

Construction of the Ostróda bypass - S5 on the section Ornowo - Wirwajdy

Ostróda, Poland

Construction of the S5 expressway - approx. 5.3km of expressway, connecting the Ostróda bypass within DK16 with the current course of DK16 near Wirwajdy.



The project

Test loading of 630 mm diameter CFA piles together with geotechnical and geodetic monitoring of the embankment as part of the construction of the S5 expressway between Ornowo and Wirwajdy

The challenge

Programme of test pile loads for the PZDd-6 bridge structure within the S5 expressway. Comprehensive monitoring project of embankment settlement on the section of about 200 m during construction and during road operation.

The solution

Comprehensive program of static and dynamic compressive load tests of CFA piles with a diameter of 630mm as elements of foundations of the future bridge structure PZDd-6. Maximum forces during the tests of CFA piles were ~ 3.2 MN.

In order to correctly assess the consolidation of the subsoil under the embankment and the correctness of the reinforcement performed by Keller in the technology of gravel and concrete columns, a monitoring system based on three different measuring methods was implemented. The first method was based on drilling and installation of 4 vertical inclinometers. The first method involved drilling out and installing 4 vertical inclinometers to control horizontal displacements at the edges of the embankment base. The other two, i.e. profilometers and disk-type benchmarks located in the embankment, provided data on the settlement of the embankment. The implementation of such a detailed monitoring system allows the contractor to safely carry out road works in areas with unfavorable soil and water conditions.

Project facts

Owner(s)

General Directorate for National Roads and Motorways
Branch in Olsztyn

Keller business unit(s)

Geo-Instruments Polska

Main contractor(s)

Budimex S.A.

Engineer(s)

Jerzy Pieronkiewicz - Technical Director
Tomasz Ziętkowski - Monitoring Engineer

Services

Deep foundations testing
Deformation monitoring

Markets

Infrastructure

Technologies

Deep foundation load tests