

LEGIONELLA FILTERS

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ABSTRACT

The target of a significant reduction of the colonization by microorganisms and the increase of them in water systems could be realised by the incorporation of specific metalliferous textile systems. For reasons of hydraulics and for maximising the contact areas of the water and the microbicidal metal specific three-dimensional textile filter systems with metalliferous or metalised yarns were developed in form of spacer fabrics. Tasks to be solved were the development of the textile form and the silver-coated thread material to be processed as well as the technological modifications of the knitting machine for the processing of this thread material.

For testing the effectiveness of the material heatable testing tanks were developed and produced and a water circulation was realised. Arrangements for the fixation of the spacer fabrics in the tanks were developed, for retrofitting too.

Moreover, an algorithm for the calculation of the yarn surface area, i. e. for the determination of the available silver surface area in the spacer fabric, was developed. Thus the necessary silver-coated yarn surface area can be realised by a specific design of the spacer fabrics for each application, according to the fluid medium to be handled, i. e. drinking, industrial, cooling or process water, to the volume to be treated, to the system-dependent characteristics, to the microbial target such as decontamination or conservation and to the guidelines, regulations and rules that have to be observed.

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