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Study for Utilization of Industrial Solid Waste, Generated by the Discharge of Casting Sand Agglomeration with Clay, Blast Furnace Slag and Sugar Cane Bagasse Ash in Concrete Composition

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Abstract : This research project accomplished a study on the technical feasibility of recycling industrial solid waste generated by the discharge of casting sand agglomeration with clay, blast furnace slag and sugar cane bagasse ash. For this, the plan proposed a methodology that initially establishes a process of solid waste encapsulation, by using solidification/stabilization technique on Portland cement matrices, in which the residuals act as small and large aggregates on the composition of concrete, and later it presents the possibility of using this concrete in the manufacture of concrete pieces (concrete blocks) for paving. The results obtained in this research achieved the objective set with great success, regarding the manufacturing of concrete pieces (blocks) for paving urban roads, whenever there is special vehicle traffic or demands capable of producing accentuated abrasion effects (surpassing the 50 MPa required by the regulation), which probes the technical practicability of using waste from sand casting agglomeration with clay and blast furnace slag used in this study, unlocking usage possibilities for construction.

Keywords : industrial solid waste, solidification/stabilization, Portland cement, reuse, bagasse ash in the sugar cane, concrete
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