

Head loss across entire pip rig

The same pip rig as in the video was run again at a lower flow rate. This time the flow rate discharged was measured to be 1 litre every 28 seconds.



Re-calculate the head loss expected to occur across the entire pipe rig using this new flow rate. Geometrical values of length, diameter and area have not changed.

Follow the same process as in the video, the steps you should follow are:

- Convert flow rate into m^3/s
- Calculate velocities from $V = Q/A$
- Calculate Reynolds numbers (use same viscosity approximation)
- Calculate relative roughness (use same effective roughness)
- Obtain approximate Darcy friction factor from Moody diagram
- Calculate frictional head losses across both different diameter pipe sections
- Calculate local head losses
- Sum all together to obtain total head loss