RCA Pump Panel Companion

(CQ^2L)

Hand Lines — Friction Loss Per 100'

Solid Stream (NP=50)

Control Nozzle (NP=100)

Tip	GPM	1 3/4"	2 1/2"
3/4"	120	17	
7/8"	160	30	
15/16"	180	38	
1"	200	48	8
1 1/8"	250		12.5
1 1/4"	325		21
1 3/4" Elkhart	190	43	
1 3/4" TFT	170	35	
2 1/2" Elkhart	300		18
2 1/2" TFT	250		12.5

Automatic Sprinkler Systems

Set pump to 150 p.s.i.

1/2" head flows 20 GPM @ 15 p.s.i.

Foam Rate of Application

Square feet of spill X application rate = GPM

GPM X ratio X (15)min. = Concentrate required

Relay Pumping

1) Total Distance ÷ 100 = # of 100' lengths

2) # of 100' lengths X Friction loss per 100' = THFL

3) THFL÷180= # of relay pumpers (+ 1 attack Pumper)

4) Distance÷# relay pumpers=Distance between pumpers

5) THFL ÷ # of pumpers = PDP + 20

Friction Loss Allowances

Master Stream Device	25psi
Appliances >350GPM	10psi
Aerial Apparatus	25psi

Elevation (+ or -)

Per 10 ft	5p.s.i.
Per story	5p.s.i.

Like Volumes

%Drop=Static - Residual / Static

0 to 10%	3 Vol.
11 - 15%	2 Vol.
16 - 25%	1 Vol.

Maintain 20 p.s.i. @ intake

Q	Q^2	Q
1.2	1.44	4.5
1.5	2.25	5.5
1.6	2.56	6.5
1.7	2.89	7.5
1.8	3.24	8.5
2	4	9.5
2.5	6.25	
3.25	10.56	
3.33	11.08	
3.5	12.25	

Coefficients

Hose	C
1 3/4"	12
2 1/2"	2
3"	0.8
4"	0.2
5"	0.08
(2)2 1/2"	0.5
(3)2 1/2"	0.22
(2)3"	0.2
(1)3"(1)2 1/2"	0.3
(2)2 1/2"(1)3"	0.16
(2)3"(1)2 1/2"	0.12

Supply And Master Streams — Friction Loss Per 100'

Solid Stream (NP=80) Control Nozzle (NP=100)

Tip							1 1/4"		1 3/8"
GPM	100	150	200	250	300	350	400	450	500
2 1/2"	2	5	8	13	18	25	32	41	50
3"	0.8	2	3	5	7	10	13	16	20
4"	0.2	0.5	1	1.25	2	2.5	3	4	5
5"	0.08	0.18	0.32	0.5	0.72	0.98	1	1.62	2
(2)2 1/2"	0.5	1	2	3	5	6	8	10	12
(3)2 1/2"	0.22	0.5	1	1.5	2	3	4	5	6
(2)3"	0.2	0.5	1	1.25	2	2.5	3	4	5
(1)3"(1)2 1/2"	0.3	0.66	1	2	3	4	5	6	8
(2)2 1/2"(1)3"	0.16	0.36	0.64	1	1.44	2	3	3.5	4
(2)3"(1)2 1/2"	0.12	0.27	0.48	0.75	1.08	1.5	2	2.5	3

Tip		1 1/2"		1 5/8"		1 3/4"		1 7/8"		2"/Control
GPM	550	600	650	700	750	800	850	900	950	1000
2 1/2"	61	72	85	98	113	128	145	162	181	200
3"	24	29	34	39	45	51	58	65	72	80
4"	6	7	9	10	11	13	15	16	18	20
5"	2.5	3	3.5	4	4.5	5	6	7	7.5	8
(2)2 1/2"	15	18	21	25	28	32	36	40	45	50
(3)2 1/2"	7	8	9	11	12	14	16	18	20	22
(2)3"	6	7	9	10	11	13	15	16	18	20
(1)3"(1)2 1/2"	9	11	13	15	17	19	22	24	27	30
(2)2 1/2"(1)3"	5	6	7	8	9	10	12	13	15	16
(2)3"(1)2 1/2"	3.5	4	5	6	7	8	9	10	11	12