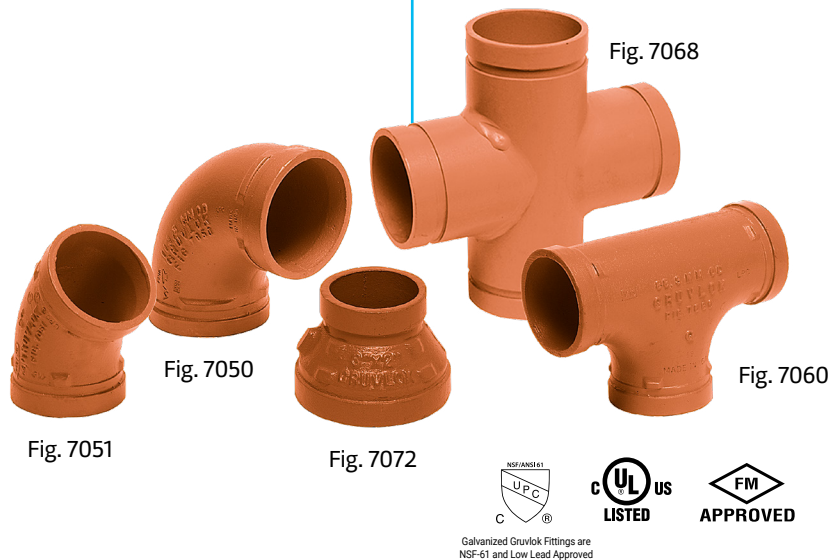


Fig. 7050 90° Elbow
Fig. 7051 45° Elbow
Fig. 7052 22½° Elbow



Material Specifications

Cast Fittings

Ductile iron conforming to ASTM A536, Grade 65-45-12

Malleable iron conforming to ASTM A47

Fabricated Fittings

1-12" Carbon steel, Schedule 40, conforming to ASTM A53, Grade B

14-24" Carbon steel, 0.375 wall, conforming to ASTM A53, Grade B

Coatings

Rust inhibiting paint
 Color: Orange (standard)

Hot Dipped Zinc Galvanized conforming to ASTM A153 (optional)

Other Colors Available
 (IE: RAL3000 and RAL9000)

Gruvlok fittings are available through 24" nominal pipe size in a variety of styles. Use the Fitting Size Table to convert nominal pipe size to corresponding pipe O.D. These fittings are designed to provide minimum pressure drop and uniform strength. Depending on styles and size, Gruvlok fittings are provided in various materials including ductile iron, forged steel or fabricated steel.

Pressure ratings of Gruvlok standard fittings conform to those of Fig. 7001 Gruvlok coupling.

For Listings/Approval Details and Limitations, visit our website at www.asc-es.com or contact an ASC Engineered Solutions™ Sales Representative.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

Elbows Fig. 7050, 7051, 7052



Flow Data - Frictional Resistance (Expressed as Equivalent Straight Pipe)

Nominal Size	O.D.	Pipe Wall Thickness	Elbow		Tee	
			90°	45°	Branch	Run
In./DN(mm)	In./mm	In./mm	Ft./m	Ft./m	Ft./m	Ft./m
1	1.315	0.133	1.7	0.9	4.4	1.7
25	33.4	3.4	0.5	0.3	1.3	0.5
1¼	1.660	0.140	2.3	1.2	5.8	2.3
32	42.2	3.6	0.7	0.4	1.8	0.7
1½	1.900	0.145	2.7	1.3	6.7	2.7
40	48.3	3.7	0.8	0.4	2.0	0.8
2	2.375	0.154	3.4	1.7	8.6	3.4
50	60.3	3.9	1.0	0.5	2.6	1.0
2½	2.875	0.203	4.1	2.1	10.3	4.1
65	73.0	5.2	1.2	0.6	3.1	1.2
3 O.D.	2.996	0.197	4.3	2.2	10.8	4.3
76.1	76.1	5.0	1.3	0.7	3.3	1.3
3	3.500	0.216	5.1	2.6	12.8	5.1
80	88.9	5.5	1.6	0.8	3.9	1.6
4¼ O.D.	4.250	0.220	6.4	3.2	16.1	6.4
108.0	108.0	5.6	2.0	1.0	4.9	2.0
4	4.500	0.237	6.7	3.4	16.8	6.7
100	114.3	6.0	2.0	1.0	5.1	2.0
5¼ O.D.	5.236	0.248	8.0	4.0	20.1	8.0
133.0	133.0	6.3	2.4	1.2	6.1	2.4
5½ O.D.	5.500	0.248	8.3	4.2	20.9	8.3
139.7	139.7	6.3	2.5	1.3	6.4	2.5
5	5.563	0.258	8.4	4.2	21.0	8.4
125	141.3	6.6	2.6	1.3	6.4	2.6
6¼ O.D.	6.259	0.280	9.7	4.9	24.3	9.7
159.0	159.0	7.1	3.0	1.5	7.4	3.0
6½ O.D.	6.500	0.280	10.0	5.0	24.9	10.0
165.1	165.1	7.1	3.0	1.5	7.6	3.0
6	6.625	0.280	10.1	5.1	25.3	10.1
150	168.3	7.1	3.1	1.6	7.7	3.1
8	8.625	0.322	13.3	6.7	33.3	13.3
200	219.1	8.2	4.1	2.0	10.1	4.1
10	10.750	0.365	16.7	8.4	41.8	16.7
250	273.1	9.3	5.1	2.6	12.7	5.1
12	12.750	0.375	20.0	10.0	50.0	20.0
300	323.9	9.5	6.1	3.0	15.2	6.1
14	14.000	0.375	22.2	11.7	64.2	22.9
350	355.6	9.5	6.8	3.4	19.6	7.0
16	16.000	0.375	25.5	12.4	73.9	26.4
400	406.4	9.5	7.8	3.9	22.5	8.0
18	18.000	0.375	28.9	14.1	87.2	31.1
450	457.2	9.5	8.8	4.4	26.6	9.5
20	20.000	0.375	32.2	15.7	97.3	34.8
500	508.0	9.5	9.8	4.9	29.7	10.6
24	24.000	0.375	38.9	19.1	113.0	40.4
600	609.6	9.5	11.9	5.9	34.4	12.3

Note:

For the reducing tee and branches, use the value that is corresponding to the branch size. For example: for 6" x 6" x 3" tee, the branch value of 3" is 12.8 ft (3.9).

The Fitting Size Chart is used to determine the O.D. of the pipe that the fittings is to be used with. Gruvlok Fittings are identified by either the Nominal size in inches or the Pipe O.D. in/mm.

Fitting Size

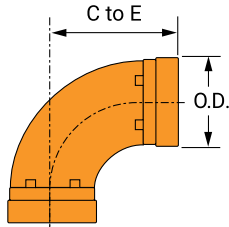
Nominal Size	O.D.
In./DN(mm)	In./mm
1	1.315
25	33.4
1¼	1.660
32	42.4
1½	1.900
40	48.3
2	2.375
50	60.3
2½	2.875
65	73.0
3 O.D.	2.996
76.1	76.1
3	3.500
80	88.9
3½	4.000
90	101.6
4¼ O.D.	4.250
108.0	108.0
4	4.500
100	114.3
5¼ O.D.	5.236
133.0	133.0
5½ O.D.	5.500
139.7	139.7
5	5.563
140	141.3
6¼ O.D.	6.259
159.0	159.0
6½ O.D.	6.500
165.1	165.1
6	6.625
150	168.3
8	8.625
200	219.1
10	10.750
250	273.0
12	12.750
300	323.9
14	14.000
350	355.6
16	16.000
400	406.4
18	18.000
450	457.2
20	20.000
500	508.0
24	24.000
600	609.6



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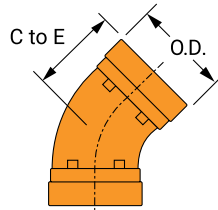
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Fig. 7050
90° Elbow*



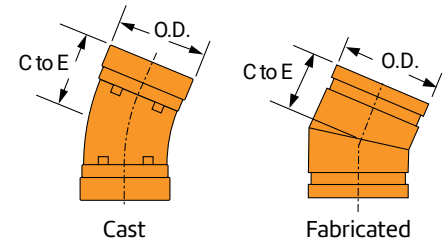
Nominal Size	O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
1	1.315	2¼ C	0.6
25	33.4	57	0.3
1¼	1.660	2¾ C	1.0
32	42.2	70	0.5
1½	1.900	2¾ C	1.2
40	48.3	70	0.5
2	2.375	3¼ C	1.7
50	60.3	83	0.8
2½	2.875	3¾ C	2.6
65	73.0	95	1.2
3 O.D.	2.996	4 C	3.6
76.1	76.1	102	1.6
3	3.500	4¼ C	4.0
80	88.9	108	1.8
3½	4.000	4½ C	5.5
90	101.6	114	2.5
4¼ O.D.	4.250	4¾ C	7.7
108.0	108.0	121	3.5
4	4.500	5 C	7.7
100	114.3	127	3.5
5¼ O.D.	2.236	5¼ C	10.4
133.0	133.0	133	4.7
5½ O.D.	5.500	5¼ C	10.9
139.7	139.7	133	4.9

Fig. 7051
45° Elbow*



Nominal Size	O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
1	1.315	1¾ C	0.5
25	33.4	44	0.2
1¼	1.660	1¾ C	0.7
32	42.2	44	0.3
1½	1.900	1¾ C	0.9
40	48.3	44	0.4
2	2.375	2 C	1.5
50	60.3	51	0.7
2½	2.875	2¼ C	1.9
65	73.0	57	0.9
3 O.D.	2.996	2½ C	2.2
76.1	76.1	64	1.0
3	3.500	2½ C	3.3
80	88.9	64	1.5
3½	4.000	2¾ C	4.3
90	101.6	70	2.0
4¼ O.D.	4.250	2⅞ C	4.4
108.0	108.0	83	2.0
4	4.500	3 C	5.4
100.0	114.3	76	2.4
5¼ O.D.	2.236	3¼ C	7.3
133.0	133.0	83	3.3
5½ O.D.	5.500	3¼ C	7.8
139.7	139.7	83	3.5

Fig. 7052
22½° Elbow



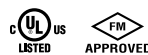
Nominal Size	O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
1	1.315	3¼	0.5
25	33.4	83	0.2
1¼	1.660	1¾	0.7
32	42.2	44	0.3
1½	1.900	1¾	0.8
40	48.3	44	0.4
2	2.375	1⅞ C	1.5
50	60.3	48	0.7
2½	2.875	2	1.9
65	73.0	51	0.9
3	3.500	2¼ C	3.2
80	88.9	57	1.5
3½	4.000	2½	4.0
90	101.6	64	1.8
4	4.500	2⅝ C	5.3
100	114.3	67	2.4
5	5.563	2⅞	7.2
125	141.3	73	3.3
6	6.625	3⅞ C	8.2
150	168.3	79	3.7
8	8.625	3⅞ C	17.8
200	219.1	98	8.1
10	10.750	4⅜	30.0
250	273.1	111	13.6

Note:

C - Cast ductile iron, all others are fabricated steel.

* 14"-24" Standard Radius 90° & 45° Elbows are 1½ Long Radius.

Center to end dimensions and weights may differ from those shown in chart, contact an ASC Engineered Solutions™ Representative for more information.



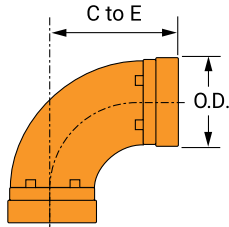
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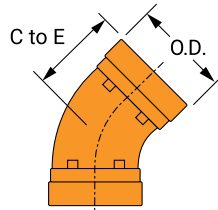
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Fig. 7050
90° Elbow*



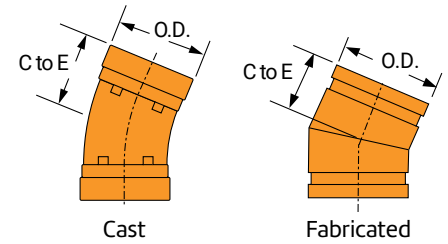
Nominal Size	O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
5	5.563	5½ C	11.1
125	141.3	140	5.0
6¼ O.D.	6.259	6 C	15.2
159.0	159.0	152	6.9
6½ O.D.	6.500	6½ C	17.4
165.1	165.1	165	7.9
6	6.625	6½ C	16.5
150	168.3	165	7.5
8	8.625	7¾ C	30.6
200	219.1	197	13.9
10	10.75	9 C	53.5
250	273.1	229	24.3
12	12.750	10 C	82.0
300	323.9	254	37.2
14*	14.000	21 C	176.0
350	355.6	533	79.8
16*	16.000	24 C	230.0
400	406.4	610	104.3
18*	18.000	27 C	293.0
450	457.2	686	132.9
20*	20.000	30 C	362.0
500	508	762	164.2
24*	24.000	36 C	520.0
600	609.6	914	235.9

Fig. 7051
45° Elbow*



Nominal Size	O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
5	5.563	3¼ C	9.0
125.0	141.3	83	4.1
6¼ O.D.	6.259	3½ C	10.1
159.0	159.0	89	4.6
6½ O.D.	6.500	3½ C	11.1
165.1	165.1	89	5.0
6	6.625	3½ C	11.2
150	168.3	89	5.1
8	8.625	4¼ C	19.8
200	219.1	108	9.0
10	10.75	4¾ C	34.3
250	273.1	121	15.6
12	12.75	5¼ C	50.0
300	323.9	133	22.7
14*	14.000	8¾ C	89.0
350	355.6	222	40.4
16*	16.000	10 C	125.0
400	406.4	254	56.7
18*	18.000	11¼ C	158.0
450	457.2	286	71.7
20*	20.000	12½ C	194.0
500	508.0	317	88.0
24*	24.000	15 C	277.0
600	609.6	381	125.6

Fig. 7052
22½° Elbow



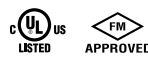
Nominal Size	O.D.	Center to End	Approx. Wt. Ea.
In./DN(mm)	In./mm	In./mm	Lbs./kg
12	12.750	4⅞	40.4
300	323.9	124	18.3
14	14.000	5	46.0
350	355.6	127	20.9
16	16.000	5	52.2
400	406.4	127	23.7
18	18.000	5½	65.0
450	457.2	140	29.5
20	20.000	6	80.0
500	508.0	152	36.3
24	24.000	7	112.0
600	609.6	178	50.8

Note:

C - Cast ductile iron, all others are fabricated steel.

* 14"-24" Standard Radius 90° & 45° Elbows are 1½ Long Radius.

Center to end dimensions and weights may differ from those shown in chart, contact an ASC Engineered Solutions™ Representative for more information.



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