

# LAMINARY FLUID FLOW IN A PIPE AND DIMENSIONAL NUMBER OF REYNOLDS. Sh.A. Mengliev Termez State University Kh.F. Kholduraev Tashkent Institute of Irrigation and Agricultural Mechanization Engineers

## LAMINARY FLUID FLOW IN A PIPE AND DIMENSIONAL NUMBER OF REYNOLDS

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### Abstract

The article provides information on the mathematical modeling of the incompressible viscous fluid in the pipe. The study shows laminar and turbulent regimes of fluid motion, as well as the physical meaning of these regimes. Consider a straight round pipe with a diameter constant along the entire length. The flow rate on the walls of the pipe due to adhesion is zero, in the middle of the pipe, it has the greatest value. A cylinder with a characteristic length and a characteristic radius inside the liquid whose axis coincides with the axis of the pipe is considered and the flow of the liquid through the cylinder is studied. The calculation formulas for calculating the maximum flow velocity in the cylinder, the volume of liquid passing through the cross-section of the pipe, the coefficient of resistance to friction in the pipe along the flow length, and the maximum value of the tangential stress are derived. The results of comparison of empirical and semi-empirical formulas for calculating the coefficient of resistance to friction are presented [1]-[5].

**Key words:** Reynolds number, laminar flow, turbulent flow, parabolic flow, the friction force is the integral coordinate of the pipe, viscosity, density, bulk flow velocity, average speed, maximum speed, radius, Gegen, Poisal, Darcy-Weisbach, the volume of fluid resistance coefficient.

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