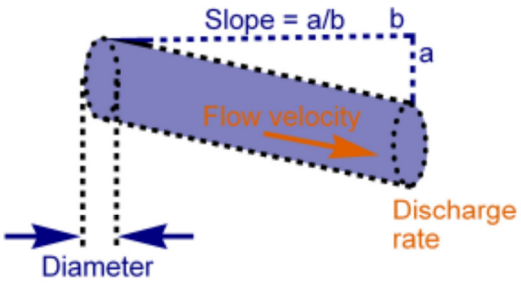
MyCT
Main
Forum

Gravity-fed pipe flow

Hazen-Williams formula for a full pipe.

Search
Engineering index
Civil Engineering index



the calc

The gravitational flow form of the Hazen-Williams equation is calculated to provide water velocity and discharge rate that can be achieved through a pipe with provided proportions.

Pipe diameter:	1	inches
Roughness coefficient:	100	
Pipe length (b):	10	feet
Drop (a):	13	feet
Velocity:	13.2486	feet/second
Discharge rate	32.4318	gal(US)/min
Pipe slope:	1.30000	

Calculate!

Add

notes

This calc is mainly for pipes full with water at ambient temperature and under turbulent flow.
If you know the slope rather than the pipe length and drop, then enter "1" in "Length" and enter the slope in "Drop". If the cunduit is not a full circular pipe, but you know the hydraulic radius, then enter (Rh×4) in "Diameter".
Typical values of the roughness (friction loss) coefficient include: 100 (concrete, cast iron); 120 (steel); 140 (cement); 150 (copper, plastics).