Hubungan antara Elevasi Muka Air Waduk dan Panjang Lintasan Rembesan terhadap Debit Rembesan pada Bendungan Urugan Batu Inti Tegak (Studi Kasus Bendungan Jatibarang)

Siswanto, author

Abstrak

ABSTRAK
Rockfill dams have better stability than homogeneous soil dams. It allows to design the dam more slim with a higher slope. The disadvantage of rockfill dam is in the core zone as an impermeable zone. Zoned vertical core rockfill dam is a combination of various material properties. Geometry and drainage design will affect the seepage and phreatic line properties that occur. Numerical modeling and calculations are used to calculate the seepage profile more accurately. The combination of the parameters of the permeability coefficient (K), reservoir water level (Δh) and the length of the seepage path (L) can be used to determine the relationship between parameters with the same unit. 2D modeling take into account saturated/unsaturated conditions with steady state on each parameter. This study uses the Jatibarang-Indonesia dam as a basic model. The seepage profile at condition K1 (k = 1x10-5cm/sec) is q/k = -0.0018 (h2/L)2 + 1.3496h2/L + 53.241 and the seepage profile K2 (k=1x10-7cm/s) is q/k = -0.1521 (h2/L)2 + 90.402h2/L + 5480.2. This equations can be used to estimate seepage that occurs in a dam of other rock fill zoned vertical core dam based on the permeability coefficient value (K) more practically for all values of Δh and L reviewed.