Darcy friction factor = f

@wikipedia

Quantitative dimensionless measure f of the friction forces between fluid pipe flow and inner pipe walls based on Darcy–Weisbach equation.

It depends on Reynolds number Re and inner pipe walls roughness ϵ (see **Fig. 1**): $f = f(\mathrm{Re}, \epsilon)$.

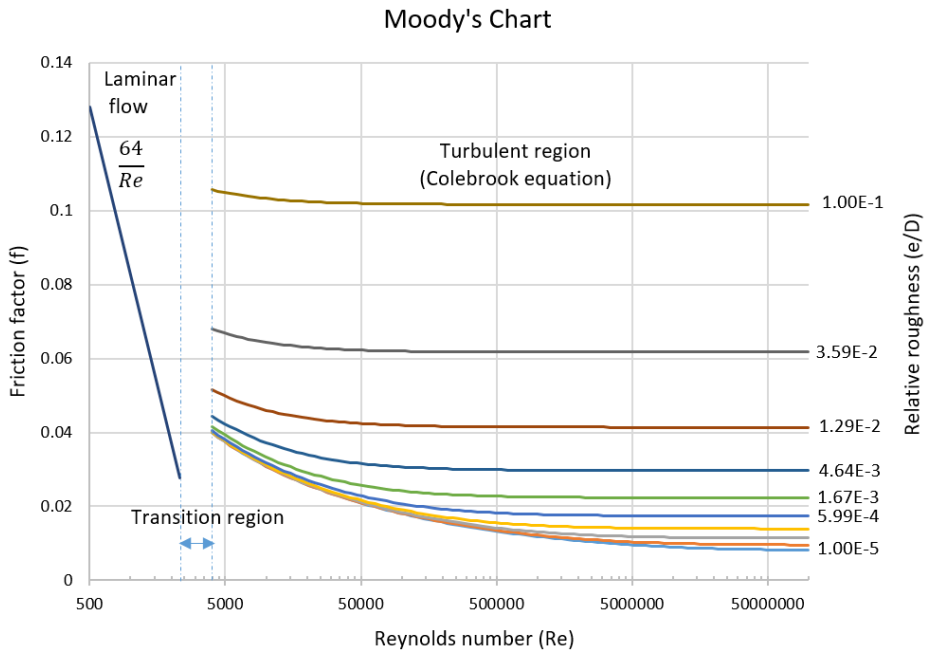

Fig. 1. Schematic chart showing how Darcy friction factor depends on Reynolds number Re and roughness ϵ (followi

In engineering practice one can use either Moody Chart or Darcy friction factor @model to estimate the actual value of Darcy friction factor.

Darcy friction factor f takes only positive values $f > 0$ but has singularity at zero flow velocity: $\mathrm{Re} \to 0 \Rightarrow f \to \infty$ which may cause computational challenges.

Using Reduced Friction Factor $\Phi = f \cdot \mathrm{Re}/64$ instead can help in computations as it stays finite for all finite values of Reynolds number Re.

See also

Physics / Fluid Dynamics / Pipe Flow Dynamics / Darcy–Weisbach equation

[Darcy friction factor Single-phase @model] [Reynolds Number for Multiphase Flow @model]

[Moody Chart] [Reduced Friction Factor ()]