



No. 20 Tee



No. 10 Elbow

## Certifications/Listings



When supplied as “hot dip galvanized” the following fittings are UL Classified in accordance with ANSI/NSF 61 and for use on cold +86°F/+30°C potable water service and ANSI/NSF 372: No. 10 90° Elbow, No. 11 45° Elbow, No. 12 22 1/2° Elbow, No. 13 11 1/4° Elbow, No. 100 90° Long Radius Elbow, No. 110 45° Long Radius Elbow, No. 20 Tee, No. 25 Tee with Grooved Branch, No. 30 45° Lateral, No. 60 Cap, No. 50 Concentric Reducers, No. 51 Eccentric Reducers.

Note: The following Victaulic fittings are VdS approved: No.10 90° Elbow, No.11 45° Elbow, No.20 Tee and No.60 Cap.

Note: The following Victaulic fittings are LPCB approved: No.10 90° Elbow, No.11 45° Elbow, No.12 22 1/2° Elbow, No.13 11 1/4° Elbow, No.30 45° Lateral, No.30-R Reducing Lateral, No.100 Long Radius Elbow, No.110 Long Radius Elbow, No.20 Tee, No.35 Cross, No.60 Cap, No.25 Reducing Tee, No.33 True Wye, No.50 Concentric Reducer, No.51 Eccentric Reducer and No.29M Tee with Threaded Branch.

## Product Description

- Wide range of fittings from ¾ – 60”/20 – 1500 mm
- Fittings conform to the pressure ratings of the Style 77 coupling
- Fittings are provided with grooved or shouldered ends.

Note: These fittings are not intended for use with Victaulic plain end couplings.

- Fittings are intended for use in grooved piping systems only

Note: When connecting wafer or lug type butterfly valves directly to Victaulic fittings using Style 741 or 743 flange adapters, be sure to check disc clearance dimensions with I.D. dimension of fitting.

### Job/Owner

System No.	
Location	

### Contractor

Submitted By	
Date	

### Engineer

Spec Section	
Paragraph	
Approved	
Date	

**Other Fitting Styles**



AGS - Advanced Groove System  
from 14 – 60"/350 – 1500 mm  
[Publication 20.05](#)



Ductile Iron for AWWA size pipe  
[Publication 23.05](#)



Stainless Steel  
[Publication 17.16](#)



XL fittings for abrasive services  
[Publication 07.07](#)



Galvanized  
[Publication 07.01](#) for Original Groove Fittings  
[Publication 20.05](#) for AGS Fittings



Aluminum  
[Publication 21.03](#)



Extra Heavy EndSeal "ES"  
[Publication 07.03](#)



Shouldered Ends  
[Publication 07.06](#)



Copper  
[Publication 22.04](#)



Plain End  
[Publication 14.04](#)



Copper Installation-Ready™  
[Publication 22.15](#)

## Material Specifications

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### Fitting: (specify choice)

Standard: Ductile iron conforming to ASTM A-536, Grade 65-45-12.

Optional: Segmentally welded steel as shown under nipples

### Nipples: (specify choice)

¾ – 4"/20 – 100 mm: Carbon steel, Schedule 40, conforming to ASTM A-53, Type F

5 – 6"/125 – 150 mm: Carbon steel, Schedule 40, conforming to ASTM A-53, Type E or S, Gr. B

8 – 12"/200 – 300 mm: Carbon steel, Schedule 30 or 40, conforming to ASTM A-53, Type E or S, Gr. B

### Flanged Adapter Nipples: (specify choice)

Class 125 Flange: Cast iron conforming to ANSI B-16.1

Class 150 Flange: Carbon steel conforming to ANSI B-16.5, raised or flat face

Class 300 Flange: Carbon steel conforming to ANSI B-16.5, raised or flat face

### Fitting Coating: (specify choice)

Standard: Orange enamel.

Optional: Hot dip galvanized and others. Some fittings supplied electroplated as standard – see product specifications.

### Flanged Adapter Nipple Coating: (specify choice)

Standard: None (Unfinished)

Optional: Orange enamel, hot dip galvanized and others.

**Flow Data**

**(Frictional Resistance)**

The chart expresses the frictional resistance of various Victaulic fittings as equivalent feet of straight pipe. Fittings not listed can be estimated from the data given, for example, a 22½° elbow is approximately one-half the resistance of a 45° elbow. Values of mid-sizes can be interpolated.

Size		Dimensions					
Nominal Size inches mm	Actual Outside Diameter inches mm	90° Elbows		45° Elbows		Tees	
		No. 10 Std. Radius feet meters	No. 100 1½ D Long Radius feet meters	No. 11 Std. Radius feet meters	No. 110 1½ D Long Radius feet meters	Branch feet meters	Run feet meters
1	1.315	1.7	—	0.8	—	4.2	1.7
25	33.7	0.5	—	0.2	—	1.3	0.5
2	2.375	3.5	2.5	1.8	1.1	8.5	3.5
50	60.3	1.1	0.8	0.5	0.3	2.6	1.1
76.1 mm	3.000	4.3	—	2.1	—	10.8	4.3
	76.1	1.3	—	0.7	—	3.3	1.3
3	3.500	5.0	3.8	2.6	1.6	13.0	5.0
80	88.9	1.5	1.2	0.8	0.5	4.0	1.5
108.0 mm	4.250	6.4	—	3.2	—	15.3	6.4
	108.0	2.0	—	0.9	—	4.7	2.0
4	4.500	6.8	5.0	3.4	2.1	16.0	6.8
100	114.3	2.1	1.5	1.0	0.6	4.9	2.1
133.0 mm	5.250	8.1	—	4.1	—	20.0	8.1
	133.0	2.5	—	1.2	—	6.2	2.5
139.7 mm	5.500	8.5	—	4.2	—	21.0	8.5
	139.7	2.6	—	1.3	—	6.4	2.6
5	5.563	8.5	—	4.2	—	21.0	8.5
125	141.3	2.6	—	1.3	—	6.4	2.6
159.0 mm	6.250	9.4	—	4.9	—	25.0	9.6
	159.0	2.9	—	1.5	—	7.6	2.9
165.1 mm	6.500	9.6	—	5.0	—	25.0	10.0
	165.1	2.9	—	1.5	—	7.6	3.0
6	6.625	10.0	7.5	5.0	3.0	25.0	10.0
150	168.3	3.0	2.3	1.5	0.9	7.6	3.0
8	8.625	13.0	9.8	6.5	4.0	33.0	13.0
200	219.1	4.0	3.0	2.0	1.2	10.1	4.0
10	10.750	17.0	12.0	8.3	5.0	41.0	17.0
250	273.0	5.2	3.7	2.5	1.5	12.5	5.2
12	12.750	20.0	14.5	10.0	6.0	50.0	20.0
300	323.9	6.1	4.4	3.0	1.8	15.2	6.1
14	14.000	24.5 <sup>1</sup>	15.8	18.5 <sup>1</sup>	11.0	70.0	23.0
350	355.6	7.5	4.8	5.6	3.4	21.3	7.0
16	16.000	28.0 <sup>1</sup>	18.0	21.0 <sup>1</sup>	13.0	80.0	27.0
400	406.4	8.5	5.5	6.4	4.0	24.4	8.2
18	18.000	31.0 <sup>1</sup>	20.0	23.5 <sup>1</sup>	14.0	90.0	30.0
450	457.0	9.5	6.1	7.2	4.3	27.4	9.1
20	20.000	34.0 <sup>1</sup>	22.5	25.5 <sup>1</sup>	16.0	100.0	33.0
800	508.0	10.4	6.9	7.8	4.9	30.5	10.1
24	24.000	42.0 <sup>1</sup>	27.0	29.5 <sup>1</sup>	19.0	120.0	40.0
600	610.0	12.8	8.2	9.0	5.8	36.6	12.2

AGS fittings available up to 60"/1500 mm. Contact Victaulic for details.



1 Fitting flow data for 14-24"/350-600 mm size No. 10 and No. 11 Elbows is based on fittings for Style 07 and 77 couplings. For flow data on AGS fittings (No. W10 and No. W11 Elbows), refer to [publication 20.05](#).

**Dimensions**

**Elbows**

**No. 10** 90° Elbow

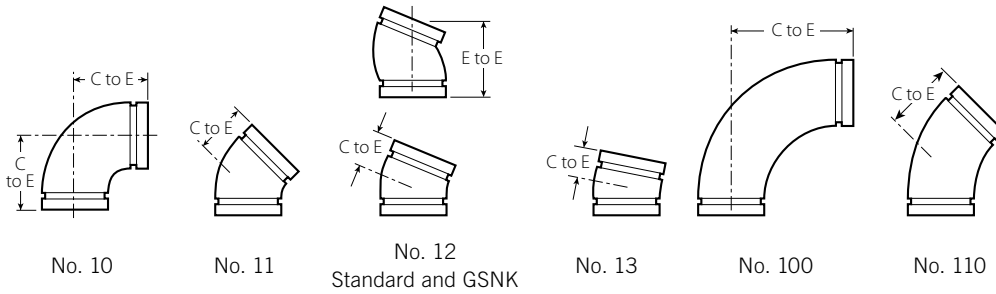
**No. 11** 45° Elbow

**No. 12** 22 ½° Elbow

**No. 13** 11 ¼° Elbow

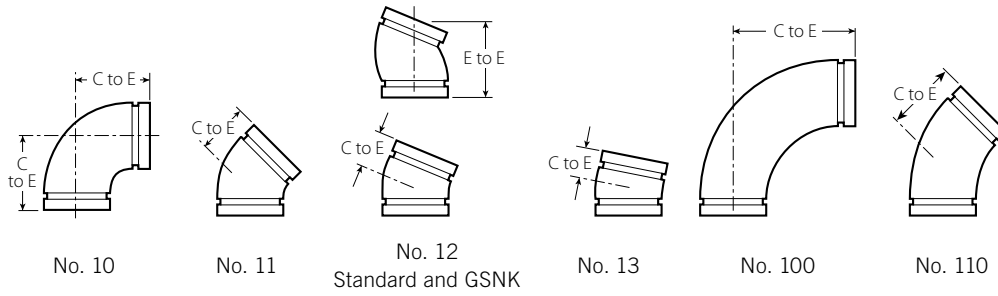
**No. 100** 90° Long Radius Elbow

**No. 110** 45° Long Radius Elbow



Size		No. 10 90° Elbow		No. 11 45° Elbow		No. 12 22½° Elbow		No. 13 11¼° Elbow		No. 100 90° Long Radius Elbow		No. 110 45° Long Radius Elbow	
Nominal Size	Actual Outside Diameter	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each
inches mm	inches mm	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg
¾ 20	1.050 26.9	2.25 57	0.5 0.2	1.50 38	0.5 0.2	1.63 (sw) 41	—	1.38 (sw) 35	—	2.50 (sw) 64	0.4 0.2	1.88 (sw) 48	0.3 0.1
1 25	1.315 33.7	2.25 57	0.6 0.3	1.75 44	0.6 0.3	3.25 <sup>2</sup> 83	0.6 0.3	1.38 (sw) 35	0.3 0.1	2.88 (sw) 73	0.6 0.3	2.25 (sw) 57	0.5 0.2
1 ¼ 32	1.660 42.4	2.75 70	1.0 0.5	1.75 44	0.9 0.4	1.75 44	0.8 0.4	1.38 (sw) 35	0.5 0.2	3.25 (sw) 83	1.1 0.5	2.38 (sw) 60	0.7 0.3
1 ½ 40	1.900 48.3	2.75 70	1.2 0.5	1.75 44	0.9 0.4	1.75 44	0.8 0.4	1.38 (sw) 35	0.5 0.2	3.63 (sw) 92	2.2 1.0	2.50 (sw) 64	1.3 0.6
2 50	2.375 60.3	3.25 83	1.8 0.8	2.00 51	1.3 0.6	1.88 48	1.2 0.5	1.38 35	1.0 0.5	4.38 111	2.5 1.1	2.75 70	1.8 0.8
2 ½ 65	2.875 73.0	3.75 95	3.2 1.5	2.25 57	2.2 1.0	4.00 <sup>2</sup> 102	2.3 1.0	1.50 38	1.1 0.5	5.13 130	3.4 1.5	3.00 76	2.8 1.3
76.1 mm	3.000 76.1	3.75 95	3.7 1.7	2.25 57	3.4 1.5	2.25 57	—	1.50 38	—	—	—	—	—
3 80	3.500 88.9	4.25 108	4.5 2.0	2.50 64	3.1 1.4	4.50 <sup>2</sup> 114	3.1 1.4	1.50 38	2.1 1.0	5.88 149	6.0 2.7	3.38 86	4.9 2.2
3 ½ 90	4.000 101.6	4.50 114	5.6 2.5	2.75 70	4.3 2.0	2.50 (sw) 64	4.0 1.8	1.75 (sw) 44	2.7 1.2	—	—	—	—
4 100	4.500 114.3	5.00 127	7.1 3.2	3.00 76	5.6 2.5	2.88 73	5.6 2.5	1.75 44	3.6 1.6	7.50 191	12.3 5.6	4.00 102	7.3 3.3
108.0 mm	4.250 108.0	5.00 127	11.0 5.0	3.00 76	5.6 2.5	—	—	—	—	—	—	—	—
4 ½ 120	5.000 127.0	5.25 (sw) 133	10.0 4.5	3.13 (sw) 79	6.0 2.7	3.50 (sw) 89	6.6 3.0	1.88 (sw) 48	4.2 1.9	—	—	—	—
5 125	5.563 141.3	5.50 140	11.7 5.3	3.25 83	8.3 3.8	2.88 (sw) 73	7.8 3.5	2.00 (sw) 51	5.0 2.2	9.25 (sw) 235	18.0 8.2	4.88 (sw) 124	14.8 6.7
133.0 mm	5.250 133.0	5.50 140	11.7 5.3	3.25 83	8.3 3.8	—	—	—	—	—	—	—	—
139.7 mm	5.500 139.7	5.50 140	11.7 5.3	3.25 83	8.3 3.8	2.88 73	—	2.00 51	—	—	—	—	—
6 150	6.625 168.3	6.50 165	17.2 7.8	3.50 89	10.8 4.9	6.25 <sup>2</sup> 159	12.2 5.5	2.00 51	7.0 3.2	10.75 273	30.4 13.8	5.50 140	17.4 7.9

- 2 Gooseneck design, end-to-end dimension fittings in this size, contact your nearest Victaulic sales representative.
- 3 For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.
- 4 Chinese standard sizes



Size		No. 10 90° Elbow		No. 11 45° Elbow		No. 12 22½° Elbow		No. 13 11¼° Elbow		No. 100 90° Long Radius Elbow		No. 110 45° Long Radius Elbow	
Nominal Size	Actual Outside Diameter	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each	C to E	Approx. Wgt. Each
inches mm	inches mm	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg	inches mm	lbs. kg
159.0 mm	6.250 159.0	6.50 165	18.6 8.4	3.50 89	10.8 4.9	—	—	—	—	—	—	—	—
165.1 mm	6.500 165.1	6.50 165	15.5 7.0	3.50 89	9.8 4.4	3.13 79	11.4 5.2	2.00 51	7.4 3.4	10.75 (sw) 273	29.0 13.2	5.50 (sw) 140	19.0 8.6
8 200	8.625 219.1	7.75 197	29.9 13.6	4.25 108	20.4 9.3	7.75 <sup>2</sup> 197	20.0 9.1	2.00 51	10.1 4.6	14.25 362	66.0 30.0	7.25 184	36.0 16.3
10 250	10.750 273.0	9.00 229	63.3 28.7	4.75 121	37.5 17.0	4.38 (sw) 111	30.0 13.6	2.13 54	11.8 5.3	15.00 381	107.0 48.5	6.25 159	57.0 25.9
12 300	12.750 323.9	10.00 254	74.0 33.6	5.25 133	66.7 30.3	4.88 (sw) 124	40.0 18.1	2.25 57	29.3 13.3	18.00 457	156.0 70.8	7.50 191	90.0 40.8
14 <sup>3</sup> 350	14.000 355.6	14.00 356	136.0 61.7	5.75 146	65.0 29.5	5.00 (sw) 127	46.0 20.9	3.50 (sw) 89	32.0 14.5	21.00 (s) 533	164.0 74.4	8.75 222	82.0 37.2
377.0 mm <sup>4</sup>	14.843 377.0	14.84 377	149.3 67.7	6.13 156	82.0 37.2	—	—	—	—	—	—	—	—
16 <sup>3</sup> 400	16.000 406.5	16.00 406	171.0 77.6	6.63 168	88.0 39.3	5.00 (sw) 127	58.0 26.3	4.00 (sw) 102	42.0 19.1	24.00 (s) 610	210.0 95.3	10.00 (s) 254	100.0 45.4
426.0 mm <sup>4</sup>	16.773 426.0	16.75 425	198.6 90.1	7.00 178	101.3 45.9	—	—	—	—	—	—	—	—
18 <sup>3</sup> 450	18.000 457.2	18.00 457	228.0 103.4	7.50 190	108.0 50.0	5.50 (sw) 140	65.0 29.5	4.50 (sw) 144	53.2 24.1	27.00 (s) 686	273.0 123.8	11.25 (s) 286	135.0 61.2
480.0 mm <sup>4</sup>	18.898 480.0	18.88 480	291.0 132.0	7.83 200	141.7 64.3	—	—	—	—	—	—	—	—
20 <sup>3</sup> 500	20.000 508.0	20.00 508	298.0 135.2	8.25 210	138.0 62.6	6.00 (sw) 152	78.6 36.0	5.00 (sw) 127	65.0 29.5	30.00 (s) 762	343.0 155.6	12.50 (s) 318	174.0 78.9
530.0 mm <sup>4</sup>	20.866 530.0	20.88 530	355.0 161.0	8.63 219	179.0 81.2	—	—	—	—	—	—	—	—
24 <sup>3</sup> 600	24.000 609.6	24.00 610	438.0 198.7	10.00 254	221.0 100.2	7.00 (sw) 178	140.0 63.5	6.00 (sw) 152	60.0 27.2	36.00 (s) 914	516.0 234.1	15.00 (s) 381	251.0 113.9
630.0 mm <sup>4</sup>	24.803 630.0	24.80 630	545.0 247.2	10.25 261	255.2 115.7	—	—	—	—	—	—	—	—
14 – 60 350 – 1500	For AGS fitting information, see <a href="#">publication 20.05</a>												



- 2 Gooseneck design, end-to-end dimension fittings in this size, contact your nearest Victaulic sales representative.
- 3 For 14"/350 mm and larger roll grooved systems, Victaulic offers the Advanced Groove System (AGS). For pricing and availability of cut groove fittings in this size, contact your nearest Victaulic sales representative.
- 4 Chinese standard sizes

**General Notes**

Note: All fittings are ductile iron unless otherwise noted with an (sw) or (s).  
 (s) = Carbon Steel Direct Roll Groove (OGS)  
 (sw) = Carbon Steel Segmentally Welded