

Table 3-1
Comparative Flow Rates for Corrugated Metal Pipe (CMP) lined with Snap-Tite®
Based on Manning's equation $n=0.00914$ for Snap-Tite®, $n=0.024$ for CMP, $s=0.001$ ft/ft

CMP			SnapTite®				% 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	274	0.6	10.75	10.05	448	1.0	164%
15	497	1.1	12.75	11.92	706	1.6	142%
18	808	1.8	14	13.09	906	2.0	112%
18	808	1.8	16	14.96	1294	2.9	160%
21	1218	2.7	16	14.96	1294	2.9	106%
21	1218	2.7	18	16.83	1771	3.9	145%
24	1739	3.9	18	16.83	1771	3.9	102%
24	1739	3.9	20	18.70	2346	5.2	135%
24	1739	3.9	22	20.56	3025	6.7	174%
27	2381	5.3	22	20.56	3025	6.7	127%
27	2381	5.3	24	22.43	3815	8.5	160%
30	3153	7.0	24	22.43	3815	8.5	121%
30	3153	7.0	26	24.31	4720	10.5	150%
30	3153	7.0	28	26.17	5755	12.8	182%
36	5128	11.4	28	26.17	5755	12.8	112%
36	5128	11.4	30	28.04	6917	15.4	135%
36	5128	11.4	32	29.91	8216	18.3	160%
42	7735	17.2	32	29.91	8216	18.3	106%
42	7735	17.2	36	33.65	11248	25.1	145%
48	11043	24.6	36	33.65	11248	25.1	102%
48	11043	24.6	42	39.26	16967	37.8	154%
54	15118	33.7	42	39.26	16967	37.8	112%
54	15118	33.7	48	44.87	24224	54.0	160%
60	20023	44.6	48	44.87	24224	54.0	121%
60	20023	44.6	54	50.48	33163	73.9	166%
66	25817	57.5	54	50.48	33163	73.9	128%
66	25817	57.5	63	58.89	50024	111.5	194%
72	32559	72.5	54	50.48	33163	73.9	102%
72	32559	72.5	63	58.89	50024	111.5	154%
84	49114	109.4	63	58.89	50024	111.5	102%

*Many culverts operate under Inlet Control where full flow Manning's equation comparisons are not accurate since they fail to account for inlet and outlet losses, which may not be minor losses, especially when the barrel is short.