



ABSTRAK

Dam construction is one of the projects of the Directorate General of Water Resources (SDA) Ministry of Public Works and Public Housing (PUPR) which is growing very rapidly. One of the main problems that occur in the reservoir's operation and maintenance for the supply of irrigation water and other fields is sedimentation. Sedimentation is a problem in the planning of reservoir's design-life where the design-life is determined by how long the volume of the dead storage is filled with sedimentation. Therefore, some measurements need to be done to prolong the design-life of the dam due to sedimentation, for example by flushing.

To find out the performance level of sediment flushing, a physical model study is carried out using the Kadumalik Dam model built at the Hydrology and Hydraulics Laboratory, PSIT, UGM. The model uses a scale of 1:70. The modeling is carried out using the uniform sediment with D_{50} of 0.18 mm. The running tests use different conditions, including using variations of the water surface level in the reservoir and using different sizes for the flushing outlet. The wide variety of running conditions is expected to be able to help in choosing which condition has the best result.

From the results of the study, it is found that running with a constant water surface level in the reservoir has the best flushing result. To identify the area around the flushing outlet, Hjulstorm Curve is used. From these identifiers, it is found that the erosion or transport area in each running scenario has a characteristic which is very steep, meanwhile the transport as bedload area is a gradual slope.