

The **MoodyChart** function returns the Darcy friction factor (f) for internal flow given inputs of Reynolds number (Re) and the Relative Roughness (RR).

Example:

Re=2900; RR=0.015

f=**MoodyChart**(Re,RR)

The head loss and pressure drop can then be found from:

$$\text{head loss} = \Delta P / (\rho \cdot g) = f \cdot (L/D) \cdot (V^2 / (2 \cdot g))$$

This example calculates the pipe friction factor using the Churchill friction factor relation (Churchill, S.W. 1977, 'Friction Factor Spans All Fluid Flow Regimes,' Chem. Eng. (Rugby, U.K.) 84(24), pp.91-91).

The Churchill relation was chosen to replace the Colebrook relation used in earlier versions of the **MoodyChart** function since it provides a smooth transition from the laminar to the turbulent flow regimes.