

Abstract

Constructing dams to control and save the water supply has been common for a long time. Due to limited resources and lack of understanding of the laws of Soil Mechanics and Hydraulics, dam height is not more than a limited amount, although there is no such limitation in extent and length of the dam. Today, dams are constructed with considerable height with the advancement of the science of soil mechanics and technology development capabilities and more detailed studies, as in the present earth dams are the world's highest dams. Further more the lands were diagnosis that inappropriate for this purpose can now prepare for the foundation of dam construction. Despite all the progress that is still difficult to have a solid mathematical solutions to design problems of earth dams. For this purpose, we can use software based on mathematics such as finite element, finite element and..., for example GeoStudio software that based on finite element method. In this research we explore the ways to reduce leakage in earth dams. For this purpose, we choose Sirjan dam and the impact of different methods of reducing the leakage flow through the dams clay core and the water head pressure was studied. And it was observed that the optimum permeability coefficient in the clay core of the dam is between 10^{-7} to 10^{-5} meters per second. One of the methods for reducing the leakage of dams body that can be used after dam construction, is concrete and clay blanket. This reduction in permeability coefficient decreases more rapidly between 10^{-6} to 10^{-7} meters per second.

Keywords: earth dam, seepage, safety, sirjan dam



University of Zabol

Graduate school

Faculty of Engineering

Department of Civil Engineering

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Supervisor:

Dr. H. Derakhshan

By:

M. Chehrazad

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