

15.3: Soil Classification

Soil Classifications

OSHA 1926 Subpart "P" Appendix A

Stable Rock

Stable rock is defined as a natural mineral matter that can be excavated with vertical sides and remain intact while exposed.

Type "A"

Type A soil is cohesive soil with the following characteristics:

1. An unconfined compressive strength of 1.5 tons per sq. ft. or greater.
2. Soils like clay, silty clay, sandy clay, clay loam and in some cases silty clay loam and sandy clay loam are classified as Type A.
3. Cemented soils such as caliche and hardpan are classified as Type A soils.
4. Soils cannot be classified as Type A if any of the following conditions exist:
5. The soil is fissured.
6. The soil is subject to vibration from heavy traffic, pile driving or other similar effects.
7. The soil has been previously disturbed.
8. 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 or greater.
9. The material is subject to other factors that would require it to be classified as a less stable material.

Type "B"

Type B soil is cohesive soil with the following characteristics:

1. Unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf.
2. Granular cohesion less soils like angular gravel, silt, silt loam, and in some cases silty clay loam and sandy clay loam are classified as Type B soils.
3. Soils would be classified as Type B if any of the following conditions exist:
4. Previously disturbed soils except those which would otherwise be classified as Type C soil.
5. Soil that meets the unconfined compressive strength or cementation requirements for Type A soil, but is fissured or subject to vibration.
6. Dry rock that is not stable.
7. 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, but only if the material would otherwise be classified as Type B soil.

Type "C"

Type C soil is cohesive soil with the following characteristics:

1. An unconfined compressive strength of 0.5 tsf or less.
2. Type C soils are granular soils including gravel, sand and loamy soil.
3. Submerged soil or soil from which water is freely seeping.
4. Submerged rock that is not stable.
5. 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 or steeper.

Soil Site Analysis

Each soil and rock deposit shall be analyzed and classified by a competent person as one of the four types identified above, Stable Rock, or Type A, B, or C.

The competent person shall use at least one visual test and one manual test to perform the soil deposit analysis.

Visual tests are done by observing samples of the soil that are excavated and samples taken

from the sides of the excavation. Appendix A, of Subpart P, lists the appropriate procedures for performing visual tests.

Manual tests are performed to determine the quality and type of the soil deposit. Some of the most common manual tests are: Plasticity, Dry Strength, Thumb Penetration and the Drying test. Appendix A, of Subpart P, lists the appropriate procedures for performing manual tests.

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