

本期目录 | 下期目录 | 过刊浏览 | 高级检索

[打印本

页] [关闭]

论文

土石混合体重塑样制备及其压密特征与力学特性分析

廖秋林^{①②}, 李晓^①, 李守定^①

(^①中国科学院地质与地球物理研究所 ■ 中国科学院工程地质力学重点实验室 ■ 北京 ■ 100029)

(^②北京城建集团建筑工程总承包部 ■ 北京 ■ 100088)

摘要:

基于土力学与岩石力学的实验室力学试验原理与方法,本文首先探索了土石混合体重塑样的制备、压密特性等问题,初步给出土石混合体重塑样制备的一个标准流程,并揭示了土石混合体的压密特性与机制,即土石混合体压密主要是土体的压密,但块石直接影响其压密效果,并指出本次试验土石混合体50锤次可达到的最佳压密效果,而压密机制随含石量增加而有所变化。运用高精度岩石试验机,首次进行了土石混合体的单轴压缩试验。试验表明,在无侧限条件下块石与土体无胶结,导致了试样实际承载面积减小,使其抗压强度与弹模反而低于土体;而土石混合体中块石形成骨架结构的力学响应是土石混合体的一个重要的力学特性。

关键词: 土石混合体,单轴压缩试验,重塑样,压密特征,骨架结构

SAMPLE REMODELING, COMPACTNESS CHARACTERISTIC AND MECHANICAL BEHAVIORS OF ROCK SOIL MIXTURES

LIAO Qiulin^{①②}, LI Xiao^①, LI Shouding^①

(^①Key Laboratory of Engineering Geology|Institute of Geology and Geophysics, Chinese Academy of Sciences|Beijing ■ 100029)

(^②Beijing Urban Construction Group Co., Ltd., Beijing ■ 100044)

Abstract:

扩展功能
本文信息
Supporting info
PDF (2109KB)
[HTML全文]
参考文献 [PDF]
参考文献
服务与反馈
把本文推荐给朋友
加入我的书架
加入引用管理器
引用本文
Email Alert
文章反馈
浏览反馈信息
本文关键词相关文章
土石混合体,单轴压缩试验,重塑样,压密特征,骨架结构
本文作者相关文章
PubMed

According to experimental theory and method of soil mechanics and rock mechanics, this paper studies equipments, methods & requirements for sample remodeling of rock soil mixtures (RSM). A standard procedure for sample remodeling of RSM is proposed. Compactness characteristic and mechanism of RSM are analyzed by comparing lots of remodeling RSM samples with soil samples. The compactness of RSM in sample remodeling is completed as a result of the compactness of the soil in RSM in fact. The uniaxial compression of RSM is firstly carried out by utilizing high precision rock test rig. Some important test data are obtained to explore the mechanical behaviors of RSM. It is shown that the compression strength, Young's modulus of RSM are lower than those of soils under the uniaxial compression, which contradicts to the common consensus. This contradiction could be explained with the poor contact mode between the rock blocks and soils in RSM, where the skeleton structure composed of rock blocks in RSM bears the main loading under unconfined compression while the soils in RSM did little. Overall, the skeleton structure composed of rock blocks in RSM is crucial to the compression strength, Young's modulus, characteristic of deformation and failure for RSM. It also is an important mechanical behavior of RSM.

Keywords: Rock and soil mixture (RSM), Uniaxial compression, Remodeling samples, Compactness characteristic, Skeleton structure

收稿日期 修回日期 网络版发布日期