WATER FLOW VS PRESSURE DROP

INTRODUCTION
The flow charts presented here were generated by conducting flow tests on porous plastic discs 1/8" thick, 20 to 100 micron average pore size, and 40 to 50% void volume. An increase in void volume of the test disc results in a higher flow at the same pressure and average pore size. Back pressure and flow rates are essentially proportional to material thickness. These flow charts should only be used as a guide, other factors such as surface finish and pore size distribution, can affect permeability. The values on the outside of the charts are in English units, whereas the inside values are metric.

HIGH WATER FLOW VS. PRESSURE:
1/8" THICK POROUS PLASTIC

LOW WATER FLOW VS. PRESSURE:
1/8" THICK POROUS PLASTIC

Example: Determine pressure drop through 1/8" thick 40 micron material at a flow of 3 GPM/IN². Use Figure 1 and read down left side to 3, then across to the 40 micron curve, and down to 30 PSI. To determine the pressure drop for 3/8" material under the same flow conditions, use the following equation:

\[
\text{Required Thickness} \times \text{PSI value of original thickness} = 3/8" \\
\text{Original Thickness} \times 30 = 90 \text{ PSI}
\]

Legend
- GPM/IN² - gallons per minute per square inch of material
- KG/CM² - kilograms per square centimeter
- µ - microns
- LPM/CM² - liters per minute per square centimeter of material
- PSI - pounds per square inch

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