

Properties of Portland cement paste incorporated with loamy clay

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Abstract

© 2017 The Korean Society of Mineral and Energy Resources Engineers (KSME) Metakaolin which is calcined kaolin clay is being widely applied as supplementary cementitious materials for Portland cement. Due to their scarcity and high cost, calcined ubiquitous polymineral clays are actively studied as alternative to metakaolin. This article presents the study results of influence of calcined ground loamy clay on the properties of Portland cement paste. About 5-15% of loamy clay calcined at 400-600 °C and ground to 250-500 m²/kg were found to be more effective compared to metakaolin of specific surface area of 1200 m²/kg for improvement of compressive strength, water resistance, and increase in density of hardened Portland cement paste.

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Keywords

calcination, compressive strength, loamy clay, metakaolin, Portland cement, water resistance