

# SOFT SOIL PROPERTIES AND TESTING METHODS

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Soils of the Dneper-Bug liman beds of softest and very soft consistency, with high water content and a high degree of void ratio and water.

Soils are of the fine-grained soil type with a high content of clay and silt particles. The physical, biological and structural-mechanical group of organo-mineral soils is characterized by the presence in the solid phase of hydrophilic components, a high degree of saturation and compressibility, the presence of strong interparticle bonds, low density and low bearing capacity.

Taking into account the increasing volume of engineering construction on sites with organo-mineral sediments, and their utilization as deposits of solid raw materials, the Author has formulated his goal as an elaboration of a unique methodological and technical background for universal exploration of structural-mechanical and hydro-mechanical properties and composition of such soils, together with establishment of theoretical fundamentals and practical recommendations for prediction of the behaviour of such soils under loading, at deswelling, and due to other effects.

The solution of this task has been possible because of the many years of the Author's experience in the formulation and extensive practical application of improved methods and a number of technical measures aimed at investigating the properties of soft organo-mineral soils, along with elaboration of special techniques for computation of the stress-strain condition under varying loads. This book describes the original methods and technical measures of testing soft soils in laboratory and field, together with characteristic criteria and different relationships worked out directly by the Author and his associates.

Since this book provides no detailed guidelines or recommendations, the testing techniques and the principles of operation of the measuring apparatus have been given in a condensed form. Generally known, or standard, methods and apparatus are not considered. References are only given on such points.

Physico-mechanical properties of organo-mineral soils are discussed first. This has been possible in the wake of the design of the special measuring and techniques of investigation, including static probing, vane shear tests, blade pressuremeter tests, sampling of large-size core specimens, and many other laboratory tests.

Use is made of the extensive material obtained by the Author within