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### Pressure Drop Corrections for Glycol in HVAC Systems (Part 2)

Last week the article covered pressure drop correction calculations. Today we offer you some handy charts to use for second glycol correction pressure drop.

#### PRESSURE DROP CORRECTION FACTOR FOR VARIOUS GLYCOL/WATER PERCENTAGES

Temperature	Percent Propylene Glycol			Percent Ethylene Glycol		
	30%	40%	50%	30%	40%	50%
35°F	1.56	1.78	2.00	1.37	1.47	1.60
45°F	1.46	1.63	1.90	1.30	1.39	1.51
50°F	1.41	1.56	1.80	1.27	1.36	1.47
80°F	1.20	1.29	1.45	1.11	1.18	1.27
100°F	1.10	1.19	1.30	1.04	1.10	1.17
130°F	1.01	1.07	1.15	0.96	1.01	1.06
150°F	0.96	1.01	1.07	0.92	0.96	1.01
170°F	0.93	0.97	1.02	0.89	0.92	0.96

**Notes:**

1. Table based on Dowfrost\* and Dowtherm SR-1\* with percentage by volume vs. water at 60°F.
2. Factor based on about 2 feet per hundred water pressure drop. Factor goes up at lower pressure drops and down at higher pressure drops.
3. Heat transfer is affected greatly at higher percentages and lower temperatures. Always use the minimum % glycol for the project.
4. Data taken from the ITT Bell and Gossett System Syzer®.
5. Chart is for use on Commercial projects. Residential projects have smaller pipe size, on average, and may require higher corrections.
6. Use the correction at the average temperature for the system.

**Example:** I have calculated the water piping pressure drop through a chilled water system to be 80 feet using the System Syzer. Question: What is the pressure drop if I have 50% Ethylene Glycol/Water with temperatures of 45°F to 55°F? Answer: The average temperature is 50°F, so my factor is 1.47. The piping pressure drop is 80 X 1.47 = 117.6 feet plus equipment losses. Remember, if the equipment was selected using water rather than glycol, you may also need to correct for heat transfer. See the article from 2 weeks ago. Next week we begin correcting the pump curve.

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