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Theoretical and Experimental Investigations of the Pumping Medium Interaction Processes with Compensating Volume of Air in the Single-Piston Mortar Pump Compensator

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Abstract

The article considers the theoretical and experimental investigations of the pumping medium interaction processes with compensating volume of air in the single-piston mortar pump compensator as well as factors that affect the air removal kinetics from the compensator of single-piston mortar pumps. The problem of air removal

from the cylindrical chamber analysis of the combined mortar pump compensator is carried out. Indicators characterizing the rate of compressed air removal from the compensator during the operation of the mortar pump are set. It is established and proved that air is removed from the cylindrical chamber depending on: pressure, productivity of mortar pump, solution temperature and intensity of exchange between pumped solution and compressed air. The allowable compressed air contact area of the compensator's cylindrical chamber is established by installing a float at the air-solution interface.

Keywords

Mortar pump with increased volume combined compensator

Cylindrical chamber

Degree of pressure pulsations

Volumetric efficiency Solution mobility

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