

## Microstructural analysis of fired clay masonry brick under aggressive environment

### Abstract

The microstructural changes in fired clay masonry brick, exposed to various aggressive environments were studied. Test samples were subjected to sodium sulphate, sodium chloride and a combination of chloride-sulphate. Beside, for the durability of specimens exposed to chloride and sulphate attack, 5, 10, and 15% solutions were used. Micrographs of the internal structure were taken at the age of 180 days. Energy-dispersive X-ray spectroscopy (EDX) analyses were performed on scanning electron microscope (SEM) images. SEM/EDX studies revealed that halite is the main deterioration product for the samples exposed to sodium chloride where thenardite formations were dominant products of deterioration in the case of sulphate attack. However, the combination of sodium sulphate-chloride produced a double compound in the specimens.