

Muhammad Ilyas 2011: Effects of Water to Binder Ratio and Slag Fineness on the Properties of Slag Mortar. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering.
Thesis Advisor: Associate Professor Prasert Suwanvitaya, Ph.D. 97 pages.

This research addresses the compressive strength and porosity when granulated blast-furnace slag (GBFS) was used as a supplementary cementitious material (SCM) to make mortar, and discusses in detail the parameters affecting the compressive strength and porosity of mortar cubes and pastes, respectively. The effects of fineness, water-binder ratio, replacement percentage, curing methods and age on the strength and porosity, and hydration products of mortars containing GBFS were studied. The cubes were conventionally-cured and steam-cured to correlate between curing methods and eventually their effects on compressive strength and porosity of mortars. The results showed that finer GBFS had the higher value of compressive strength and lower porosity when steam-cured ones. The increase in water-binder ratio reduced the strength and increased the porosity of mortars as expected.

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