

Table 3-2
Comparative Flow Rates for Concrete Pipe lined with Snap-Tite®

 Based on Manning's equation $n=.00914$ for Snap-Tite®, $n=.015$ for Concrete, $s=.001$ ft/ft

Concrete			Snap-Tite®				% of Flow Relined
Culvert Size ID (in)	Flow (gpm)	Flow (cfs)	Outside Dia. (in)	DR 32.5 Av. ID (in)	Flow (gpm)	Flow (cfs)	
12	438	1.0	10.75	10.05	448	1.0	102%
15	795	1.8	12.75	11.92	706	1.6	89%
18	1292	2.9	14	13.09	906	2.0	70%
18	1292	2.9	16	14.96	1294	2.9	100%
21	1949	4.3	16	14.96	1294	2.9	66%
21	1949	4.3	18	16.83	1771	3.9	91%
24	2783	6.2	18	16.83	1771	3.9	64%
24	2783	6.2	20	18.70	2346	5.2	84%
24	2783	6.2	22	20.56	3025	6.7	109%
27	3810	8.5	22	20.56	3025	6.7	79%
27	3810	8.5	24	22.43	3815	8.5	100%
30	5045	11.2	24	22.43	3815	8.5	76%
30	5045	11.2	28	26.17	5755	12.8	114%
36	8204	18.3	28	26.17	5755	12.8	70%
36	8204	18.3	30	28.04	6917	15.4	84%
36	8204	18.3	32	29.91	8216	18.3	100%
42	12376	27.6	32	29.91	8216	18.3	66%
42	12376	27.6	34	31.78	9658	21.5	78%
42	12376	27.6	36	33.65	11248	25.1	91%
48	17669	39.4	42	39.26	16967	37.8	96%
54	24190	53.9	42	39.26	16967	37.8	70%
54	24190	53.9	48	44.87	24224	54.0	100%
60	32037	71.4	48	44.87	24224	54.0	76%
60	32037	71.4	54	50.48	33163	73.9	104%
66	41307	92.0	54	50.48	33163	73.9	80%
66	41307	92.0	63	58.89	50024	111.5	121%
72	52095	116.1	63	58.89	50024	111.5	96%
84	78582	175.1	63	58.89	50024	111.5	64%