



Effect of the wall thickness of an overflow pipe on the short-circuit flow

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ABSTRACT

This study adopted FLUENT, a computational fluid dynamics software program, for the three-phase flow simulation of a hydrocyclone. The flow field and air-core of a hydrocyclone were simulated through the large eddy simulation methodology and volume of the fluid multiphase flow model. The Reynolds stress model was used as the coupled turbulent model. The particle flow was then simulated using a discrete phase model for examining the influence of the wall thickness of the hydrocyclone overflow pipe on the short-circuit flow and particle grade efficiency. The results revealed that an appropriate thickness of the overflow pipe wall should be selected to avoid short-circuit flow.

Keywords: Overflow; Thickness; Efficiency; Particle; CFD

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