

Study of Aggregates with Sulphides in Concrete

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Aggregates from rocks with sulphide mineral may promote the occurrence of deleterious expansive products generated from the oxidation-hydration process of these minerals. This research was led in pastes and mortars produced with three cement types containing limestone filler and blast-furnace slag (varying from 40% to 60%) and aggregates with sulphide mineral. The oxidation-hydration process of sulphides and their chemical interactions with hydrated compounds of cement, in pastes and in mortars as well, were evaluated throughout 18 months, based on two different methodologies. In both of them, the X-ray diffraction and thermogravimetry analyses were considered. Thus, after the age of 180 days, it was observed the progressive increasing of compounds, such as ettringite and gypsum, and the portlandite rate decreasing, with different growing tendencies dependents on the cement type.