



1 inch diameter, 3 inches long, ¼ inch hole

$$\frac{\text{Hole Area}}{\text{Inner surface}} = \frac{1}{224} = 0.45\%$$



8 inches diameter, 8 inches long, 1/2 inch hole

$$\frac{\text{Hole Area}}{\text{Inner surface}} = \frac{1}{1536} = 0.065\%$$