Regulation of ECOFILM heating foils

Floor heating (ECOFILM F)

For the regulation of floor heating, a thermostat with a floor probe is essential. The floor probe is inserted into the heated surface and, because it cannot be placed between the heating foil and the floating floor, the probe is inserted under the heating foil into the impact insulation. A groove must be cut in the insulation, and sometimes also in the base, so that the probe can fit under the foil and at the same time, there must not be floor insulation between the end of the probe (thermistor) and the heating foil – if there is, the thermostat won't be able to measure the temperature near the foil. As the temperature is approx. 1°C lower on the floor surface than on the heating foil, and the thermostat probe is near the heating foil, the real surface temperature will be lower than the temperature shown on the display of the thermostat (if a digital thermostat is used). The real difference may vary and is dependent on the composition of the floor, the materials used, the air temperature in the room, etc. Therefore, we recommend you find out what this difference is by carrying out a checking measurement. Some types of digital thermostats enable the calibration of the sensor and so the thermostat can display the real temperature after finding the difference and after the calibration of the sensor.
Generally, the regulation of floor heating is used for the maintenance of the floor temperature at a set level, and simultaneously, in the protection of the floor from possible overheating. In order to maintain the warranty, the temperature of a floating floor mustn't exceed a value set by the producer – usually 27°C. Heating foils with outputs of 60 W/m² and 40 W/m² cannot actually reach this temperature in practice at all. However, most producers of floating floors require the use of a thermostat with a limiting probe in order to maintain the warranty and therefore we definitely recommend the installation of a thermostat.
The regulation of a heated floor can have two modes:

- **the heated floor is the main source of heating:** the thermostat measures the air temperature and simultaneously the temperature of the floor. The air temperature has priority – if the room is heated, the foils are switched off even if the floor is cold. The floor probe has the function of a limiting sensor here which doesn't allow the set floor temperature to be exceeded.
- **the heated floor provides thermal comfort:** the thermostat measures only the floor temperature and maintains it at a set value, without any regard to the air temperature in the room.

Ceiling heating (ECOFILM C)

ECOFILM C foils, installed in plasterboard suspended ceilings, are used primarily as the main source of heating. From the point of view of heat transfer, they use the same principle as ECOSUN radiant panels, i.e. they transfer the majority of the thermal energy in the form of infra-red radiation, and therefore the form of regulation is also the same – it

is based on the scanning of the room temperature in the heated room. The temperature scanner (thermostat) should be placed in such a way that it isn't, if possible, within the radiant field of the ceiling structure, and it isn't affected by direct sunlight or any other direct source of heat or cold. It is usually placed on an inside wall at a height of approx. 1.2m above the floor.

Sometimes, ceiling heating is used as a comfortable supplement to zone heating – the heating is installed e.g. only above the sofa in the living room. In these cases, operation of the heating foils is controlled according to the subjective needs of the user and they are therefore switched on manually, sometimes being equipped with a timer which allows them to switch themselves off automatically after a certain period of heating. Of course, even here regulation can be installed which will enable the programming of the period for which the ceiling heating should be in operation and the temperature beyond which the system will switch itself off.

For both systems – floor and ceiling – analogue, digital as well as central regulators can be used. The type of regulation used not only influences the convenience of the setting and operation of heating but mainly (and significantly) the operating costs of the whole heating system.