O 20. RELATIVE RATE OF DURABILITY TOWARDS INFLUENCE OF WATER IN STONE DEGRADATION CASE STUDY OF "LEAD MOSQUE" IN SHKODRA (NORTHWEST ALBANIA)

Laura Shumka[1]

[1] *Albanian University of Tirana*

Email: shumkalaura@gmail.com

ABSTRACT: The Lead Mosque is located in the northwest of Albania into a humid Mediterranean environment. It was built in 1773 by the Albanian pasha Mehmed Bushati who was vizier of Shkodra at the time. Through this act, he intended to give his city of birth, the feeling of the capital. The mosque has numerous cultural importances and represents a building built with calcareous stone based materials which have suffered degradation process due to long exposure periods to the existing environmental conditions.

The main purpose of this paper is to present the influence of water and relative humidity on stone degradation. Water circulation in stones and water flow between stones and atmosphere or ground are one of the main driving factors in the building degradation processes in other historical monuments of Albania including other religious. It is well known that porous building materials absorb and desorbs water as a function of the weather conditions (temperature, relative humidity, and rainwater), that is why water plays a fundamental role in the phenomena of stone deterioration. The construction of hydropower plants in Drini River (Vau i Dejes) accelerated the water presence through flooding along with diverse water bodies proximity of the mosque location (Adriatic coast, Shkodra Lake and Drini/Buna system). The experimental tests through temperature and humidity were determined using data loggers from selected walls of Lead Mosque. Air temperature and relative humidity were measured every 30 min and processed to obtain average, maximum, and minimum monthly data. The flood history was also considered following archival data of Institute of Geo-science in Tirana.

Keywords: Limestone, degradation, Mediterranean climate, water, humidity