

## Bearing capacity on marshlands Hemmingstedt, Germany

Enkagrid® MAX, Enkagrid® PRO, Enkagrid® TRC

How can one turn former marshlands into economically viable land, when load-bearing capacities are so poor that in times of heavy rainfall one cannot even walk on the land? By creating a floating foundation with the use of Enkagrid.



The municipality of Hemmingstedt had been facing the matter of the dormant marshlands for quite a while before a simple solution was presented: create a floating foundation with the use of high quality bi-axial geogrids to deliver the critical soil stabilization, on which economic activities can be initiated. In the Hemmingstedt case, this meant building a 12 ha greenhouse complex.

The greenhouse complex consisted of several elements: a greenhouse platform which also served as a working platform during the building process, a network of distribution and main feeder roads, rainwater basins (including dikes) and a water tank. Each element having its own specific demands for load-bearing capacity, so EnkaRoad - Low & Bonar's design program - was used to calculate which geogrids and



intermediate layers of fill would be necessary to deliver the required load-bearing capacities for each of the elements. In addition, the individual layers were separated by nonwoven geotextiles, also provided by Bonar.

### **Enkagrid TRC**

An important part of the solution for this unique and large project is Bonar's Enkagrid TRC which is used when conventional geogrids are not adequate. Enkagrid TRC is a composite of a Twaron<sup>®</sup> aramid mesh for reinforcement, embedded in a nonwoven geotextile for separation. The aramid fibers are five times stronger than steel and combine high strength with low elongation.

Nowadays, 5-axle, 60-ton trucks may drive, undisturbed, in an area of former marshlands, where a major greenhouse complex was built on a floating foundation. New economic value - thanks to the outstanding stabilizing properties of Enkagrid.

Location: Hemmingstedt, Germany  
Project owner: Municipality of Hemmingstedt  
Product type: Enkagrid MAX 30, Enkagrid PRO 60, Enkagrid TRC 30