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强夯后地基承载力的估算

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摘要 基于强夯法处理软弱地基承载力的研究现状, 对夯后地基承载力作经验统计回归分析, 得出强夯后地基容许承载力是单夯击能和点夯击数的函数。研究表明, 其不仅仅为单夯击能的函数。强夯处理无黏性土地基时, 按照拟静力法, 首先计算出强夯拟静力、夯坑深度, 然后确定夯后相对密实度。按照前人研究的相对密实度和标准贯入值的经验关系来确定标准贯入值, 再依据《建筑地基基础设计规范》(GB50007-2002)的规定, 按标准贯入击数确定地基承载力标准值, 提出其估算公式。工程实例表明, 所获得的公式简单且易应用。强夯后地基承载力的估算可为强夯法处理地基的初步设计和处理方案的比选提供依据。

关键词 [土力学; 强夯; 无黏性土; 地基承载力; 拟静力](#)

分类号

EVALUATION OF BEARING CAPACITY OF FOUNDATION TREATED WITH DYNAMIC COMPACTION METHOD

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Abstract

The bearing capacity of foundation treated with dynamic compaction—ground improvement method, is evaluated. Evaluation of bearing capacity of foundation with dynamic compaction method can provide references to the preliminary design of ground improvement. The in-situ loading tests for dynamic compaction projects to determine all types of foundation’s bearing capacity are performed because, sometimes, the theoretical calculation is not always reliable. Through the empirical-statistical regression analysis of some practical data for the bearing capacity of foundation treated with dynamic compaction, it is found that the allowable bearing capacity of foundation is a function of energy of single drop and the number of total drops. When the foundation of noncohesive soil is treated, the equivalent quasi-static force between the tamper, ground and the depth of compaction-pit according to the quasi-static method is studied, while the contact force on the surface between the tamper and ground is represented by an equivalent static force. Then the volumetric strain, the relative density of soil beneath the surface and the theoretical values representing the results of standard penetration test using empirical relationship between relative density and standard penetration, which are achieved by predecessors, are determined. Last, the standard values of bearing capacity of foundation is determined according to Design Code for Building Foundation(GB5007-2002), in which the relationship between standard values of bearing capacity of foundation and standard penetration is given. The proposed method can provide references to the primary design and selection of schemes.

Key words [soil mechanics; dynamic compaction; noncohesive soil; bearing capacity](#)

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