

土木工程

膨胀性土质隧道围岩级别划分与支护对策研究

李树忱¹,徐钦健¹,冯现大¹,胡世权²,周强²

1. 山东大学岩土与结构工程研究中心, 山东 济南 250061;
2. 中铁十四局集团第二工程有限公司, 山东 泰安 271624

摘要:

采用统计分析结合室内试验的方法,对山西某膨胀性土质隧道的工程地质性质进行了测试分析,系统研究了隧道出口端膨胀性土质的物理力学特性,提出了具有实用参考价值的铁路土质隧道围岩级别划分的亚级细化标准,并结合地质雷达图谱提供的相关参数数据,综合室内实验土体物理力学参数,对该膨胀性土质隧道的围岩分级进行了亚级细化,从而调整了该隧道的支护参数,改良了出口端的整体支护。研究结果对膨胀性土质的特性进行了合理评价,为隧道开挖方案的确定和支护参数的优化提供了理论依据,对今后膨胀性土质隧道的安全施工具有极其重要的实践价值和理论意义。

关键词: 膨胀性土质隧道 围岩分级 亚级细化 衬砌支护

Study on the classifications of surrounding rock and the support measures of the expansive soil tunnels

LI Shu-chen¹, XU Qin-jian¹, FENG Xian-da¹, HU Shi-quan², ZHOU Qiang²

1. Geotechnical & Structural Engineering Research Center, Shandong University, Jinan 250061, China;
2. China Railway 14th Bureau Group Co.Ltd., Taian 271624, China

Abstract:

The engineering geological properties of the expansive soil tunnel were studied by means of statistical analysis and laboratory test. The physical and mechanical properties of the expansive soil were completely studied. And the sub class refined classification standards of soil tunnel were proposed, which had practical reference value. Combined with parameters provided by images of geological radar, the sub class refinement of expansive tunnel was performed, which could amend the tunnel support parameters and improve the overall support system. The results provided a theoretical basis for the reasonable evaluation of the characteristics and the design of support parameters of the expansive soil, which was of practical significance for future design and construction of the expansive soil tunnels.

Keywords: the expansive soil tunnel surrounding rock classification sub-class refinement lining support measures

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通讯作者:

作者简介: 李树忱(1973-), 男, 黑龙江齐齐哈尔人, 教授, 博士生导师, 主要研究方向为深部岩体力学特性和隧道灾害防治. E-mail: shuchenli@sdu.edu.cn

作者Email:

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