C.I. MK

This Standard has been approved by ANSI Standards Committee A21 and Secretariats AWWA, NEWWA and AGA. Final adoption is contingent upon regular ANSI administrative procedures.

Gloria - give copy to Mr Dill & Mr Perred Return to [illegible] 5/13/77

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PLAINTIFF'S EXHIBIT

CAP-852

AMERICAN NATIONAL STANDARD

for

DUCTILE-IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS, FOR WATER OR OTHER LIQUIDS

SECRETARIATS

AMERICAN GAS ASSOCIATION

AMERICAN WATER WORKS ASSOCIATION
NEW ENGLAND WATER WORKS ASSOCIATION

Revised Edition
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TABLE 51.4

STANDARD DIMENSIONS AND WEIGHTS OF PUSH-ON-JOINT DUCTILE-IRON PIPE

Size In.	Thickness Class	Thickness In.	OD* In.	Wt. of Barrel Per Ft Lb.	Wt. of Bell Lb.	18-Ft. Laying Length Wt. Per Lgth. † Lb.	18-Ft. Laying Length Avg. Wt. Per Ft‡ Lb.	20-Ft. Laying Length Wt. Per Lgth. † Lb.	20-Ft. Laying Length Avg. Wt. Per Ft‡ Lb.
3§	51	0.25	3.96	8.9	9	170	9.4	185	9.4
3	52	0.28	3.96	9.9	9	185	10.4	205	10.4
3	53	0.31	3.96	10.9	9	205	11.4	225	11.4
3	54	0.34	3.96	11.8	9	220	12.3	245	12.2
3	55	0.37	3.96	12.8	9	240	13.3	265	13.2
3	56	0.40	3.96	13.7	9	255	14.2	285	14.2
4	51	0.26	4.80	11.3	11	215	11.9	235	11.8
4	52	0.29	4.80	12.6	11	240	13.2	265	13.2
4	53	0.32	4.80	13.8	11	260	14.4	285	14.4
4	54	0.35	4.80	15.0	11	280	15.6	310	15.6
4	55	0.38	4.80	16.1	11	300	16.7	335	16.6
4	56	0.41	4.80	17.3	11	320	17.9	355	17.8
6	50	0.25	6.90	16.0	18	305	17.0	340	16.9
6	51	0.28	6.90	17.8	18	340	18.8	375	18.7
6	52	0.31	6.90	19.6	18	370	20.6	410	20.5
6	53	0.34	6.90	21.4	18 25	405	22.4	445	22.3
6	54	0.37	6.90	23.2	18	435	24.2	480	24.1
6	55	0.40	6.90	25.0	18	470	26.0	520	25.9
6	56	0.43	6.90	26.7	18	500	27.7	550	27.6
8	50	0.27	9.05	22.8	26	435	24.2	480	24.1
8	51	0.30	9.05	25.2	26	480	26.6	530	26.5
8	52	0.33	9.05	27.7	26	525	29.1	580	29.0
8	53	0.36	9.05	30.1	26 36	570	31.5	630	31.4
8	54	0.39	9.05	32.5	26	610	33.9	675	33.8
8	55	0.42	9.05	34.8	26	650	36.2	720	36.1
8	56	0.45	9.05	37.2	26	695	38.6	770	38.5
10	50	0.29	11.10	30.1	34	575	32.0	635	31.8
10	51	0.32	11.10	33.2	34	630	35.1	700	34.9
10	52	0.35	11.10	36.2	34	685	38.1	760	37.9
10	53	0.38	11.10	39.2	34 49	740	41.1	820	40.9
10	54	0.41	11.10	42.1	34	790	44.0	875	43.8
10	55	0.44	11.10	45.1	34	845	47.0	935	46.8
10	56	0.47	11.10	48.0	34	900	49.9	995	49.7

* Tolerance of OD of spigot end: 3-12 in., ± 0.06 in.; 14-24 in., +0.05 in., -0.08 in.; 30-54 in., +0.08 in., -0.06 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lb.

‡ Including bell; average weight, per foot, based on calculated weight of pipe before rounding.

§ Pipe of 3-in. size also available in 12-ft. laying length with following weights:

Thickness Class	Thickness In.	Wt. Per Lgth.† Lb.	Avg. Wt. Per Ft.‡ Lb.
51	0.25	115	9.6
52	0.28	130	10.6
53	0.31	140	11.6
54	0.34	150	12.6
55	0.37	165	13.6
56	0.40	175	14.4

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TABLE 51.4 (Continued)

STANDARD DIMENSIONS AND WEIGHTS OF
PUSH-ON-JOINT DUCTILE-IRON PIPE

Size In.	Thickness Class	Thickness In.	OD* In.	Wt. of Barrel Per Ft Lb.	Wt. of Bell Lb.	18-Ft. Laying Length		20-Ft. Laying Length	
						Wt. Per Lgth. † Lb.	Avg. Wt. Per Ft.‡ Lb.	Wt. Per Lgth. † Lb.	Avg. Wt. Per Ft.‡ Lb.
12	50	0.31	13.20	38.4	43	735	40.8	810	40.6
12	51	0.34	13.20	42.0	43	800	44.4	885	44.2
12	52	0.37	13.20	45.6	43	865	48.0	955	47.8
12	53	0.40	13.20	49.2	43	930	51.6	1025	51.4
12	54	0.43	13.20	52.8	43	995	55.2	1100	55.0
12	55	0.46	13.20	56.3	43	1055	58.7	1170	58.4
12	56	0.49	13.20	59.9	43	1120	62.3	1240	62.0
14	50	0.33	15.30	47.5	63	920	51.0	1015	50.6
14	51	0.36	15.30	51.7	63	995	55.2	1095	54.8
14	52	0.39	15.30	55.9	63	1070	59.4	1180	59.0
14	53	0.42	15.30	60.1	63	1145	63.6	1265	63.2
14	54	0.45	15.30	64.2	63	1220	67.7	1345	67.4
14	55	0.48	15.30	68.4	63	1295	71.9	1430	71.6
14	56	0.51	15.30	72.5	63	1370	76.0	1515	75.6
16	50	0.34	17.40	55.8	76	1080	60.0	1190	59.6
16	51	0.37	17.40	60.6	76	1165	64.8	1290	64.4
16	52	0.40	17.40	65.4	76	1255	69.6	1385	69.2
16	53	0.43	17.40	70.1	76	1340	74.3	1480	73.9
16	54	0.46	17.40	74.9	76	1425	79.1	1575	78.7
16	55	0.49	17.40	79.7	76	1510	83.9	1670	83.5
16	56	0.52	17.40	84.4	76	1595	88.6	1765	88.2
18	50	0.35	19.50	64.4	87	1245	69.2	1375	68.8
18	51	0.38	19.50	69.8	87	1345	74.6	1485	74.2
18	52	0.41	19.50	75.2	87	1440	80.0	1590	79.6
18	53	0.44	19.50	80.6	87	1540	85.4	1700	85.0
18	54	0.47	19.50	86.0	87	1635	90.8	1805	90.4
18	55	0.50	19.50	91.3	87	1730	96.1	1915	95.6
18	56	0.53	19.50	96.7	87	1830	101.5	2020	101.0
20	50	0.36	21.60	73.5	97	1420	78.9	1565	78.4
20	51	0.39	21.60	79.5	97	1530	84.9	1685	84.4
20	52	0.42	21.60	85.5	97	1635	90.9	1805	90.4
20	53	0.45	21.60	91.5	97	1745	96.9	1925	96.4
20	54	0.48	21.60	97.5	97	1850	102.9	2045	102.4
20	55	0.51	21.60	103.4	97	1960	108.8	2165	108.2
20	56	0.54	21.60	109.3	97	2065	114.7	2285	114.2

* Tolerance of OD of spigot end: 3-12 in., ±0.06 in.; 14-24 in., +0.05., -0.08 in.; 30-54 in., +0.08 in., -0.06 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lb.

‡ Including bell; average weight per foot, based on calculated weight of pipe before rounding.

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TABLE 51.4 (Continued)

STANDARD DIMENSIONS AND WEIGHTS OF PUSH-ON-JOINT DUCTILE-IRON PIPE

Size In.	Thickness Class	Thickness In.	OD* In.	Wt. of Barrel Per Ft Lb.	Wt. of Bell Lb.	18-Ft. Laying Length		20-Ft. Laying Length	
						Wt. Per Lgth. † Lb.	Avg. Wt. Per Ft‡ Lb.	Wt. Per Lgth. † Lb.	Avg. Wt. Per Ft‡ Lb.
24	50	0.38	25.80	92.9	120	1790	99.6	1980	98.9
24	51	0.41	25.80	100.1	120	1920	106.8	2120	106.1
24	52	0.44	25.80	107.3	120	2050	114.0	2265	113.3
24	53	0.47	25.80	114.4	120	2180	121.1	2410	120.4
24	54	0.50	25.80	121.6	120	2310	128.3	2550	127.6
24	55	0.53	25.80	128.8	120	2440	135.5	2695	134.8
24	56	0.56	25.80	135.9	120	2565	142.6	2840	141.9
30	50	0.39	32.00	118.5		2350	130.5	2535	126.6
30	51	0.43	32.00	130.5		2565	142.5	2775	138.6
30	52	0.47	32.00	142.5		2780	154.5	3015	150.6
30	53	0.51	32.00	154.4	(1)	2995	166.4	3250	162.6
30	54	0.55	32.00	166.3		3210	178.3	3490	174.4
30	55	0.59	32.00	178.2		3425	190.2	3725	186.4
30	56	0.63	32.00	190.0		3635	202.0	3965	198.2
36	50	0.43	38.30	156.5		3110	172.7	3345	167.3
36	51	0.48	38.30	174.5		3435	190.7	3705	185.3
36	52	0.53	38.30	192.4		3755	208.6	4065	203.2
36	53	0.58	38.30	210.3	(2)	4075	226.5	4420	221.1
36	54	0.63	38.30	228.1		4400	244.3	4780	238.9
36	55	0.68	38.30	245.9		4720	262.1	5135	256.7
36	56	0.73	38.30	263.7		5040	279.9	5490	274.5
42	50	0.47	44.50	198.9	261			4240	212.0
42	51	0.53	44.50	224.0	261			4740	237.0
42	52	0.59	44.50	249.1	261			5245	262.2
42	53	0.65	44.50	274.0	261			5740	287.0
42	54	0.71	44.50	298.9	261			6240	312.0
42	55	0.77	44.50	323.7	261			6735	336.8
42	56	0.83	44.50	348.4	261			7230	361.4
48	50	0.51	50.80	246.6	316			5250	262.4
48	51	0.58	50.80	280.0	316			5915	295.8
48	52	0.65	50.80	313.4	316			6585	329.2
48	53	0.72	50.80	346.6	316			7250	362.4
48	54	0.79	50.80	379.8	316			7910	395.6
48	55	0.86	50.80	412.9	316			8575	428.7
48	56	0.93	50.80	445.9	316			9235	461.7

* Tolerances of OD of spigot end: 3-12 in., ±0.06 in.; 14-24 in., +0.05 in., -0.08 in.; 30-54 in., + 0.08 in., -0.06 in.

(1) Weight of 30-in. bell is 216 lb for 18-ft. pipe and 163 lb for 20-ft. pipe.

(2) Weight of 36-in. bell is 292 lb for 18-ft. pipe and 216 lb for 20-ft. pipe.

† Including bell; calculated weight of pipe rounded off to nearest 5 lb.

‡ Including bell; average weight per foot, based on calculated weight of pipe before rounding.

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TABLE 51.4 (Continued)

STANDARD DIMENSIONS AND WEIGHTS OF
PUSH-ON-JOINT DUCTILE-IRON PIPE

Size In.	Thickness Class	Thickness In.	OD* In.	Wt. of Barrel Per Ft Lb.	Wt. of Bell Lb.	18-Ft. Laying Length		20-Ft. Laying Length	
						Wt. Per Lgth. † Lb.	Avg. Wt. Per Ft‡ Lb.	Wt. Per Lgth. † Lb.	Avg. Wt. Per Ft‡ Lb.
54	50	0.57	57.10	309.8	370			6565	328.3
54	51	0.65	57.10	352.7	370			7425	371.2
54	52	0.73	57.10	395.6	370			8280	414.1
54	53	0.81	57.10	438.3	370			9135	456.8
54	54	0.89	57.10	480.9	370			9990	499.4
54	55	0.97	57.10	523.4	370			10840	541.9
54	56	1.05	57.10	565.8	370			11685	584.3

* Tolerances of OD of spigot end: 3-12 in., ±0.06 in.; 14-24 in., +0.05 in., -0.08 in.; 30-54 in., +0.08 in., -0.06 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lb.

‡ Including bell; average weight per foot, based on calculated weight of pipe before rounding.

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