

RECYCLING OF FOUNDRY SAND WASTES IN SELF-COMPACTING MORTARS: USE AS FINE AGGREGATES

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Description

The foundry sand wastes (FSW) are likely to constitute as raw material for the manufacture of cement mortars or concretes at a low cost. For this reason, present work has main objective to use the foundry sand wastes in self-compacting mortar as a fine aggregate (by a partial sand substitution). An experimental tests were carried out to evaluate fresh (slump test) and hardened (bulk density, compressive and flexural strength and elastic modulus) properties of SCMs based on FSW. The Natural Sand (NS) is substituted by FSW at dosages (0%, 10%, 30% and 50% wt.). The results show that fluidity was slightly decreased and was corrected by addition a few quantity of superplasticizer. However, the measurements of mechanical properties show that compressive strength of mortars has been significantly improved at short and long term. It follows that it is possible to use this waste type up to 30% of FWS as sand without ...