Postprint: Riverbed Curtain Grouting Test and Results Analysis at Daxingzhai Reservoir

Authors: Cai Guobin, Tang Guangxiong

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Abstract

The Daxingzhai Reservoir Project is primarily designed for flood control, while also serving water supply, irrigation, and ecological water replenishment functions. Through two-stage curtain grouting production tests, this study systematically analyzes the effects of different grouting pressures on unit cement injection quantity, permeability rate, and construction efficiency, and proposes grouting pressures suitable for the strata of this project. Additionally, for special hole sections such as water inrush and large grout absorption, process optimization measures including flow limiting, pressure reduction, thick grout, and intermittent waiting for setting are proposed. The research findings can provide technical reference for similar projects.

Full Text

Preamble

Experiment and Result Analysis of Curtain Grouting in the Riverbed of Daxingzhai Reservoir

Cai Guobin, Tang Guangxiong
(Sinohydro Engineering Bureau 8 Co., Ltd., Changsha 410004)

Abstract

The Daxingzhai Reservoir project serves primarily for flood control, while also providing water supply, irrigation, and ecological water replenishment functions. This paper presents a systematic analysis of the effects of different grouting pressures on unit cement consumption, permeability rate, and construction efficiency based on two-stage production-scale curtain grouting tests, and proposes appropriate grouting pressures for the geological strata encountered in this project.

Furthermore, for special hole sections exhibiting water inrush and large grout absorption, optimization measures such as flow limiting, pressure reduction, thick grout application, and intermittent waiting for setting are proposed. The research results can serve as a technical reference for similar projects.

Keywords: curtain grouting; unit cement consumption; permeability rate; grouting pressure; treatment of special hole sections

Note: Figure translations are in progress. See original paper for figures.