



Long-term weathering of concrete bridge at the coast of Koze-shima Island, Japan

Chiaki T. Oguchi (1) and Shota Kakei (2)

(1) Saitama University, Department of Science and Engineering, Saitama, Japan (ogchiaki@mail.saitama-u.ac.jp), (2) Undergraduate Student, Department of Civil Engineering, Saitama University, Saitama, Japan

The present study focuses on an old concrete bridge at the coast of Koze-shima Island, the one of the Izu Seven Islands in the Pacific Ocean, Japan. It was built around 1942 and had been used for building stone transportation in Koze-shima-Island. The Koze-shima village wants to consider whether it will be able to be a heritage or not. Thus, the evaluation of the degree of deterioration was necessary. The present conditions of physical and mechanical properties by non-destructive methods were investigated at the site. The values are equivalent to general soft rocks like tuff or mudstone. After small pieces of concrete fragments collected, chemical properties were analysed using SEM-EDS in the laboratory. The results shows that the center part of the bridge has low strength affected by tide by sea salt weathering. Many concrete structures elapsed several decades after construction exists in Japan, which are facing to serious problems due to deterioration and are necessary to be taken some countermeasures.