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## Investigating the Local Granulated Blast Furnace Slag

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### ABSTRACT

The promotion of blast furnaces slag in construction industry aims at protecting the environment, fighting against the nuisance such as waste dumps and promoting local products. The use of granulated slag as a part replacement of Portland cement or in the production of clinker free binder constitutes a valuable outlet for this product. The aim of this study is the characterization of local granular slag using various techniques such as chemical analysis, X ray diffraction, differential thermal analysis, infrared spectrometry, and conductimetry. These methods provide a clearer understanding of the vitreous structure of this type of slag and also provide clues as to the nature of its hydraulic reactivity. Mechanical tests have been carried out using 4 × 4 × 16 cm3 prismatic mortars using a composition activated by the clinker, varying the fineness of slag, its content and the nature of clinkers. Results obtained show that this type of slag is reactive, the evolution of its mechanical resistance depends on its fineness, and that long-term mechanical performance is of great interest.

### KEYWORDS

Activation; Cement; Clinker; Mortar; Promotion; Slag

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