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CIRCULAR ECONOMY MODEL OF RECYCLED AGGREGATES FOR THE CONSTRUCTION SECTOR OF SARDINIA ISLAND

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Abstract

This study analysed the recycling of debris derived from the partial and selective demolition of concrete structures of Sant'Elia Stadium in Cagliari (Sardinia, Italy). This recycling was carried out to obtain coarse recycled aggregates for the production of recycled concrete.
The experimental investigations demonstrated the possibility of using these recycled concrete aggregates in structural concrete and in precast concrete element, with unchanged production processes and suitable mechanical properties. Additionally, the required quantity of recycled aggregates for new construction works and the refurbishment of buildings in three towns of Sardinia South West coast was determined. The applied research provides a significant contribution to the management plan of construction and demolition waste in Sardinia Island. In this context, the circular economy model is the best to achieve the sustainable development of the construction sector.

Keywords: circular economy, precast concrete industry, recycled aggregate, recycled concrete, urban planning

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