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Statistics Analysis on Soil Reduction Activity in Grizzly-under-Materials Discharged from Recycling Plant of Waste Asphalt Blocks

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Waste asphalt blocks from construction sites are usually processed in the recycling plants to be used as recycled asphalt aggregates. These materials are usually fed into the grizzly to remove the soils attached on their surfaces. At present, grizzly-under-materials (GUM) does not satisfy the required standard value for soil contents. In 2009, we proposed the equipment to remove the soils from GUM. This equipment was able to reduce the soil content in the GUM, but the efficiency was not so high. Then, in 2013, a process of re-designing this equipment was carried out; where a vibration device was added to reduce the pipe inclination angle and to increase the processing time of materials inside the apparatus. The equipment performance had an opposite behavior from 2009's experimental results to 2013's experiment results, when the water content in the GUM was changed from 3% to 5%. That is, it was necessary to analyze the main factors that influence on equipment performance. In this study, the experiments were carried out with changing the water contents. It was found through this research that soil reduction activity, using the screenless separation equipment not only depends on the soil particle distribution (% of clay and silt) contained in GUM and the moisture content in the soil when is mixed with GUM. Specific surface area and water absorption of GUM and temperature also have influence on the mentioned activity.

Keywords : Waste asphalt blocks, recycled asphalt aggregate, grizzly under material, soil content