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Analytical modelling of gas leakage rate through a geosynthetic clay liner-geomembrane composite liner due to a circular defect in the geomembrane

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Abstract: An analytical model was developed to predict gas leakage rate through a GM/GCL composite liner with a circular defect in the geomembrane. The predictions of the proposed analytical model were found to be in good agreement with experimental results for specimens with moisture content higher than the so-called critical moisture content. However, at moisture contents lower than the critical moisture content, the model predictions seem to overestimate the experimental results. This deficiency was attributed to the change in the gas flow pattern at lower moisture content, which appears to be controlled by the ratio between the gas permeability of the GCL and the gas permeability of the interface zone between the GCL and the geomembrane. (c) 2007 Elsevier Ltd. All rights reserved.

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McWatters RS, Rowe RK [Diffusive Transport of VOCs through LLDPE and Two Coextruded Geomembranes](#) JOURNAL OF GEOTECHNICAL AND GEOENVIRONMENTAL ENGINEERING 136 9 1167-1177 SEP 2010

Rowe RK, Hoor A, Pollard A [Numerical Examination of a Method for Reducing the Temperature of Municipal Solid Waste Landfill Liners](#) JOURNAL OF ENVIRONMENTAL ENGINEERING-ASCE 136 8 794-803 AUG 2010

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