

ALWAYS change the temperature GRADUALLY at the start and end of a heating period.

The relative ambient air humidity must be kept between 40 and 60%.

Always avoid heat accumulation by carpets or rugs or by leaving insufficient space between furniture and the floor.

Open joints may appear during the heating season.

Pergo Wood Parquet can be glued down or laid ‘floating’. Please note the following remarks.

When using glue, we advise to lay your Pergo Wood Parquet with Pergo Parquet Glue. We refer to the specific laying instructions for laying with glue, which you can find in the general laying instructions. This method gives the highest degree of heat transference and thus ensures the optimum efficiency of your heating system. On the other hand, there is no vapour protection and there is a risk of condensation when there are excessively rapid and excessively large temperature swings. Account should also be taken of small open joints that might appear during the heating season.

The Pergo Wood Parquet can also be laid ‘floating’ on top of a Pergo underlay. However, the heat given off from the floor heating system with the floating method is less and the efficiency is somewhat lower than with the gluing method. On the other hand, using the right kind of underfloor is the perfect solution to avoid problems with rising damp or condensation. The risk of open joints during the heating season is almost non-existent.

With floor heating and cooling systems it is recommended to lay a Pergo underlay with built-in moisture barrier or begin with a separate plastic film of minimum 0.2 mm thick. In this case, use a single sheet of plastic foil, or use several sheets but make sure they overlap at least 20 cm and tape them together.

The maximum allowed heat resistance (R) of a floor covering in combination with floor heating is 0.15 m<sup>2</sup>K/W (EN 4725). In combination with floor cooling the maximum heat resistance is 0,09m<sup>2</sup>K/W.

The table below shows the heat resistances R (m<sup>2</sup>K/W) of Pergo Wood Parquet products with the respective underlay or glue.

		Glued down	Installed floating on						
Thickness		R-Value	Prof. Soundblock: 2 mm	Smart underlay +: 1,2 mm	Smart underlay: 3 mm	Underlay Foam: 0,95 mm	Pergo Silent walk: 2 mm	Moisture block extreme: 2,5 mm	Underlay foam +: 2 mm
Floor			R: 0,053 m <sup>2</sup> .K/W	R: 0,086 m <sup>2</sup> .K/W	R: 0,107 m <sup>2</sup> .K/W	R: 0,045 m <sup>2</sup> .K/W	R: 0,01 m <sup>2</sup> . K/W	R: 0,048 m <sup>2</sup> . K/W	R: 0,059 m <sup>2</sup> . K/W
			Total R: m <sup>2</sup> . K/W						
Pergo: Bornholm - Gotland - Jomfruland - Sjælland - Svalbard - Varmdo	14 mm	0,127 m <sup>2</sup> .K/W	0,18	0,213	0,234	0,172	0,137	0,175	0,186
Pergo Aland	13 mm								

not suitable for floorheating

### **Floor cooling**

Increasing numbers of homes now have systems for both heating and cooling. A combination of heating in winter and cooling in summer can for technical and physical reasons be problematic in combination with organic floorings in general and with parquet in particular.

The instructions for laying Pergo parquet on floor heating without cooling remain applicable without alteration. The use of Pergo parquet accessories, such as glue (if applicable), is also essential.

With regard to floor cooling systems, it is important that an advanced regulation and security system be used to prevent internal condensation (dew point regulation). To prevent damage to the floor, the incoming temperature of the cooling water must not be lowered without limit and it must never fall below the dew point temperature. Lower temperatures lead to condensation in the floor and can cause damage to the parquet, such as cupping, distortions, swelling and joints opening.

A proper safety system includes automatic sensors that detect when the dew point (= start of condensation) is reached below or in the parquet and then switch off the cooling. Room thermostats must never be set to a temperature of less than 24°C. Moreover, the thermostats must never be set to a temperature that is 5°C lower than the room temperature. So, when the temperature is 32°C, the room thermostat should not be lower than 27°C.

The cooling circuit must be provided with a regulator that prevents the cooling fluid from falling lower than 18 to 22°C. This depends on the climate zone in which the floor has been laid. In zones with a high relative humidity, the minimum is 22°C; with average humidity and temperature, the temperature can drop to 18°C.

Failure to follow these instructions renders the Pergo warranty no longer valid.

For floor cooling, a heat-resistance of  $\leq 0.09\text{m}^2\text{K/W}$  is prescribed. The heat-resistance of Pergo Parquet 14mm is about  $0.127\text{ m}^2\text{K/W}$ . So account should be taken here of a certain loss of capacity in combination with one of our underlays.

### **Heating films**

Heating films or other “new” systems that are laid ON the screed/floor finish or wooden base floor cannot be used without extra precautions. Please consider the following extra guidelines.

An underfloor must in this case serve as an equalising medium, heat-insulator and especially for embedding the film elements and electrical connectors as well. The following construction is usually used: first underfloor, then heating film and finally the parquet floor.

The conditions that must be met by these systems is that the heat-distribution is homogenous over the whole floor, so that there are no cold and warm zones, that the heat rises and does not sink, that the maximum contact temperature is no more than 27°C and that the electrical connectors between the panels are sufficiently thin to be sunk into the underfloor mat, but still sufficiently strong and electrically safe, even if condensation or a leak occurs.

A second type of heating system for renovation is a system with hot water pipes or electrical resistances embedded in frames. These are usually polystyrene panels, which may be combined with metal plates. We consider these systems to be more reliable because they are a better guarantee of homogenous heat distribution, there is heat-insulation under the floor heating, there is good contact and a stable base floor under the parquet floor. In any case, the remarks above are still applicable, but we consider them as more feasible.

All these aspects must be examined by the distributor/installer of this heating system. It is their responsibility to ensure that the underfloor heating system has been installed correctly and works in unity with the aforementioned guidelines which must be followed in full. Using these heating films and “new systems” as a primary and only heat source should always be confirmed with the dealer and/or installer of this system. Additional heat sources like radiators could be needed and depends on the power of the heating system and insulation of the building itself.

We trust that the foregoing will provide you with sufficient information. Should you have any further questions or problems, please do not hesitate to contact our technical department.

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