

A Study of Tensile Strength on Contaminated and Compacted Sand-Bentonite Mixtures

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ABSTRACT

Theoretical and experimental studies of the unconfined penetration test (UP) method were conducted for determination of the tensile strength of contaminated and compacted sand-bentonite mixtures. The tensile strength of the specimen can be estimated from limit analysis based on the theory of perfect plasticity with assumptions, sufficient local deformability and modified Mohr-Coulomb failure criterion. Some factors including relative size of specimen-disc, disc diameter, and loading rate affect the tensile strength of mixtures. Misalignment between loading axis (discs) and specimen in the UP test also influences the results of tensile strength.

Key words: tensile strength, compacted sand-bentonite mixtures, unconfined penetration test, modified Mohr-Coulomb failure criterion, alignment