

## RATIONAL DESIGN OF WIDTH OF EARTH CORE FOR ROCKFILL DAMS

**Abstract:** Because an earth core zone of rockfill dam cannot be constructed in rainy and cold days, construction of core zone is the critical path of the construction process of rockfill dams. As a result, to reduce construction cost and to shorten construction period, it is necessary to speed up the construction of earth core zone. Then, we investigate the probability of compaction thickness of earth core zone to be thicker and earth core width to be narrower. However, at present, earth core width is decided empirically, appropriate core width should be designed based on evaluation of the safety against hydraulic fracturing as well as sliding. Hydraulic fracturing of core materials for rockfill dams has not been studied comprehensively.

In this study, based on the laboratory tests of hydraulic fracturing of core materials for rockfill dams and the safety evaluation against hydraulic fracturing of earth core using banking and seepage analyses, we finally proposed rational design method of earth core width.

**Keywords :** rockfill dam, core width, banking analysis, seepage analysis, hydraulic fracturing, progressive failure