



The bioreceptivity of building stone

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Bioreceptivity is an intrinsic property of stone, and is defined as the ability of a material to be colonized by living organisms. The fouling and staining of building stone material due to the activity of microorganisms presents a serious problem in modern as well as historical buildings, not only due to the aesthetic impact but also due to the deterioration of the material. Biological colonisation on stone materials is influenced by a number of factors, e.g. the intrinsic properties of the stone (porosity, roughness, permeability, mineral composition), environmental parameters (e.g. solar radiation, temperature, water regime, climate, etc.), and specific microclimatic parameters (e.g. orientation, exposure to shadow, permanent capillary humidity, etc.). In order to assess the bioreceptivity of building stones, use is often made of artificial colonisation experiments comprising the inoculation of stones with a single species or a few isolated strains under laboratory conditions. In the present work the authors present the development of a method for the determination of bioreceptivity, as well as a study of the bioreceptivity of selected natural stone versus the latter's intrinsic properties. Field examples of biodeterioration are also presented. The study was supported by the Slovenian Research Agency (L1-5453).