Drag Force

Newton's equation for drag force is:

$$F_D = C_D \left(\frac{\pi d^2}{4} \right) \left(\frac{\rho_g \, v^2}{2} \right)$$

Here, the drag coefficient depends on Reynolds number,

$$Re = \frac{d \, v \, \rho_g}{\mu}$$

The relationship between Reynolds number and drag coefficient, C_D, is given in the plot below for objects of several different shapes.