WET DEEP SOIL MIXING – LESSONS FROM HAMMARSLUNDSVALLEN IN KRISTIANSTAD

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Abstract

As part of the planned reconstruction of Hammarlundsvallen in Kristianstad, Sweden, a test program was conducted using the Wet Deep Soil Mixing (Wet DSM) method to assess its suitability for local soil conditions and preliminary design requirements. Laboratory testing was initially performed by the designer and an independent lab, followed by a bench-scale program by Keller to evaluate different binder types, mix ranges, preliminary strength, and workability. Results showed strength values between 0.3 MPa and 1.2 MPa, guiding agreed adjustments to the field trial.

The field test installed 21 DSM columns, each about 20 m long and 2 m in diameter, varying binder types, installation parameters, slurry amounts, and cement dosages. Objectives included identifying suitable mix designs, verifying constructability, assessing tolerances, and evaluating early and long-term strength development. Quality control involved wet grab sampling, core drilling (planned), and visual inspections. Laboratory testing of wet samples is ongoing, with unconfined compressive strength (UCS) tests planned. Early field tests, including FKPS and CPT, provided indicative strength data.

This case study demonstrates the value of aligning lab and bench-scale testing with full-scale trials to refine design and execution, ensuring reliable ground improvement and supporting the next project stage

Figur 1. From Lab to In-Situ