Screening efficiency of municipal solid waste by trammel using screen clogging prevention system

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Since 2000, climatic change and low carbon and green growth has became the global issue, municipal solid waste(MSW) treatment technology has been changed from landfill or incineration to reusing or producing the alternative energy sources such as refuse deriverd fuel(RDF) or biogas. To keep pace with those changes, we have developed more efficient mechanical treatment process to get combustible solid waste from MSW and have estimated the performance of system using 5ton/day scale pilot plant. In this study, especially, it was evaluated the effectiveness of our newly developed screen clogging prevention equipment which for reducing the problems during MSW pre-treatment process operation such as screen clogging and jamming by waste at the trommel.

The experiments were conducted by 5ton/day scale MSW pre-treatment pilot plant using waste being imported to the landfill.

Troubles with screen clogging or jamming by fabric materials at the trommel were considerably reduced after screen clogging prevention equipment had been installed. As results of experiments, screen clogging ratio without screen clogging prevention equipment came to about 40% of total screen number of trommel for 16 hours operation. While screen clogging ratio with screen clogging prevention equipment was reduced to about 10% of total screen number of trommel.

The screen clogging prevent equipment can easily apply existing MSW pre-treatment facilities which including trammel and the device also can effectively remove trouble factors like fabric materials. Thus it is considered that this device can prevent decreasing of screening effectiveness as increasing the operation time and give good effect to facilities in terms of maintenance.

Keyword: MSW, mechanical treatment, trammel, screen clogging