AMERICAN Specials

The principal standards relating to AMERICAN Specials are ANSI/AWWA C110/A21.10, C151/A21.51, and C153/A21.53. These and other standards are referenced throughout this Section either by the full ANSI/AWWA designation or by only the AWWA numbering, such as AWWA C110.

In addition to the full complement of Mechanical Joint (MJ), Fastite®, Restrained Joint, and Flanged fittings, AMERICAN furnishes many special fittings to meet special construction requirements. AMERICAN Specials include types and lengths of wall pipe, wall castings and fabrications, fittings with a combination of joints, and a number of other special fittings.

Many of the special fittings furnished by AMERICAN are included in this section.

General Notes Relating to AMERICAN Specials

1. Fittings are manufactured of ductile iron, grade 70-50-05 (minimum tensile strength: 70,000 psi; minimum yield strength: 50,000 psi; minimum elongation: 5%) in accordance with AWWA C110 or C153.
2. Pipes are manufactured of ductile iron, grade 60-42-10, (minimum tensile strength: 60,000 psi; minimum yield strength: 42,000 psi; minimum elongation: 10%) in accordance with AWWA C151.
3. Flange adaptors for AWWA C110/C115 Flange to ANSI/ASME B16.1 Class 250 Flange are manufactured of ASTM A36 steel.
4. Flanges and static-cast MJ bells can be tapped for studs when specified by the purchaser.
5. All pressure ratings shown are AMERICAN's suggested standard and are for water service.
6. Unless otherwise noted, all cast-on flanges are per AWWA C110 or C153.
7. All Mechanical Joints comply with AWWA C111. Threaded-on or otherwise fabricated MJ bells are per applicable portions of AWWA C115 and C153. Weights of MJ accessories are not included in weights of fittings with MJ outlets shown in tables, unless otherwise specified.
8. Weights of fittings can vary due to changes in foundry practice.
9. AMERICAN produces many specials other than those listed in this section. Contact AMERICAN regarding any specific requirements.

AMERICAN Ductile Iron Specials

Plain End Pipe and Thrust Collar Weights

Fabricated Wall Pipe

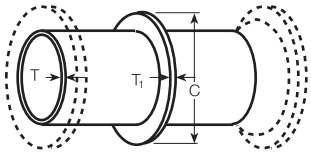


Table No. 7-1

Size in.	Plain End Pipe				Thrust Collars			
	Ductile Iron Centrifugally Cast							
	ANSI/AWWA* Minimum Class		ANSI/AWWA** C115		T1 Thickness in.	C Diameter in.	Weight lb	Allowable Load † Per Collar T lbs
	T lbs Thickness in.	Weight lb/ft	T lbs Thickness in.	Weight lb/ft				
4	.25	10.9	.32	13.8	.25	6.80	1	4,500
6	.25	16.0	.34	21.4	.25	8.90	2	9,300
8	.25	21.1	.36	30.1	.25	11.05	2	16,000
10	.26	27.1	.38	39.2	.25	13.10	3	24,000
12	.28	34.8	.40	49.2	.25	15.20	3	34,000
14	.28	40.4	.42	60.1	.25	17.30	5	46,000
16	.30	49.3	.43	70.1	.25	19.40	6	59,000
18	.31	57.2	.44	80.6	.38	22.50	15	75,000
20	.33	67.5	.45	91.5	.38	24.60	11	92,000
24	.33	80.8	.47	114.4	.38	28.80	13	130,000
30	.34	103.5	.51	154.4	.50	36.00	29	200,000
36	.38	138.5	.58	210.3	.50	42.30	35	290,000
42	.41	173.8	.65	274.0	.75	50.75	98	390,000
48	.46	222.6	.72	346.6	.75	57.05	111	510,000
54	.51	279.7	.81	441.9	1.00	66.06	231	650,000
60	.54	317.0	.83	485.0	1.00	70.11	246	745,000
64	.56	350.5	.87	542.0	1.00	74.17	261	847,000

*AWWA C151 – minimum thickness classes in this standard are Class 350 for 4"–12" sizes, Class 250 for 14"–20" sizes, Class 200 for 24" and Class 150 for 30"–64" sizes.

**AWWA C115 – minimum thicknesses for all sizes of ductile iron pipe for threading on flanges.

Wall pipe is normally fabricated of Special Class 53 thickness ductile iron pipe but may be furnished with minimum classes unless threaded flanges or threaded MJ bells are included or unless specified otherwise. For weights of plain end pipe of other classes see Section 3, Table No. 3–9.

†These values are based on dead–end thrust due to 250 psi internal pressure. For higher allowable loads or pressures, contact AMERICAN. (See also the figure above Table No. 9–11, for use of thrust collars, e.g., in some buried systems where other types of concrete thrust blocks cannot be used.)

Welded–on thrust collars are normally fabricated from steel. Dimensions and weights above are for steel thrust collars.

Collars may be angled and/or rotated from top dead center. Contact AMERICAN for details.

See general notes on page 7–1.

AMERICAN Ductile Iron Specials

Bell and Flange Weights

Table No. 7-2

Size in.	Bells—Weight in Pounds					Flanges—Weight in Pounds	
	Mechanical Joint		Fastite	Flex-Ring	Lok-Ring	ANSI/AWWA** Flange	ANSI B16.1 F&D Class 250
	Centrifugally Cast On Pipe*	Threaded-On Pipe	Centrifugally Cast On Pipe*	Centrifugally Cast On Pipe*	Centrifugally Cast On Pipe*	Threaded-On C115	Threaded-On
4	14	16	7	14	–	12	22
6	19	23	12	20	–	17	32
8	25	31	19	29	–	24	51
10	31	41	29	40	–	36	69
12	38	55	31	54	–	55	100
14	–	85	40	92	–	70	125
16	–	105	45	105	–	80	145
18	–	125	72	125	–	85	200
20	–	150	80	130	–	105	220
24	–	235	96	222	–	160	335
30	–	375	164	328	–	240	514
36	–	500	210	428	–	350	697
42	–	600	315	609	–	500	994
48	–	810	389	778	–	625	1510
54	–	–	515	–	667	664	–
60	–	–	569	–	805	1055	–
64	–	–	677	–	866	1765	–

*Bell weights for ductile iron pipe are the same for all pressure classes per AWWA C151.
**AWWA C110 flange and AWWA C115 flange will match with facing and drilling of ANSI B16.1 Class 125 flange.
In sizes where applicable.

A unique Fastite fitting bell is not available in many configurations of 4"–48" fittings. In cases where Flex–Ring bell fittings are used without Flex–Ring or Field Flex–Ring restraint (in effect as "Fastite") the Flex–Ring "Statically Cast" bell weight will of course apply.

Weights shown for 14" and larger AWWA C110 cast–on flanges are for Class B thickness statically cast pipe and fittings; for a Class D thickness casting the cast–on flange weight is lighter by approximately 5% to 15% with the lower of these percentages applicable to the smaller size fittings and the higher of the percentages to the larger size fittings.

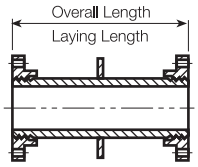
Weights above are subject to change, our option.

See General Notes on page 7–1.

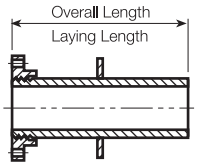
To determine weight of wall pipe, use data in Table Nos. 7–1 and 7–2. For example: Weight of 12" Flg–W/S–MJ Wall Pipe with centrifugal cast bell 12" L.L.(14 1/2" O.A.) Special Class 53 equals (12"/12" X 49.2 lb/ft.) + 58 lbs (Flg) + 10 lbs (W/S) + 38 lbs (MJ Bell) = 155 lbs.

AMERICAN Ductile Iron Specials

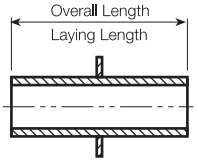
Thrust Collar (T/C) Wall Pipe - Fabricated from Centrifugally Cast Ductile Iron Pipe



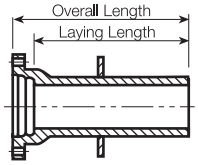
Flange-Thrust Collar-Flange



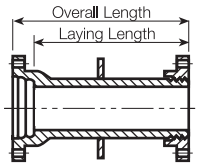
Flange-Thrust Collar-Plain End



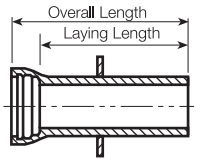
Plain End-Thrust Collar-Plain End



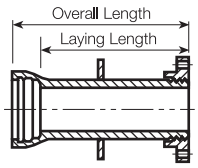
MJ-Thrust Collar-Plain End



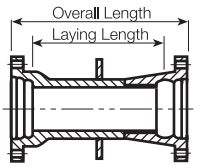
MJ-Thrust Collar-Flange



Fastite-Thrust Collar-Plain End



Fastite-Thrust Collar-Flange



MJ-Thrust Collar-MJ Fab

Table No. 7-3

Size in.	Minimum Dimensions in Inches												
	Flg–T/C–Flg.	Flg–T/C–PE	Flg–T/C–PE	MJ–T/C–MJ (Fab*)		MJ–T/C–PE		MJ–T/C–Flg		Fst–T/C–PE		Fst–T/C–Flg	
	O.A./L.L.	O.A./L.L.	O.A./L.L.	O.A.	L.L.	O.A.	L.L.	O.A.	L.L.	O.A.	L.L. *	O.A.	L.L.*
4	8	8	8	10	4 5/8	8	5 1/2	8	5 1/2	8	4 11/16	8	4 5/8
6	8	8	8	10	4 5/8	8	5 1/2	8	5 1/2	8	4 5/8	8	4 5/8
8	8	8	8	10	4 5/8	8	5 1/2	8	5 1/2	8	4 1/4	8	4 1/4
10	8	8	8	10	4 5/8	8	5 1/2	10	7 1/2	8	4 1/4	7 1/4	3 1/2
12	8	8	8	10	4 5/8	8	5 1/2	10	7 1/2	8	4 1/4	7 1/4	3 1/2
14	8 1/2	8	8	12	4 1/2	8	4 1/2	11	7 1/2	8	2 3/4	9 3/4	4 1/2
16	8 1/2	8	8	12	4 1/2	8	4 1/2	11 1/2	8	8	2 3/4	9 3/4	4 1/2
18	8 1/2	8	8	12	4 1/2	8	4 1/2	12	8 1/2	8	1 1/2	10	4 1/2
20	8 1/2	8	8	12	4 1/2	8	4 1/2	12	8 1/2	8	1 1/2	10	4 1/2
24	9 1/2	8	8	12	4 1/2	8	4 1/2	12	8 1/2	8	1 1/2	10	4 1/2
30	12	10 1/2	8	–	–	–	–	–	–	8	1 1/2	12	5 1/2
36	14	11 1/2	8	–	–	–	–	–	–	8	1 1/2	12	5 1/2
42	16	12	8	–	–	–	–	–	–	8 1/2	1	14	6 1/2
48	16	12	8	–	–	–	–	–	–	9	1	15	7
54	18	16	8	–	–	–	–	–	–	9 1/2	1	16	7 1/2
60	18	16	8	–	–	–	–	–	–	9 3/4	1	16	7 1/4
64	18	16	8	–	–	–	–	–	–	10	1	16	7

*Laying lengths are rounded to the nearest 1/4".

Thrust Collars may not be located in exact center of all minimum length pieces shown above.

Flanges and MJ bells of minimum–length pieces should normally be specified by the purchaser "tapped for studs" to enable assembly of joints flush with the wall face.

Maximum laying length of above wall pipe is 19'–6" (except 19'–0" for 64") except for MJ–T/C–PE or Fst–T/C–PE which may be furnished full 20' nominal length in all available sizes with the exception of 4" (4" maximum length is 18'–1 3/4"). 4"–16" Flange–Thrust Collar–Flange and Flange–Thrust Collar – PE pipe may also be furnished up to 20'–0" length. Contact AMERICAN if longer lengths required. All intermediate lengths can be furnished.

Wall pipe lengths shorter than those shown above can be furnished in some sizes by special fabrication. Contact AMERICAN for details.

Overall lengths are subject to manufacturing tolerances. If maximum overall length is critical, such as for installation of item inside steel forms, this must be specified by the purchaser on the order.

To determine weight of Thrust Collars Wall Pipe, use data in Table 7–1.

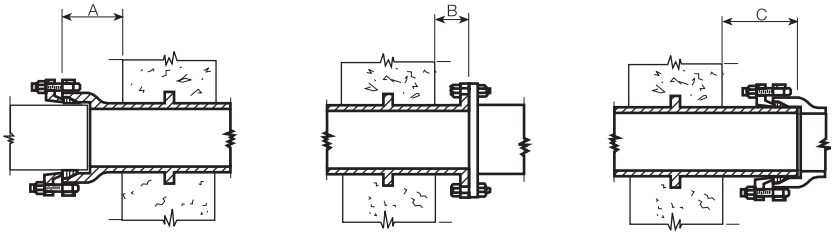
Correctly installed flanged wall pipe will normally have the bolt holes straddling the horizontal and vertical centerlines. **Checking with a spirit level or plumb line prior to pouring the walls is recommended.**

Wall pipe with MJ threaded–on bells (MJ Fab), Flex–Ring, and Lok–Ring bells can also be furnished. Contact AMERICAN for dimensions not shown above.

Minimum–length pipes with plain ends (PE) in many cases do not allow enough room between PE and collar to assemble joints. Contact AMERICAN for PE joint assembly needs, normally requiring longer pipes.

AMERICAN Ductile Iron Specials

Wall Piping - Recommended Minimum Installation Dimensions for Piping not Tapped for Studs



MJ Bell | Flanged Joint | MJ Plain End

Table No. 7-4

Size in.	A in.	B in.	C in.
4	5 3/4	2 1/4	6
6	5 3/4	2 3/4	6
8	6 1/4	2 3/4	6 1/2
10	6 1/2	3	6 1/2
12	6 1/2	3	6 1/2
14	7	3 1/2	7 3/4
16	7 1/4	3 1/2	7 3/4
18	7 1/2	3 3/4	7 3/4
20	7 1/2	3 3/4	7 3/4
24	8	4	8 1/4
30	9 1/2	5	9 3/4
36	9 3/4	5 1/4	9 3/4
42	10	*5 1/2	10
48	10	*6	10
54	–	*6 1/4	–
60	–	*6 1/2	–
64	–	*6 3/4	–

*The minimum dimension "B" for 42"–64" wall castings with threaded–on (AWWA C115) flange would be as follows: for 42", B = 6"; for 48", B = 61/2"; for 54"–64", B = 71/4".

Dimensions are based on standard mechanical joints per AWWA C111 and standard flanges per AWWA C110.

Wall piping with MJ bells or flanges having "A" and "B" dimensions shorter than those above, e.g. wall pipes with bell faces often placed "flush" with concrete form work, should be specified to be tapped for studs.

"A" and "C" dimensions for 14"–48" sizes apply to MJ castings only.