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Performance of Self-Compacting Mortars Containing Foam Glass Granulate

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Abstract : The inorganic wastes are currently used in the manufacture of concretes as mineral additions by cement substitution or as fine/coarse aggregates by replacing traditional aggregates. In this respect, this study aims to valorize the mineral wastes in particular glass wastes to produce granulated foam glass (as fine aggregates). Granulated foam glasses (GFG) were prepared from the glass powder (glass cullet) and foaming agent (limestone) according to applied manufacturing of GFG (at a heat treatment 850 ° C for 20min). After, self-compacting mortars were elaborated with fine aggregate (sand) and other variant mortars with granulated foam glass at volume ratio (0, 30, 50 and 100 %). Rheological characterization tests (fluidity) and physic-mechanical (density, porosity /absorption of water and mechanical tests) were carried out on studied mortars. The results obtained show that a slightly decreasing of compressive strength of mortars having lightness very important for building construction.

Keywords : glass wastes, lightweight aggregate, mortar, fluidity, density, mechanical strength
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