ABSTRACT

This study on an experimental program to investigate the effect of using copper slag as a replacement of fine aggregate on the concrete. Chemical composition of copper slag presents a high Fe, Si and Al oxide Content which makes it as a pozzolanic material. Thus, it is possible to use it as a partial replacement for sand in concrete. After a chemical, physical, mineralogical, and environmental characterization of copper slag, it is used as partial replacement of fine aggregate in concrete was investigated. The concrete with various mix proportions were prepared with copper slag such as 15%, 25%, 30%. The concrete proportions were tested for compressive strength, split tensile strength and flexural strength. The results are noticeable that the replacement of copper slag for fine aggregate considerably increases the compressive strength and tensile strength of concrete. It is not recommended for the proportion beyond 25%, because it increases the self-weight of concrete and decreases the strength.