

## 有机质对水泥加固软土效果的影响

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**摘要** 工程中发现采用水泥加固有机质含量较高的软土地基时, 土中有机质会对水泥的加固效果产生很大影响, 从而使得加固后土体的强度达不到预期目的。针对这一情况进行一些室内研究, 在研究中向土样中加入一定量的有机物质来改变其有机质含量, 以测定土中有机质含量对水泥加固软土效果的影响, 同时在室内模拟水泥加固软土的过程, 然后采用无侧限抗压试验及直接剪切试验测定不同有机质含量的软土在水泥加固后的力学指标, 并从易溶盐、阳离子交换容量及微结构等方面对有机质在水泥加固软土中所起的作用进行了更进一步的分析。分析结果表明: 随着有机质含量的提高, 试样的力学性质变差, 且易溶盐、阳离子交换容量数据及微结构照片都从不同角度对力学结果进行补充说明, 从而更加明确土中有机质对水泥加固软土效果的影响, 也为实际工程提供了一定的依据。

**关键词** [土力学](#); [有机质](#); [水泥](#); [加固](#); [软土](#)

分类号

## INFLUENCES OF ORGANIC MATTER ON THE EFFECTS OF CONSOLIDATING SOFT SOIL WITH CEMENT

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### Abstract

In some projects using cement to improve soft soil foundations, it is found that organic matters in soil have great influences on the stabilization effects when the organic content soft soil is high, which makes the strength of stabilized soil not reach the expected one. So some indoor studies have been performed on this problem. It is found that the organic content of soil is changed by adding substance with high organic content in order to study the influence of organic content on the consolidation effect of cement, and the progress of consolidating soft soil with cement is modeled indoors. Then, the mechanical indexes of soft soil with different organic contents are determined with direct shear test and unconfined compression test after being consolidated by cement. A further analysis on the effect of organic matter in cement consolidating soft soil is made on the basis of soluble salt, exchange capacity of cation and microstructure. The derived results show that the more organic matters there are in soft soil, the worse the mechanical properties are. Moreover, data of soluble salt, exchange capacity of cation and microstructure pictures all make a compensating explain to the mechanical results, which exert the influences of organic on the effect of consolidating soft soil with cement much clearly. It can provide reference to the practical engineering projects.

**Key words** [soil mechanics](#); [organic matter](#); [cement](#); [consolidation](#); [soft soil](#)

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