

软土地区预应力管桩偏位处理实例分析

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Treatment of sloping prestressed pipe piles in soft soil

摘要

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摘要 结合工程实例分析了预应力管桩产生偏位的原因, 介绍了预应力管桩偏位的处理方法。预应力管桩桩顶偏位桩的处理方法为: 首先先测量每根管桩的平面偏位情况; 然后对所有管桩进行低应变动测确定桩身损伤情况及缺陷深度; 最后根据管桩偏位和损伤情况采取有针对性的处理措施。对严重偏位且断裂的桩进行补桩处理; 对偏位较小且桩身质量完好的桩进行纠偏扶正处理; 对偏位较大且桩身有损伤的桩进行先纠偏扶正, 并在管桩内芯放钢筋笼灌芯加固处理, 处理后的单桩承载力极限值可取原设计承载力极限值的60%; 对偏位桩集中部位, 处理后承载力达不到设计要求时应进行补桩处理。本工程经上述措施处理后建筑物实测最大沉降仅为13 mm且沉降较为均匀, 说明效果良好, 具有借鉴意义。

关键词: 预应力管桩 偏位 桩身损伤 纠偏 灌芯 沉降

Abstract: Based on an engineering example, the reason of sloping prestressed pipe piles (PPPs) and the treatment method for the sloping PPPs are given. First of all, the sloping condition of each pile should be made clearly, then the damaged position of each pile is found out using low strain dynamic tests, and finally, treatment measures are put forward. For the piles with serious deviation of pile tops and rupture of pile shafts, they must be replaced by bored piles. For the piles with smaller slope of pile tops and soundness of pile shafts, they can be directly used after rectification and righting. For the piles with larger deviation of pile tops and defect of pile shafts, the first step is rectification and righting, and then strengthening the pile shafts by placing reinforcement cage and pouring concrete in the cores of piles. The ultimate bearing capacity of the treated single pile accounts for 60% of the design capacity. For the piles with treatment because of serious shortage of bearing capacity, the bearing capacity should be strengthened by adding bored piles. The measured settlement of buildings is small and uniform, and the maximum settlement is only 13 mm, indicating that the treatment method achieves the desired results, and it can be used for reference.

Keywords: prestressed pipe pile deviation pile shaft defect rectification concrete pouring settlement

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