



International Course on Stone Conservation SC13

SESSION: Microbiological deterioration

INSTRUCTOR: Ornella Salvadori

TIME: Monday, 27th May/ 11:30-13:00 (1.5 hours)

SESSION OUTLINE

ABSTRACT

The physico-chemical damages caused by microorganisms (bacteria, algae, fungi) and lichens will be described in brief, as well as their relationships with stone (epilithic, chasmolithic, endolithic). The presence of biodeteriogens is related to the different types of environments in which stone works are located (indoors, outdoors, semi-confined areas, urban, rural, etc.). In addition, we will examine the influence of conservation products and procedures on the biological recolonization of stone substrates.

OBJECTIVES

By the end of this session participants will:

- be able to recognize the presence of biodeteriogens on stone;
- be able to discriminate between different kinds of organisms and microorganisms;
- understand the types of physical and chemical damages induced by microorganisms and organisms involved in the biodeterioration of stone;
- understand the environmental factors favouring their settlement; and
- be able to identify the kinds of environments (outdoors and/or indoors) in which the growth of biodeteriogens are recurrent.

CONTENT OUTLINE

- Definition of biofilm and bioreceptivity.
- The characteristics of and causal relationships between bacteria, algae, fungi and lichens on stone.
- Contribution of different analytical techniques to the knowledge of biodeterioration.
- Biodeterioration versus bioprotection.
- Biodegradability of products used in conservation of stone.

READINGS

 = Essential reading material

 = Available online

 Caneva, Giulia, Maria Pia Nugari, and Ornella Salvadori, ed. 2008. *Plant Biology for Cultural Heritage: Biodeterioration and Conservation*. Los Angeles: Getty Conservation Institute. 97-218.

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