

ABSTRACT

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SITE CHARACTERIZATION USING DMT COMPARED TO CPT AND SPT : STUDY CASE OF LABUHAN ANGIN, SIBOLGA

(xviii+ 141 pages: 17 tables, 99 figures, 6 appendixes)

Dilatometer test (known as DMT) was first developed by Silvano Marchetti (1975). This test has been widely used in the world but not in Indonesia. DMT includes penetrating the blade vertically into the ground and inflating a stainless steel membrane at one side of the blade. Two readings taken; pressure A and pressure B. Alternatively pressure C can be read while deflating membrane.

These basic parameters can be obtained from DMT: material index (I_D), horizontal stress index (K_D) and dilatometer modulus (E_D). These three parameters then can be used to obtain some geotechnical parameters which include: coefficient of lateral earth pressure (K_0), undrained shear strength (c_u), angle of internal friction (ϕ) and overconsolidation ratio (OCR).

A study case from Labuhan Angin Coal Fired Steam Power Plant in Sibolga was analysed. DMT test were located in 6 locations DMT-1, DMT-2, DMT-3, DMT-5, DMT-6 and DMT-7. Geotechnical parameters obtained from these points were compared to those obtained from CPT, SPT and laboratory tests.

Data from DMT-1, DMT-3, DMT-5 and DMT-6 shows that soils behave as cohesionless soils and DMT-2 and DMT-7 behave as cohesive soils. Ratio of $M_{DMT}/N_{SPT} = 6.6$ $E_D/N_{SPT} = 2.7$ and $M_{DMT}/q_c = 12 - 20$ which shows that soil is overconsolidated sand.

References: 4(2001 – 2005)