

METHOD FOR OPERATING A TEMPERATURE-CONTROLLED CIRCULATION SYSTEM AND TEMPERATURE-CONTROLLED CIRCULATION SYSTEM

The invention relates to a method for operating a circulation system (10) comprising a heating device having an inlet port and an outlet port for controlling the temperature of water, and comprising a pipe system having a plurality of strings which include one or more sections of a given thermal coupling to the surroundings and are connected by means of nodes, one or more of the pipes of the pipe system being designed as a supply pipe (4, 5, 6), at least one individual delivery pipe (7) connected to a removal point (9) and at least one pipe designed as a circulation pipe (10a) being connected to the supply pipe(s) (4, 5, 6), said method comprising the steps: - setting a water temperature at the outlet port to a value T_a by means of the heating device; - setting a volumetric flow rate at the inlet port to a value V_z , and comprising the following steps: - determining, in particular calculating, a temperature change of the water between the start region and the end region according to a model of the axial temperature change for the first section connected to the outlet port, starting from a temperature start value TMA^* and a volumetric flow rate start value V_z^* ; - determining, in particular calculating, a temperature change of the water between the start region and the end region for each further given section according to the model of the temperature change, subject to the boundary condition that the water temperature in the start region of the given section is the same as the water temperature in the end region of the section to which the given section is connected; and - selecting the value T_a of the water temperature and the value V_z of the volumetric flow rate at the outlet port in such a way that in the end region of each section the water temperature TME is in a specified temperature range around T_{soll} , in particular at the inlet port (12a, 14b) the water temperature $T_b < T_{soll}$ is set with $T_{soll} - T_b < \Theta$, where $\Theta > 0$ is a specified value. Furthermore, the invention also relates to a circulation system for carrying out the method.

[Figure 3]