

# Colebrook-White Formula

The Colebrook-White Formula is used for Velocity calculations within the software

$$V = -2\sqrt{2gDS} \log_{10} \left[ \frac{k_s}{3.7D} + \frac{2.51v}{D\sqrt{2gDS}} \right]$$

Where:

V = Velocity, (m/s)

g = Gravitational acceleration

S = Hydraulic gradient (m/m)

v = Kinematic viscosity of fluid (m<sup>2</sup>/s)

k<sub>s</sub> = Effective roughness

D = 4 \* Hydraulic Radius (m)

Typical k<sub>s</sub> values for storm drainage are 0.6 mm and 1.5 mm for foul sewage pipes.



## Note

Software uses a fixed viscosity value of 1 centistoke = 1E-06 m<sup>2</sup>/s



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