



Technological feasibility of using glass waste in mortar

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Major advances in humanity are noticeable over the years, both in the technological sector and in sustainable development. In terms of economic, social and ecological advance, finding sustainable ways to deal with problems such as water scarcity, raw materials taken from nature, deforestation, among others, has been the main focus. Thus, the implementation of sustainability has been carried out so that the waste generated by society can be reused beneficially in civil construction, reducing the extraction of raw materials and the large disposal of materials with high potential for use, reducing environmental impacts. Aiming at the need to reuse waste, this work aims at elaborating fifteen experimental traces, of mortar, being one of reference and fourteen with the substitution of glass waste, in volume with proportions of 5, 10, 15%, by cement and small aggregate, to verify its influence on cement mixtures. The methodology used consists in carrying out the experimental programme which is composed of the characterisation of the materials used for the production of the multipurpose mortar, as well as carrying out the technological tests of the mortars in the fresh and hardened state. The analyses made on the properties, both in the fresh and the hardened state of the mixture, will be through the results of standardized tests. Thus, it is possible to observe influences that the residue used generates in the cementitious mixture. One of the tests carried out on the mixture not yet hardened will be that of consistency by spreading which checks the water consumption in the mixture in order to obtain a good performance. With the cementitious mixture hardened some tests will be carried out, and one of them is that of resistance to compression in prismatic CP, where the influence of the residue on the resistant mortar will be analysed. Therefore, it is expected to develop a mortar using the residue from the glass cutting process, allowing an environmentally acceptable destination for this residue.

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