



International Geosynthetic Society United Kingdom Chapter



IGS/Engineering Group of the Geological Society joint meeting

Tuesday 14th December 2010

Geological Society, Burlington House, London

5.00pm for 5.30pm

AGM followed by

Soil-geosynthetic interaction: Obtaining strength parameters for design

Professor Neil Dixon
(Loughborough University)

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The IGS UK Chapter is a member of the Ground Forum

Knowledge of soil vs. geosynthetic and geosynthetic vs. geosynthetic interface shear behaviour is of fundamental importance to designers. This talk will consider factors influencing measured behaviour, summarize methods of measurement including specifications, present data that quantifies variability, detail methods for obtaining characteristic interface shear strength parameters for use in design and define key questions to be answered by engineers. It will be shown that the design of direct shear apparatus is the main reason for observed large variability of measured interface strengths from inter-laboratory comparison testing programs. The talk will establish the need to carry out repeat tests at each normal stress and will discourage the use of global databases of measured interface strengths to inform selection of strength parameters. A recommendation will be provided to use the results of repeatability testing programs to support calculation of characteristic interface strength parameters. Using the example of landfill lining design, guidance will also be provided on selection of strength parameters in conjunction with relevant factors of safety, consequences of failure, selection of the controlling interface and minimizing interface displacements.

Biography:

Professor Dixon has been a university academic for over 20 years and he has over 25 years experience in geotechnical engineering research and practice. He has worked on funded projects and published over 100 referred papers in the areas of slope failure mechanisms, pore water pressure regimes in slopes, in situ measurement of soil/waste properties, slope stability assessment, instrumentation development, slope process modelling, landfill barrier design guidance and impacts of climate change studies. Professor Dixon played a leading role in the development of UK practice in waste containment system design. He is currently an elected Council Member of the International Geosynthetic Society and is Chairman of the IGS, UK Chapter. He is an editorial board member of the journals Geotextiles and Geomembranes, and Geosynthetics International.