

Reconstruction of the Znojmo Dam – practical application of hydraulic research

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SYNOPSIS. Many dams and waterworks had been built in the Czech Republic during 1950s and 1960s. One of them is the Znojmo Dam. It is an earth dam with a combined spillway block. A nominal discharge of $Q = 355 \text{ m}^3 \cdot \text{s}^{-1}$ was considered for designing the safety spillway. Extreme flood events which occurred in the Czech Republic in 1997 and 2002 evoked questions relating to the safety of dams. The nominal discharge of the Znojmo Dam safety spillway was enhanced up to $Q = 610 \text{ m}^3 \cdot \text{s}^{-1}$. Therefore, the decision on reconstruction of the Znojmo dam spillway block was made. The following modifications were proposed: sinking the existing spillway crest, replacement of the existing flap gates with tainter gates with flaps, installation of breakwater on the dam crest, and necessary modifications of the stilling basin. With regard to the importance of the dam and the volume of the reconstruction planned, assessment on a hydraulic model was necessary. This paper summarises the results of the hydraulic research and its practical application to the processing reconstruction of the Znojmo Dam. It also describes some differences between the modelled situations and reality.