CENTRUM PÆLE A/S

Foundation System

Electrification Foundations for Railways

CENTRUM

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We have installed almost 100,000 units across Europe over the last 30 years, equating to electrification of circa 4,000km of track

PILE SYSTEM

The Centrum System is based on a precast, reinforced concrete pile with integral stainless steel bolts for subsequent mounting of masts.

The piles are adapted for the electrification application by enlarging the upper part of the pile sections. This increases the moment capacity perpendicular to the orientation of the rail.

The product is manufactured in the Centrum Pæle factory, a controlled environment that ensures the highest quality is achieved.

It has a design life of up to 120 years, resulting in a cost effective, efficient and sustainable solution for the rail electrification market with full traceability of all components.

The pile system is maintenance free for a design life of 120 years, resulting in no disruption for maintenance

It is vital to understand and allow time in the schedule for each of the individual phases involved in the process of implementing the precast pile system for electrification projects

PHASES IN PILE SYSTEM IMPLEMENTATION

- Specification of pile positions, pile loads, and deflection criteria
- Site investigations, to verify soil conditions and geometry (cross section) of railway line
- Design of piles (ultimate capacity and deformation calculations)
- Production of piles in the pile factory
- Supply of piles. (transport from pile factory to location along the track)
- Installation of piles by driving with hydraulic hammer
- Documentation, including As-Built data

BASIS FOR DESIGN

Design loads must be specified as:

- Horizontal load towards track/away from track
- Bending moments towards track/away from track
- Vertical load
- Maximum acceptable rotation of pile top for full characteristic load to be specified
- Soil type (including strength and stiffness parameters) and ground water level must be specified
- Cross section of rail track, showing possible inclination of slopes

The Geotechnical Design of the piles is based on a soil-pile interactive model with elastic springs, representing the soil stiffess in different layers, for which a bespoke piece of design software has been developed