

The geotextiles dilemma

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LEEDS – Manufacturers of geosynthetics are facing impossible demands from specifiers for products that are both 100% plastic-free and at the same time have a guaranteed performance life of 50, or even 100 years.

Chris Quirk, managing director of Naue Geosynthetics UK, based in Warrington, with headquarters in Espelkamp Germany, outlined this dilemma at the recent 27th Nonwovens Network UK conference held in Leeds, West Yorkshire, on October 12th.

Naue has this year introduced a high performance range of geotextiles called GreenLine, which are available in a weight range of 300-1,000 gsm and based on PLA.

“This development has been a real learning curve for us,” Quirk said. “The problem we face is that under the current European Union Construction Products Directive, geotextiles based on bioplastics, as we call recycled products, can only receive a durability rating of five years. This is as opposed to virgin plastics like polypropylene which have established durability of up to 100 years.

“It means that our new PLA products can only be used in temporary works at present, although we know that PLA has far greater durability than the guarantee we are allowed to give.”

At the same time there is a rise in the application of bans on the use of plastics in construction works notably in National Parks in Europe, California and New Zealand.

“It’s a tick-box exercise for contractors who ask for both no plastic and a 100-years guarantee,” Quirk observed. “For some challenging applications, fossil-based plastic will always have to be used and that is good bio-based plastic too, but this is not understood by regulators.”

Naue is enjoying particular success with its Bentofix geosynthetic clay barriers in applications such as landfills, industrial clear-up sites and wind farm access roads. These are needlepunched, reinforced composites that combine two durable geotextile outer layers and a uniform core of high-swelling powdered sodium bentonite clay with the ability to absorb 600 times their own weight. The clay forms a uniform multi-directional, shear-resistant hydraulic barrier with self-sealing and re-healing characteristics.

The benefits of Bentofix in such applications are indisputable, not just in terms of performance and durability, but in carbon footprint too – to seal a 4,500-square-metre site requires one truck of Bentofix compared to the 187 trucks of compacted clay would have to otherwise be transported to the site.