International Geosynthetics Society
United Kingdom Chapter

IGS/EGGS London
JOINT MEETING
Tuesday 1st December 2015
Burlington House, 31 Burlington Arcade, London W1J 0PG

6.00pm for 6.30pm

Installation damage of geosynthetics and consequences for the design

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Geosynthetics are often installed in contact with soil. For reinforced soil applications usually geosynthetics are installed between layers of compacted coarse material. The construction and installation processes are very likely to induce mechanical damage, which in turn can affect the performance of geosynthetics. Most design codes allow for the damage associated with installation by using a partial reduction factor for the ultimate tensile strength. Although ideally such reduction factors should be determined from field trials, often that is not possible. Alternative approaches include: using published guidance documents and specifications (often not applicable to reinforcements), field trials, interpolations using data for similar conditions.

Several geosynthetics were exhumed after field installation and characterized to assess how the installation damage affected some of their properties. Additionally mechanical damage usually associated with installation damage was induced in laboratory. The short- and long-term tensile response of the geosynthetics were studied, as well as the soil-geosynthetic interface response after damage. The corresponding reduction factors for installation damage were estimated and compared.

Biography:

Dr Margarida Pinho Lopes is a Lecturer in Geomechanics in the Faculty of Engineering and the Environment at the University of Southampton and a member of the Infrastructure Group. Her main technical areas of interest are in geotechnical engineering and the application of geosynthetic materials. She particularly focuses on reinforcement and improvement of soil, durability and endurance of geosynthetics, soil-geosynthetic interaction and geosynthetics in railways and in fluvial/coastal environments. Dr Pinho Lopes also participates in several technical and scientific committees (ISO/TC 221 Geosynthetics, CEN/TC 189 Geosynthetics, International Society for Soil Mechanics and Geotechnical Engineering - Technical committee TC306 Geo-Engineering Education).
Dr Pinho Lopes graduated in Civil Engineering from the Faculdade de Engenharia da Universidade do Porto, Portugal. Later she received a M.Sc. in Civil Engineering Structures and a PhD in Civil Engineering from the same university. Previously Margarida worked as an Assistant Professor at University of Aveiro, Portugal, between 2006 and 2013, and as a Lecturer at University of Brighton, between 2013 and 2015. Margarida joined University of Southampton in February 2015.