

عنوان مقاله:

Studies on main properties of ternary blended cement with limestone powder and microsilica

محل انتشار:

یازدهمین کنگره ملی مهندسی شیمی ایران (سال: 1385)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Allahverdi - Assistant professor, college of chemical eng., Iran university of science and technology

Salem - MS.C student, college of chemical eng., Iran university of science and technology

خلاصه مقاله:

The ternary system of Portland cement-microsilica-limestone has been studied by investigating its set and strength behaviours. Many different cementitious systems comprising of 0, 10, 15, 20, 25, and 30% limestone powder and 0, 4, 6, 8, 10, 12, 14, and 16% microsilica were designed and prepared. The cementitious systems were then characterized by determining their relative workability and measuring their initial and final setting times and also their 7- and 28-day compressive strengths using paste specimens prepared at a constant W/C-ratio of 0.38. Total 77-day shrinkage of the systems was also measured. The obtained results reveal that both 7- and 28-day compressive strengths increase with increasing microsilica up to 12% and decrease with increasing the percentage of limestone powder. A comparison of the results confirm the possibility of replacing Portland cement by a proportioned mixture of microsilica and limestone powder for enhancing the strength behaviour or producing composite cements containing relatively high proportions of limestone powder with no loss in 7- and 28-day compressive strengths compared to plain cement.

کلمات کلیدی:

Microsilica, limestone, compressive strength

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