

## Effect of Dynamic and Static Methods of Compaction on Soil Strength

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**Abstract:** *The effect of static (hydraulic press) and dynamic (Proctor) methods of compaction on the strength of soils was investigated in the laboratory. Soil samples of different densities were obtained by incorporating peat into three agricultural soils at 0%, 4%, 8% and 12%, air-dry mass basis. The soils were dynamically compacted using 5, 15 and 25 blows of the Proctor hammer at moisture contents which varied from 5% to 55%, after which bulk density and penetration resistance were measured. The soil was then loosened and repacked to the same bulk densities using static compaction imposed via a hydraulic press and penetration resistance was again measured. Peak strengths of soils achieved from the two compaction methods were compared and the two sets of values were highly correlated ( $P = 0.001$ ). Results indicate that as long as the same soils are compacted statically or dynamically at the similar moisture contents to same bulk densities, similar strength values are expected. The effect of method of soil compaction on soil strength is not important.*

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