



FLANGED Fittings ANSI/AWWA C110/A21.10 DI & CI

2" - 54" DUCTILE AND GRAY IRON FLANGED FITTINGS

GENERAL SPECIFICATIONS

MATERIAL: DUCTILE IRON PER ASTM A536 - GRAY IRON PER ASTM A126

PRESSURE: GRAY IRON 250 PSI RATING FOR 2"-12" SIZES AND 150 PSI RATING FOR 14"-36"
DUCTILE IRON 250 PSI RATING FOR 2"-48" SIZES AND 150 PSI RATING FOR 54".

TESTING: IN ACCORDANCE WITH ANSI/AWWA C110/A21.10, C153/21.53, UL AND FM REQUIREMENT

LAYING LENGTH: 2"-48" SIZES IN ACCORDANCE WITH ANSI/AWWA C110/A21.10 AND ANSI B16.1.
54" SIZES IN ACCORDANCE WITH ANSI/AWWA C153/A21.53. FITTINGS NOT LISTED
IN ANSI/AWWA HAVE DIMENSIONS PER STAR DESIGN AS NOTED IN CATALOG.

WEIGHTS: DO NOT INCLUDE ACCESSORIES, CEMENT LINING AND COATINGS

DRILLING: IN ACCORDANCE WITH ANSI/AWWA C110/A21.10 AND ANSI B16.1 CLASS 125 FLANGES.

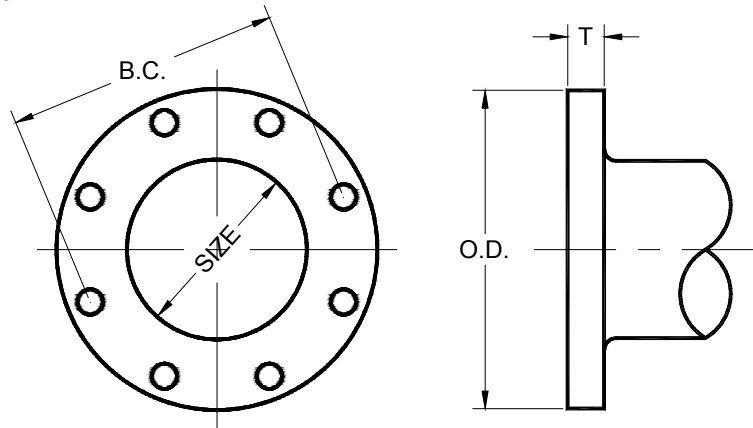
CEMENT LINING: IN ACCORDANCE WITH ANSI/AWWA C104/A21.4

COATING: ASPHALTIC SEAL COAT INSIDE IN ACCORDANCE WITH ANSI/AWWA C104/A21.4 AND
PRIME COAT OUTSIDE.

APPROVALS: 4"-12" UNDERWRITERS LABORATORIES LISTED AND FACTORY MUTUAL APPROVED.
NSF 61



APPROVED

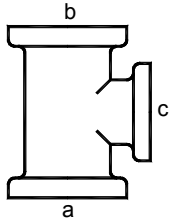


Flange details				Bolts		
SIZE	O.D.	B.C.	T	Bolt Hole Dia.	Size	No.
★ 2	6.00	4.75	0.62	0.75	5/8x2 1/4	4
3	7.50	6.00	0.75	0.75	5/8x2 1/2	4
4	9.00	7.50	0.94	0.75	5/8x3	8
★ 5	10.00	8.50	0.94	0.88	3/4x3	8
6	11.00	9.50	1.00	0.88	3/4x3 1/2	8
8	13.50	11.75	1.12	0.88	3/4x3 1/2	8
10	16.00	14.25	1.19	1.00	7/8x4	12
12	19.00	17.00	1.25	1.00	7/8x4	12
14	21.00	18.75	1.38	1.13	1x4 1/2	12
16	23.50	21.25	1.44	1.13	1x4 1/2	16
18	25.00	22.75	1.56	1.25	1 1/8x5	16
20	27.50	25.00	1.69	1.25	1 1/8x5	20
24	32.00	29.50	1.88	1.38	1 1/4x5 1/2	20
30	38.75	36.00	2.12	1.38	1 1/4x6 1/2	28
36	46.00	42.75	2.38	1.63	1 1/2x7	32
42	53.00	49.50	2.62	1.63	1 1/2x7 1/2	36
48	59.50	56.00	2.75	1.63	1 1/2x8	44
★ 54	66.25	62.75	3.00	2.00	1 3/4x8 1/2	44

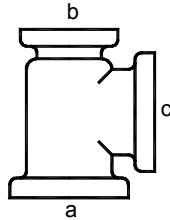
★ NOT INCLUDED IN AWWA C110

METHOD OF DESIGNATING OUTLETS OF REDUCING FITTINGS FOR SPECIFICATIONS

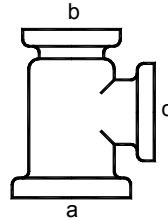
Reducing Tees



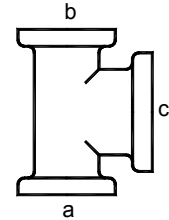
Reducing on
Outlet



Reducing on
One Run

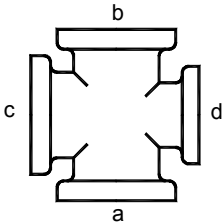


Reducing on
One Run and Outlet

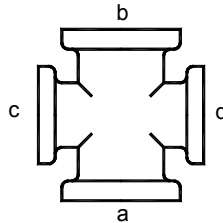


Reducing on Both
Runs (Bull Head)

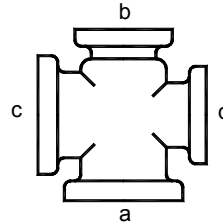
Reducing Crosses



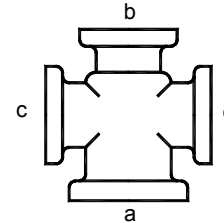
Reducing on
One Outlet



Reducing on
Both Outlets

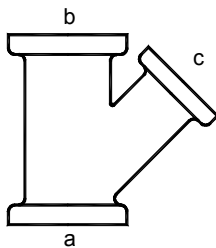


Reducing on
One Run and Outlet

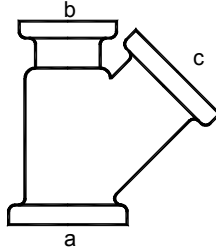


Reducing on One Run
and Both Outlets

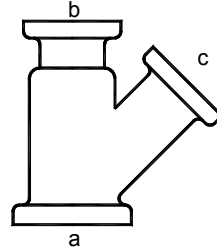
Reducing Laterals



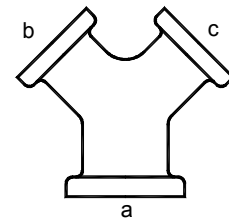
Reducing on
Branch



Reducing on
One Run

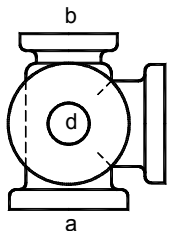


Reducing on
One Run and Branch

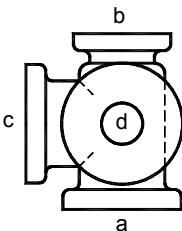


True Y

Side Outlet Tee

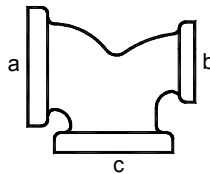


Right Hand

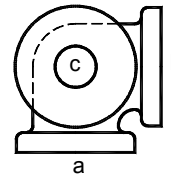


Left Hand

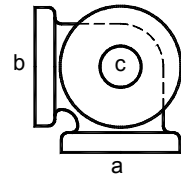
Double Branch Elbow



Side Outlet 90 deg. Elbow



Right Hand

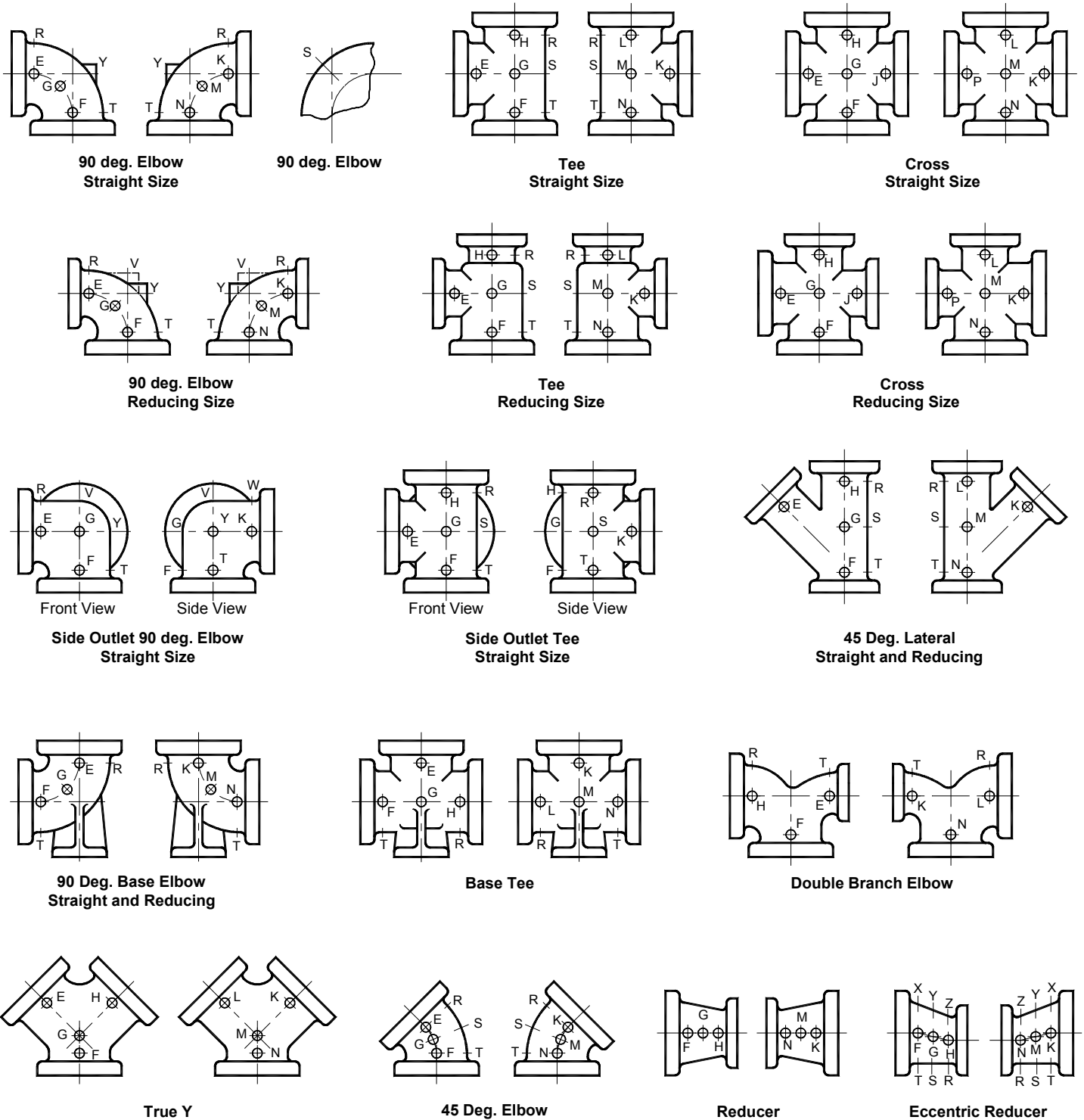


Left Hand

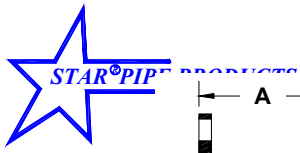
The Largest opening establishes the basic size of a reducing fitting. The largest opening is named first, except for bull head tees which are reducing on both runs and double branch elbows where both branches are reducing; the outlet is the largest opening and named last in both cases.

In designating the openings of reducing fittings, they should be read in the order indicated by the sequence of the letters, a, b, c and d. In designating the outlets of side outlet reducing fittings, the side outlet is named last; and in the case of the cross which is not shown, the side outlet is designated by the letter e.

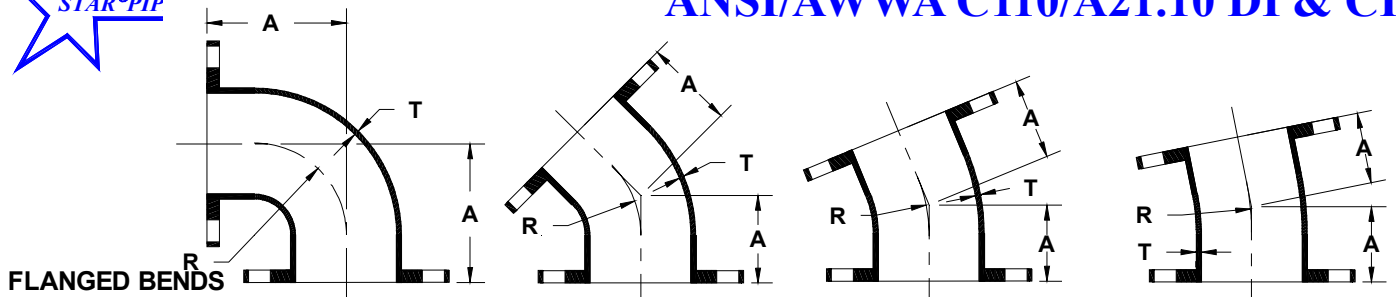
METHOD OF DESIGNATING LOCATION OF TAPPED HOLES FOR DRAINS WHEN SPECIFIED



The above illustrations show two views of the same fitting and represent fittings with symmetrical shapes, with the exception of the side outlet elbow and the side outlet tee (straight sizes).

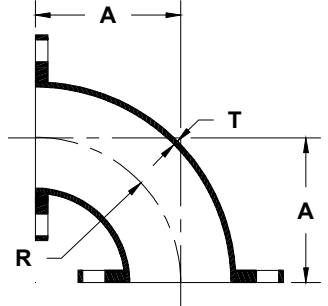


FLANGED Fittings ANSI/AWWA C110/A21.10 DI & CI



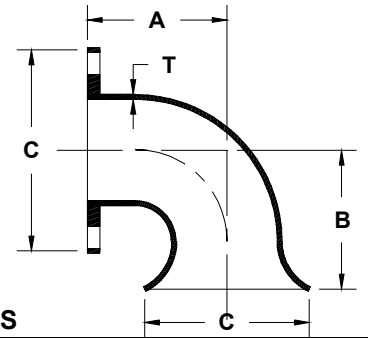
FLANGED BENDS

★ Size	T	90° Flanged Bends (1/4)			45° Flanged Bends (1/8)			22½° Flanged Bends (1/16)			11¼° Flanged Bends (1/32)		
		A	R	Wt	A	R	Wt	A	R	Wt	A	R	Wt
2	0.31	4.50	3.00	14	2.50	2.41	12	2.5	6.04	12	2.5	12.69	12
3	0.48	5.50	4.00	25	3.00	3.62	20	3.00	7.56	20	3.00	15.25	20
4	0.52	6.50	4.50	45	4.00	4.81	40	4.00	10.06	40	4.00	20.31	40
6	0.55	8.00	6.00	65	5.00	7.25	55	5.00	15.06	55	5.00	30.50	55
8	0.60	9.00	7.00	105	5.50	8.44	90	5.50	17.62	90	5.50	35.50	90
10	0.68	11.00	9.00	165	6.50	10.88	130	6.50	22.62	135	6.50	45.69	135
12	0.75	12.00	10.00	235	7.50	13.25	195	7.50	27.62	205	7.50	55.81	205
14	0.66	14.00	11.50	290	7.50	12.06	220	7.50	25.12	225	7.50	50.75	225
16	0.70	15.00	12.50	370	8.00	13.25	280	8.00	27.62	285	8.00	55.81	285
18	0.75	16.50	14.00	450	8.50	14.50	325	8.50	30.19	335	8.50	60.94	335
20	0.80	18.00	15.50	580	9.50	16.88	430	9.50	35.19	435	9.50	71.06	435
24	0.89	22.00	18.50	900	11.00	18.12	630	11.00	37.69	640	11.00	76.12	645
30	1.03	25.00	21.50	1430	15.00	27.75	1120	15.00	57.81	1135	15.00	116.75	1150
36	1.15	28.00	24.50	2135	18.00	35.00	1755	18.00	72.88	1790	18.00	147.25	1805
42	1.28	31.00	27.50	3055	21.00	42.25	2600	21.00	88.00	2665	21.00	177.69	2680
48	1.42	34.00	30.50	4095	24.00	49.50	3580	24.00	103.06	3665	24.00	208.12	3695
★ 54	0.90	39.00	35.29	3740	20.50	41.05	2735	14.00	32.42	2260	12.00	30.81	2100



★ **90° FE LONG RADIUS BENDS**

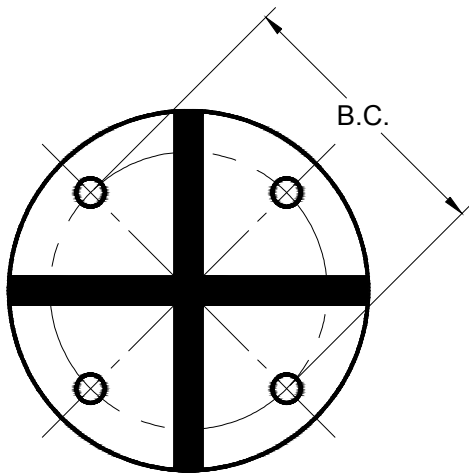
Size	Dimensions			Wt
	T	A	R	
3	0.48	7.75	6.25	30
4	0.52	9.00	7.00	50
6	0.55	11.50	9.50	80
8	0.60	14.00	12.00	140
10	0.68	16.50	14.50	215
12	0.75	19.00	17.00	325
14	0.66	21.50	19.00	580
16	0.70	24.00	21.50	740
18	0.75	26.50	24.00	840
20	0.80	29.00	26.50	1080
24	0.89	34.00	30.50	1640
30	1.03	41.50	38.00	2105
36	1.15	49.00	45.50	3285
42	1.28	56.50	53.00	4865
48	1.42	64.00	60.50	6790
54	0.90	73.50	69.50	6205



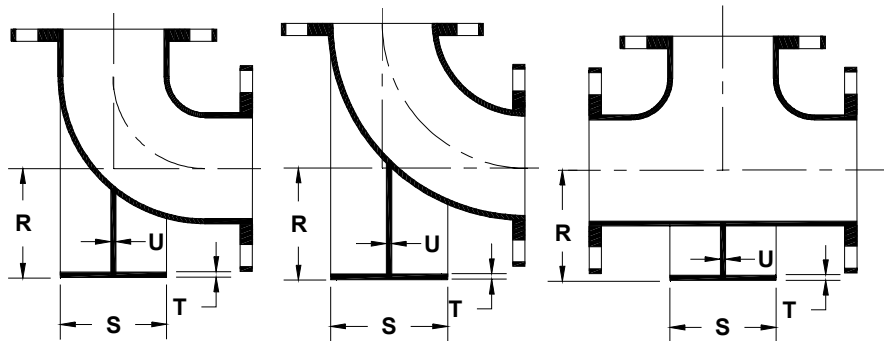
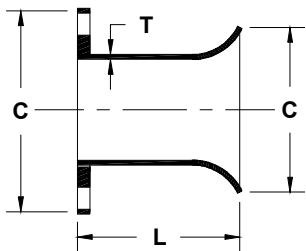
★ **90° FE X FLARE BENDS**

Size	Dimensions				Wt
	T	A	B	C	
3	0.48	5.50	11.00	7.50	25
4	0.52	6.50	12.00	9.00	40
6	0.55	8.00	12.00	11.00	70
8	0.60	9.00	14.00	13.50	110
10	0.68	11.00	17.00	16.00	175
12	0.75	12.00	18.00	19.00	245
14	0.66	14.00	20.00	21.00	340
16	0.70	15.00	21.00	23.50	460
18	0.75	16.50	22.50	25.00	560
20	0.80	18.00	24.00	27.50	700
24	0.89	22.00	28.00	32.00	1100
30	1.03	25.00	32.00	38.75	1840
36	1.15	28.00	35.00	46.00	2700
42	1.28	31.00	38.00	53.00	3250
48	1.42	34.00	41.00	59.50	4215
54	0.90	39.00	46.00	66.25	3965

BASE DRILLING DETAILS



SIZE	B.C.	Bolt Hole Dia.	No. of Bolts
3	3.88	0.63	4
4	4.75	0.75	4
6	5.50	0.75	4
8	7.50	0.75	4
10	7.50	0.75	4
12	9.50	0.88	4
14	9.50	0.88	4
16	9.50	0.88	4
18	11.75	0.88	4
20	11.75	0.88	4
24	11.75	0.88	4
30	14.25	1.00	4
36	17.00	1.00	4
42	21.25	1.13	4
48	22.75	1.25	4
54	25.00	1.25	4



★ STRAIGHT FLANGE X FLARE PIECES

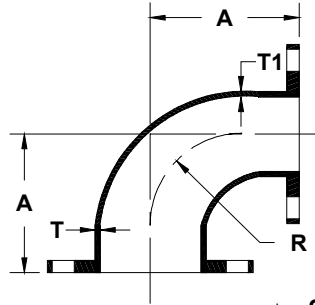
Size	Dimensions			Wt
	T	L	C	
3	0.48	8.00	7.50	20
4	0.52	8.00	9.00	30
6	0.55	8.00	11.00	40
8	0.60	10.00	13.50	70
10	0.68	10.00	16.00	95
12	0.75	12.00	19.00	155
14	0.66	12.00	21.00	225
16	0.70	16.00	23.50	330
18	0.75	16.00	25.00	355
20	0.80	18.00	27.50	460
24	0.89	18.00	32.00	635
30	1.03	24.00	38.75	1100
36	1.15	24.00	46.00	1460
42	1.28	30.00	53.00	1900
48	1.42	30.00	59.50	2350
54	0.90	36.00	66.25	2035

★ 90° FE & LONG RADIUS BASE BENDS & BASE TEES

Size	Dimensions				Weight		
	R	S	T	U	90°	90°LR	TEE
3	4.88	5.00	0.56	0.50	35	40	45
4	5.50	6.00	0.62	0.50	55	60	75
6	7.00	7.00	0.69	0.62	85	100	110
8	8.38	9.00	0.94	0.88	145	180	185
10	9.75	9.00	0.94	0.88	210	260	300
12	11.25	11.00	1.00	1.00	300	390	430
14	12.50	11.00	1.00	1.00	360	650	485
16	13.75	11.00	1.00	1.00	445	815	600
18	15.00	13.50	1.12	1.12	565	955	740
20	16.00	13.50	1.12	1.12	700	1200	930
24	18.50	13.50	1.12	1.12	1030	1770	1410
30	23.00	16.00	1.19	1.15	1625	2295	2270
36	26.00	19.00	1.25	1.15	2385	3535	3320
42	30.00	23.50	1.44	1.28	3465	5275	5850
48	34.00	25.00	1.56	1.42	4610	7305	7720
★ 54	38.00	27.50	1.69	1.55	4415	6880	6465



FLANGED Fittings ANSI/AWWA C110/A21.10 DI & CI

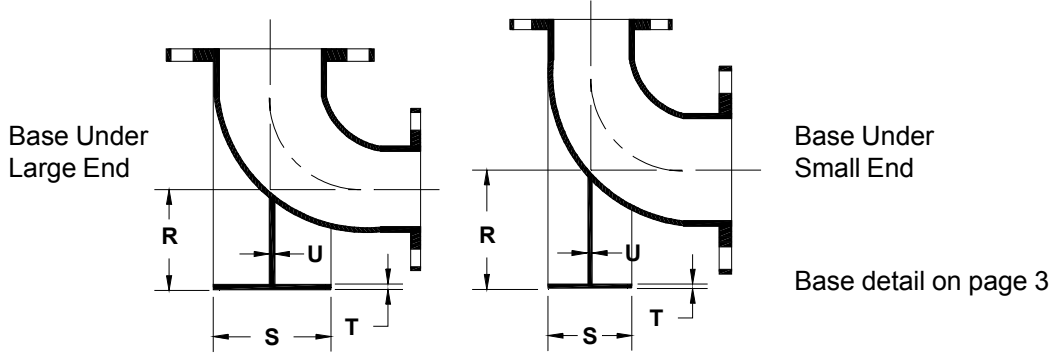


★ 90° FE REDUCING BENDS

Size	Dimensions				Wt
	T	T1	A	R	
4x3	0.52	0.48	6.50	4.50	35
6x4	0.55	0.52	8.00	6.00	55
8x4	0.60	0.52	9.00	7.00	80
8x6	0.60	0.55	9.00	7.00	90
10x6	0.68	0.55	11.00	9.00	125
10x8	0.68	0.60	11.00	9.00	150
12x6	0.75	0.55	12.00	10.00	165
12x8	0.75	0.60	12.00	10.00	190
12x10	0.75	0.68	12.00	10.00	220
14x6	0.66	0.55	14.00	11.50	144
14x8	0.66	0.60	14.00	11.50	200
14x10	0.66	0.68	14.00	11.50	240
14x12	0.66	0.75	14.00	11.50	270
16x6	0.70	0.55	15.00	12.50	220
16x8	0.70	0.60	15.00	12.50	240
16x10	0.70	0.68	15.00	12.50	280
16x12	0.70	0.75	15.00	12.50	310
16x14	0.70	0.66	15.00	12.50	330
18x6	0.75	0.55	16.50	14.00	260
18x8	0.75	0.60	16.50	14.00	280
18x10	0.75	0.68	16.50	14.00	320
18x12	0.75	0.75	16.50	14.00	350
18x14	0.75	0.66	16.50	14.00	370
18x16	0.75	0.70	16.50	14.00	410
20x6	0.80	0.55	18.00	15.50	320
20x8	0.80	0.60	18.00	15.50	345
20x10	0.80	0.68	18.00	15.50	385
20x12	0.80	0.75	18.00	15.50	415
20x14	0.80	0.66	18.00	15.50	435
20x16	0.80	0.70	18.00	15.50	475
20x18	0.80	0.75	18.00	15.50	515
24x6	0.89	0.55	22.00	18.50	480
24x8	0.89	0.60	22.00	18.50	505
24x10	0.89	0.68	22.00	18.50	545
24x12	0.89	0.75	22.00	18.50	575
24x14	0.89	0.66	22.00	18.50	595
24x16	0.89	0.70	22.00	18.50	635
24x18	0.89	0.75	22.00	18.50	675
24x20	0.89	0.80	22.00	18.50	740

★ 90° FE REDUCING BENDS

Size	Dimensions				Wt
	T	T1	A	R	
30x12	1.03	0.75	25.00	21.50	840
30x14	1.03	0.66	25.00	21.50	860
30x16	1.03	0.70	25.00	21.50	900
30x18	1.03	0.75	25.00	21.50	940
30x20	1.03	0.80	25.00	21.50	1005
30x24	1.03	0.89	25.00	21.50	1165
36x12	1.15	0.75	28.00	24.50	1195
36x14	1.15	0.66	28.00	24.50	1215
36x16	1.15	0.70	28.00	24.50	1255
36x18	1.15	0.75	28.00	24.50	1295
36x20	1.15	0.80	28.00	24.50	1360
36x24	1.15	0.89	28.00	24.50	1520
36x30	1.15	1.03	28.00	24.50	1785
42x12	1.28	0.75	31.00	27.50	1655
42x14	1.28	0.66	31.00	27.50	1675
42x16	1.28	0.70	31.00	27.50	1715
42x18	1.28	0.75	31.00	27.50	1755
42x20	1.28	0.80	31.00	27.50	1820
42x24	1.28	0.89	31.00	27.50	1980
42x30	1.28	1.03	31.00	27.50	2245
42x36	1.28	1.15	31.00	27.50	2600
48x12	1.42	0.75	34.00	30.50	2175
48x14	1.42	0.66	34.00	30.50	2195
48x16	1.42	0.70	34.00	30.50	2235
48x18	1.42	0.75	34.00	30.50	2275
48x20	1.42	0.80	34.00	30.50	2340
48x24	1.42	0.89	34.00	30.50	2500
48x30	1.42	1.03	34.00	30.50	2765
48x36	1.42	1.15	34.00	30.50	3115
48x42	1.42	1.28	34.00	30.50	3580
54x12	0.90	0.75	39.00	35.29	1990
54x14	0.90	0.66	39.00	35.29	2015
54x16	0.90	0.70	39.00	35.29	2055
54x18	0.90	0.75	39.00	35.29	2095
54x20	0.90	0.80	39.00	35.29	2160
54x24	0.90	0.89	39.00	35.29	2320
54x30	0.90	0.90	39.00	35.29	2585
54x36	0.90	0.90	39.00	35.29	2940
54x42	0.90	0.90	39.00	35.29	3395
54x48	0.90	0.90	39.00	35.29	3565



★ 90° FE REDUCING BASE BENDS

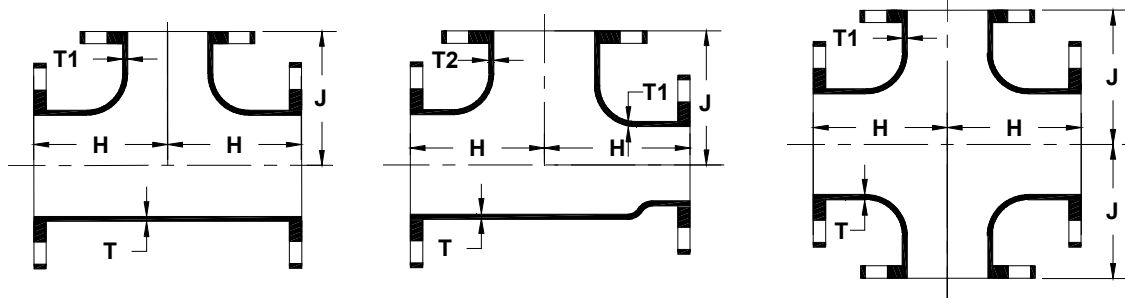
Size	Dimensions				Wt
	R	S	T	U	
4x3	5.50	6.00	0.62	0.50	45
6x4	7.00	7.00	0.69	0.62	75
8x4	8.38	9.00	0.94	0.88	120
8x6	8.38	9.00	0.94	0.88	130
10x6	9.75	9.00	0.94	0.88	170
10x8	9.75	9.00	0.94	0.88	195
12x6	11.25	11.00	1.00	1.00	230
12x8	11.25	11.00	1.00	1.00	255
12x10	11.25	11.00	1.00	1.00	285
14x6	12.50	11.00	1.00	1.00	214
14x8	12.50	11.00	1.00	1.00	270
14x10	12.50	11.00	1.00	1.00	310
14x12	12.50	11.00	1.00	1.00	340
16x6	13.75	11.00	1.00	1.00	295
16x8	13.75	11.00	1.00	1.00	315
16x10	13.75	11.00	1.00	1.00	355
16x12	13.75	11.00	1.00	1.00	385
16x14	13.75	11.00	1.00	1.00	405
18x6	15.00	13.50	1.12	1.12	375
18x8	15.00	13.50	1.12	1.12	395
18x10	15.00	13.50	1.12	1.12	435
18x12	15.00	13.50	1.12	1.12	465
18x14	15.00	13.50	1.12	1.12	485
18x16	15.00	13.50	1.12	1.12	525
20x6	16.00	13.50	1.12	1.12	440
20x8	16.00	13.50	1.12	1.12	465
20x10	16.00	13.50	1.12	1.12	505
20x12	16.00	13.50	1.12	1.12	535
20x14	16.00	13.50	1.12	1.12	555
20x16	16.00	13.50	1.12	1.12	595
20x18	16.00	13.50	1.12	1.12	635
24x6	18.50	13.50	1.12	1.12	610
24x8	18.50	13.50	1.12	1.12	635
24x10	18.50	13.50	1.12	1.12	675
24x12	18.50	13.50	1.12	1.12	705
24x14	18.50	13.50	1.12	1.12	725
24x16	18.50	13.50	1.12	1.12	765
24x18	18.50	13.50	1.12	1.12	805
24x20	18.50	13.50	1.12	1.12	870

★ 90° FE REDUCING BASE BENDS

Size	Dimensions				Wt
	R	S	T	U	
30x12	23.00	16.00	1.19	1.15	1030
30x14	23.00	16.00	1.19	1.15	1050
30x16	23.00	16.00	1.19	1.15	1090
30x18	23.00	16.00	1.19	1.15	1130
30x20	23.00	16.00	1.19	1.15	1195
30x24	23.00	16.00	1.19	1.15	1355
36x12	26.00	19.00	1.25	1.15	1445
36x14	26.00	19.00	1.25	1.15	1465
36x16	26.00	19.00	1.25	1.15	1505
36x18	26.00	19.00	1.25	1.15	1545
36x20	26.00	19.00	1.25	1.15	1610
36x24	26.00	19.00	1.25	1.15	1770
36x30	26.00	19.00	1.25	1.15	2035
42x12	30.00	23.50	1.44	1.28	2065
42x14	30.00	23.50	1.44	1.28	2085
42x16	30.00	23.50	1.44	1.28	2125
42x18	30.00	23.50	1.44	1.28	2165
42x20	30.00	23.50	1.44	1.28	2230
42x24	30.00	23.50	1.44	1.28	2390
42x30	30.00	23.50	1.44	1.28	2655
42x36	30.00	23.50	1.44	1.28	3010
48x12	34.00	25.00	1.56	1.42	2690
48x14	34.00	25.00	1.56	1.42	2710
48x16	34.00	25.00	1.56	1.42	2750
48x18	34.00	25.00	1.56	1.42	2790
48x20	34.00	25.00	1.56	1.42	2855
48x24	34.00	25.00	1.56	1.42	3015
48x30	34.00	25.00	1.56	1.42	3280
48x36	34.00	25.00	1.56	1.42	3630
48x42	34.00	25.00	1.56	1.42	4095
54x12	38.00	27.50	1.69	1.55	2665
54x14	38.00	27.50	1.69	1.55	2690
54x16	38.00	27.50	1.69	1.55	2730
54x18	38.00	27.50	1.69	1.55	2770
54x20	38.00	27.50	1.69	1.55	2835
54x24	38.00	27.50	1.69	1.55	2995
54x30	38.00	27.50	1.69	1.55	3260
54x36	38.00	27.50	1.69	1.55	3615
54x42	38.00	27.50	1.69	1.55	4070
54x48	38.00	27.50	1.69	1.55	4240



FLANGED Fittings ANSI/AWWA C110/A21.10 DI & CI



FLANGED TEES & CROSSES

	Size	Dimensions					Weight	
		T	T1	T2	H	J	TEE	CROSS
★	2x2	0.31	0.31	---	4.50	4.50	20	---
★	3x2	0.48	0.31	---	5.50	5.50	35	---
	3x3	0.48	0.48	---	5.50	5.50	40	50
★	4x3x3	0.52	0.48	0.48	6.50	5.50	55	---
★	4x2	0.52	0.31	---	6.50	6.50	50	---
	4x3	0.52	0.48	---	6.50	6.50	60	70
★	4x4x6	0.52	0.52	0.55	8.00	8.00	90	---
	4x4	0.52	0.52	---	6.50	6.50	65	80
★	6x4x4	0.55	0.52	0.52	8.00	8.00	85	---
★	6x4x6	0.55	0.52	0.55	8.00	8.00	90	---
★	6x6x8	0.55	0.55	0.60	9.00	9.00	140	---
★	6x2	0.55	0.31	---	8.00	8.00	85	---
	6x3	0.55	0.48	---	8.00	8.00	85	95
	6x4	0.55	0.52	---	8.00	8.00	90	110
	6x6	0.55	0.55	---	8.00	8.00	95	120
★	8x6x4	0.60	0.55	0.52	9.00	9.00	130	---
★	8x6x6	0.60	0.55	0.55	9.00	9.00	135	---
★	8x6x8	0.60	0.55	0.60	9.00	9.00	145	---
★	8x8x10	0.60	0.60	0.68	11.00	11.00	260	---
★	8x8x12	0.60	0.60	0.75	12.00	12.00	310	---
★	8x3	0.60	0.48	---	9.00	9.00	130	140
	8x4	0.60	0.52	---	9.00	9.00	140	155
	8x6	0.60	0.55	---	9.00	9.00	145	165
	8x8	0.60	0.60	---	9.00	9.00	155	195
★	10x6x6	0.68	0.55	0.55	11.00	11.00	200	---
★	10x6x10	0.68	0.55	0.68	11.00	11.00	255	---
★	10x8x6	0.68	0.60	0.55	11.00	11.00	210	---
★	10x8x8	0.68	0.60	0.60	11.00	11.00	220	---
★	10x8x10	0.68	0.60	0.68	11.00	11.00	265	---
	10x4	0.68	0.52	---	11.00	11.00	205	220
	10x6	0.68	0.55	---	11.00	11.00	215	240
	10x8	0.68	0.60	---	11.00	11.00	225	265
	10x10	0.68	0.68	---	11.00	11.00	270	330
★	10x10x12	0.68	0.68	0.75	12.00	12.00	355	---
★	12x6x6	0.75	0.55	0.55	12.00	12.00	325	---
★	12x6x8	0.75	0.55	0.60	12.00	12.00	345	---
★	12x8x6	0.75	0.60	0.55	12.00	12.00	340	---
★	12x8x8	0.75	0.60	0.60	12.00	12.00	290	---
★	12x8x12	0.75	0.60	0.75	12.00	12.00	365	---
★	12x10x6	0.75	0.68	0.55	12.00	12.00	375	---
★	12x10x8	0.75	0.68	0.60	12.00	12.00	380	---
★	12x10x10	0.75	0.68	0.68	12.00	12.00	345	---
★	12x10x12	0.75	0.68	0.75	12.00	12.00	370	---

FLANGED TEES & CROSSES

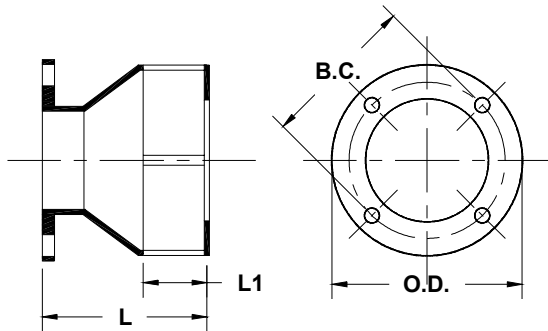
	Size	Dimensions					Weight	
		T	T1	T2	H	J	TEE	CROSS
	12x4	0.75	0.52	---	12.00	12.00	290	310
	12x6	0.75	0.55	---	12.00	12.00	295	320
	12x8	0.75	0.60	---	12.00	12.00	310	345
	12x10	0.87	0.80	---	12.00	12.00	360	415
	12x12	0.87	0.87	---	12.00	12.00	385	460
★	14x4	0.66	0.52	---	14.00	14.00	370	---
	14x6	0.66	0.55	---	14.00	14.00	375	400
	14x8	0.66	0.60	---	14.00	14.00	390	425
	14x10	0.66	0.68	---	14.00	14.00	400	460
CI	14x12	0.82	0.75	---	14.00	14.00	470	555
	14x12	0.66	0.75	---	14.00	14.00	425	505
CI	14x14	0.82	0.82	---	14.00	14.00	500	595
	14x14	0.66	0.66	---	14.00	14.00	435	530
★	16x4	0.70	0.52	---	15.00	15.00	460	---
	16x6	0.70	0.55	---	15.00	15.00	465	490
	16x8	0.70	0.60	---	15.00	15.00	475	520
	16x10	0.70	0.68	---	15.00	15.00	495	555
	16x12	0.70	0.75	---	15.00	15.00	520	605
CI	16x14	0.89	0.82	---	15.00	15.00	610	700
	16x14	0.70	0.66	---	15.00	15.00	530	620
CI	16x16	0.89	0.89	---	15.00	15.00	635	755
	16x16	0.70	0.70	---	15.00	15.00	550	665
	18x6	0.75	0.55	---	13.00	15.50	480	505
	18x8	0.75	0.60	---	13.00	15.50	495	535
	18x10	0.75	0.68	---	13.00	15.50	510	560
	18x12	0.75	0.75	---	13.00	15.50	535	610
	18x14	0.75	0.66	---	16.50	16.50	630	720
CI	18x16	0.96	0.89	---	16.50	16.50	760	880
	18x16	0.75	0.70	---	16.50	16.50	650	765
CI	18x18	0.96	0.96	---	16.50	16.50	785	915
	18x18	0.75	0.75	---	16.50	16.50	665	795
	20x6	0.80	0.55	---	14.00	17.00	610	635
	20x8	0.80	0.60	---	14.00	17.00	620	665
	20x10	0.80	0.68	---	14.00	17.00	635	685
	20x12	0.80	0.75	---	14.00	17.00	660	735
	20x14	0.80	0.66	---	14.00	17.00	665	745
	20x16	0.80	0.70	---	18.00	18.00	810	915
CI	20x18	1.03	0.96	---	18.00	18.00	965	1100
	20x18	0.80	0.75	---	18.00	18.00	820	945
CI	20x20	1.03	1.03	---	18.00	18.00	1005	1175
	20x20	0.80	0.80	---	18.00	18.00	885	1015
	24x6	0.89	0.55	---	15.00	19.00	845	875
	24x8	0.89	0.60	---	15.00	19.00	860	895

FLANGED TEES & CROSSES (CONTINUED)

Size	Dimensions				Weight	
	T	T1	H	J	TEE	CROSS
24x10	0.89	0.68	15.00	19.00	880	930
24x12	0.89	0.75	15.00	19.00	890	960
24x14	0.89	0.66	15.00	19.00	900	975
24x16	0.89	0.70	15.00	19.00	915	1010
24x18	0.89	0.75	22.00	22.00	1220	1365
CI 24x20	1.16	1.03	22.00	22.00	1510	1695
CI 24x20	0.89	0.80	22.00	22.00	1255	1430
CI 24x24	1.16	1.16	22.00	22.00	1585	1850
CI 24x24	0.89	0.89	22.00	22.00	1330	1570
★ 30x6	1.03	0.55	18.00	23.00	1725	---
30x12	1.03	0.75	18.00	23.00	1490	1565
30x14	1.03	0.66	18.00	23.00	1490	1570
30x16	1.03	0.70	18.00	23.00	1505	1605
30x18	1.03	0.75	18.00	23.00	1515	1615
30x20	1.03	0.80	18.00	23.00	1540	1670
CI 30x24	1.37	1.16	25.00	25.00	2475	2695
CI 30x24	1.03	0.89	25.00	25.00	2025	2245
CI 30x30	1.37	1.37	25.00	25.00	2615	2980
CI 30x30	1.03	1.03	25.00	25.00	2150	2500
36x12	1.15	0.75	20.00	26.00	2170	2240
36x14	1.15	0.66	20.00	26.00	2175	2240
36x16	1.15	0.70	20.00	26.00	2185	2270
36x18	1.15	0.75	20.00	26.00	2190	2280
36x20	1.15	0.80	20.00	26.00	2210	2325
36x24	1.15	0.89	20.00	26.00	2255	2405
CI 36x30	1.58	1.37	28.00	28.00	3745	4025
CI 36x30	1.15	1.03	28.00	28.00	3000	3300
CI 36x36	1.58	1.58	28.00	28.00	3930	4405
CI 36x36	1.15	1.15	28.00	28.00	3160	3620
42x12	1.28	0.75	23.00	30.00	3165	3240
42x14	1.28	0.66	23.00	30.00	3170	3240
42x16	1.28	0.70	23.00	30.00	3180	3270

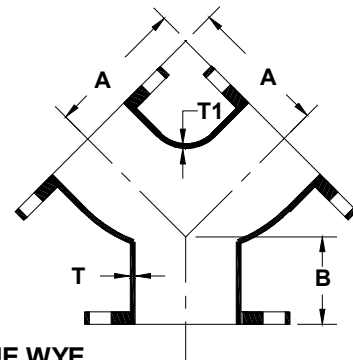
FLANGED TEES & CROSSES (CONTINUED)

Size	Dimensions				Weight	
	T	T1	H	J	TEE	CROSS
42x18	1.28	0.75	23.00	30.00	3185	3275
42x20	1.28	0.80	23.00	30.00	3205	3320
CI 42x24	1.78	1.16	23.00	30.00	4020	4135
CI 42x24	1.28	0.89	23.00	30.00	3245	3395
CI 42x30	1.78	1.37	31.00	31.00	5225	5445
CI 42x30	1.28	1.03	31.00	31.00	4125	4375
42x36	1.78	1.58	31.00	31.00	5360	5720
42x42	1.78	1.78	31.00	31.00	5580	6155
48x12	1.42	0.75	26.00	34.00	4315	4390
48x14	1.42	0.66	26.00	34.00	4315	4385
48x16	1.42	0.70	26.00	34.00	4330	4415
48x18	1.42	0.75	26.00	34.00	4330	4420
48x20	1.42	0.80	26.00	34.00	4350	4460
48x24	1.42	0.89	26.00	34.00	4385	4535
CI 48x30	1.96	1.37	26.00	34.00	5540	5705
CI 48x30	1.42	1.03	26.00	34.00	4455	4670
CI 48x36	1.96	1.58	34.00	34.00	7035	7310
CI 48x36	1.42	1.15	34.00	34.00	5555	5880
48x42	1.96	1.78	34.00	34.00	7195	7630
48x48	1.96	1.96	34.00	34.00	7385	8005
★ 54x12	1.05	0.75	29.00	37.00	4435	4575
★ 54x14	1.05	0.66	29.00	37.00	4435	4575
★ 54x16	1.05	0.70	29.00	37.00	4450	4605
★ 54x18	1.05	0.75	29.00	37.00	4460	4625
★ 54x20	1.05	0.80	29.00	37.00	4480	4665
★ 54x24	1.05	0.89	29.00	37.00	4515	4700
★ 54x30	1.05	0.72	31.00	37.00	4615	4800
★ 54x36	1.05	0.77	31.00	37.00	4695	4950
★ 54x42	1.05	0.88	39.00	39.00	5740	6210
★ 54x48	1.05	0.94	39.00	39.00	5850	6425
★ 54x54	1.05	1.05	39.00	39.00	6025	6780



★ FLANGE SLUDGE SHOE

Size	Dimensions					Wt
	L	L1	B.C.	Hole dia.	O.D.	
3	12.00	6.00	5.50	0.75	7.00	25
4	12.00	6.00	7.00	0.75	8.50	35
6	12.00	6.00	7.88	0.88	9.50	45
8	12.00	6.00	10.12	0.88	11.75	65
10	12.00	6.00	12.25	1.00	14.00	85
12	12.00	6.00	15.25	1.00	17.00	120

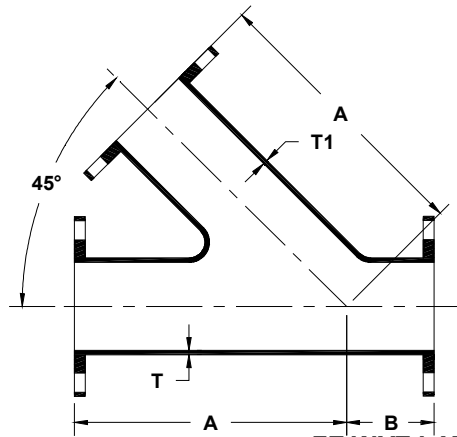


★ FLANGE TRUE WYE

Size	Dimensions				Wt
	T	T1	A	B	
4x4x4	0.52	0.52	6.50	3.00	50
6x4x4	0.55	0.52	8.00	3.50	75
6x6x6	0.55	0.55	8.00	3.50	80
8x6x6	0.60	0.55	9.00	4.50	120
8x8x8	0.60	0.60	9.00	4.50	125



FLANGED Fittings ANSI/AWWA C110/A21.10 DI & CI

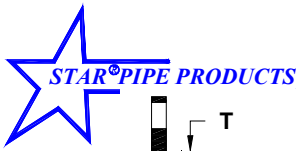


★ FE WYE LATERALS

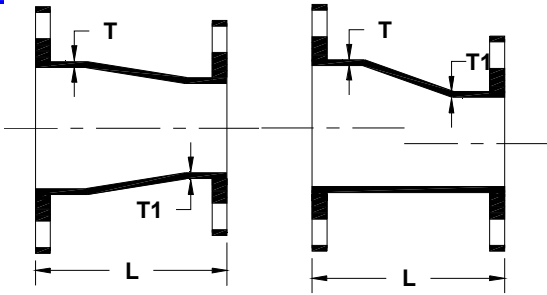
Size	Dimensions				Wt
	T	T1	A	B	
3x3	0.48	0.48	10.00	3.00	45
4x3	0.52	0.48	12.00	3.00	65
4x4	0.52	0.52	12.00	3.00	75
6x4	0.55	0.52	14.50	3.50	105
6x6	0.55	0.55	14.50	3.50	120
8x4	0.60	0.52	17.50	4.50	165
8x6	0.60	0.55	17.50	4.50	175
8x8	0.60	0.60	17.50	4.50	200
10x4	0.68	0.52	20.50	5.00	240
10x6	0.68	0.55	20.50	5.00	250
10x8	0.68	0.60	20.50	5.00	335
10x10	0.68	0.68	20.50	5.00	335
12x4	0.75	0.52	24.50	5.50	350
12x6	0.75	0.55	24.50	5.50	370
12x8	0.75	0.60	24.50	5.50	395
12x10	0.75	0.68	24.50	5.50	420
12x12	0.75	0.75	24.50	5.50	515
14x6	0.66	0.55	27.00	6.00	475
14x8	0.66	0.60	27.00	6.00	500
14x10	0.66	0.68	27.00	6.00	525
14x12	0.66	0.75	27.00	6.00	570
14x14	0.66	0.66	27.00	6.00	605
16x6	0.70	0.55	30.00	6.50	620
16x8	0.70	0.60	30.00	6.50	645
16x10	0.70	0.68	30.00	6.50	675
16x12	0.70	0.75	30.00	6.50	715
16x14	0.70	0.66	30.00	6.50	755
16x16	0.70	0.70	30.00	6.50	805
18x8	0.75	0.60	32.00	7.00	780
18x10	0.75	0.68	32.00	7.00	810
18x12	0.75	0.75	32.00	7.00	850
18x14	0.75	0.66	32.00	7.00	885
18x16	0.75	0.70	32.00	7.00	935
18x18	0.75	0.75	32.00	7.00	980
20x10	0.80	0.68	35.00	8.00	1025
20x12	0.80	0.75	35.00	8.00	1065
20x14	0.80	0.66	35.00	8.00	1110
20x16	0.80	0.70	35.00	8.00	1155
20x20	0.80	0.80	35.00	8.00	1265

★ FE WYE LATERALS

Size	Dimensions				Wt
	T	T1	A	B	
24x8	0.89	0.60	40.50	9.00	1425
24x10	0.89	0.68	40.50	9.00	1460
24x12	0.89	0.75	40.50	9.00	1500
24x14	0.89	0.66	40.50	9.00	1560
24x16	0.89	0.70	40.50	9.00	1615
24x18	0.89	0.75	40.50	9.00	1680
24x20	0.89	0.80	40.50	9.00	1750
24x24	0.89	0.89	40.50	9.00	1905
30x12	1.03	0.75	49.00	10.00	2545
30x14	1.03	0.66	49.00	10.00	2590
30x16	1.03	0.70	49.00	10.00	2645
30x18	1.03	0.75	49.00	10.00	2690
30x20	1.03	0.80	49.00	10.00	2760
30x24	1.03	0.89	49.00	10.00	2915
30x30	1.03	1.03	49.00	10.00	3225
36x12	1.15	0.75	60.00	19.50	4490
36x14	1.15	0.66	60.00	19.50	4545
36x16	1.15	0.70	60.00	19.50	4610
36x18	1.15	0.75	60.00	19.50	4670
36x20	1.15	0.80	60.00	19.50	4750
36x24	1.15	0.89	60.00	19.50	4920
36x30	1.15	1.03	60.00	19.50	5255
36x36	1.15	1.15	60.00	19.50	5740
42x20	1.28	0.80	60.00	11.75	6680
42x24	1.28	0.89	60.00	11.75	6850
42x30	1.28	1.03	63.00	11.75	7185
42x36	1.78	1.58	66.00	12.00	7670
42x42	1.78	1.78	71.00	15.00	9185
48x24	1.42	0.89	64.00	5.00	8695
48x30	1.42	1.03	68.00	9.00	9030
48x36	1.42	1.15	72.00	7.00	9515
48x42	1.96	1.78	77.00	16.00	11030
48x48	1.96	1.96	77.00	16.00	12115
54x24	1.05	0.89	67.00	5.00	6220
54x30	1.05	0.72	72.00	9.00	6826
54x36	1.05	0.77	76.00	9.00	7600
54x42	1.05	0.88	81.00	14.00	8930
54x48	1.05	0.94	86.00	18.00	9480
54x54	1.05	1.05	90.00	20.00	11780



FLANGED Fittings ANSI/AWWA C110/A21.10 DI & CI



REDUCERS

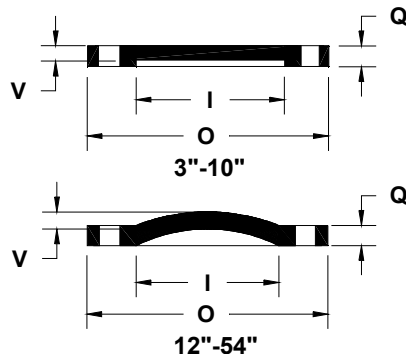
Size	Dimensions			Wt
	T	T1	L	
16x6	0.70	0.55	18.00	190
16x8	0.70	0.60	18.00	210
16x10	0.70	0.68	18.00	235
16x12	0.70	0.75	18.00	265
16x14	0.70	0.66	18.00	280
18x8	0.75	0.60	19.00	240
18x10	0.75	0.68	19.00	265
18x12	0.75	0.75	19.00	295
18x14	0.75	0.66	19.00	310
18x16	0.75	0.70	19.00	340
20x10	0.80	0.68	20.00	310
20x12	0.80	0.75	20.00	345
20x14	0.80	0.66	20.00	355
20x16	0.80	0.70	20.00	390
20x18	0.80	0.75	20.00	410
24x12	0.89	0.75	24.00	480
24x14	0.89	0.66	24.00	490
24x16	0.89	0.70	24.00	525
24x18	0.89	0.75	24.00	550
24x20	0.89	0.80	24.00	590
30x16	1.03	0.70	30.00	770
30x18	1.03	0.75	30.00	810
30x20	1.03	0.80	30.00	870
30x24	1.03	0.89	30.00	970
36x20	1.15	0.80	36.00	1230
36x24	1.15	0.89	36.00	1345
36x30	1.15	1.03	36.00	1555
42x24	1.28	0.89	42.00	1820
42x30	1.28	1.03	42.00	2060
42x36	1.28	1.15	42.00	2345
48x30	1.42	1.03	48.00	2625
48x36	1.42	1.15	48.00	2950
48x42	1.42	1.28	48.00	3320
54x30	0.90	0.61	32.00	1625
54x36	0.90	0.66	28.00	1680
54x42	0.90	0.76	25.00	1800
54x48	0.90	0.80	18.00	1695

REDUCERS

Size	Dimensions			Wt
	T	T1	L	
3x2	0.48	0.31	6.00	16
4x2	0.52	0.31	7.00	25
4x3	0.52	0.48	7.00	30
6x2	0.55	0.31	7.00	35
6x3	0.55	0.48	9.00	40
6x4	0.55	0.52	9.00	45
6x5	0.55	0.52	9.00	52
8x3	0.60	0.48	11.00	60
8x4	0.60	0.52	11.00	65
8x5	0.60	0.52	11.00	70
8x6	0.60	0.55	11.00	75
10x4	0.68	0.52	12.00	85
10x6	0.68	0.55	12.00	90
10x8	0.68	0.60	12.00	110
12x4	0.75	0.52	14.00	120
12x6	0.75	0.55	14.00	130
12x8	0.75	0.60	14.00	145
12x10	0.75	0.68	14.00	170
14x6	0.66	0.55	16.00	155
14x8	0.66	0.60	16.00	175
14x10	0.66	0.68	16.00	190
14x12	0.66	0.75	16.00	220

★ BLIND FLANGES

Size	Dimensions				Wt
	O	Q	V	I	
3	7.50	0.75	0.69	3.00	9
4	9.00	0.94	0.88	4.00	16
6	11.00	1.00	0.94	6.00	25
8	13.50	1.12	1.06	8.00	42
10	16.00	1.19	1.12	10.00	63
12	19.00	1.25	0.81	12.00	85
14	21.00	1.38	0.88	14.00	120
16	23.50	1.44	1.00	16.00	145
18	25.00	1.56	1.06	18.00	195
20	27.50	1.69	1.12	20.00	245
24	32.00	1.88	1.25	24.00	370
30	38.75	2.12	1.44	30.00	500
36	46.00	2.38	1.62	36.00	790
42	53.00	2.62	1.81	42.00	1300
48	59.50	2.75	2.00	48.00	1740
54	66.25	3.00	2.50	54.00	2600



★ NOT INCLUDED IN AWWA C110