

[1]张俊芝,王梁英,刘华挺,等.弯曲荷载对混凝土氯离子扩散与钢筋初锈时间的影响[J].自然灾害学报,2010,03:13-18.

ZHANG Jun-zhi,WANG Liang-ying,LIU Hua-ting,et al.Influence of flexural loading on diffusion of chlorine ion and corrosion initiation time of steel bar in concrete[J].,2010,03:13-18.

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## 弯曲荷载对混凝土氯离子扩散与钢筋初锈时间

《自然灾害学报》[ISSN:/CN:23-1324/X] 期数: 2010年03期 页码: 13-18 栏目: 出版日期: 2010-03-01

Title: Influence of flexural loading on diffusion of chlorine ion and corrosion initiation time of steel bar in concrete

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关键词: 弯曲荷载; 混凝土; 氯离子; 钢筋; 初始锈蚀时间

Keywords: flexural loading; concrete; chlorine ion; steel bar; corrosion initiation time

分类号: TV332

DOI: -

文献标识码: -

摘要: 通过设计的人工气候环境下水工混凝土梁加载侵蚀对比试验,分析了弯曲荷载作用下梁的纯弯区与无荷载作用下混凝土的氯离子浓度分布,并以Fick第二定律和Monte Carlo方法为基础,研究了弯曲荷载对水工混凝土的氯离子扩散参数与钢筋初始锈蚀时间的影响。结论表明,弯曲荷载对受压区混凝土的氯离子扩散有抑制作用,并延缓了受压区钢筋初始锈蚀时间。

Abstract: A check experiment for chlorine ion corrosion of hydraulic RC beams with loading in the designed artificial climate environment was tested,chlorine ions concentration distribution in the pure flexural region of experimental beams and those concrete without loading were analyzed.Influence of flexural loading on diffusion parameters of chlorine ion and corrosion initiation time of steel bar in concrete were studied on the basis of the measured chlorine ion concentration,Fick's second law and the Monte Carlo method.Analysis results show that there are obvious inhibition against diffusion of chlorine ion in compressive region of

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