岩石力学与工程学报 » 2012, Vol. 31 » Issue (11) :2319-2326 DOI:

国贸中心三期基坑支护工程监测研究

张钦喜，陈 鹏，尹文彪*

(北京工业大学 建筑工程学院，北京 100022)

MONITORING AND STUDY FOR SUPPORT ENGINEERING OF DEEP EXCAVATION OF CHINA WORLD TRADE CENTER TOWER PHASE 3

ZHANG Qinxi，CHEN Peng，YIN Wenbiao*

(College of Architecture and Civil Engineering，Beijing University of Technology，Beijing 100022，China)

摘要 北京地区深基坑开挖监测及理论研究尚显不足。对北京国贸三期深基坑开挖过程中的监测结果进行分析、研究，结果表明：正常情况下，桩锚支护的位移一般不会超过0.1%H；护坡桩钢筋的应力一般仅达钢筋设计强度值的1/10～1/8；锚杆的实际拉力值较小，说明目前支护设计采用的土压力值大于护坡体系实际受到的土压力；各排土钉的拉力均在38 kN以下，远小于按现行规程计算出的土钉的设计拉力值。由此看出，实际钢筋应力、锚杆拉力、土钉拉力均比按目前规程计算理论拉力小。研究结果为类似工程的设计提供参考，也为以后规程的修订提供依据。

关键词： 基坑工程 深基坑 桩锚支护 锚杆拉力 土钉拉力 现场监测

Abstract： The monitoring and theoretical studies for deep excavation are lack in Beijing. The monitoring results of deep excavation of China World Trade Center Tower phase 3 in Beijing during excavation process are analyzed. The study results show that：(1) Under normal circumstances，the displacement of pile-anchor bracing system is generally not more than 0.1%H，where H is the depth of foundation pit. (2) The stress of reinforcement in pile is usually only 1/10－1/8 of design strength. (3) The actual tension of anchor is smaller than the design value，which shows that the adopted earth pressure in the design of support system is larger than the actual earth pressure. (4) The tensions of each row soil nailings are all less than 38 kN，which is far less than the design value calculated by current regulations. It is found that the actual steel stress，anchor tension and soil-nailling tension are all less than the current theoretical values. The monitoring results can provide a reference to the similar projects and the basis for amendments to the subsequent procedures.

Keywords： foundation pit engineering deep excavation pile-anchor support tension of anchor tension of soil nailing field monitoring

Received 2012-07-20;

引用本文:

张钦喜，陈 鹏，尹文彪.国贸中心三期基坑支护工程监测研究[J] 岩石力学与工程学报，2012,V31(11)：2319-2326

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