

Project Report

Vertical drainage

Cofra

Project

Mobasa Port development Project Kenya

Total Project Scope

5.871.569,17 m¹ Vertical drains

124.597 m¹ Horizontal drains

Drain type

Vertical: MebraDrain MD7007

Horizontal: PP450

Period

February 2013 – November 2013

Equipment

O&K RH40, CAT345, CAT385, CAT390

Hydraulic excavators.

MZ325, EVV, ML25 drain stitchers



Vertical wick drains can be used for soil stabilization in areas with compressible and water saturated soils. When loads such as road embankments, hydraulic fills or dikes are placed on soft compressible soils, significant settlement may occur and this in turn could create serious problems. MebraDrain installed evenly spaced, into the depth of the compressible layer, will allow pore water to flow in a horizontal direction to the nearest drain and escape freely, thereby reducing the consolidation period significantly.



The project

In the Port of Mombasa the container terminal is extended with 350.000m². The sand used is reclaimed about 25km offshore from the Indian ocean and transported to shore with a "hopper" carrying 10.000m³ at the time. The sand is pumped thru a "spray pontoon" on top of the soft existing layer under the waterlevel. Above the waterlevel sand is pumped onto the sand-fill and leveled by ground equipment. The vertical drains have been installed from the sand fill, till a depth of - 34m¹.

Equipment

For this project we used;

- O&K RH40
- CAT345
- CAT385
- CAT390

All hydraulic excavators are assembled with winch stitchers.

Special requirements

Part of our work scope is to install horizontal drains, connected to the vertical drains. These horizontal drains are placed in a trench and connected before backfilling.

Drain configuration

Vertical drainage was installed up to 35m below the working platform. The drains are installed in a rectangular drainspacing of 1,20m. In total 244.000 drains are installed with a total length of 5.871.569,17 m¹. A total of 124.597m¹ Horizontal drains are installed.

