

Soils Analysis Checklist

This checklist must be completed when soil analysis is made to determine the soil type (s) present in the excavation. A separate analysis must be performed on the excavation (trench) is stretched over a distance where soil type changes.

Site Location: _____

Date: _____ Time: _____ Competent Person: _____

Where Was The Sample Taken From: _____

Excavation Depth: _____ Excavation Width: _____ Excavation Length: _____

Visual Test

Particle type: Fine grained (cohesive) Granular (sand / gravel)
Water conditions: Wet Dry Seeping water
 Surface water present Submerged

Previously disturbed soils: Yes No

Underground utilities: Yes No

If yes, what type? _____

Layered soils? Note: the less stable layer controls soil type. Yes No

Layered soils dipping into excavation: Yes No Unknown

Excavation exposed to vibrations: Yes No

If yes, from what? _____

Crack like openings or spalling observed: Yes No

Conditions that may create a hazardous atmosphere: Yes No

If yes, identify condition and source: _____

Surface encumbrances: Yes No

If yes, what type? _____

Work to be performed near public vehicular traffic: Yes No

Possible confined space exposure: Yes No

Manual Test

Plasticity: Cohesive Non-Cohesive

Dry Strength: Granular (crumbles easily) Cohesive (broken with difficulty)

Wet shake: Water comes to surface (granular material) Surface remains dry (clay material)

Note: The following unconfined compressive strength tests should be performed on undisturbed soils.

Thumb Test used to estimate unconfined compressive strength of cohesive soil.

Test performed: Yes No

Type A - soil indented by thumb with very great effort.

Type B - soil indented by thumb with some effort.

Type C - soil easily penetrated several inches by thumb with little or no effort. If soil is submerged, seeping water, subjected to surface water, runoff, exposed to wedging.

Penetrometer or Shearvane used to estimate on confined compresses strength of the cohesive soils:

Test performed: Yes No Device Used: _____

Type A soil: Cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if: (1) The soil is fissured; or (2) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or (3) The soil has been previously disturbed; or (4) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or (5) The material is subject to other factors that would require it to be classified as a less stable material.

Type B soil: (1) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf; or (2) Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam. (3) Previously disturbed soils except those which would otherwise be classed as Type C soil. (4) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or (5) Dry rock that is not stable; or (6) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

Type C soil: (1) Cohesive soil with an unconfined compressive strength of 0.5 tsf or less; or (2) Granular soils including gravel, sand, and loamy sand; or (3) Submerged soil or soil from which water is freely seeping; or (4) Submerged rock that is not stable, or (5) Material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or steeper.

Soil Classification

Stable Rock Type A Type B Type C

Selection of Protective System

Protective System: Sloping Specify angle _____
Timber Shoring
Aluminum hydraulic shoring
Trench shield maximum depth in this soil