

砂层在黄土中的阻水性及减渗性的研究

Experiment and Study on Water-Tightness and Infiltration Reduction of Sand Layer in Loess Soils

投稿时间: 1993-6-4

稿件编号: 19950118

中文关键词: 能量原理;入渗;阻水性;减渗性

英文关键词: Energy theory Infiltration Water-tightness Infiltration reduction

基金项目:

作者	单位
王文焰	西安理工大学水资源研究所
张建丰	西安理工大学水资源研究所
汪志荣	西安理工大学水资源研究所
高岩	西安理工大学水资源研究所

摘要点击次数: 7

全文下载次数: 85

中文摘要:

根据土壤水的能量原理,对砂层在黄土中的阻水作用进行了室内一维土柱的入渗试验研究及教学模拟,结果表明:在黄土中设置砂层,不仅具有良好的阻水性,使下渗水流在一定限度内滞留于砂层以上的土体内,增加了上层土壤的持水能力;而且还具有减渗性,使下渗水量及入渗峰面的湿润速度明显减小,并且还可将下渗的非线性过程转化为线性过程,从而使整个入渗过程进入一个具有较小入渗率的稳渗阶段。该研究结果对在黄土地区采用设置砂层的方法,作为水利、建筑工程以及西北农村窑洞民居防渗、减渗的一项工程技术措施,提供了理论依据。

英文摘要:

Based on the energy theory of soil water, this paper deals with the effect of watertightness of sand layer in loess soils through the lab experiments on water infiltration into soil column as well as mathematical simulation. The results showed that sand layer set up in the loess soils is characterised not only by better water-tightness, which can make infiltration flow stay over sand layer in soil body to a certain limit extent so as to improve water retaining capacity in upper soil layer, but also by infiltration flow as well as the wetting velocity and also convert the non-linear process of infiltration into the linear process, thus resulting in the whole infiltration process to enter the stable infiltration stage with a smaller infiltration rate. Accordingly the results of this project have provided the theoretical base for the adoption of setting up sand layer in the loess soil in Northwest China as an important technical engineering practice for the infiltration prevention and reduction to water conservancy work and architectural engineering as well as cave-dwellings of the local inhabitants.

[查看全文](#)

[关闭](#)

[下载PDF阅读器](#)

您是第607235位访问者

主办单位: 中国农业工程学会 单位地址: 北京朝阳区麦子店街41号

服务热线: 010-65929451 传真: 010-65929451 邮编: 100026 Email: tcsae@tcsae.org

本系统由北京勤云科技发展有限公司设计