

Chloride resistance of concrete containing palm oil fuel ash

Abstract

Experimental study was conducted to investigate the chloride resistance of concrete containing palm oil fuel ash (POFA). Ground POFA was used to partially replace Portland cement Type I, by 20% by weight of binder in order to prepare POFA concrete. Water cement ratio of 0.28 was used and high water reducing admixture was added to maintain workability. POFA concrete was investigated and tested for compressive strength at ages of 7, 28 and 90 days. Rapid chloride penetration test (ASTM C1202) and salt ponding test (ASTM C1543) were conducted on standard concrete specimens to investigate the chloride resistance of concrete. The results showed that the compressive strength of POFA concrete was improved comparing with plain concrete. The results of chloride penetration tests revealed that significant improvement in terms of chloride resistance could be obtained by using 20 % of ground POFA in concrete mix as cementing replacement material.