

Sizing Of Gas Pipework To Confirm No More Than <1 Mbar Loss

Workout line drawing showing branches and effective lengths with the discharge rate for each section of pipe. Select proposed pipework size from charts or gustimate. Using the formula below. $H =$

Pole Formula

$$Q = 0.0071 \times \sqrt{\frac{D_5 \times H}{S \times L}}$$

Where Q = flow (M^3/hr)

D = diameter of pipe (internal in mm)

H = pressure drop (millibar)

L = length of pipe (M)

S = specific gravity of gas (N.gas = 0.58)

Or

$$H = \frac{Q^2 \times S \times L}{D_5 (0.0071)^2}$$

Loss say on section B to D with 28mm pipework which is 18 M long (including allowance for fittings) & is to discharge 4.35M³/hr. this would be –

Med Hard Copper OD = ID	
15mm OD	13.6mm ID
22mm OD	20.2mm ID
28mm OD	26.2mm ID
35mm OD	32.6mm ID
42mm OD	39.6mm ID
54mm OD	51.6mm ID

$$H = \frac{4.35^2 \times 0.58 \times 18}{26.25 (0.0071)^2} = 0.31743 \text{ Mbar}$$

Do this for each section of pipework totalling the loss as long as this does not exceed 1Mbar the run is OK.