

Diameters, Circumferences and Areas for Ductile Iron Standard Cement-Lined Pipe

Table No. 1

PRESSURE CLASS (psi)	NOMINAL SIZE (inches)	OUTSIDE DIAMETER (inches)	INSIDE DIAMETER* (inches)	O.D. AREA (sq. in.)	I.D. AREA* (sq. in.)	O.D. CIRCUMFERENCE (inches)	I.D. CIRCUMFERENCE (inches)
350	3"	3.96	3.34	12.32	8.76	12.44	10.49
350	4"	4.80	4.18	18.10	13.72	15.08	13.13
350	6"	6.90	6.28	37.39	30.97	21.68	19.73
350	8"	9.05	8.43	64.33	55.81	28.43	26.48
350	10"	11.10	10.46	96.77	85.93	34.87	32.86
350	12"	13.20	12.52	136.85	123.11	41.47	39.33
250	14"	15.30	14.55	183.85	166.27	48.07	45.71
250	16"	17.40	16.61	237.79	216.69	54.66	52.18
250	18"	19.50	18.59	298.65	274.35	61.26	58.72
250	20"	21.60	20.75	366.44	338.16	67.86	65.19
200	24"	25.80	24.95	522.79	488.91	81.05	78.38
150	30"	32.00	31.07	804.25	758.18	100.53	97.61
150	36"	38.30	37.29	1152.10	1092.13	120.32	117.15
150	42"	44.50	43.43	1555.29	1481.39	139.80	136.44
150	48"	50.80	49.63	2026.83	1934.54	159.59	155.92
150	54"	57.56	56.29	2602.14	2488.58	180.83	176.84

* Based on Ductile Iron Pipe Pressure Classes nominal thickness for all sizes as specified in AWWA C151, and on standard cement lining minimum thickness specified in AWWA C104. The value of Pi (π) used in calculations = 3.1416.

Weights for Pipeline Design Weight of Ductile Iron Pipe and Contained Water

Table No. 2

PRESS. CLASS	NOM. SIZE (inches)	GALS. HELD (per foot)	WEIGHT – LBS. PER FOOT			PRESS. CLASS	NOM. SIZE (inches)	GALS. HELD (per foot)	WEIGHT – LBS. PER FOOT		
			PIPE	WATER	TOTAL				PIPE	WATER	TOTAL
350	3"	0.45	9.2	3.8	13.0	250	18"	14.24	60.2	118.4	179.1
350	4"	0.71	11.3	5.9	17.2	250	20"	17.55	71.2	146.5	217.7
350	6"	1.61	15.5	13.4	29.9	200	24"	25.37	85.6	211.9	297.5
350	8"	2.90	22.0	24.2	46.2	150	30"	39.35	110.5	328.5	439.0
350	10"	4.46	28.3	37.2	65.5	150	36"	56.68	147.7	473.3	621.0
350	12"	6.39	36.3	53.3	89.6	150	42"	76.88	188.3	641.9	830.2
250	14"	8.63	42.7	72.1	114.8	150	48"	100.40	240.3	838.3	1078.6
250	16"	11.25	52.0	93.9	145.9	150	54"	129.16	301.7	1078.4	1380.1

These weights are based on minimum class Ductile Iron Pipe with minimum thickness standard cement lining as specified in AWWA C104 and on weight of water of 62.4 pounds per cubic foot. The inside diameters are as given in Table No. 1.
Pounds of water per foot = $0.4333 \times (\text{I.D. in inches})^2$
Gallons of water per foot = $0.0519 \times (\text{I.D. in inches})^2$

Ductile Iron/Gray Iron Weights

POUNDS PER CUBIC FOOT	
DUCTILE IRON	GRAY IRON
440.64	449.28

Conversion Factors

TO CHANGE	TO	MULTIPLY BY
Gray Iron	Ductile Iron	0.9808
Ductile Iron	Gray Iron	1.0196