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论文

环境因素对PS加固土遗址效果的影响

邵明申<sup>①</sup>,李黎<sup>②</sup>,裴强强<sup>③</sup>,王思敬<sup>②</sup>,李最雄<sup>③</sup>

(<sup>①</sup>兰州大学土木工程与力学学院 ■ 兰州 ■ 730000)

(<sup>②</sup>中国科学院地球与地质物理研究所 ■ 北京 ■

100029)

(<sup>③</sup>敦煌研究院 ■ 敦煌 ■ 736200)

摘要:

通过PS加固的高昌故城遗址土样崩解试验,耐风蚀的风洞模拟试验,冻融破坏,温差破坏,干湿破坏对力学强度影响等试验,模拟古丝绸之路特殊的自然环境对土遗址的影响,研究PS保护加固土遗址的效果。结果表明,经PS加固以后,样品的初始崩解时间延长,崩解速度大幅降低,抗风蚀能力提高10倍,抗冻融能力也有所增强。在高温养护下力学得到强度提高,干湿循环降低了样品的强度,但表现出良好的加固效果。试验证明PS可以有效地降低环境因素对干旱区土遗址的破坏,起到明显的加固保护效果。

关键词: PS,环境因素,崩解,风洞,冻融,强度

**LABORATORY SOIL TESTS ON IMPACT OF ENVIRONMENTAL FACTORS TO EARTHEN RUINS REINFORCED WITH PS**

**SHAO Mingshen<sup>①</sup>, LI li<sup>②</sup>, PEI Qiangqiang<sup>③</sup>, WANG Sijing<sup>②</sup>, LI Zuixiong<sup>③</sup>**

(<sup>①</sup>College of Civil Engineering and Mechanics, Lanzhou University, Lanzhou ■ 730000)

(<sup>②</sup>Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing ■ 100029)

(<sup>③</sup>Conservation Institute of Dunhuang Academy, Dunhuang ■ 736200)

**Abstract:**

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PS,环境因素,崩解,风洞,冻融,强度

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Soil specimens were moulded according to different dry densities and then reinforced with 5% PS solutions. The specimens with or without PS reinforcement were subjected to disintegration test in water, to wind erosion test in wind tunnel, to temperature fluctuation test, to humidity variation test and to freeze thaw test. So, the influences of serious environments of the ancient Silk Road on the reinforcement effect are studied. Specimens reinforced with 5% PS show a better resistance to environment weathering respectively. For example, they have a longer initial disintegration time, a slower disintegration speed, and a higher ability of anti wind erosion and freeze thaw, as compared with unreinforced specimens. These results show that the PS reinforcement is still effective and the PS is suitable for conservation of the earthen ruins in arid area of the Silk Road.

**Keywords:** PS Environment factor  
Disintegration Wind tunnel Freeze thaw  
Strength Soil test

收稿日期 修回日期 网络版发布日期

**DOI:**

基金项目: