

## **Fungal Growth Measurement by ESEM in four different mortars and proposal of a biodeterioration mechanism**

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### **ABSTRACT**

Growth of the fungi *Cladosporium sphaerospermum* was observed on four different types of mortar incubated at 25° C. Two mortars were composed of cement, lime and Brazilian standardised sand, the others being of industrial origin. Environmental scanning electron microscopy (ESEM) allowed the observation without any treatment performing a quick and efficient analysis avoiding artefacts, imaging micro-organisms and mortar the in the hydrated state. The mortar pH had a significant effect upon fungal growth. It was possible to propose a biodeterioration mechanism for mortar composed of cement, lime and four fractions of standardised sand 3 months after inoculation with fungi.