



PROTOCOL FLOOR HEATING

The protocol below is a guideline, we always recommend requesting the heating protocol from the supplier of the underfloor heating. This protocol can be followed at least once after an average of 28 days after laying the subfloor before the RAW Stones are going to be laid on it. There should preferably be 2 days between heating and cooling keeping the temperature at 40°C during these 2 days. The protocol can then be continued according to the steps below.

This protocol applies to the following situations:

- When there is an existing floor heating with tiles on it, the RAW Stones then go over the existing tiles.
- When there is only an existing floor heating without tiles on it but where there is a newly poured underfloor (the RAW Stones go over it immediately).
- When there is a new underfloor with underfloor heating.
- Once the floor has been laid, the firing up protocol must be repeated after 28 days. This applies to EVERY situation, so even when there is an existing floor heating system on which our tiles are laid. It goes without saying that this firing up protocol also takes at least 28 days.

PROCESSING PROTOCOL:

Example cycle, based on 15 °C ambient temperature for the protocol to be used.

PAY ATTENTION:

Place a thermometer on the floor where the firing and cooling protocol is started, so that the surface temperature of the floor can be closely monitored. If the surface of the screed has reached a temperature of 31 °C, the water temperature should NOT be raised further and the cooling cycle must be started immediately.

HEATING UP PROTOCOL:

day 1: water temperature 20 °C
day 2: 25 °C
day 3: 30 °C
day 4: 35 °C
day 5: 40 °C
day 6: 40 °C

COOLING PROTOCOL:

day 7: 35 °C
day 8: 30 °C
day 9: 25 °C
day 10: 20 °C
day 11: repeat or end

Preferably restart the procedure and repeat it several times. If - given the available time - this is not possible, then start using the installation. The floor heating can be put back into operation at least four weeks after the RAW Stones have been installed. This firing up and cooling down protocol should preferably be carried out several times before a floor covering or finishing (plastic floor, tiles, tiles, parquet, laminate, marmoleum, etc.) is applied.

Under floor heating in this firing and cooling protocol is understood to mean a hot water pipe that is included in a floor. The floor must be at least 25mm thick above the water pipe.

RAW STONES

IMPORTANT:

this protocol is a guideline. Always inquire with the supplier of your underfloor heating about their heating protocol. In screeds that have underfloor heating, cracks can occur due to thermal changes in length. To limit that risk as much as possible, it is necessary to bring the floor heating up to temperature slowly and regularly. It is advisable to use the firing and cooling protocol below for this.

A heating and cooling protocol for underfloor heating is based on the water temperature of the heating installation and not on any thermostat temperature in the room concerned. It is wise to continue the process until the water has reached a temperature of 40°C at most. Generally speaking, the water may not become warmer than a maximum of 40°C. Installation companies sometimes indicate 55°C as the maximum temperature. However, this results in a considerably increased risk of cracks and detachment. If it is not necessary to maintain 55°C, it is advisable to adjust the firing protocol to 40°C. Certainly not higher than 55°C. The risk of damage increases enormously!

It is also important that the screed is approximately at final strength. This means that cement-bound screeds are preferably not heated within *28 days*. For calcium sulphate bonded screeds, this may happen a little earlier, depending on the mortar quality. Calcium sulphate has a higher internal flexural strength.

How much earlier is difficult to indicate and is entirely dependent on the circumstances under which the floor is dried. As a rule of thumb, the calcium sulphate floor must not contain more than 3% moisture by weight. This must be determined with a calcium carbide meter. *Please note*, there must be a maximum residual moisture percentage of <1.5% in cement screed floors. For calcium sulphate subfloors this is <0.3%.

Note:

Cracks usually do not occur in the warm-up phase but mostly in the cool-down phase. This phase is therefore actually more important than the heating phase, so the right pace must also be maintained when cooling down. Please note that RAW Stones is never responsible for the (quality) of the subfloor on which our tiles are applied.

THE FIRING UP AND COOLING DOWN PROTOCOL:

- Start with a water temperature that is 5°C higher than the ambient temperature of the relevant room. The water temperature must be read on the heating system.
- Increase the water temperature by 5°C every 24 hours (or longer), until the practically maximum water temperature of 40°C has been reached (see comments above).
- Keep the maximum water temperature stable at 40°C for at least 48 hours.
- Then lower the water temperature by 5°C every 24 hours, until the starting temperature is reached again. More and more often it happens that a floor heating system can also cool. With such a system it is important (especially in the summer at high temperatures) that the cooling cycle is continued until the minimum temperature on the heating and cooling unit is 15°C.
- If sufficient time is available, repeat this cycle several times.
- It is advisable to provide this firing / cooling protocol to the end user / consumer for the benefit of normal use after delivery. The firing up and cooling down protocol must also be after long term standstill of the underfloor heating.
- After the entire RAW Stones floor has been laid, you should certainly wait 4 weeks before switching on the floor heating.
- Please shut down the floor heating at least 48 hours before start placing the tiles. During the placing process also keep the floor heating down.