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*Research article*

## **Natural limestone discolouration triggered by microbial activity—a contribution**

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**Abstract:** Colour is a major argument that drives the decision of an architect in a specific architecture project and one of the most important characteristics and perceptible aspects of natural building stones. “Blue” limestones are building rocks, with different geological ages, typically used in several countries, and are known for their vulnerability to alteration, which causes colour change and the occurrence of unaesthetic patterns. Owing to this vulnerability, the conservation-restoration works in monuments, or new buildings constructed with “blue” limestone is extremely costly. Considering that the main limitation of this lithological variation is the chromatic change, a multidisciplinary approach was envisaged in this study to allow a closer insight into the chemical and mineralogical alterations and the microbial communities. Results obtained suggest that the inorganic alteration in the “blue” limestone may create favourable conditions for microbial growth and could lead to an increment in deterioration process.

**Keywords:** building stone; limestone; alteration; colour; microbial contamination

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