Swiderska-Broz, M. Contributory Factors in the Potential of Biofilm Formation and Growth in Water Distribution Systems. ***Ochrona Srodowiska*** **2010, Vol. 32, No. 3, pp. 7–13.**

Abstract: The paper gives an account of the problems associated with the formation and growth of a biofilm on the internal surfaces of water pipes and water supply systems. Consideration is given to the causes and implications of chemical and biological instability of the water in the distribution system. Biofilms not only create technological and economic problems, but also pose a serious risk of deteriorating the quality of the water supplied to the user. The causes underlying the occurrence and growth of the biofilm in the water distribution system are manifold. Apart from those pertaining to the quality of the water entering the distribution system, they include the properties of the materials from which particular installations have been constructed, the hydraulic conditions that occur during water transport to the user, the technical and sanitary condition of all elements being part of the water distribution system, as well as any of the phenomena involved. Considering all the concomitant interactions – as well as the fact that in most instances they are difficult to eliminate to the extent desired (if at all) – a viable control of the biofilm's growth becomes a must. To efficiently control biofilm growth, it is necessary to provide the water distribution systems with continuous supply of disinfectants. (The type and quantity of the disinfectant may vary from one water distribution system to another.) Such requirement is difficult to fulfil specifically in the case of spacious, obsolete water-supply systems.

Keywords: Water distribution system, biofilm, chemical stability, biological stability, disinfectant.