Incorporation on Expanded Polystyrene (EPS) Post-Consumer Packaging in Production of Concrete Blocks

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Abstract

The worldwide production of expanded polystyrene (EPS) is over 92.95 million tonnes each year. The reuse or recycling of EPS still considered uneconomic due to its low market value, by taking up too much space and there are just a few recycling plants. Find an economically attractive solution for EPS is extremely necessary. The process of incorporate waste is one way to minimize environmental damage and reduce waste also providing cleaner production. With that in mind, this work aimed to evaluate the incorporation of post-consuming packaging of this material in the production of concrete blocks without structural purposes in construction. Samples were produced with triturated EPS from electronics packaging and food. Incorporating the waste produces concrete with compressive strength lower compared with the reference sample, it is observed that the incorporation of 50% of waste reduces by about 20% to 30% of the resistance bodies. However, the produced samples are in accordance with the values established by NBR7173, also produce lighter concrete blocks which can serve to seal and to be of great utility in construction.

Keywords: *Portland cement, expanded polystyrene, waste*