

Method for Producing Lightweight Concrete Mixtures Using Lightweight Aggregates

Abstract

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The invention provides a method for producing lightweight concrete mixtures using lightweight aggregates, comprising an at least two-stage mixing process, where first a suspension mixture comprising the binder composition is prepared by high-speed stirring with a cement or a geopolymer and water and then the

10 suspension mixture is mixed by low-speed stirring with constituents including the lightweight aggregates. The invention also embraces lightweight concretes and lightweight concrete mixtures produced accordingly. Binder composition candidates include, for example: - 60-80 wt% finely ground slag sand cement, 10-60 wt% fly ash - 2-25 wt% alkali metal hydroxides/alkali metal silicates, 75-

15 98 wt% finely ground slag sand - 2-20 wt% alkali metal hydroxides/alkali metal silicates, 60-78 wt% finely ground slag sand - 20-38 wt% fly ash cement, 30-50 kg/m (in the lightweight concrete mixture) microsilica cement, 10-60 wt% rice husk fly ash cement, 1-5 wt% caustic calcined CaO/MgO

20 No figure.