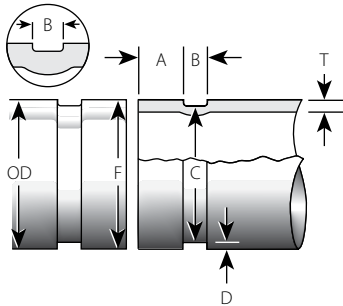


Standard Groove Specifications

STANDARD ROLL GROOVE SPECIFICATIONS FOR STEEL AND OTHER IPS PIPE †



Roll grooving removes no metal, cold forming a groove by the action of an upper male roll being forced into pipe as it is rotated by a lower female drive roll.

Roll groove configuration has rounded edges which reduce the available pipe end movement (expansion, contraction and deflection).

NOTE: Coatings applied to the interior surfaces, including bolt pad mating surfaces, of our grooved and bolted plain end couplings should not exceed 0.010"/0.25 mm. Also, the coating thickness applied to the gasket seating surface and within the groove on the pipe exterior should not exceed 0.010"/0.25 mm.

1	2		3		4		5		6	7	8
	Dimensions – Inches/millimeters										
	Nominal Size Inches/mm	Pipe Outside Dia. O.D.		Gasket Seat - A ±0.03 ±0.76	Grv. Width - B ±0.03 ±0.76	Groove Dia. – C		Groove Depth D (ref.)	Min. Allow. Wall Thk. T	Max. Allow. Flare Dia.	
Basic		Tolerance				Basic	Tol. +0.000 +0.00				
¾ 20	1.050 26.9	0.010 0.25	0.010 0.25	0.625 15.88	0.281 7.14	0.938 23.83	-0.015 -0.38	0.056 1.42	0.065 1.65	1.15 29.2	
1 25	1.315 33.7	0.013 0.33	0.013 0.33	0.625 15.88	0.281 7.14	1.190 30.23	-0.015 -0.38	0.063 1.60	0.065 1.65	1.43 36.3	
1¼ 32	1.660 42.4	0.016 0.41	0.016 0.41	0.625 15.88	0.281 7.14	1.535 38.99	-0.015 -0.38	0.063 1.60	0.065 1.65	1.77 45.0	
1½ 40	1.900 48.3	0.019 0.48	0.019 0.48	0.625 15.88	0.281 7.14	1.775 45.09	-0.015 -0.38	0.063 1.60	0.065 1.65	2.01 51.1	
2 50	2.375 60.3	0.024 0.61	0.024 0.61	0.625 15.88	0.344 8.74	2.250 57.15	-0.015 -0.38	0.063 1.60	0.065 1.65	2.48 63.0	
2½ 65	2.875 73.0	0.029 0.74	0.029 0.74	0.625 15.88	0.344 8.74	2.720 69.09	-0.018 -0.46	0.078 1.98	0.083 2.11	2.98 75.7	
76.1 mm	3.000 76.1	0.030 0.76	0.030 0.76	0.625 15.88	0.344 8.74	2.845 72.26	-0.018 -0.46	0.078 1.98	0.083 2.11	3.10 78.7	
3 80	3.500 88.9	0.035 0.89	0.031 0.79	0.625 15.88	0.344 8.74	3.344 84.94	-0.018 -0.46	0.078 1.98	0.083 2.11	3.60 91.4	
3½ 90	4.000 101.6	0.040 1.02	0.031 0.79	0.625 15.88	0.344 8.74	3.834 97.38	-0.020 -0.51	0.083 2.11	0.083 2.11	4.10 104.1	
4 100	4.500 114.3	0.045 1.14	0.031 0.79	0.625 15.88	0.344 8.74	4.334 110.08	-0.020 -0.51	0.083 2.11	0.083 2.11	4.60 116.8	
108.0 mm	4.250 108.0	0.043 1.09	0.031 0.79	0.625 15.88	0.344 8.74	4.084 103.73	-0.020 -0.51	0.083 2.11	0.083 2.11	4.35 110.5	
4½ 120	5.000 127.0	0.050 1.27	0.031 0.79	0.625 15.88	0.344 8.74	4.834 122.78	-0.020 -0.51	0.083 2.11	0.095 2.41	5.10 129.5	
133.0 mm	5.250 133.0	0.053 1.35	0.031 0.79	0.625 15.88	0.344 8.74	5.084 129.13	-0.020 -0.51	0.083 2.11	0.109 2.77	5.35 135.9	
139.7 mm	5.500 139.7	0.056 1.42	0.031 0.79	0.625 15.88	0.344 8.74	5.334 135.48	-0.020 -0.51	0.083 2.11	0.109 2.77	5.60 142.2	
5 125	5.563 141.3	0.056 1.42	0.031 0.79	0.625 15.88	0.344 8.74	5.395 137.03	-0.022 -0.56	0.084 2.13	0.109 2.77	5.66 143.8	
152.4 mm	6.000 152.4	0.056 1.42	0.031 0.79	0.625 15.88	0.344 8.74	5.830 148.08	-0.022 -0.56	0.085 2.16	0.109 2.77	6.10 154.9	
159.0 mm	6.250 159.0	0.063 1.60	0.031 0.79	0.625 15.88	0.344 8.74	6.032 153.21	-0.030 -0.76	0.109 2.77	0.109 2.77	6.35 161.3	

† On roll grooved pipe, Allowable Pipe End Separation and Deflection from Centerline will be ½ values listed for cut grooved pipe.

For 14 – 24"/350 – 600 mm roll groove dimensions, request publication 25.09.

For 30 – 42"/750 – 1050 mm roll groove dimensions contact Victaulic.

COLUMN 1: Nominal IPS Pipe size.

COLUMN 2: IPS outside diameter. The outside diameter of roll grooved pipe shall not vary more than the tolerance listed. For IPS pipe the maximum allowable tolerance from square cut ends is 0.030" for ¾ – 3½"; 0.045" for 4 – 6"; and 0.060" for sizes 8" O.D. and above measured from true square line.

COLUMN 3: Gasket seat. The pipe surface shall be free from indentations, roll marks, and projections from the end of the pipe to the groove, to provide a leak-tight seal for the gasket. All loose paint, scale, dirt, chips, grease and rust must be removed. It continues to be Victaulic's first recommendation that pipe be square cut. When using beveled pipe contact Victaulic for details. Square cut pipe **must** be used with FlushSeal® and EndSeal® gaskets. Gasket seat "A" is measured from the end of the pipe. IMPORTANT: Roll grooving of beveled end pipe may result in unacceptable pipe end flare. See column 8.

COLUMN 4: Groove width. Bottom of groove to be free of loose dirt, chips, rust and scale that may interfere with proper coupling assembly. Corners at bottom of groove must be radiused. For IPS steel pipe, .06R on ¾ – 1½", .08R on 2 – 6", .05R on 8" and up.

COLUMN 5: Groove outside diameter. The groove must be of uniform depth for the entire pipe circumference. Groove must be maintained within the "C" diameter tolerance listed.

COLUMN 6: Groove depth. For reference only. Groove must conform to the groove diameter "C" listed.

COLUMN 7: Minimum allowable wall thickness. This is the minimum wall thickness which may be roll grooved.

COLUMN 8: Maximum allowable pipe end flare diameter. Measured at the most extreme pipe end diameter square cut or beveled.

JOB/OWNER

System No. _____

Location _____

CONTRACTOR

Submitted By _____

Date _____

ENGINEER

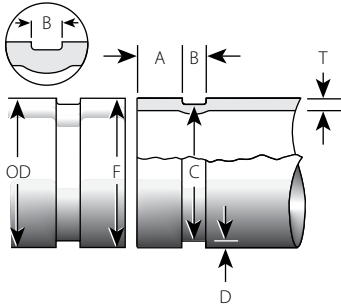
Spec Sect _____ Para _____

Approved _____

Date _____

Standard Groove Specifications

STANDARD ROLL GROOVE SPECIFICATIONS FOR STEEL AND OTHER IPS PIPE †



Roll grooving removes no metal, cold forming a groove by the action of an upper male roll being forced into pipe as it is rotated by a lower female drive roll.

Roll groove configuration has rounded edges which reduce the available pipe end movement (expansion, contraction and deflection).

NOTE: Coatings applied to the interior surfaces, including bolt pad mating surfaces, of our grooved and bolted plain end couplings should not exceed 0.010"/0.25 mm. Also, the coating thickness applied to the gasket seating surface and within the groove on the pipe exterior should not exceed 0.010"/0.25 mm.

1 Nominal Size Inches/mm	2 Dimensions – Inches/millimeters								7 Min. Allow. Wall Thk. T	8 Max. Allow. Flare Dia.
	Pipe Outside Dia. O.D.			Gasket Seat - A ±0.03 ±0.76	Grv. Width - B ±0.03 ±0.76	Groove Dia. - C		Groove Depth D (ref.)		
	Basic	Tolerance				Basic	Tol. +0.000 +0.00			
165.1 mm 6	6.500 165.1	0.063 1.60	0.031 0.79	0.625 15.88	0.344 8.74	6.330 160.78	-0.022 -0.56	0.085 2.16	0.109 2.77	6.60 170.9
203.2 mm 8	8.000 203.2	0.063 1.60	0.031 0.79	0.750 19.05	0.469 11.91	7.816 198.53	-0.025 -0.64	0.092 2.34	0.109 2.77	8.17 207.5
254.0 mm 10	10.000 254.0	0.063 1.60	0.031 0.79	0.750 19.05	0.469 11.91	9.812 249.23	-0.027 -0.69	0.094 2.39	0.134 3.40	10.17 258.3
304.8 mm 12	12.000 304.8	0.063 1.60	0.031 0.79	0.750 19.05	0.469 11.91	11.781 299.24	-0.030 -0.76	0.109 2.77	0.156 3.96	12.17 309.1
26 O.D. 650	26.00 660.4	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	25.50 647.7	-0.063 -1.60	0.250 6.35	0.250 6.35	26.20 665.5
28 O.D. 700	28.00 711.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	27.50 698.50	-0.063 -1.60	0.250 6.35	0.250 6.35	28.20 716.3
30 O.D. 750	30.00 762.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	29.50 749.30	-0.063 -1.60	0.250 6.35	0.250 6.35	30.20 767.1
32 O.D. 800	32.00 813.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	31.50 800.10	-0.063 -1.60	0.250 6.35	0.250 6.35	32.20 817.9
36 O.D. 900	36.00 914.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	35.50 901.70	-0.063 -1.60	0.250 6.35	0.250 6.35	36.20 919.5
42 O.D. 1050	42.00 1067.0	0.093 2.36	0.031 0.79	2.00 50.80	0.625 15.88	41.50 1054.10	-0.063 -1.60	0.250 6.35	0.250 6.35	42.20 1071.8

† On roll grooved pipe, Allowable Pipe End Separation and Deflection from Centerline will be ½ values listed for cut grooved pipe.

For 14 – 24"/350 – 600 mm roll groove dimensions, request publication 25.09.

For 30 – 42"/750 – 1050 mm roll groove dimensions contact Victaulic.

COLUMN 1: **Nominal IPS Pipe size.**

COLUMN 2: **IPS outside diameter.** The outside diameter of roll grooved pipe shall not vary more than the tolerance listed. For IPS pipe the maximum allowable tolerance from square cut ends is 0.030" for ¾ – 3 ½"; 0.045" for 4 – 6"; and 0.060" for sizes 8" O.D. and above measured from true square line.

COLUMN 3: **Gasket seat.** The pipe surface shall be free from indentations, roll marks, and projections from the end of the pipe to the groove, to provide a leak-tight seal for the gasket. All loose paint, scale, dirt, chips, grease and rust must be removed. It continues to be Victaulic's first recommendation that pipe be square cut. When using beveled pipe contact Victaulic for details. Square cut pipe **must** be used with FlushSeal® and EndSeal® gaskets. Gasket seat "A" is measured from the end of the pipe. IMPORTANT: Roll grooving of beveled end pipe may result in unacceptable pipe end flare. See column 8.

COLUMN 4: **Groove width.** Bottom of groove to be free of loose dirt, chips, rust and scale that may interfere with proper coupling assembly. Corners at bottom of groove must be radiused. For IPS steel pipe, .06R on ¾ – 1 ½", .08R on 2 – 6", .05R on 8" and up.

COLUMN 5: **Groove outside diameter.** The groove must be of uniform depth for the entire pipe circumference. Groove must be maintained within the "C" diameter tolerance listed.

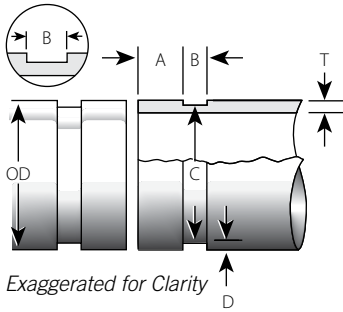
COLUMN 6: **Groove depth.** For reference only. Groove must conform to the groove diameter "C" listed.

COLUMN 7: **Minimum allowable wall thickness.** This is the minimum wall thickness which may be roll grooved.

COLUMN 8: **Maximum allowable pipe end flare diameter.** Measured at the most extreme pipe end diameter square cut or beveled.

Standard Groove Specifications

STANDARD CUT GROOVE SPECIFICATIONS FOR STEEL AND OTHER IPS PIPE



Cut grooving standard steel pipe removes less metal, to less depth, than threading, maintaining the desired integrity of the pipe.

1 Nominal Size Inches/mm	2 Pipe Outside Dia. O.D.		3 Tolerance		4 Gasket Seat - A ±0.03 ±0.76		5 Groove Dia. - C		6 Groove Depth D (ref.)	7 Min. Allow. Wall Thk. T
	Basic	+	-	±0.03 ±0.76	±0.03 ±0.76	Groove Dia. - C				
						Basic	Tol. +0.000 +0.00			
¾ 20	1.050 26.9	0.010 0.25	0.010 0.25	0.625 15.88	0.313 7.95	0.938 23.83	-0.015 -0.38	0.056 1.42	0.113 2.87	
1 25	1.315 33.7	0.013 0.33	0.013 0.33	0.625 15.88	0.313 7.95	1.190 30.23	-0.015 -0.38	0.063 1.60	0.133 3.38	
1 ¼ 32	1.660 42.4	0.016 0.41	0.016 0.41	0.625 15.88	0.313 7.95	1.535 38.99	-0.015 -0.38	0.063 1.60	0.140 3.56	
1 ½ 40	1.900 48.3	0.019 0.48	0.019 0.48	0.625 15.88	0.313 7.95	1.775 45.09	-0.015 -0.38	0.063 1.60	0.145 3.68	
2 50	2.375 60.3	0.024 0.61	0.024 0.61	0.625 15.88	0.313 7.95	2.250 57.15	-0.015 -0.38	0.063 1.60	0.154 3.91	
2 ½ 65	2.875 73.0	0.029 0.74	0.029 0.74	0.625 15.88	0.313 7.95	2.720 69.09	-0.018 -0.46	0.078 1.98	0.188 4.78	
76.1 mm	3.000 76.1	0.030 0.76	0.030 0.76	0.625 15.88	0.313 7.95	2.845 72.26	-0.018 -0.46	0.078 1.98	0.188 4.78	
3 80	3.500 88.9	0.035 0.89	0.031 0.79	0.625 15.88	0.313 7.95	3.344 84.94	-0.018 -0.46	0.078 1.98	0.188 4.78	
3 ½ 90	4.000 101.6	0.040 1.02	0.031 0.79	0.625 15.88	0.313 7.95	3.834 97.38	-0.020 -0.51	0.083 2.11	0.188 4.78	
4 100	4.500 114.3	0.045 1.14	0.031 0.79	0.625 15.88	0.375 9.53	4.334 110.08	-0.020 -0.51	0.083 2.11	0.203 5.16	
4 ½ 120	5.000 127.0	0.050 1.27	0.031 0.79	0.625 15.88	0.375 9.53	4.834 122.78	-0.020 -0.51	0.083 2.11	0.203 5.16	
139.7 mm	5.500 139.7	0.056 1.42	0.031 0.79	0.625 15.88	0.375 9.53	5.334 135.48	-0.020 -0.51	0.083 2.11	0.203 5.16	
5 125	5.563 141.3	0.056 1.42	0.031 0.79	0.625 15.88	0.375 9.53	5.395 137.03	-0.020 -0.51	0.084 2.13	0.203 5.16	
152.4 mm	6.000 152.4	0.056 1.42	0.031 0.79	0.625 15.88	0.375 9.53	5.830 148.08	-0.022 -0.56	0.085 2.16	0.219 5.56	
159 mm	6.250 159	0.063 1.60	0.031 0.79	0.625 15.88	0.375 9.53	6.032 153.2	-0.030 -0.76	0.109 2.77	0.249 6.30	
165.1 mm	6.500 165.1	0.063 1.60	0.031 0.79	0.625 15.88	0.375 9.53	6.330 160.78	-0.022 -0.56	0.085 2.16	0.219 5.56	
6 150	6.625 168.3	0.063 1.60	0.031 0.79	0.625 15.88	0.375 9.53	6.455 163.96	-0.022 -0.56	0.085 2.16	0.219 5.56	
203.2 mm	8.000 203.2	0.063 1.60	0.031 0.79	0.750 19.05	0.438 11.13	7.816 198.53	-0.022 -0.56	0.092 2.34	0.238 6.05	
8 200	8.625 219.1	0.063 1.60	0.031 0.79	0.750 19.05	0.438 11.13	8.441 214.40	-0.025 -0.64	0.092 2.34	0.238 6.05	
254.0 mm	10.000 254.0	0.063 1.60	0.031 0.79	0.750 19.05	0.500 12.70	9.812 249.23	-0.025 -0.64	0.094 2.39	0.250 6.35	
10 250	10.750 273.0	0.063 1.60	0.031 0.79	0.750 19.05	0.500 12.70	10.562 268.28	-0.027 -0.69	0.094 2.39	0.250 6.35	
304.8 mm	12.000 304.8	0.063 1.60	0.031 0.79	0.750 19.05	0.500 12.70	11.781 299.24	-0.027 -0.69	0.109 2.77	0.279 7.09	

* ⅝"/14 mm width groove is required in sizes 22 – 24"/550 – 600 mm in order to obtain the maximum allowable pipe end movement listed in Performance Data Charts. ½"/12 mm width groove will give ½ the maximum allowance shown for 22 – 24"/550 – 600 mm. For double groove tool bit information, contact Victaulic.

COLUMN 1: **Nominal IPS Pipe size.**

COLUMN 2: **IPS outside diameter.** The outside diameter of cut grooved pipe shall not vary more than the tolerance listed. For IPS pipe the maximum allowable tolerance from square cut ends to 0.030" for ¾ – 3 ½"; 0.045" for 4 – 6"; and 0.060" for sizes 8" O.D. and above measured from true square line.

COLUMN 3: **Gasket seat.** The pipe surface shall be free from indentations, roll marks, and projections from the end of the pipe to the groove, to provide a leak-tight seal for the gasket. All loose paint, scale, dirt, chips, grease and rust must be removed. It continues to be Victaulic's first recommendation that pipe be square cut. When using beveled pipe contact Victaulic for details. Square cut pipe **must** be used with FlushSeal® and EndSeal® gaskets. Gasket seat "A" is measured from the end of the pipe.

COLUMN 4: **Groove width.** The bottom of groove to be free of loose dirt, chips, rust and scale that may interfere with proper coupling assembly. Maximum permissible radius at bottom of groove is .015".

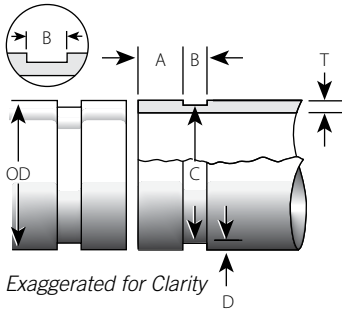
COLUMN 5: **Groove outside diameter.** The groove must be of uniform depth for the entire pipe circumference. Groove must be maintained within the "C" diameter tolerance listed.

COLUMN 6: **Groove depth.** For reference only. Groove must conform to the groove diameter "C" listed.

COLUMN 7: **Minimum allowable wall thickness.** This is the minimum wall thickness which may be cut grooved.

Standard Groove Specifications

STANDARD CUT GROOVE SPECIFICATIONS FOR STEEL AND OTHER IPS PIPE



Cut grooving standard steel pipe removes less metal, to less depth, than threading, maintaining the desired integrity of the pipe.

1 Nominal Size Inches/mm	2 Pipe Outside Dia. O.D.								3 Gasket Seat - A ±0.03 ±0.76	4 Groove Width - B ±0.03 ±0.76	5 Groove Dia. - C		6 Groove Depth D (ref.)	7 Min. Allow. Wall Thk. T
	Basic		Tolerance		Basic	Tol. +0.000 +0.00								
			+	-										
12 300	12.750 323.9	0.063 1.60	0.031 0.79	0.750 19.05	0.500 12.70	12.531 318.29	-0.030 -0.76	0.109 2.77	0.279 7.09					
14 350	14.000 355.6	0.063 1.60	0.031 0.79	0.938 23.83	0.500 12.70	13.781 350.04	-0.030 -0.76	0.109 2.77	0.281 7.14					
15 375	15.000 381.0	0.063 1.60	0.031 0.79	0.938 23.83	0.500 12.70	14.781 375.44	-0.030 -0.76	0.109 2.77	0.312 7.92					
16 400	16.000 406.4	0.063 1.60	0.031 0.79	0.938 23.83	0.500 12.70	15.781 400.84	-0.030 -0.76	0.109 2.77	0.312 7.92					
18 450	18.000 457.2	0.063 1.60	0.031 0.79	1.000 25.40	0.500 12.70	17.781 451.64	-0.030 -0.76	0.109 2.77	0.312 7.92					
20 500	20.000 508.0	0.063 1.60	0.031 0.79	1.000 25.40	0.500 12.70	19.781 502.44	-0.030 -0.76	0.109 2.77	0.312 7.92					
22 550	22.000 559.0	0.063 1.60	0.031 0.79	1.000 25.40	0.563* 14.30	21.656 550.06	-0.030 -0.76	0.172 4.37	0.375 9.53					
24 600	24.000 610.0	0.063 1.60	0.031 0.79	1.000 25.40	0.563* 14.30	23.656 600.86	-0.030 -0.76	0.172 4.37	0.375 9.53					
26 O.D. 650	26.00 660.4	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	25.50 647.7	-0.063 -1.60	0.250 6.35	0.625 15.88					
28 O.D. 700	28.00 711.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	27.50 698.50	-0.063 -1.60	0.250 6.35	0.625 15.88					
30 O.D. 750	30.00 762.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	29.50 749.30	-0.063 -1.60	0.250 6.35	0.625 15.88					
32 O.D. 800	32.00 813.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	31.50 800.10	-0.063 -1.60	0.250 6.35	0.625 15.88					
36 O.D. 900	36.00 914.0	0.093 2.36	0.031 0.79	1.75 44.45	0.625 15.88	35.50 901.70	-0.063 -1.60	0.250 6.35	0.625 15.88					
42 O.D.	42.00	0.093	0.031	2.00	0.625	41.50	-0.063	0.250	0.625					

* $\frac{3}{16}$ "/14 mm width groove is required in sizes 22 – 24"/550 – 600 mm in order to obtain the maximum allowable pipe end movement listed in Performance Data Charts. $\frac{1}{2}$ "/12 mm width groove will give $\frac{1}{2}$ the maximum allowance shown for 22 – 24"/550 – 600 mm. For double groove tool bit information, contact Victaulic.

COLUMN 1: **Nominal IPS Pipe size.**

COLUMN 2: **IPS outside diameter.** The outside diameter of cut grooved pipe shall not vary more than the tolerance listed. For IPS pipe the maximum allowable tolerance from square cut ends to 0.030" for $\frac{3}{4}$ – 3 $\frac{1}{2}$ "; 0.045" for 4 – 6"; and 0.060" for sizes 8" O.D. and above measured from true square line.

COLUMN 3: **Gasket seat.** The pipe surface shall be free from indentations, roll marks, and projections from the end of the pipe to the groove, to provide a leak-tight seal for the gasket. All loose paint, scale, dirt, chips, grease and rust must be removed. It continues to be Victaulic's first recommendation that pipe be square cut. When using beveled pipe contact Victaulic for details. Square cut pipe **must** be used with FlushSeal® and EndSeal® gaskets. Gasket seat "A" is measured from the end of the pipe.

COLUMN 4: **Groove width.** The bottom of groove to be free of loose dirt, chips, rust and scale that may interfere with proper coupling assembly. Maximum permissible radius at bottom of groove is .015".

COLUMN 5: **Groove outside diameter.** The groove must be of uniform depth for the entire pipe circumference. Groove must be maintained within the "C" diameter tolerance listed.

COLUMN 6: **Groove depth.** For reference only. Groove must conform to the groove diameter "C" listed.

COLUMN 7: **Minimum allowable wall thickness.** This is the minimum wall thickness which may be cut grooved.

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.

For complete contact information, visit www.victaulic.com

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