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论文

直排式真空预压法加固软土地基的试验与研究

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摘要:

目前常规真空预压法加固软土是通过设置真空管网、水平向排水砂垫层和竖向排水体共同完成。为节省砂源和经费,设计了直排式真空预压法,它是对常规真空预压法的技术改进和创新。本文通过对直排式真空预压与常规真空预压现场试验区的监测与检测数据对比分析得出:直排式真空预压大幅度提高了真空预压的能效,即直排式真空预压在排水板不同深度内的真空压力比常规真空预压高出10%~50%,且深度越深效果越显著;直排式真空预压的沉降速率比常规真空预压提高约30%,直排式真空预压比常规真空预压平均总沉降量提高49.3%,缩短了预压时间;同时直排式真空预压法所加固的土体,其各项物理力学指标均好于常规的真空预压法,且不需中粗砂垫层,节省了材料,降低了工程造价。

关键词: 直排式真空预压,能效,固结,沉降,孔隙水压力,真空度,十字板强度

EXPERIMENTAL STUDY AND RESEARCH ON STRAIGHT LINE VACUUM PRELOADING METHOD TO REINFORCE SOFT SOIL

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Abstract:

Compared with routine vacuum preloading method for consolidation of soft soil for the present

扩展功能

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combined with the vacuum tube network, horizontal sand blanket and prefabricated vertical drains, straight line vacuum preloading method was improved and was innovated in design to save sand sources and funding. It has been achieved to increase efficiency, improve quality, reduce costs and shorten construction time. Both of the two vacuum preloading methods were analyzed contrastively on the field test of obtained monitoring and detection of areas of data. Straight line vacuum preloading method was significantly improved energy efficiency. Not only did it shorten the pre press time, but saved the material of the medium coarse sand and reduced the project cost.

Straight line vacuum preloading, Energy efficiency, Consolidation, Settlement, Pore water pressure, Vacuum, Vane shear strength

Keywords:

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