

PENFLEX

ENGINEERING BULLETIN #108

Corrugated Metal Hose and Flow Velocity Consideration

The flow velocity in corrugated metal hose should never exceed 150 ft./sec. for gas or 75 ft./sec. for liquids otherwise a resonant vibration can occur. Resonant vibration may cause very rapid failure of the assembly.

For a quick way to figure out maximum allowable flow rate, please refer to the table below.

MAXIMUM PERMISSIBLE FLOW RATES

Product ID	Hose ID (in.)	Gas		Liquid	
		CFH (ft ³ /hour)	CFM (ft ³ /min.)	CFH (ft ³ /hour)	CFM (ft ³ /min.)
7xx-004	1/4"	283	4.72	141.5	2.36
7xx-006	3/8"	544.4	9.08	272.2	4.54
7xx-008	1/2"	923.4	15.4	461.7	7.7
7xx-012	3/4"	1,882.7	31.4	941.4	15.7
7xx-016	1"	3,309.8	55.2	1,654.9	27.6
7xx-020	1-1/4"	5,156.6	86	2,578.3	43
7xx-024	1-1/2"	8,034.6	134	4,017.3	67
7xx-032	2"	11,770.1	196.3	5,885.1	98.15
7xx-048	3"	26,482.5	441.67	13,241.3	220.835
7xx-064	4"	47,068.6	785	23,534.3	392.5

7xx-080	5"	72,911.4	1,216	36,455.7	608
7xx-096	6"	104,930	1,750	52,465	875
7xx-128	8"	179,880	3,000	89,940	1,500
7xx-160	10"	275,816	4,600	137,908	2,300
7xx-192	12"	407,728	6,800	203,864	3,400
7xx-224	14"	509,660	8,500	254,830	4,250
7xx-256	16"	689,540	11,500	344,770	5,750
7xx-288	18"	869,420	14,500	434,710	7,250
7xx-320	20"	1,079,280	18,000	539,640	9,000
7xx-352	22"	1,319,120	22,000	659,560	11,000
7xx-384	24"	1,588,940	26,500	794,470	13,250

Where the flow velocity exceeds these rates, an interlocked metal hose liner or larger hose I.D. is recommended. If you have any questions or comments, please [contact us](#).