

Grooved End Fittings



Victaulic offers a broad line of fittings in sizes through 60"/1500mm in a variety of straight and reducing styles. Most standard fittings are cast of durable ductile iron to precise tolerances. Victaulic standard fittings pressure ratings conform to the ratings of Victaulic Style 77 couplings.

All fittings are supplied with grooves to permit fast installation without field preparation. The grooved design permits flexibility for easy alignment. *These fittings are not intended for use with Victaulic couplings for plain end pipe (refer to Section 14.04 for fittings available for plain end applications).*

Fittings are provided in various materials including ductile iron, steel or segmentally welded steel depending on styles and size. Fittings are painted orange enamel with a galvanized finish available as an option, contact Victaulic for details.

Victaulic fittings are designed specifically for use in grooved piping systems. Fittings are provided grooved conforming to standard steel pipe outside diameters. When connecting wafer or lug-type butterfly valves directly to Victaulic fittings with 741 or 743 Vic-Flange® adapters, check disc clearance dimensions with I.D. dimension of fitting.

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 ½° Elbow, No.13 11 ¼° 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.



NO. 20 TEE



NO. 10 ELBOW



AGS – ADVANCED GROOVE SYSTEM

Advanced Groove System – For 14 – 60"/350 – 1500mm piping systems, Victaulic now offers the Advanced Groove System (AGS). Refer to Section 20.05 for AGS fitting details.

Stainless Steel – Grooved end fittings are available in Schedule 10 Type 316 stainless steel (Schedule 5, 40 and Type 304 available as an option) in various sizes. Fitting center-to-end dimensions will vary depending upon type and schedule. Refer to Section 17.04 and 17.16 for details.

Aluminum – Grooved end fittings are available in aluminum alloy 356 T6, in sizes from 1 – 8"/25 – 200mm. Refer to Section 21.03 or contact Victaulic for details.

Fabricated Steel – A full range of fabricated segmentally welded steel or full flow grooved end fittings are available refer to section 07.04.

Fabricated Steel with AGS Vic-Rings – A full range of full flow fabricated fittings with Vic-Rings are also available.

ALTERNATE STYLES



Extra Heavy EndSeal® "ES" Fittings – EndSeal fittings are available in 2 – 12"/50 – 300mm for use with "ES" grooved pipe and HP-70ES EndSeal couplings. "ES" fittings are painted black for easy identification. EndSeal (and standard) fittings may be easily internally coated (by others) for severe service requirements. Always specify "ES EndSeal fittings" when ordering. See Section 07.03 for information on EndSeal fittings.

Fittings Machined for Rubber or Urethane Lining (MRL) – For severe abrasive services, Victaulic fittings may be rubber or urethane lined (by others). Lining may be inside diameter/end (abrasion resistance) or wrap-around (corrosion and/or abrasion) machined. Refer to Section 25.03 or contact Victaulic for specific details.

Note: Fittings are available with a variety of coatings upon request such as hot dip galvanized, epoxy, glass lined and others.

JOB/OWNER

System No. _____

Location _____

CONTRACTOR

Submitted By _____

Date _____

ENGINEER

Spec Sect _____ Para _____

Approved _____

Date _____

Grooved End Fittings

MATERIAL SPECIFICATIONS

Fitting: Ductile iron conforming to ASTM A-536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request.

- **Or:** Segmentally welded steel as shown under nipples

Nipples: (adapter, swaged & hose)

- ¾ – 4"/20 – 100mm: Carbon steel, Schedule 40, conforming to ASTM A-53, Type F
- 5 – 6"/125 – 150mm: Carbon steel, Schedule 40, conforming to ASTM A-53, Type E or S, Gr. B
- 8 – 12"/200 – 300mm: Carbon steel, Schedule 30 or 40, conforming to ASTM A-53, Type E or S, Gr. B

Flanged Adapter Nipples: (Nipple – see above)

- 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 Coatings: Orange enamel

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

Flanged Adapter Nipple Coating: None (Unfinished)

- **Optional:** Orange enamel, hot dip galvanized and others.

Grooved End Fittings

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		Dimension – Feet/meters					
Nominal Size In./mm	Actual Outside Dia. In./mm	Elbows				Tees	
		90° Elbows		45° Elbows		Branch	Run
		No. 10 Std. Radius	No. 100 1 ½ D Long Radius	No. 11 Std. Radius	No. 110 1 ½ D Long Radius		
1 25	1.315 33.7	1.7 0.5	—	0.8 0.2	—	4.2 1.3	1.7 0.5
2 50	2.375 60.3	3.5 1.1	2.5 0.8	1.8 0.5	1.1 0.3	8.5 2.6	3.5 1.1
76.1 mm	3.000 76.1	4.3 1.3	—	2.1 0.7	—	10.8 3.3	4.3 1.3
3 80	3.500 88.9	5.0 1.5	3.8 1.2	2.6 0.8	1.6 0.5	13.0 4.0	5.0 1.5
108.0 mm	4.250 108.0	6.4 2.0	—	3.2 0.9	—	15.3 4.7	6.4 2.0
4 100	4.500 114.3	6.8 2.1	5.0 1.5	3.4 1.0	2.1 0.6	16.0 4.9	6.8 2.1
133.0 mm	5.250 133.0	8.1 2.5	—	4.1 1.2	—	20.0 6.2	8.1 2.5
139.7 mm	5.500 139.7	8.5 2.6	—	4.2 1.3	—	21.0 6.4	8.5 2.6
5 125	5.563 141.3	8.5 2.6	—	4.2 1.3	—	21.0 6.4	8.5 2.6
159.0 mm	6.250 159.0	9.4 2.9	—	4.9 1.5	—	25.0 7.6	9.6 2.9
165.1 mm	6.500 165.1	9.6 2.9	—	5.0 1.5	—	25.0 7.6	10.0 3.0
6 150	6.625 168.3	10.0 3.0	7.5 2.3	5.0 1.5	3.0 0.9	25.0 7.6	10.0 3.0
8 200	8.625 219.1	13.0 4.0	9.8 3.0	6.5 2.0	4.0 1.2	33.0 10.1	13.0 4.0
10 250	10.750 273.0	17.0 5.2	12.0 3.7	8.3 2.5	5.0 1.5	41.0 12.5	17.0 5.2
12 300	12.750 323.9	20.0 6.1	14.5 4.4	10.0 3.0	6.0 1.8	50.0 15.2	20.0 6.1
14 350	14.000 355.6	24.5 § 7.5	15.8 4.8	18.5 § 5.6	11.0 3.4	70.0 21.3	23.0 7.0
16 400	16.000 406.4	28.0 § 8.5	18.0 5.5	21.0 § 6.4	13.0 4.0	80.0 24.4	27.0 8.2
18 450	18.000 457.0	31.0 § 9.5	20.0 6.1	23.5 § 7.2	14.0 4.3	90.0 27.4	30.0 9.1
20 800	20.000 508.0	34.0 § 10.4	22.5 6.9	25.5 § 7.8	16.0 4.9	100.0 30.5	33.0 10.1
24 600	24.000 610.0	42.0 § 12.8	27.0 8.2	29.5 § 9.0	19.0 5.8	120.0 36.6	40.0 12.2

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

Contact Victaulic for details.

For 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 office.

§ 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 submittal 20.05.

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

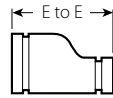
Grooved End Fittings

Concentric/Eccentric Reducer

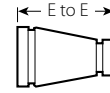
NO. 50 Concentric
NO. 51 Eccentric



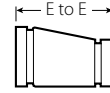
NO. 50



NO. 51



Fabricated Steel
No.50



Fabricated Steel
No.51

Size		No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
Nominal Size Inches mm		E to E Inches mm	Approx. Weight Each Lbs. kg	E to E Inches mm	Approx. Weight Each Lbs. kg
1 1/4 32	x 3/4 20	+	1.9 0.9	—	—
		+	1.9 0.9	—	—
1 1/2 40	x 3/4 20	+	1.4 0.6	—	—
		2.50 64	0.8 0.4	8.50sw 216	4.5 2.0
		2.50 64	1.0 0.5	—	—
2 50	x 3/4 20	2.50 64	0.9 0.3	9.00sw 229	2.0 0.9
		2.50 64	0.7 0.3	9.00sw 229	2.3 1.0
		2.50 64	1.2 0.5	9.00sw 229	4.6 2.1
		3.50 89	1.0 0.5	3.50 89	1.1 0.5
2 1/2 65	x 3/4 20	+	1.3 0.6	+	3.3 1.5
		2.50 64	1.1 0.5	9.50 241	3.5 1.6
		3.50 89	3.3 1.5	3.50 89	1.4 0.6
		2.50 64	3.6 1.6	9.50sw 241	3.7 1.7
		2.50 64	3.9 1.8	3.50 89	4.3 2.0
3 80	x 3/4 20	+	1.5 0.7	+	4.5 2.0
		2.50 241	1.3 0.6	9.50sw 241	4.8 2.2
		2.50 64	1.4 0.6	+	4.8 2.2
		2.50 64	5.1 2.3	9.50sw 241	5.1 2.3
		2.50 64	1.6 0.7	3.50 89	6.0 2.7
		2.50 64	1.8 0.8	3.50 89	7.0 3.2
		2.50 64	2.1 1.0	—	—

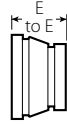
Size		No. 50 Concentric Reducer		No. 51 Eccentric Reducer	
Nominal Size Inches mm		E to E Inches mm	Approx. Weight Each Lbs. kg	E to E Inches mm	Approx. Weight Each Lbs. kg
3 1/2 90	x 3 80	2.50 64	2.0 0.9	9.50sw 241	7.0 3.2
		3.00 76	3.0 1.4	13.00sw 330	6.5 2.9
4 100	x 1 25	+	4.6 2.1	—	—
		3.00sw 76	2.6 1.2	10.00sw 254	8.1 3.7
		3.00 76	2.4 1.1	4.00 102	3.3 1.5
		3.00 76	2.7 1.2	4.00 102	3.4 1.5
		3.00 76	3.2 1.4	4.00 102	3.5 1.6
		3.00 76	2.9 1.3	10.00sw 254	8.0 3.6
		3.00 76	2.9 1.3	10.00sw 254	8.0 3.6
5 125	x 2 50	11.00sw 279	9.0 4.1	11.00sw 279	5.2 2.4
		4.00 102	4.3 2.0	11.00sw 279	10.8 4.9
		4.00 102	5.5 2.5	11.00sw 279	11.1 5.0
		3.50 89	4.3 1.9	5.00 127	12.0 5.4
6 150	x 1 25	4.00 102	5.0 2.3	11.50sw 292	14.5 6.6
		+	5.5 2.5	+	+
		4.00 102	6.6 3.0	11.50sw 292	14.5 6.6
		4.00 102	6.4 2.9	11.50sw 292	14.2 6.4
		4.00 102	6.4 2.9	5.50 140	15.0 6.8
		4.00 102	6.5 2.9	5.50 140	17.0 7.7
		4.00 102	6.4 2.9	5.50 140	17.0 7.7
8 200	x 2 1/2 65	16.00 406	7.9 3.6	12.00sw 305	26.1 11.8
		5.00 127	9.3 4.2	12.00sw 305	22.0 10.0

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

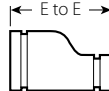
Grooved End Fittings

Concentric/Eccentric Reducer

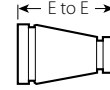
NO. 50 Concentric
NO. 51 Eccentric



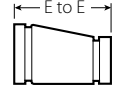
NO. 50



NO. 51



Fabricated Steel
No.50



Fabricated Steel
No.51

Size	No. 50 Concentric Reducer		No. 51 Eccentric Reducer		
	Nominal Size Inches mm	E to E Inches mm	Approx. Weight Each Lbs. kg	E to E Inches mm	Approx. Weight Each Lbs. kg
8 200	4 100	5.00 127	10.4 4.8	12.00sw 305	23.0 10.4
		5.00 125	11.6 5.2	12.00sw 305	23.0 10.4
		6.00 150	11.9 5.4	6.00 152	24.0 10.9
10 250	4 100	6.00 152	19.7 8.9	13.00sw 330	32.0 14.5
		5.00 125	34.3 15.6	+	34.6 15.7
		6.00 150	20.0 9.1	13.00sw 330	36.9 16.7
		8.00 200	22.0 10.0	7.00 178	21.6 9.8
12 300	4 100	+	44.0 20.0	14.00sw 356	48.0 21.8
		7.00 178	24.6 11.2	14.00sw 356	50.0 22.7
		8.00 200	52.0 23.6	14.00sw 356	53.5 24.3
		10.00 250	39.0 17.7	14.00sw 356	57.0 25.9
# 14 350	6 150	13.00 330	65.0 29.5	13.00 330	60.0 27.2
		8.00 200	65.0 29.5	13.00 330	60.0 27.2
		10.00 250	66.0 29.9	13.00 330	65.0 29.5
		12.00 300	68.0 30.8	13.00 330	66.0 29.9
# 16 400	8 200	14.00 356	73.0 33.1	14.00 355	73.0 33.1
		10 § 250	73.0 33.1	14.00 355	73.0 33.1
		12.00 300	73.0 33.1	14.00 355	73.0 33.1
		14.00 350	73.0 33.1	14.00 355	73.0 33.1
# 18 450	10 250	15.00 381	91.0 41.3	15.00 381	91.0 41.3

Size	No. 50 Concentric Reducer		No. 51 Eccentric Reducer		
	Nominal Size Inches mm	E to E Inches mm	Approx. Weight Each Lbs. kg	E to E Inches mm	Approx. Weight Each Lbs. kg
# 18 450	12 300	15.00 381	91.0 41.3	15.00 381	91.0 41.3
		14.00 350	91.0 41.3	15.00 381	91.0 41.3
		16.00 400	91.0 41.3	15.00 381	91.0 41.3
# 20 500	10 250	20.00 508	110.0 49.9	20.00 508	177.0 80.3
		12.00 300	120.0 54.4	20.00 508	120.0 54.4
		14.00 350	149.0 67.9	20.00 508	149.0 67.9
		16.00 400	120.0 54.4	20.00 508	120.0 54.4
		18.00 450	136.0 61.7	20.00 508	136.0 61.7
		20.00 500	151.0 68.5	20.00 508	151.0 68.5
# 24 600	10 250	20.00 508	142.0 64.4	20.00 508	142.0 64.4
		12.00 300	150.0 68.0	20.00 508	150.0 68.0
		14.00 350	162.0 73.5	20.00 508	162.0 73.5
		16.00 400	162.0 73.5	20.00 508	162.0 73.5
		18.00 450	162.0 73.5	20.00 508	162.0 73.5
		20.00 500	190.0 86.2	20.00 508	190.0 86.2
14 - 60" 350 - 1500 mm		AGS For AGS fitting information, see publication 20.05			

+ Contact Victaulic for details.

* Available with male threaded small end No. 52.

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

IMPORTANT NOTE:

Steel eccentric reducers available through 30"/750mm, contact Victaulic for dimensions.

For 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 office.

§ Cast fitting available for JIS size. Contact Victaulic for details.

Grooved End Fittings

INSTALLATION

Reference should always be made to the I-100 Victaulic Field Installation Handbook for the product you are installing. Handbooks are included with each shipment of Victaulic products for complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

WARRANTY

Refer to the Warranty section of the current Price List or contact Victaulic for details.

NOTE

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.