

Hydraulic Reference Sheet

2 1/2"	1"	1 1/2"	1 3/4"	3 1/2"	4"	FLR
				200	200	1
					250	1
100	11	28	50	250	400	2
110	12	31	55		450	2
120	13	34	60	300		3
130	14	36	65		500	3
140	15	39	70			4
150	17	42	75		600	5
160	18	45	80	400		5
170	19	48	85			6
180	20	50	90	450	700	6
190	21	53	95		750	7
200	22	56	100	500	800	8
210	23	59	105			9
220	24	62	110			10
230	25	64	115		900	11
240	26	67	120	600		12
250	28	70	125		1000	13
260	29	73	130			14
270	30	76	135			15
280	31	78	140	700	1100	16
290	32	81	145			17
300	33	84	150	750	1200	18
310	34	87	155		1250	19
320	35	90	160	800		20
330	36	92	165		1300	22
340	37	95	170			23
350	39	98	175		1400	25
360	40	101	180	900		26
370	41	104	185			27
380	42	106	190		1500	29
390	43	109	195			30
400	44	112	200	1000		32
410	45	115	205			33
420	46	118	210			35
430	47	120	215			37
440	48	123	220	1100	1750	39
450	50	126	225			41
460	51	129	230			42
470	52	132	235			44
480	53	134	240	1200		46
490	54	137	245			48
500	55	140	250	1250	2000	50
510	56	143	255			52
520	57	143	260	1300		54
530	58	148	265			56
540	59	151	270			58
550	60	154	275			61

SMOOTH BORE TIPS - HAND LINES	NP	GPM
3/16" - Round to 1 GPM	50psi	7
1/4"	50psi	13
3/8"	50psi	30
1/2" - Round to 10 GPM	50psi	50
5/8"	50psi	80
3/4"	50psi	120
7/8"	50psi	160
1"	50psi	210
1 1/8"	50psi	270
1 1/4"	50/80psi	330/400
SMOOTH BORE TIPS - APPLIANCES	NP	GPM
1 3/8" - Round to 100 GPM+15A	80psi	500
1 1/2"	80psi	600
1 3/4"	80psi	800
2"	80psi	1100

GG/GL	+/- .5ft or 5psi per floor
AL	15psi
LSL	25psi
SL	25psi
SPR. L	25psi
SPR	30gpm per sprinkler head
SPRINKLER SYSTEM	25(NP) + TFL + 25(SPR. L)+ GL
AERIAL LADDER	NP + TFL + 25(LSL) + GL

Hose	Conversion
3/4"	GPM X 25
1"	GPM X 9
1 1/2"	GPM X 3.6
1 3/4"	GPM X 2
3"	GPM X .67
3 1/2 "	GPM X .4
4"	GPM X .25

Standpipe	25psi
Nozzle	50psi (160gpm Slug) or 75psi (200gpm SOF)
Attack	FLR of fire floor attack lines
Gravity	GL = 5psi/floor - 5psi for ground floor
Supply to Building	FLR of 2 1/2" supply lines (total gpm flow/2)

1 3/4" HOSE (FLR per L)	100'	150'	200'
30gpm SOF (1)	101 psi	102 psi	102 psi
60gpm SOF (3)	103 psi	105 psi	106 psi
95gpm SOF (7)	107 psi	111 psi	114 psi
125gpm SOF (13)	113 psi	120 psi	126 psi
150gpm SOF (18)	118 psi	127 psi	136 psi
175gpm SOF (25)	125 psi	138 psi	150 psi
200gpm SOF (32)	132 psi	148 psi	164 psi

2 1/2" HOSE (FLR per L)	NP	100'	150'	200'
125gpm SOF (3)	100	103 psi	105 psi	106 psi
150gpm SOF (5)	100	105 psi	108 psi	110 psi
200gpm SOF (8)	100	108 psi	112 psi	116 psi
250gpm SOF (13)	100	113 psi	120 psi	126 psi
1" tip 210 gpm (9)	50	59 psi	64 psi	68 psi
1 1/8" tip 270gpm (15)	50	65 psi	73 psi	80 psi
1 1/4" tip 330gpm (22)	50	72 psi	83psi	94psi
1 3/8" tip 500gpm/2 + AL (13)	80	108 psi	115 psi	121 psi
1 1/2" tip 600gpm/2 + AL (18)	80	113 psi	122 psi	131 psi
1 3/4" tip 800gpm/2 + AL (3)	80	127 psi	143 psi	159 psi
2" tip 1100gpm/2 + AL (61)	80	156 psi	187 psi	217 psi
1000gpm SOF/2 + AL (9)	100	165 psi	190 psi	215 psi

FORMULAS: PP= NP + TFL TFL =
 FLR x L FLR = 2Q²
 Q = GPM/100 GPM = 30d² vNP
 NR = 1.5d² NP

IMMEDIATE PP: Handlines = NP + GL or - GL

Elevated Streams = 150psi

Standpipes/Sprinklers = 150psi