Welcome

WIND. ASSURING CONFIDENCE THROUGH COMPETENCE

Jan Hebig
Dynapile – CPT and Dynamic pile measurements in Altenwalde
Content and Objectives

- Embedded in the research project „VIBRO- Pfahl“ about
  - Comparison and Evaluation between hammered and vibratory driven piles as regards as installation method and pile performance
  - Concentrated research on Soil resistance against lateral pile loads
Content and Objectives

- Tasks in „dynapile“:
  - **Evaluation** between **hammered and vibratory driven piles** in terms of soil resistance against penetration (**axial direction**)
  - Adapting of measuring equipment and recording to large pile diameters
  - Selection and application of **measuring** and evaluation method for **Vibro-Piling**
  - Influence of soil properties and **interaction with the soil during installation** need special attention
Activities

- Numerous CPT across the test site for detailed investigation before and after installation
Activities

- Strain and acceleration measurements at the pile head during installation to determine penetration resistance
Analysis – CPT

Hammered pile VP 04

Vibro-piling VP 03
Analysis – CPT

Hammered pile VP 04

Vibro-piling VP 03
Analysis – Dynamic pile measurements
Analysis – Dynamic pile measurements

Strains - 2. Part of Installation from 03.07.2014 - 2 strain gauges, strain-range

Time [s]

Strains [\text{\textmu m}]

DMS 1  DMS 3
Analysis – Dynamic pile measurements
Analysis – Dynamic pile measurements
Analysis – Dynamic pile measurements

Strain compared to Velocity - 2. Part of Installation from 01.07.2014

- Strain [µm/m] Sensor 2.1
- Strain [µm/m] Sensor 2.3
- Velocity [mm/s] via peaks Sensor 2.6
Analysis – Dynamic pile measurements

Hammered pile VP 04  Vibro-piling VP 03

Rigid body approach:
12 MN

Rodgers & Littlejohn:
19 MN

Figure 16: Comparison of End Bearing Capacities
Thank you for your attention