

论文

支座纵向摩阻力对济南黄河三桥受力性能的影响

张惠勤 高建军 吕长荣

山东高速工程咨询有限公司, 山东 济南 250002

摘要:

为了探索支座纵向摩阻力对该桥受力性能的影响,对主梁的支座按照纵向约束刚度的不同设定了5种纵向约束工况来模拟支座的纵向摩阻力,分别分析各工况下恒载和活载在主梁控制断面和塔底产生的内力、塔顶产生的纵向位移、斜拉索力等,总结出了不同纵向约束方式下桥梁受力性能的变化规律;然后根据该桥的荷载试验结果,确定了相对合理的纵向约束方式;最后提出利用该类型支座在以后此类桥梁的设计中需要注意的问题.该研究成果为使用此类型支座桥梁的计算分析提供了技术参考.

关键词: 济南黄河三桥 支座摩阻力 纵向约束 受力性能

Analysis of structural performance on friction of bearing of the third bridge of the Jinan Yellow River

Shandong Expressway Engineering Consultants Co.Ltd, Jinan 250002, China

Abstract:

For the analysis of structural performance on friction of bearing of the bridge, this paper adopts different longitudinal restraint conditions simulating longitudinal friction of bearing by setting different longitudinal rigidity, in different conditions of dead load and live load, such as the internal force of the control section of the main beam and the bottom of the bridge tower, the longitudinal displacement of the top of the bridge tower, and the cable-stayed cable force. The changing rule of bridge stress performance under different longitudinal restraint conditions was summerized. Then, according to the result of the bridge's loading test, the relatively reasonable longitudinal restraint conditions of this bridge were determined. Finally, according to the actual situation of this bridge bearing, the question that needed to be paid attention to when we design this type bearing was proposed. This research can provide technical reference for calculation and analysis of a bridge by using the type of bearing.

Keywords: the third bridge of Jinan Yellow River friction of bearing longitudinal restraint conditions stress performance

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作者简介: 张惠勤(1971-),男,山东高密人,高级工程师,主要从事公路桥梁试验检测的研究工作. E-mail: zhq19710613@163.com

作者Email:

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