Push-Heat / TC-CPT

Combined Thermal Conductivity- and CPT testing. In the offshore electric power cable- and pipeline market, thermal conductivity measurements are considered a "must" for a reliable cable or pipeline design. To facilitate measurement in coastal areas, Fielax and MSH have developed Pushheat. This system combines the Fielax thermal conductivity probe with the MSH mini CPT. The system allows both stand-alone and combined thermal conductivity- and CPT measurements.



fig. 1: Mini CPT system

Specifications

A typical equipment spread includes a base frame with pushing unit, an umbilical reel with cable, a service container and 2 portable computers.

Thermal conductivity probe

- Maximum pushing depth 10 m
- Maximum 19 thermistors (stand alone),
- Maximum 14 thermistors (CPTcombi).
- Tip resistance (Qc), friction (fs) Porewater pressure (CPT-Combi)
- 2 cm² cones,
- Maximum tip resistance allowed: 45 Mpa.

System advantages

- Quick mobilisation and demobilisation
- Deployment from small vessels possible
- Continuous pushing system with minimal operator involvement, allowing for rapid and accurate testing
- Real-time display of CPT results
- Minimal sediment disturbance, hence optimum thermal conductivity measurement results
- Testing at intermediate levels possible
- With combined measurements, cycle- time is reduced by factor 2

fig. 2: system with thermal probe installed

Vessel requirements

Electric power:	380V AC, 50 Hz,
	32 A
Hoisting Height:	3.0 m minimum
SWL:	3 T minimum

Application

Combined in-situ measurements for thermal capacity design and cable burial assessment ideal for coastal zones with sandy or clayey sediment.



fig. 3: typical measurement result



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