

ALGORITHM OF CALCULATING HYDRODYNAMIC PARAMETERS OF A PIPELINE PARTIALLY FILLED WITH AIR

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The paper presents a software algorithm which enables calculating hydrodynamic parameters of a liquid in a plastic main pipeline partially filled with air and connected up to a tank with an air cavity over the liquid when the electro pneumatic gate is opened. The influence of cavity volume and pressure in the tank, the time of opening the gate, the degree of filling the main line with liquid, pipeline parameters and diaphragm dimensions on the speed of liquid column moving along the lines and reaction forces emerging in pipe bends is analysed. Recommendations are given how to reduce hydrodynamic loads on the pipelines.