

Award-winning paper in 2014

Papers published in Environmental Geotechnics are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 9 October 2015, ICE President David Balmforth presented an award to the following paper published in Environmental Geotechnics in 2014. The editorial panel nominated their best papers and an awards committee chaired by Quentin Leiper allocated the awards.

Thomas Telford Gold Medal

The Thomas Telford Gold Medal, presented for to the first overall paper from all of the papers in the competition, was awarded to R Kerry Rowe (2014).

Abstract

The available evidence suggests that both geosynthetic clay liners (GCLs) and composite liners with a geomembrane (GMB) over a clay liner have performed extremely well at controlling leakage in field applications for a couple of decades. However, there have also been some problems reported and recent research has allowed us to have a much better understanding of the key design and construction factors affecting good and poor performance. This paper examines some of these issues including factors affecting GCL performance such as the water retention curve of GCLs, subgrade grain size and initial water content, GCL water content and normal stress on the GCL, the effect of daily thermal cycles on hydration, GCL panel shrinkage and cation exchange. Factors affecting composite liner performance examined include the potential for desiccation of the clay liner under a sustained thermal gradient, GMB/GCL interface transmissivity, wrinkles in the GMB when the ballast layer is placed over the composite liner and the potential interaction between wrinkles and GCL panel overlaps. Recent insights regarding leakage through composite liners are discussed. Although a number of potential issues with liner performance are discussed, it is concluded that all can be addressed by appropriate design, material selection, construction and operations.

REFERENCE

Rowe RK (2014) Performance of GCLS in liners for landfill and mining applications. *Environmental Geotechnics* **1**(1): 3–21, <http://dx.doi.org/10.1680/envgeo.13.00031>.



R Kerry Rowe, winner of the Thomas Telford Gold Medal, with ICE President David Balmforth