

Friction Loss and Reaction Data

FLOW (U.S. GAL. PER MINUTE)	PRESSURE LOSS (PSI PER 100' HOSE)								
	1"	1½"	2"	2½"	3"	3½"	4"	4½"	5"
10	3.5								
20	6								
30	14								
40	24	4.5	3	1					
50	38	7	4	2					
60	54	10	5	2.5					
70	75	12.5	6	3					
80		16	8	3.5					
90		20	10	5					
100		25	12	6	3	1			
110		30	14.5	7	3.5	1			
120		35	17	8.5	4	1.5			
130		40	20	10	4.5	1.5			
140		47	23	12	5	2			
150		54	26	13.5	6	2			
160			29.5	15.5	7	2.5			
170			33	17.5	7.5	3			
180			37	19.5	8.5	3			
190			41	21.5	9	3.5			
200			45	24	10	4	2		
225			57	30	12	4.5	2		
250			70	37.5	15	6	2.5		
275			82	45	17.5	7	3		
300			95	54	21	8	3.5	2	
325				65	24.5	9.5	4	2.5	
350				78	28	11	5	2.5	
375				86	32	12.5	5.5	3	
400				96	36	14	6	3	1
450					45	17.5	8	4	1.5
500					55	21	9.5	5	2
550						25.5	11.5	6	2
600						30	13.5	7	2.5
650						35	15.5	8.5	3
700						40.5	18	9.5	3.5
750						46	20	11.5	4
800						53	23	12.5	4.5
850							25.5	14.5	5
900							28	16	5.5
950							31	17.5	6
1000							34	19	6.5
1100							41	23	8
1200							49	27.5	9.5
1300							57	32.5	11
1400							66.5	38	13
1500							76.5	43	15
1750								59	20
2000								77	26.5

Data Provided by Cascade Fire Equipment Company

STRAIGHT BORE NOZZLES

NR = 1.5 d²NP
 Where NR = Nozzle Reaction (Pounds)
 d = Nozzle Diameter (Inches)
 NP = Nozzle Pressure (PSI)
 1.5 is a constant

COMBINATION FOG NOZZLES

NR = 0.0505 Q√P
 Where NR = Nozzle Reaction (Pounds)
 Q = Flow (GPM)
 P = Nozzle Pres. (PSI at base of nozzle)
 0.0505 is a constant

This formula is with nozzle set on straight stream. Reaction will decrease as pattern is widened.