

论文  
武（汉）广（州）客专武汉—韶关段红黏土工程特性研究

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摘要:

通过对武（汉）广（州）客运专线武汉—韶关段红黏土的工程特性研究，认为该地区红黏土液塑限高，饱和度和孔隙比大；具有较好的力学性能，压实性较低；先期固结压力远大于上覆土层自重压力，具有超固结性，具有“固而不密”特征；红黏土呈现出特殊的“上硬下软”的工程特性，超固结比和先期固结压力随深度增加而减小。这些研究成果为客运专线实体工程的修建提供了重要的指导和依据。

关键词： 红黏土 固结特性 胀缩变形 抗剪强度 “上硬下软”现象

ANALYSIS OF ENGINEERING CHARACTERISTICS OF RED CLAY AT WUHAN-SHAOGUAN SECTION |OF WUHAN-GUANGZHOU PASSENGER DEDICATED RAILWAY LINE

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Abstract:

This paper examines the engineering properties of red clay at the Wuhan-Guangzhou section of Wuhan-Guangzhou passenger dedicated railway line. The red clay in this area has high values in liquid and plastic limits,saturation, and porosity. It has good mechanical properties with low compactibility. The soil pre-consolidation pressure is far greater than its vertical overburden pressure. The soil is overconsolidated with high porosity. Besides, it was suggested that the red clay presents the peculiar engineering characteristics thatthe upper layers are rigid and the lower layers are weak. The overconsolidation ratio and pre-consolidation pressure reduce as the depth increases. The results provide important guidance and reference to the design and construction of passenger railway line.

Keywords: Red clay, Consolidation, Swell-shrinking properties, Shear strength, Wuhan-Guangzhou passenger dedicated railway line

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