Development of a stopdriving criterion for vibrodriven steel sheet piles –definition of problem, results of full scale field tests, production experiences and numeric attempts.

NGV2022



Kenneth Viking





Stop-driving criteria of vibro-driven sheet piles

<u>AGENDA</u>

- Backround
- Problem
- Results
- Production
- Numerical



Background/Problem







Traffic interchange





Problem

The knowledge is to define the needed to stop vibro driving (i.e. define the stop-driving criteria) before toe gets damaged.

Because; -with a damaged pile toe then cost intensive measures is needed.











Production





Production





Production

- The knowledge do exist (se picture)
- Example when it works





Numerical



Numerical

- Lund Tebäck R, 2019, Dynamisk fininita element-analys av vibrodriven spontplanka, Report TVGT-5066.
- Andersson A, Jonsson J, 2021, Modelling and simulation of vibratory driven sheet piles - development of a stop a criterion, Report TVSM-5254,
- PhD student @ LTH together with (KTH) to fall 2023 ???? field test of instrumented damaged toe + new probing method



Numerical

Challenges

- Dynamic interlock friction.
- Dynamic soil resistance (toe and shaft).
- Dynamic toe yield when toe hits boulder/till
- Probing method



Thank You

