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Compressibility characteristics of synthetic municipal solid waste at different phases of biodegradation

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Results of a laboratory investigation conducted to determine compressibility characteristics of synthetic municipal solid waste (SMSW) at different phases of biodegradation is presented. SMSW samples were prepared based on the composition of municipal solid waste (MSW) generated in the Galle Municipal Council. Leachate collected from a landfill was added and recirculated to accelerate the degradation. Degradation phases were quantified based on the leachate characteristics and the each SMSW sample was tested at different phases of degradation for the compressibility characteristics of SMSW. Compression index (C_c) and secondary compression index (C_α) of SMSW from initial fresh stage to the degraded stage varied in the range 0.61 to 0.26 and 0.16 to 0.1, respectively. Degraded MSW shows lower settlement compared to fresh MSW. As the waste degraded, compression index (C_c) and secondary compression index (C_α) were decreased.

Keywords: synthetic municipal solid waste (SMSW), biodegradation, compressibility characteristics, compression index (C_c) and secondary compression index (C_α)

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