

A STUDY ON COUNTERMEASURE FOR CAVITY AROUND SLUICE PIPE IN RIVER LEVEE

Abstract : Sluice pipes which are installed across river levees have a possibility to grow a cavity or a loosening between the pipe and its basement or a levee, especially if the pipe is supported by piles. The cavity or the loosening can lead a severe damage to levees by seepage during a flood. This research conducts the investigation of the cavity and the loosening around sluice pipes at three rivers in Japan. Laboratory experiments are also carried out to examine countermeasures for the cavity and the influence of the loosening to the seepage. The output of the investigation shows the presence of the cavity and the loosening in the sites. Moreover, the results of experiments indicate the applicability of a river levee enlargement and a cutoff around the pipes for the cavity. In addition, the results also show that the influence of the loosening might raise the seepage level of levees slightly.

Key words : river levee, sluice pipe, seepage, cavity, loosening