Problem
Two 5000 m² warehouses for storage of thousands of tons of sulphate had to be built on of low bearing, silty, estuarine area. The ground was unable to carry the high loads and engineering solution was needed to provide a suitable foundation to carry the large loads as economically and possible and with the fast construction programme.

Solution
A piling solution to meet the loading requirements was ruled out as to slow and to expensive. A raft foundation of ParaLink™ 300 basal reinforcement laid on a pre-consolidated base using the dynamic compaction and replacement method was found to be the best solution for this problem. ParaLink™ 300 reinforcement did not only offer a fast and sound engineering solution, but a cost analysis showed that this alternative provided a huge cost saving as well.

Design Features
Knowledge of the geology of the area and very specific soil details are necessary for any basal reinforcement design. In this project the Dutch Probe tests, DCP, boreholes, inspection pits, etc were all carried out to determine the site conditions. The level of the groundwater table was also determined.

Client name:
RICHARDS BAY MINERALS VALLEY TERMINALS
Main contractor name:
LEO MAT
Consultant:
GEOTECH MOORE SPENCE JONES
Product used:
PARALINK™ 300, PARAWEB
Construction info:
Construction date: November 2007
Completion date: December 2007
Benefits
The laying of ParaLink™ 300 is easy and simply entails unrolling the roll of ParaLink™ 300 onto well prepared ground and then cover with a selected granular fill, compacted as per specification. The rate of construction was therefore very quick, the contractor was able to lay an average of 1000m² of ParaLink™ 300 per day and completed the 11 000 sq metres raft foundation in six weeks on time and on budget.

A traditional piled foundation would have not made the project feasible, both in terms of cost and time.