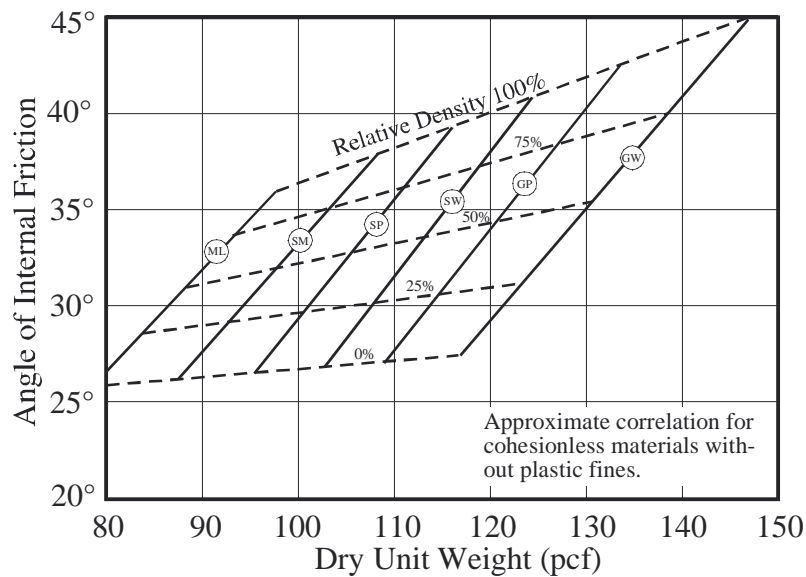




Compaction of Soils

Proper placement and compaction of soils is essential to the successful performance of retaining wall structures. Post construction settlement is an obvious concern with poorly compacted materials as well as excessive lateral wall movement and/or insufficient shear strength to perform as intended. Soils must be compacted in lifts to achieve maximum soil shear strength and validate the design.

The chart below indicates a relationship between peak shear strength and soil density for cohesionless granular materials with no plastic fines as shown. As the relative density of the material is increased, significant gains are realized in shear strength. Therefore, it is necessary that levels of compaction and lift thickness be specified and obtained during construction to insure proper performance.



Correlations of Strength Characteristics for Granular Soils

(Ref. from NAVFAC DM 7.01-1986)

Granular soils are much more tolerant to variations in the placement and compaction process than the finer silts and clays which require close monitoring of moisture content and compaction procedures. The standard soil density specification for the structural fill behind Keystone walls is indicated below. Moisture content is limited to optimum moisture to avoid wall misalignment during construction due to overly saturated soils being compacted behind the wall facing.

Test Criteria	Minimum %	Moisture %	ASTM Method	AASHTO Method
Standard Proctor	95%	+0, -3	D 698	T-99
Modified Proctor	90-92%	+0, -3	D 1557	T-180