

Assessing Effect of End Sill with Different Forms on Hydraulic Jump Characteristics

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Abstract

One of the most important problems in the design of a stilling basin is determination of the exact location of the hydraulic jump or stabilization of the hydraulic jump. In the present study, the effects of different forms of end sills on hydraulic jump characteristics were studied. The experiments were carried out for three different forms of end sills, rectangular, square and stepped, with three heights in two distances and for Froude numbers in the range of 4.7-8.23. The results showed that the end sill with larger cross section (square and stepped) will have a greater effect on reducing sequent depths of hydraulic jump and increasing energy loss than narrow end sills. However, in this type of end sills, water fall and the risk of erosion at downstream is greater.

Keywords: End sill, Hydraulic jump, Energy loss in hydraulic jump.

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