

Gibson Bay Wind Farm - Near Oyster Bay in the Eastern Cape

Dynamic Compaction and installation of CFA Piles to Turbine Tower Bases



Project Facts

Owner

ENEL Green Power

Client

NORDEX - c/o Power Construction

Consultant

QUNU Consulting

Quantity

360 No. CFA piles to average depth of 14m for 16 No. Turbine Towers (ave. 22 No. Per Tower)

Dynamic Compaction - 14 No. Turbine Towers x ave. 380m² = 5 320m²

Period of time

June 2015 - December 2015 - DC Works

August 2015 - March 2016 - Piling Works

Franki Africa

674 Pretoria Main Road,
Wynberg, Sandton

P.O. Box 39075, Bramley, 2018

South Africa

Tel. +27 11 531 2700

info@franki.com

www.franki.co.za

CFA Piling

This project entailed Piling and the Dynamic Compaction of In-situ soils of typically wind blown and cemented sands within the vegetated undulating high dunes which run parallel to the nearby coastline.

The piling works comprised of the installation of 360 No. 750mm Ø Continuous Flight Auger (CFA) Piles.

While carrying out the piling works the challenges included heavy rains, long moves between towers, unforeseen ground conditions, unusual testing criteria, design of piles by others and archaeological relic discoveries.





Dynamic Compaction

Product Description

Piling

-)] 360 No. 750mm Ø Continuous Flight Auger (CFA) piles to an average depth of 14m
-)] B-Tronic Quality Control
-)] Destructive Pile Load Tests

Dynamic Compaction

-)] Penetration Compaction on Primary and Secondary positions by dropping an 11.8t Cylindrical Pounder through an 18m drop height.
-)] Ironing with a 10.5t Hexagon Button Pounder through an 18m drop height with a 30% overlap.

The dynamic compaction works also faced similar challenges such as heavy rains, long moves between towers on steep pathfinder tracks, high coastal winds and archaeological relic discoveries.

Despite these challenges the project was completed on time and with Zero Safety incidents.

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