



## AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings

The principal standards covering fittings are ANSI/AWWA C110/A21.10 and ANSI/AWWA C153/A21.53. The principal standard covering joints is ANSI/AWWA C111/A21.11. These and other standards are referenced throughout this section by the full ANSI/AWWA designation or by only the AWWA numbering, such as AWWA C110 or C153.

AMERICAN furnishes a line of 4"–48" Flex-Ring and 54"–64" Lok-Ring fittings meeting the applicable requirements of AWWA C153. These fittings employ the standard Fastite or Fast-Grip gasket seal, and the joints meet the applicable requirements of AWWA C111. Many of these fittings are not specifically listed in the AWWA standards because of joints, outlets, or other variations and are designated as "AMERICAN standard."

When welded joint restraint is desired, Flex-Ring or Lok-Ring fittings should also be used, depending on size. These joints are also essentially boltless and use the standard Fastite gasket for joint sealing. In addition, field adaptable joint restraint is available for 14"–36" Flex-Ring pipe or Flex-Ring fittings by use of AMERICAN's Fast-Grip gaskets or Field Flex-Rings, respectively. See Section 9 for more information on Restrained Joints.

Flex-Ring and Lok-Ring fittings are normally furnished complete with standard Fastite plain rubber gaskets and a sufficient supply of Fastite joint lubricant. Restraining elements for Flex-Ring or Lok-Ring fittings may be shipped either with the fittings or joining pipe, dependent on joint type, fitting configuration, etc. See Section 9.

Flex-Ring and Lok-Ring fittings are furnished of ductile iron only. Fittings for pressure ratings of 250 and 350 psi are furnished as shown in the tables in this Section. Fittings for pressure ratings higher than shown are available for special applications.

Fittings are normally furnished with cement lining in accordance with AWWA C104 and with an outside asphaltic coating. They can also be furnished asphaltic coated or uncoated inside. For special conditions, other types of coatings and linings may be available. See Section 11.



## AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings

### General Notes Relating to Flex-Ring and Lok-Ring Fittings

1. Fittings in the following tables with the heading "ANSI/AWWA C153/A21.53" are essentially as specified in that standard. Fittings in tables with the heading "AMERICAN Standard" are either not included in the ANSI/AWWA standard or vary therefrom in weights, dimensions, and/or joints.

2. Fittings are manufactured of ductile iron qualified as per grade 70-50-05 (minimum tensile strength: 70,000 psi; minimum yield strength: 50,000 psi; minimum elongation: 5%) as specified in AWWA C153.

3. Weights of accessories are not included in weights of fittings shown in tables unless specifically noted. For weights of accessories, see Section 2 or Section 9.

4. For allowable joint deflection of Flex-Ring and Lok-Ring fitting joints, see Table 4-3.

5. All pressure ratings are for water service.

6. Some fittings are available with body metal thickness and weights other than shown in the tables. Some fittings are available in different sizes and with different size combinations than shown. All sizes and body metal thicknesses listed may not be available due to equipment changes. Check AMERICAN regarding special requirements.

7. See Section 7 for AMERICAN Specials.

8. Fittings may be furnished by AMERICAN that are manufactured by others. Any such fittings will normally be manufactured in accordance with appropriate ANSI/AWWA standards.

9. The 250 psi rating for 54"–64" fittings is an AMERICAN standard, based on

performance testing. 54"–64" fittings are rated only 150 psi in AWWA C153, although that standard provides for higher pressure ratings by the manufacturer (AMERICAN).

10. Center-to-socket dimensions, wall thicknesses, and weights may vary from those shown in the following tables depending on foundry practice.

11. The locations of taps, bases, or other special options when available on fittings shall be specified by the Purchaser as shown on page 6-5 for similar body type fittings. Likewise, end types and end sizes used in descriptions must be specified in numbering sequence shown on pages 6-5 and 6-6 and the illustrations in this section.

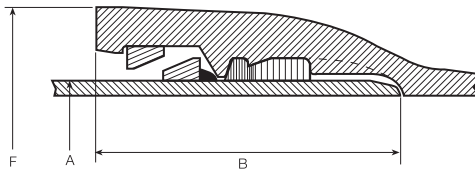
12. Lateral or wye branch fittings with Flex-Ring and Lok-Ring end connections are not shown in this section. For small-diameter varied angle lateral and tangential connections to larger mains, shop-welded outlet pipes are normally preferable and can be furnished with all joining connections as noted in Section 7. For larger or full-opening requirements, some 45° lateral and true wye configurations can also be furnished with these push-on end connections. (Contact AMERICAN for availability.) These wye fittings are special, and for economy and availability, alternative combinations of other standard fittings may be preferable in some cases. (See alternatives as depicted in Sections 5 and 6, etc.)

13. AMERICAN Flex-Ring fittings will work as push-on unrestrained fittings as long as suitable external restraint (thrust blocks, etc.) is applied. Flex-Ring fittings are thus furnished as "Fastite" fittings in many sizes and configurations, at Foundry option.

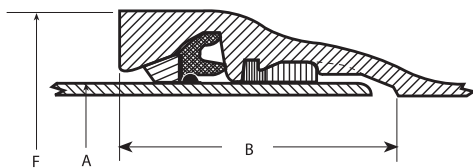


**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53 and AMERICAN Standard**

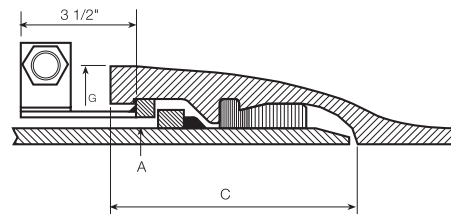
**Flex-Ring and Lok-Ring Fittings Joint Dimensions**



**4"-12" Flex-Ring**



**16"-48" Flex-Ring**



**54"-64" Lok-Ring**

Table No. 4-1

Size in.	Dimensions in Inches				
	A Outside Diameter	B Socket Depth Flex-Ring	C Socket Depth Lok-Ring	F* Bell O.D. Flex-Ring	G* Bell O.D. Lok-Ring
4	4.80	5.71	-	7.18	-
6	6.90	5.71	-	9.20	-
8	9.05	5.83	-	11.35	-
10	11.10	6.74	-	13.75	-
12	13.20	6.74	-	16.14	-
16	17.40	7.38	-	21.49	-
18	19.50	8.20	-	23.71	-
20	21.60	8.20	-	25.83	-
24	25.80	8.96	-	30.70	-
30	32.00	9.63	-	37.04	-
36	38.30	9.63	-	43.54	-
42	44.50	10.84	-	50.62	-
48	50.80	12.37	-	56.98	-
54	57.56	-	10.07	-	62.14
60	61.61	-	10.57	-	66.27
64	65.67	-	10.57	-	70.45

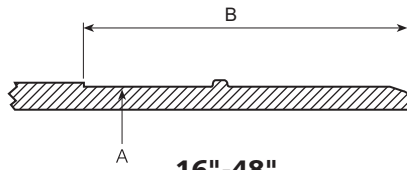
\*Dimensions subject to change at our option.  
 For Fastite pipe dimensions, see Section 2.  
 For Flex-Ring and Lok-Ring pipe dimensions, see Section 9.



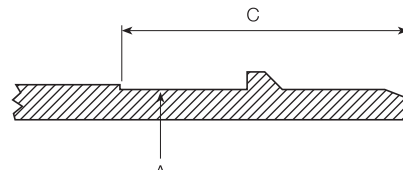
**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53 and AMERICAN Standard**

**Flex-Ring End and Lok-Ring End**

**Standard Dimensions**



**16"-48"  
Flex-Ring End**



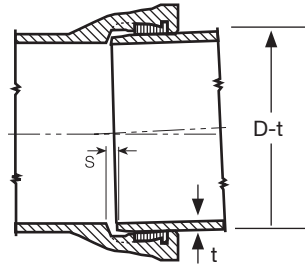
**54"-64" Lok-Ring End**

Table No. 4-2

Size in.	A Outside Diameter in.	B Flex-Ring Minimum Gauge Length in.	C Lok-Ring Minimum Gauge Length in.
16	17.4	9	-
18	19.5	9	-
20	21.6	9	-
24	25.8	10	-
30	32.0	10	-
36	38.3	10	-
42	44.5	11 1/2	-
48	50.8	13	-
54	57.56	-	12
60	61.61	-	13
64	65.67	-	13



### Maximum Allowable Separation Push-On Fitting Joints



Maximum allowable separation, "S", in a push-on fitting joint is approximately equal to the median pipe diameter in inches times the sine of the deflection angle. This is provided for information only and should not be used to determine precise joint deflection.

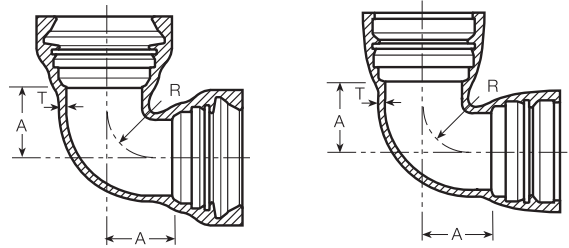
### Allowable Deflection Push-On Fitting Joints

Table No. 4-3

Size in.	Flex-Ring	Lok-Ring
	Deflection Angle (Deg.)	Deflection Angle (Deg.)
4	5	—
6	5	—
8	5	—
10	5	—
12	5	—
16	3.75	—
18	3.75	—
20	3.50	—
24	3.00	—
30	2.50	—
36	2.00	—
42	2.00	—
48	1.50	—
54	—	0.5
60	—	0.5
64	—	0.5



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**  
**90° Bends (1/4th)**



**Flex-Ring Bell-Bell\*\***

**Lok-Ring Bell-Bell\*\***

Table No. 4-4

Size in.	Pressure† Rating psi	Dimensions in Inches			Weight in Pounds	
		T	A	R	Flex-Ring	Lok-Ring
4	350	0.34	4.00	3.00	40	–
6	350	0.36	5.00	4.00	57	–
8	350	0.38	6.50	5.38	81	–
10	350	0.40	7.50	6.25	127	–
12	350	0.42	9.00	7.50	163	–
16	350	0.50††	15.00	12.50	515	–
18	350	0.75	16.50	14.00	720	–
20	350	0.80	18.00	15.50	815	–
24	350	0.61	17.00	15.50	760	–
30	250	0.66	22.75	20.50	1290	–
36	250	0.74	25.75	23.50	1810	–
42	250	0.82	29.25	26.50	2784	–
48	250	0.90	33.25	30.50	3960	–
54	250	0.90	37.00	34.25	–	3930
60	250	0.94	39.50	36.50	–	4620
64	250	0.99	42.00	38.75	–	5385

\*AWWA C153 configurations with shorter center-to-socket dimensions, etc. may be furnished in some cases in the 18"–20" size range. **Contact AMERICAN** if dimensions are critical.

\*\*30" and larger Flex-Ring and Lok-Ring 90° Bends may be furnished with Flex-Ring Ends or Lok-Ring Ends. See Table No. 4-2.

† Higher pressure ratings are available on special applications. Pressure ratings may be limited below the values shown by the pressure rating of the pipe to which fitting is attached, or the restrained joint used.

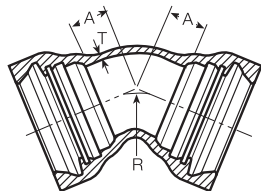
**Based on performance testing per AWWA C153, AMERICAN can rate 30"–48" C153 bends 350 psi. Contact AMERICAN.**

See General Notes on page 4-2.

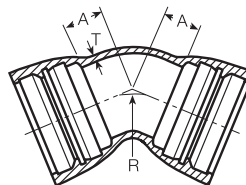
†† 16" Flex-Ring fittings may have greater "T" dimensions than those shown.



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**  
**45° Bends (1/8th)**



**Flex-Ring Bell-Bell\*\***



**Lok-Ring Bell-Bell\*\***

Table No. 4-5

Size in.	Pressure† Rating psi	Dimensions in Inches			Weight in Pounds	
		T	A	R	Flex-Ring	Lok-Ring
4	350	0.34	2.00	2.41	35	—
6	350	0.36	3.00	4.83	52	—
8	350	0.38	3.50	5.75	71	—
10	350	0.40	4.50	7.85	112	—
12	350	0.42	5.50	9.66	143	—
16	350	0.50††	8.00	13.25	425	—
18	350	0.75	8.50	14.50	595	—
20	350	0.80	9.50	16.88	665	—
24	350	0.61	7.50	14.50	620	—
30	250	0.66	10.50	19.92	1010	—
36	250	0.74	12.00	23.54	1395	—
42	250	0.82	14.00	27.20	2235	—
48	250	0.90	15.00	29.60	2960	—
54	250	0.90	20.28	42.32	—	3070
60	250	0.94	21.26	44.08	—	3560
64	250	0.99	22.24	45.85	—	4085

\*AWWA C153 configurations with shorter center-to-socket dimensions, etc., may be furnished in some cases in the 18"-20" size range. **Contact AMERICAN** if dimensions are critical.

\*\*30 and larger Flex-Ring and Lok-Ring 45° Bends may be furnished with Flex-Ring Ends or Lok-Ring Ends. See Table No. 4-2.

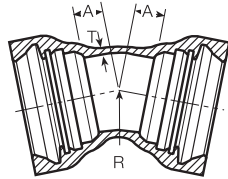
† Higher pressure ratings are available on special applications. **Based on performance testing per AWWA C153, AMERICAN can rate 30"-48" C153 bends 350 psi. Contact AMERICAN.**

†† 16" Flex-Ring fittings may have greater "T" dimensions than those shown.

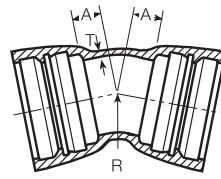
See General Notes on page 4-2.



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**  
**22 1/2° Bends (1/16th)**



**Flex-Ring Bell-Bell\*\***



**Lok-Ring Bell-Bell\*\***

Table No. 4-6

Size in.	Pressure† Rating psi	Dimensions in Inches			Weight in Pounds	
		T	A	R	Flex-Ring	Lok-Ring
4	350	0.34	1.50	2.51	35	—
6	350	0.36	2.00	5.03	47	—
8	350	0.38	2.50	6.94	66	—
10	350	0.40	3.00	8.80	102	—
12	350	0.42	3.50	10.05	128	—
16	350	0.50††	8.00	27.62	430	—
18	350	0.75	8.50	30.19	600	—
20	350	0.80	9.50	35.19	670	—
24	350	0.61	4.50	15.10	525	—
30	250	0.66	6.75	22.60	900	—
36	250	0.74	7.75	27.70	1220	—
42	250	0.82	9.00	31.40	1972	—
48	250	0.90	10.00	36.50	2630	—
54	250	0.90	10.24	37.65	—	2305
60	250	0.94	10.63	38.36	—	2650
64	250	0.99	11.02	39.06	—	3000

\*AWWA C153 configurations with shorter center-to-socket dimensions, etc., may be furnished in some cases in the 18"-20" size range. **Contact AMERICAN** if dimensions are critical.

\*\*30" and larger Flex-Ring and Lok-Ring 22 1/2° bends may be furnished with Flex-Ring Ends or Lok-Ring Ends. See Table No. 4-2.

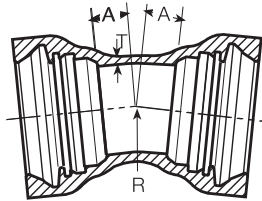
† Higher pressure ratings are available on special applications. **Based on performance testing per AWWA C153, AMERICAN can rate 30"-48" C153 bends 350 psi. Contact AMERICAN.**

†† 16" Flex-Ring fittings may have greater "T" dimensions than those shown. See General Notes on page 4-2.

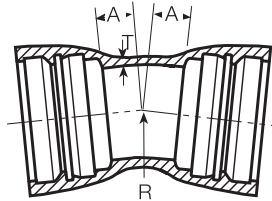




**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**  
**11 1/4° Bends (1/32nd)**



**Flex-Ring Bell-Bell\*\***



**Lok-Ring Bell-Bell\*\***

Table No. 4-7

Size in.	Pressure† Rating psi	Dimensions in Inches			Weight in Pounds	
		T	A	R	Flex-Ring	Lok-Ring
4	350	0.34	1.25	2.54	35	—
6	350	0.36	1.50	5.08	47	—
8	350	0.38	1.75	6.40	61	—
10	350	0.40	2.00	7.61	97	—
12	350	0.42	2.25	7.61	118	—
16	350	0.50††	8.00	55.81	430	—
18	350	0.75	8.50	60.94	605	—
20	350	0.80	9.50	71.06	675	—
24	350	0.89	3.00	15.33	490	—
30	250	0.66	4.75	25.40	830	—
36	250	0.74	5.00	27.90	1100	—
42	250	0.82	6.00	33.00	1934	—
48	250	0.90	6.50	33.50	2350	—
54	250	0.90	6.50	38.07	—	2000
60	250	0.94	7.00	40.61	—	2320
64	250	0.99	7.00	38.07	—	2590

\*AWWA C153 configurations with shorter center-to-socket dimensions, etc., may be furnished in some cases in the 18"–20" size range. Contact AMERICAN if dimensions are critical.

\*\*30" and larger Flex-Ring and Lok-Ring 11 1/4° bends may be furnished with Flex-Ring Ends or Lok-Ring Ends. See Table No. 4-2.

† Higher pressure ratings are available on special applications. Based on performance testing per AWWA C153, AMERICAN can rate 30"–48" C153 bends 350 psi. Contact AMERICAN.

††16" Flex-Ring fittings may have greater "T" dimensions than those shown.

See General Notes on page 4-2.



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**

**Tees and Crosses**

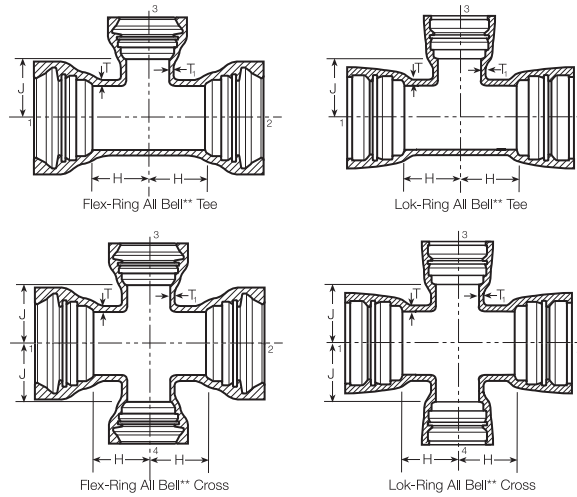


Table No. 4-8

Size in.		Pressure Rating psi †	Dimensions in Inches				Weight in Pounds			
Run	Branch		T	T <sub>1</sub>	H	J	Tee		Cross	
							**Flex-Ring All Bell	**Lok-Ring All Bell	**Flex-Ring All Bell	**Lok-Ring All Bell
4	4	350	0.34	0.34	4.00	4.00	65	-	-	-
6	4	350	0.36	0.34	4.00	5.00	82	-	-	-
6	6	350	0.36	0.36	5.00	5.00	88	-	-	-
8	4	350	0.38	0.34	4.00	6.50	96	-	-	-
8	6	350	0.38	0.36	5.00	6.50	107	-	-	-
8	8	350	0.38	0.38	6.50	6.50	142	-	-	-
10	4	350	0.40	0.34	4.00	7.50	142	-	-	-
10	6	350	0.40	0.36	5.00	7.50	153	-	-	-
10	8	350	0.40	0.38	6.50	7.50	170	-	-	-
10	10	350	0.40	0.40	7.50	7.50	198	-	-	-
12	4	350	0.42	0.34	4.00	8.75	168	-	-	-
12	6	350	0.42	0.36	5.00	8.75	179	-	-	-
12	8	350	0.42	0.38	6.50	8.75	201	-	-	-
12	10	350	0.42	0.40	7.50	8.75	229	-	-	-
12	12	350	0.42	0.42	8.75	8.75	252	-	-	-
16	4	350	.50††	.34††	15.0	15.0	645	-	-	-
16	6	350	.50††	.36††	15.0	15.0	655	-	705	-
16	8	350	.50††	.38††	15.0	15.0	670	-	730	-
16	10	350	.50††	.40††	15.0	15.0	705	-	-	-
16	12	350	.50††	.42††	15.0	15.0	730	-	850	-
16	14	350	.50††	.47††	15.0	15.0	775	-	-	-
16	16	350	.50††	.50††	15.0	15.0	805	-	1000	-

16" and 24"-64" fittings are generally per AWWA C153. While AWWA C153 shows 54"-64" fittings with 150 psi ratings, AMERICAN rates many 54"-64" fittings 250 psi as AMERICAN Standard based on performance testing. \*\*30" and larger Flex-Ring and Lok-Ring Tees and Crosses may be furnished on the runs with Flex-Ring Ends or Lok-Ring Ends. See Table No. 4-2.

† Higher pressure ratings are available on special applications. Contact AMERICAN.

Note: Tees and Crosses with smaller reductions may be available; however, welded-on outlets are normally preferable in these cases from a layout, installation, and economical standpoint. See Section 7.

†† 16" Flex-Ring fittings may have greater "T" and "T<sub>1</sub>" dimensions than those shown.

See General Notes on page 4-2.



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**  
**Tees and Crosses**

Table No. 4-8 —Continued

Size in.		Pressure Rating psi †	Dimensions in Inches				Weight in Pounds			
			T	T <sub>1</sub>	H	J	Tee		Cross	
Run	Branch						**Flex-Ring All Bell	**Lok-Ring All Bell	**Flex-Ring All Bell	**Lok-Ring All Bell
18	6	350	0.75	0.55	13.0	15.5	810	—	850	—
18	8	350	0.75	0.60	13.0	15.5	820	—	880	—
18	10	350	0.75	0.68	13.0	15.5	855	—	940	—
18	12	350	0.75	0.75	13.0	15.5	875	—	990	—
18	14	350	0.75	0.66	16.5	16.5	1015	—	1185	—
18	16	350	0.75	0.70	16.5	16.5	1045	—	1240	—
18	18	350	0.75	0.75	16.5	16.5	1125	—	1405	—
20	6	350	0.80	0.55	14.0	17.0	905	—	950	—
20	8	350	0.80	0.60	14.0	17.0	920	—	980	—
20	10	350	0.80	0.68	14.0	17.0	950	—	1040	—
20	12	350	0.80	0.75	14.0	17.0	975	—	1090	—
20	14	350	0.80	0.66	14.0	17.0	1020	—	1175	—
20	16	350	0.80	0.70	18.0	18.0	1170	—	1365	—
20	18	350	0.80	0.75	18.0	18.0	1255	—	1530	—
20	20	350	0.80	0.80	18.0	18.0	1270	—	1565	—
24	6	350	0.61	0.36	13.0	17.0	920	—	870	—
24	8	350	0.61	0.38	13.0	17.0	930	—	900	—
24	10	350	0.61	0.40	13.0	17.0	950	—	935	—
24	12	350	0.61	0.42	13.0	17.0	965	—	965	—
24	14	350	0.61	0.47	13.0	17.0	990	—	1020	—
24	16	350	0.61	0.50	13.0	17.0	1005	—	1060	—
24	18	350	0.61	0.54	17.0	17.0	1035	—	1225	—
24	20	350	0.61	0.57	17.0	17.0	1050	—	1265	—
24	24	350	0.61	0.61	17.0	17.0	1130	—	1380	—
30	20	250	0.66	0.57	16.5	21.0	1500	—	—	—
30	24	250	0.66	0.61	22.0	22.0	1840	—	2070	—
30	30	250	0.66	0.66	22.0	22.0	2000	—	2480	—
36	24	250	0.74	0.61	18.5	26.0	2070	—	—	—
36	30	250	0.74	0.66	26.0	26.0	2670	—	3390	—
36	36	250	0.74	0.74	26.0	26.0	2740	—	3400	—

16" and 24"-64" fittings are generally per AWWA C153. While AWWA C153 shows 54"-64" fittings with 150 psi ratings, AMERICAN rates many 54"-64" fittings 250 psi as AMERICAN Standard based on performance testing.

\*\*30" and larger Flex-Ring and Lok-Ring Tees and Crosses may be furnished on the runs with Flex-Ring Ends or Lok-Ring Ends. See Table No. 4-2.

† Higher pressure ratings are available on special applications. **Contact AMERICAN.**

Note: Tees and Crosses with smaller reductions may be available; however, welded-on outlets are normally preferable in these cases from a layout, installation, and economical standpoint. See Section 7.



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**  
**Tees and Crosses**

Table No. 4-8 —Continued

Size in.		Pressure Rating psi †	Dimensions in Inches				Weight in Pounds			
			T	T <sub>1</sub>	H	J	Tee		Cross	
Run	Branch					**Flex-Ring All Bell	**Lok-Ring All Bell	**Flex-Ring All Bell	**Lok-Ring All Bell	
42	24	250	0.82	0.61	22.0	27.5	3370	—	3570	—
42	30	250	0.82	0.66	22.0	29.5	3340	—	3860	—
42	36	250	0.82	0.74	30.0	30.0	3300	—	4670	—
42	42	250	0.82	0.82	30.0	30.0	4830	—	6970	—
48	24	250	0.90	0.61	23.0	32.0	3820	—	—	—
48	30	250	0.90	0.66	23.0	32.0	4180	—	4610	—
48	36	250	0.90	0.74	33.5	32.3	5190	—	5760	—
48	42	250	0.90	0.82	33.5	33.5	5600	—	6550	—
48	48	250	0.90	0.90	33.5	33.5	6130	—	7680	—
54	30	250	1.05	1.03	29.3	37.0	—	5086	—	5729
54	36	250	1.05	1.15	29.28	37.0	—	—	—	6380
54	42	250	1.05	1.28	38.59	39.0	—	6557	—	—
54	48	250	1.05	1.42	38.59	39.0	—	7001	—	—
54	54	250	1.05	1.05	38.59	38.59	—	8279	—	15774
60	36	250	1.10	1.15	29.53	39.0	—	—	—	6760
60	42	250	1.10	1.28	29.53	41.0	—	6428	—	—
60	48	250	1.10	1.42	40.95	41.0	—	8025	—	—
60	54	250	1.10	1.05	40.95	40.7	—	8913	—	11125
60	60	250	1.10	1.10	40.95	40.95	—	9975	—	12619
64	36	250	1.16	1.15	34.25	42.0	—	—	—	8360
64	42	250	1.16	1.28	34.25	42.0	—	7622	—	8708
64	48	250	1.16	1.42	34.25	44.0	—	8815	—	—
64	54	250	1.16	1.05	43.31	44.0	—	10336	—	—
64	60	250	1.16	1.10	43.31	44.0	—	10770	—	—
64	64	250	1.16	1.16	43.31	43.31	—	11806	—	14884

16" and 24"–64" fittings are generally per AWWA C153. While AWWA C153 shows 54"–64" fittings with 150 psi ratings, AMERICAN rates many 54"–64" fittings 250 psi as AMERICAN Standard based on performance testing.

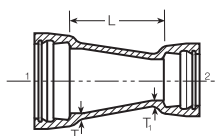
† Higher pressure ratings are available on special applications. **Contact AMERICAN.**

Note: Tees and Crosses with smaller reductions may be available; however, welded-on outlets are normally preferable in these cases from a layout, installation, and economical standpoint. See Section 7.



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**

**Reducers**



**Bell and Bell**

Table No. 4-9

Size in.		Pressure Rating psi†	Thickness in Inches		Bell x Bell	
Large End	Small End		T Large End	T <sub>1</sub> Small End	L Laying Length in.	Weight lb
6	4	350	0.36	0.34	4	55
8	4	350	0.38	0.34	5	67
8	6	350	0.38	0.36	4	75
10	4	350	0.40	0.34	7	94
10	6	350	0.40	0.36	5	102
10	8	350	0.40	0.38	4	114
12	4	350	0.42	0.34	9	112
12	6	350	0.42	0.36	7	120
12	8	350	0.42	0.38	5	132
12	10	350	0.42	0.40	4	195
16	6	350	.50††	.36††	11	135
16	8	350	.50††	.38††	9	137
16	10	350	.50††	.40††	7	139
16	12	350	.50††	.42††	5	137
16	14	350	.50††	.47††	4	160
18	8	350	0.75	0.60	19	410
18	10	350	0.75	0.68	19	449
18	12	350	0.75	0.75	19	491
18	14	350	0.75	0.66	19	533
18	16	350	0.75	0.70	19	565
20	8	350	0.80	0.60	20	423
20	10	350	0.80	0.68	20	467
20	12	350	0.80	0.75	20	504
20	14	350	0.80	0.66	20	546
20	16	350	0.80	0.70	20	583
20	18	350	0.80	0.75	20	579
24	12	350	0.89	0.75	24	706
24	14	350	0.89	0.66	24	748
24	16	350	0.89	0.70	24	785
24	18	350	0.89	0.75	24	786
24	20	350	0.89	0.80	24	885
30	12	250	1.03	0.75	30	910
30	16	250	1.03	0.70	30	985
30	18	250	1.03	0.75	30	1030
30	20	250	1.03	0.80	30	1080
30	24	250	1.03	0.89	30	1210

\*AWWA C153 configurations with shorter center-to-socket dimensions, etc., may be furnished in some cases in the 18"-48" size range.

Contact AMERICAN if dimensions are critical.

† Higher pressure ratings are available on special applications. Contact AMERICAN.

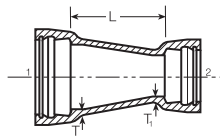
†† 16" Flex-Ring fittings may have greater "T" and "T<sub>1</sub>" dimensions than those shown.

See General Notes on page 4-2.



**AMERICAN Ductile Iron Flex-Ring® and Lok-Ring® Fittings**  
**ANSI/AWWA C153/A21.53\* and AMERICAN Standard**

**Reducers**



**Bell and Bell**

Table No. 4-9 — Continued

Size in.		Pressure Rating psi†	Thickness in Inches		Bell x Bell**	
Large End	Small End		T Large End	T <sub>1</sub> Small End	L Laying Length in.	Weight lb
36	20	250	1.15	0.80	36	1490
36	24	250	1.15	0.89	36	1635
36	30	250	1.15	1.03	36	1925
42	20	250	1.28	0.80	42	1710
42	24	250	1.28	0.89	42	1875
42	30	250	1.28	1.03	42	2200
42	36	250	1.28	1.15	42	2540
48	24	250	1.42	0.89	48	2430
48	30	250	1.42	1.03	48	2790
48	36	250	1.42	1.15	48	3170
48	42	250	1.42	1.28	48	3315
54	30	250	0.90	1.00	31.25	2035
54	36	250	0.90	1.15	27.25	2180
54	42	250	0.90	1.25	19.25	1850
54	48	250	0.90	1.40	15.25	1890
60	30	250	0.94	1.00	35.5	2345
60	36	250	0.94	1.15	31.5	2505
60	42	250	0.94	1.25	23.5	2175
60	48	250	0.94	1.40	19.5	2230
60	54	250	0.94	0.90	10.25	1815
64	30	250	0.99	1.00	39.25	2690
64	36	250	0.99	1.15	35.25	2860
64	42	250	0.99	1.25	27.25	2525
64	48	250	0.99	1.40	23.25	2590
64	54	250	0.99	0.90	14.5	2145
64	60	250	0.99	0.94	10.25	2050

\*AWWA C153 configurations with shorter center-to-socket dimensions, etc., may be furnished in some cases in the 18"-48" size range.

Contact AMERICAN if dimensions are critical.

\*\*Reducers may be furnished with Flex-Ring or Lok-Ring bells and Flex-Ring or Lok-Ring ends in larger sizes. Dimensions (including laying lengths in some cases) and weights will be different than those shown above. Plain ends on available reducers may or may not be beveled/smoothed for push-on joint assembly. If push-on assembly is required, such ends may require field bevel/smoothing.

Contact AMERICAN if further information is needed. See Table No. 4-2 and 7-4.

† Higher pressure ratings are available on special applications. Contact AMERICAN.

See General Notes on page 4-2.