

Influence of solidification process on calcined kaolin geopolymeric powder

Abstract

This paper aims at investigating the influence of solidification condition on the processing of calcined kaolin geopolymeric powder. This is a new process developed using the geopolymerization process. Geopolymer slurry was prepared from calcined kaolin and activating solution (mixture of NaOH and Na_2SiO_3). This slurry was allowed to solidify in oven and then crushed and grounded to fixed particle size. Compressive testing and SEM analysis were performed in this study. The results showed that the solidification condition at 80 °C for 4 hours was the best to synthesize the geopolymeric powder where this solidification condition results in geopolymeric powder which can produce higher strength resulted geopolymer paste. The microstructure showed more intervening gel phase which indicates that the geopolymerization process continued to react after the addition of water to the calcined kaolin geopolymeric powder.