



体外预应力锚固横梁拉应力域法配筋

Reinforcement Design for Anchorage Beams of Externally Prestressed Bridges Based on Tensile Stress Region Method

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英文关键词: [end anchorage beam](#) [tensile stress region method](#) [tensile stress region slice](#) [tensile stress region slice depth](#) [finite element](#) [reinforcement](#)

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中文摘要

针对体外预应力混凝土桥端锚固横梁内侧承受较大拉应力且传统配筋方法有所欠缺的现状,提出一种新方法——“拉应力域法”配筋:对于承受主拉、压应力,存在有规律的二维“拉应力域”实体结构,可连续划分二维“拉应力域切片”,通过对各切片网格配筋的方式以承担混凝土拉应力的正交分量,并以“拉应力域深度”控制网格的纵向布置区域.以某体外预应力端锚固横梁为例,建立有限元模型,并考虑锚固端横、竖向预应力的影响.应用拉应力域法配筋的分析结果表明,锚固端横、竖向预应力对于配筋量有较大影响,原设计竖向钢筋过多,横向钢筋分布不尽合理,而拉应力域法可根据实际应力分布来配筋,结果更准确.

英文摘要

Based on well-regulated two dimension tensile stress regions at the back of anchorage structures of prestressed concrete bridges,a new method on reinforcement design named “tensile stress region method” is advanced for the lack of reinforcement theories.The blocks can be divided into several tensile stress region slices,then the web reinforcement is raised up to bear the tensile stress orthonormal value for each,and the notion “tensile stress region slice depth” is advanced to control the longitudinal length of reinforcement.An example of external prestressed anchorage reinforcement is analyzed by means of tensile stress region method,thus a finite element model is built up.In addition,the influences of transverse,vertical prestressing are also taken into consideration.The results show that the reinforcement amount is affected obviously by the transverse,vertical prestressing at the anchorages when the tensile stress region method is used,this method can set steel bars according to the stress state,and more exact reinforcement results can be obtained.

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