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The Evaluation of Ornamental Stone Cutting Processing and Sludge Production with the Goal of Eliminating Waste

Xi Xinfei*

Department of Environmental Education, Peking University, China

Introduction

In the quarry, the reduction of landfill material can be achieved not only by determining an acceptable material recovery, but also by determining the best available slicing method to be used based on the physical, chemical, and mechanical properties of the stones. By reducing energy consumption, reducing the convergence of heavy metals in the muck, and delivering less waste, the decision of all that slicing method might result in high productivity and execution, top-quality cut surfaces, and an exceptionally low natural effect. An research of the methods for cutting various types of intricate stones into pieces, as well as an assessment of muck generation for the various cutting strategies, has been accomplished in this specific case.

Evaluation of the stone's functionality and calculation of the amount of slop produced by the three different cutting developments and the cutting of squares. The nature of the slop delivered, the type and amount of metals present, and the various cutting improvements were all examined. SEM inspection of the metal part, substance investigation, and appealing detachment test The study could provide stone manufacturers with a mechanical, logical tool for identifying the best cutting procedures for handling their stones, acquiring a high-productivity process, improving the recovery interaction, increasing financial benefits, and assessing the slime's potential reuse through a proactive waste management technique. The stone industry is undergoing continuous innovation in order to

ensure its long-term viability and security. Good management of production processes and the minimization of processing waste are tools for the long-term development of mining activities. Sludge and powders produced by industrial operations during the cutting phase of ornamental stone make up a considerable amount of material that, if correctly processed, might be recycled and transformed into a secondary raw material, providing businesses with extremely inventive prospects

Because of the presence of metallic coarseness, frame saw cutting is more secure in terms of the linearity of the pieces formed, but it produces slop with higher metal focus. Diamond wire produces a same number of chunks with a similar square aspect as the edge saw, but the pieces produced have a smoother surface; in any event, it produces a similar amount of slime as the casing saw, but with lower metals fixation. Diamond sharp edges generate smoother chunks, but they also cause more linearity concerns, especially with extremely severe shakes. It produces more goo than other innovations.

By all accounts, the precious stone wire innovation is the best, both in terms of chunk usability and the low level of metals in the slime, which can be reused. Overall, the muck produced by the edge saw invention has high levels of Cr, Ni, and Cu, necessitating appealing partitioning prior to reuse.

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