

# International Geosynthetics Society

## United Kingdom Chapter



IGS/Yorkshire Geotechnical Group  
JOINT MEETING

**Tuesday 16<sup>th</sup> February 2016**

University of Sheffield, Sir Frederick Mappin Building, Mappin Street, Sheffield S1 3JD

6.00pm for 6.30pm

## Recent Progress in Basal Reinforcement

**Alain Nancey, Tencate Geosynthetics.**

Basal reinforcement by geosynthetics of piled embankment is a current technique. With more than 20 years of experience, geosynthetics have proved their efficiency in reinforcing the base of embankments. Especially in the northern Europe geosynthetics are widely used in this application even in difficult conditions.

Nevertheless the optimisation of the design remains a constant need to offer an economical, but also an environmental sustainable solution to the users, designers or contractors. Particularly for the reinforced piled embankment, the developments of soil improvement techniques require the need to rethink the models used for the geosynthetics: how to consider correctly the load transfer to the piles and the behaviour of the geosynthetics reinforcement?

In this context, two main projects have been carried out to get a better understanding of the load transfer and then to offer an optimised solution: "ASIRI" (France) and a detailed study based on laboratory tests series by Deltares institute (Netherlands). As a result of these research programs, the influence of parameters like the fill material, the stiffness and the type and position of geosynthetics have been clearly demonstrated. Additionally, the load distribution between piles and over the geosynthetic has been found different from those taken in the standard design models. A new design model is proposed by S V Eekelen, giving results closer to on site measurements

This presentation proposes to show a synthesis of the latest development and some real projects particularly over piles where high strength polyester wovens appeared as a reliable and economical solution.

### Biography:

Dr Alain Nancey is currently technical manager at TenCate Geosynthetics Europe and is in charge of technical marketing activities particularly on the domain of basal reinforcement. He obtained his thesis in Soil Mechanics at the University of Grenoble (F) in 1992. An active participation at numerous research projects on the use of geosynthetics contributes to an high level of expertise in this field (GARDEN 1992 on reinforced walls – RAFAEL 1998 on reinforcement over cavities - GEODETECT 2002 (Eureka label) development of a monitoring system, ASIRI (2004 – 2010) - Deltares test series (2009-2012) geosynthetic in piled embankment.

Member of the French committee of standardisation (BNTRA) and member of the European Committee for Standardization on Geotextiles (CEN TC 189 WG1, WG3, WG5 and ISO WG6).

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