Saturated Steam Flow in Pipes

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THE NOMOGRAPH reproduced at the right permits rapid determination of the pressure drop in steel pipes, and easy selection of pipe sizes. The equation on which it is based,

\[ \Delta P_{100} = \frac{6.44 \times 10^{-3} W^{1.83}}{d^{0.83} \rho^{0.83}} \]

is derived from the Darcy equation and the approximation that the friction factor equals \(0.1778/R^{0.17}\).

Example: What is the friction loss of 100,000 lb per hr of saturated steam at 60 psig in a 12.0-in. inside diameter pipe? Align \(p = 60\) with \(W = 100,000\) and mark the intersection (1). Align the intersection with \(d = 12\) and read \(P = 1.12\) (2).

(Editor's note: Reprints of a chart giving steam velocity in pipes developed by Mr. Caplan and presented in THE TRAP MAGAZINE, No. 5, 1965, are available on request from Armstrong Machine Works.)