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Abstract: Test results of mass balancing for two Polish waste sorting plants located in Bielsko-Biala and Gorzow Wielkopolski are presented. Both plants operate within the framework of mechanical biological treatment of municipal wastes. However, they differ in technological equipment and organization of sorting process, which is reflected in the plant operational efficacy. Test results allowed for evaluation of individual sorting stages effectiveness and their detailed diagnosis. Secondary raw materials recovered from municipal wastes in the sorting plant in Bielsko-Biala constituted 16% of the input waste mass, raw materials for alternative fuel production – 10.5% while another 10.5% were the post-sorting waste remains. In the Gorzow Wielkopolski sorting plant secondary raw materials amounted to 7.6%, alternative fuel – to 11% and the post-sorting remains – to 24% of the input mass of municipal wastes. Additionally, a subscreen fraction directed for biological treatment, as well as debris and oversize waste were separated in both sorting plants. Recovery indexes determined for paper (91%) and PET (85%) fractions confirmed high operational effectiveness of optopneumatic separators applied in the sorting plant of Gorzow Wielkopolski.

Keywords: Solid waste management, secondary raw materials, optopneumatic sorter, recovery index.