

The First Article

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M.A. Abd-El.Aziz^a, **S. Abd.El.Aleem**^b, Mohamed Heikal^c, "Physico-chemical and mechanical characteristics of pozzolanic cement pastes and mortars hydrated at different curing temperatures", Construction and Building Materials 26 (2012) 310–316.

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Abstract

The effect of elevated curing temperature on the properties of cement mortars is vital for heat resistance. Addition of pozzolanas, such as slag, to type I cement is known to increase heat resistance. In this study, OPC was partially substituted by two types of slag (WCS and ACS) in the ratios of 10, 20, 30, 40 and 50 wt. %. The cement mortars were cured for 120 days at different curing temperatures from 25 to 100°C. The results show that, elevated curing temperature improves the early age strength in the all cement mortars. Also, the results indicated that, the pozzolanic cement mortars give higher compressive strength than the plain cement mortars, especially at curing temperatures above 35°C. Therefore, slag pozzolanic cement mortars can be beneficially used in the hot conditions.