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SOIL CLASSIFICATION

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# **SOIL CLASSIFICATION**

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## **Summary :**

The purpose of this project is to study the different soil classification systems and their importance. Another objective is to show the significance of soil tests, either laboratory tests or in-situ tests, in soil classification. Below there is a small description for the contents of each chapter.

Chapter I: Origin and definition of soil. General information and major characteristics of soils.

Chapter II: The need to identify and classify soils. Characteristics which help us do that.

Chapter III: Description of the most important tests

Chapter IV: Description of the AASHTO soil classification system

Chapter V: Description of the Unified soil classification system

Chapter VI: Description of the Pedological soil classification system and Air photo interpretation

Chapter VII: Brief Description of other classification systems



## Introduction:

Soil engineers should realize that they are dealing with an inherently variable, complex, and in many respects an unusual kind of engineering material in their work with soils. In marked contrast to the essential uniformity of the common structural materials, the predictability of their behavior within the range of common working stresses, and the marked constancy of their responses and properties for all common usages unaffected by external environmental influences, soils should not be expected to follow such simple patterns of behavior.

The very fact of having test methods for the study of soil properties may suggest to the unwary that soils are similar to other materials of construction, and therefore always susceptible to routine testing in the laboratory. That this is not the case, all who have gained any experience in the use of soil mechanics know well that the necessity for the vital use of judgement in all phases of soil testing should never be forgotten.

Thus it is apparent that in using the basic test methods, the engineer must give proper consideration to climate, traffic, and all other factors that are an inherent part of the specific design problem, adjusting these methods as required. The tests described in chapter III that follows, help us to classify soils based on their engineering properties.

Soil classification systems are valuable in identifying soil changes that indicate a need for strength tests. Three soil classification systems in common use are:

- (1) The AASHTO classification system for soils
- (2) The Unified soil classification system
- (3) The Pedological classification of soils

There are some other classification systems for soils that are described briefly in the last chapter of this project but the above three systems are discussed in more detail.