

Title: Discussion of Mortar Blended with Basic Oxygen Furnace Slag

Abstract: The study performed the various experiments by grounding Basic Oxygen Furnace Slag (BOFS) to the three specimens of each mixture were tested at 3, 7, 14, and 28 days. The major objectives can be classified as (1) Feasibility of using finer BOFS particles in cement-based composites was investigated and analysed, (2) BOFS as a cement replacement in blended mixture, with the fineness and proportion of BOFS used as variables in experiments, (3) Inclusion of high-amount BOFS (70% replacement of cement) in cement-based composites was also tested and evaluated. The study was concluded as (1) Fineness of the BOFS was the primary factor influencing the fluidity of BOFS mortar. Inclusion of 10000 cm²/g BOFS had a particularly pronounced effect in reducing fluidity, (2) Increasing the amount of BOFS (B5 and B7) used as a replacement for cement was shown to speed up the initial and final setting times, (3) Replacement of cement with BOFS resulted in increased expansion and cracking, particularly when BOFS was used to replace more than 50%, (4) Specimens that included 10% BOFS achieved the highest compressive strength at 28 days; however, even this was 5% lower than that of OPM.



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Dr. Hui-Mi Hsu had received his Ph.D. from Memphis State University, USA. After that, he went back Taiwan to teach at two different universities as a professor. Now, he is at the position of vice president of the national Dong-Hwa university. His research is in the fields of green materials, sustainable development, and Geographic Information System. Within his research career of more than 20 years, approximately 80+ journal papers and 130+ conference papers have been published.