

## Working platform using TensarTech<sup>®</sup> Stratum™ to support crane outrigger loads for a wind farm at Ostercappeln, Germany, 2014

### TensarTech Stratum working platform used as an alternative to traditional ground improvement methods



*Heavy lift crane operating on completed TensarTech Stratum working platform*

#### BENEFITS TO CLIENT

- Cost savings made compared with original proposals to deal with low strength soils
- Solution applicable to the whole working area to allow different crane configurations to operate in case of maintenance works or future re-powering
- Fast and easy installation - no special equipment needed

#### THE PROBLEM

As with many wind farm projects, this project required stable working platforms to be provided over the soft soils encountered on site to allow lifting operations to take place for the construction of wind turbines. Traditional ground improvement techniques were initially considered but were proving to be expensive. A piled solution was also considered but along with the expense, the piles would need to be installed in specific locations to fit the individual type of crane being used for turbine construction. This would be potentially restrictive for future maintenance works or repowering, where other crane types may be needed which may not be compatible with the locally fixed concrete foundations. A more flexible solution was required.

#### THE SOLUTION

A TensarTech Stratum System was proposed as a cost effective alternative to these traditional methods. The cellular construction which characterises Stratum provided stability to the resulting platform with an improved bearing capacity over the low strength soils.

## PROJECT DESCRIPTION

A wind farm was to be constructed in Ostercappeln, Northern Germany. Existing ground conditions consisted of loose sandy silt and layers of peat with a ground water level which could rise up to the surface. One of the main challenges for the project was to construct a stable working platforms to allow the heavy lift cranes to operate. Outrigger loads from these cranes were expected to reach a maximum load of 183 tonnes. Traditional methods of ground improvement including a proposal of installing deep concrete piles and associated pile caps was proving to be very expensive and so alternative solutions were investigated by the project team. Tensar were approached for an alternative to the traditional methods and proposed the TensarTech Stratum System. This system was chosen based on both economic and technical advantages as a viable alternative and was then constructed to form the working platforms.

After removing the top soil layer, the formation was leveled with sand to get an even base for the construction of the TensarTech Stratum System. Tensar StratumGrids were then used to form the cellular mattress structure with the resulting cells filled with crushed gravel which was suitably compacted.



Compared with the original piled solution, the construction of TensarTech Stratum was much faster and there was no need for heavy equipment. As well as the cost benefits of removing the need for piles on this scheme, the biggest advantage and an investment into future for the client was that the whole area covered by the TensarTech Stratum was available to act as a lifting platform. This would be a major benefit in case of later maintenance or upgrading works where cranes with different outrigger configurations could be used without being limited by fixed pile locations.

*The cellular structure of TensarTech Stratum under construction*

**Tensar**<sup>®</sup>

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