

Title: **Study of the reuse of green foundry sands in the industrial mortars manufacturing.**

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Green foundry sands, from the processes of manufacturing castings in which they use moulds of this material to shape the morphology of the different parts, have mainly a siliceous composition. These sands are surplus in the Fagor Ederlan foundries since, for their process, the continuous introduction of new sand is necessary but, when removing it from the circuit, it becomes waste. Approximately one ton of metal production results in one ton of moulding sand residue. Nationally, about 100000 tons of this type of sand are generated, of which 70% is deposited in a landfill. The saturation of the capacity of landfills and the difficulty of establishing new ones makes it more important to study alternatives for the reuse or recycling of these sands. This project contemplates the realization of tests of treatment of this sand, in order to improve its quality as granular material in the manufacture of industrial mortars. In addition, trials in commercial products will be carried out to demonstrate the technical viability of this waste. The partial or total replacement of natural sands by these sands will be assessed, with a twofold objective: avoiding their deposition in landfills, and decreasing the carbon footprint, boosting the circular economy. Finally, an estimation of potential savings by replacing the natural sand by green foundry sand will be given to support the feasibility of the final product.