

The influence of curing periods on the compressive strength of fly ash-based geopolymer at different aging times

Abstract

The results of the current experimental investigation indicate the significant effect of the heating periods on the compressive strength of fly ash-based geopolymers prepared at different alkaline liquid content at both early and later ages. The results indicated that the geopolymer materials have a high early strength which increases with the increase of heating time to the maximum of 24 hours at aged of 3 days. The only exception of this trend was reported for the optimal strength geopolymer which produced its highest strength at heating period of 12 hours. The highest compressive strength development seen in geopolymers with an aging time of 7 days was for the curing times of 12 and 24 hours. The strength resulting at 28 days indicated that the highest curing period produced the optimum strength development. The strength reported has been shown as an effect of the alkaline activator content, and as that is increased, the resultant strength increases as well.