A234 WPB Mild Carbon Steel Pipe Fittings With SCH40 SCH80

Our Product Introduction

Basic Information

- Place of Origin: CHINA
- Brand Name: DEYE
- Certification: ISO9001:2015 PED
- Model Number: PF-TEE-C10
- Minimum Order Quantity: 10PCS
- Price: USD0.58-USD100 for seamless fittings
- Packaging Details: Ply-wooden cases, pallets, cartons
- Delivery Time: 5-8 days for stock items
- Payment Terms: L/C, T/T, D/P

Product Specification

- Standard: ASME ANSI DIN GOST MSS SP 44
- Material: A234WPB, WP11, WP22, WPC, P9, P11, A420WPL6
- Thickness: SGP, STD, SCH20, SCH30,SCH40, SCH60, SCH80, SCH160, XS, XXS
- Size: 1/2"-72"
- Types: Elbow, Tees, Reducers, Caps, Stub Ends, Caps
- Connection: Butt Welded BW Butt Welding
- Surface: Black Painting, Vanish Painting, Anti-rust Oil, Sandblastic
- Highlight: **Mild Carbon Steel Pipe Fittings**, **SCH40 Carbon Steel Pipe Fittings**, **A234 carbon pipe fittings**

More Images

Product Description

A234 WPB Mild Carbon Steel Pipe Fittings With SCH40 SCH80

Butt Welded Pipefittings is designed as per ASME B16.9 specification applied in industrial construction pipelines. Including elbow, tee, cross, cap, reducer, Stub ends and etc.Seamless buttweld pipe fittings are manufactured from seamless pipes and tube by hot or cold extrusion, forming and machining process. Seam welded buttweld fittings are produced from hot rolled Carbon steel pipes. Large size butt weld fittings are manufactured from hot rolled plates, formed into half shells or segments and then welded on the seams.welded Fittings shoulbe be made100% Radiographic Test

Product Information/Product Description/Basis Information/Specification

Production Standards

ASME B16.9	Factory-Made Wrought Fittings Buttwelding
ASME B16.25	Buttwelding Ends
ASME B16.28	Wrought Steel Short Radius Elbows and Buttwelding Returns
MSS SP-43	Wrought and Fabricated Butt-Welding Fittings for Low Pressure, Corrosion Resistant Applications
ASTM A403 – ASME SA403	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings

Detailed Specification sheet

Product Name	ANSI B16.9 Butt-Welding Carbon Steel Pipe Fitting seamless type or welded type
Types	LR 90deg Elbows, SR 90deg Elbow, 45deg LR elbow, 22.5LR Elbow, 80deg Returns, Bends, Reducing Elbow, straight Tee, Equal Tee, Con. Reducers, Ecc. reducers, Y tees, caps, Stub Ends, Long and short lap joint stub ends
Size	1/2"-72" Seamless Elbow (1/2″ 24″), ERW / Welded / Fabricated Elbow (1/2″ 72″)
Wall Thickness	SCH10,SCH20,SCH30,STD,SCH40,SCH60,XS,SCH80,SCH100,SCH120,SCH140,SCH160,XXS, DIN, SGP JIS thickness
Mat. Standard	ASTMA234,ASTM A420,ASTM A312, ANSI B16.9/B16.28/B16.25,ASME B16.9,
	JIS B2311-1997/2312, JIS B2311/B2312, DIN 2605-1/2617/2615,
	GB 12459-99,EN Standard etc.
Material Grade	Carbon Steel : A234 WPB, WP5, WP6, WP9,WP11,WP12, WP22, A420WPL6, WPL8, WP91
	12CrMo, 15Cr5Mo, 1Cr5Mo, 12Cr1MoV , WPHY 42, WPHY 46, WPHY 52, WPH 60, WPHY 65 & WPHY 70
	ST37.0,ST35.8,ST37.2,ST35.4/8,ST42,ST45,ST52,ST52.4
	STP G38,STP G42,STPT42,STB42,STS42,STPT49,STS49
	Stainless Steel304, 304L, 304H. 316, 316L, 316H, 321, 347, 347H, Duplex SS 2507, DSS2205, UNS31803 UNS32750 1.4301,1.4306, 1.4401, 1.4435, 1.4406, 1.4404, 1.4462, 1.4410, 1.4501
Surface	Black painting,varnish paint, anti rust oil, hot galvanized, cold galvanized, 3PE,etc.
Transport Package	Plastic film,wooden cases ,wooden pallet,or as per customers' requests

Technology/ Technical Data Sheet

Thickness List for pipefittings ANSI B16.9

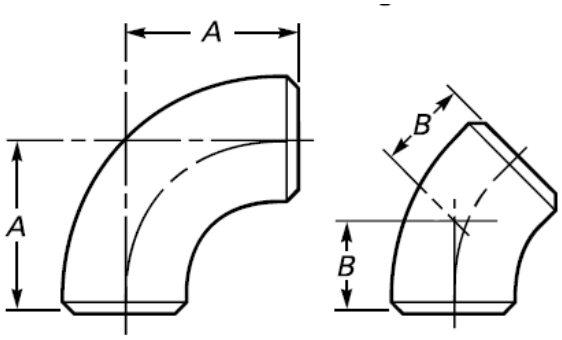
Unit: mm

NPS	Outside Dimeter	Different thickness with tolerance of +-12.5%									
		Sch20	Sch30	STD	**Sch40**	Sch60	**XS**	**Sch80**	Schl20	Sch160	**XXS**
1/8	10. 3	——	——	1. 73	1. 73	——	2. 41	2. 41	——	——	——
1/4	13. 7	—	—	2. 24	2. 24	—	3. 02	3. 02	—	—	—
3/8	17. 1	—	—	2. 31	2. 31	—	3. 20	3. 20	—	—	—
1/2	21. 3	——	——	2. 77	2. 77	——	3. 73	3. 73	——	4. 78	7. 47
3/4	26. 7	——	——	2. 87	2. 87	——	3. 91	3. 91	——	5. 56	7. 82
1	33.4	—	—	3. 38	3. 38	—	4. 55	4. 55	—	6. 35	9. 09
1 1/4	42. 2	—	—	3. 56	3. 56	—	4. 85	4. 85	—	6. 35	9. 70
1 1/2	48. 3	——	——	3. 68	3. 68	——	5. 08	5. 08	——	7. 14	10. 15
2	60. 3	——	——	3. 91	3. 91	——	5. 54	5. 54	——	8. 74	11. 07
2 1/2	73. 0	—	—	5. 16	5. 16	—	7. 01	7.01	—	9. 53	14. 02
3	88. 9	—	—	5. 49	5. 49	—	7. 62	7. 62	—	11. 13	15. 24
3 1/2	101. 6	——	——	5. 74	5. 74	——	8. 08	8. 08	——	——	——
4	114. 3	——	——	6.02	6. 02	——	8. 56	8. 56	11. 13	13. 49	17. 12
5	141. 3	—	—	6. 55	6. 55	—	9. 53	9. 53	12. 70	15. 88	19. 05
6	168. 3	—	—	7. 11	7. 11	—	10. 97	10. 97	14. 27	18. 26	21.95
8	219. 1	6. 35	7. 04	8. 18	8. 18	10. 31	12. 70	12. 70	18. 26	23. 01	22.23
10	273. 1	6. 35	7. 80	9. 27	9.27	12. 70	12. 70	15. 09	21. 44	28. 58	25. 40
12	323.9	6. 35	8. 38	9. 53	10. 31	14. 27	12. 70	17. 48	25. 40	33. 32	25. 40

14	355. 6	7. 92	9. 53	9. 53	11. 13	15. 09	12. 70	19. 05	27. 79	35. 71	—
16	406. 4	7. 92	9. 53	9. 53	12. 70	16. 66	12. 70	21. 44	30. 96	40. 49	——
18	457. 2	7. 92	11. 13	9. 53	14. 27	19. 05	12. 70	23. 83	34. 96	45. 24	——
20	508. 0	9. 53	12. 70	9. 53	15. 09	20. 62	12. 70	26. 19	38. 10	50. 01	—
22	558. 8	9. 53	12. 70	9. 53	—	22. 23	12. 70	28. 58	41. 28	53. 98	—
24	609. 6	9. 53	14. 27	9. 53	17. 48	24. 61	12. 70	30. 96	46. 02	59. 54	——
26	660.4	12. 70	——	9. 53	——	——	12. 70	——	——	——	——
28	711.2	12. 70	15. 88	9. 53	—	—	12. 70	—	—	—	—
30	762. 0	12. 70	15. 88	9. 53	—	—	12. 70	—	—	—	—
32	812. 8	12. 70	15. 88	9. 53	17. 48	——	12. 70	——	——	——	——
34	863. 6	12. 70	15. 88	9. 53	17. 48	——	12. 70	——	——	——	——
36	914. 4	12. 70	15. 88	9. 53	17. 48	—	12. 70	—	—	—	—
38	965.2	—	—	9. 53	—	—	12. 70	—	—	—	—
40	1016. 0	——	——	9. 53	——	——	12. 70	——	——	——	——
42	1066. 8	——	——	9. 53	——	——	12. 70	——	——	——	——
44	1117. 6	—	—	9. 53	—	—	12. 70	—	—	—	—
46	1168.4	—	—	9. 53	—	—	12. 70	—	—	—	—
48	1219. 2	—	—	9. 53	—	—	12. 70	—	—	—	—

Dimension List

Table 1 Dimensions of Long Radius Elbows

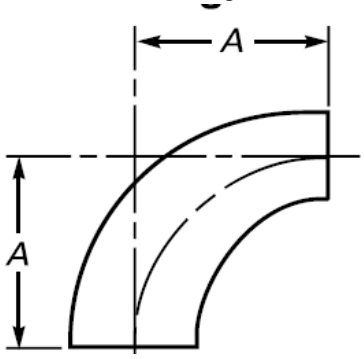


GENERAL NOTE: All dimensions are in millimeters.

Normial Pipe Size (NPS)	Outside Diameter at Bevel	90-deg Elbows, A	45-deg Elbows, B
1/2	21.3	38	16
3/4	26.7	38	19
1	33.4	38	22
1 1/4	42.2	48	25
1 1/2	48.3	57	29
2	60.3	76	35
2 1/2	73.0	95	44
3	88.9	114	51
3 1/2	101.6	133	57
4	114.3	152	64
5	141.3	190	79
6	168.3	229	95
8	219.1	305	127
10	273.0	381	159
12	323.8	457	190
14	355.6	533	222
16	406.4	610	254
18	457.0	686	286
20	508.0	762	318
22	559.0	838	343
24	610.0	914	381
26	660.0	991	406
28	711.0	1 067	438
30	762.0	1 143	470
32	813.0	1 219	502
34	864.0	1 295	533
36	914.0	1 372	565
38	965.0	1 448	600
40	1 016.0	1 524	632
42	1 067.0	1 600	660
44	1 118.0	1 676	695

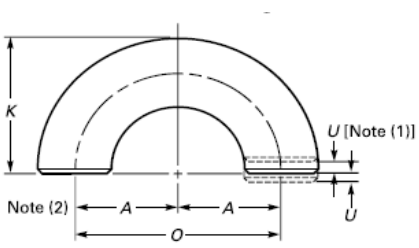
46	1 168.0	1 753	727
48	1 219.0	1 829	759

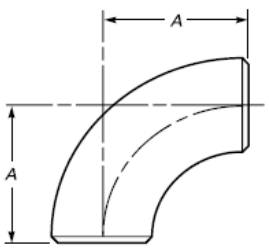
Table 2 Dimensions of Long Radius Reducing Elbow



Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center-to-End, A	Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center-to-End, A
	Large End	Small End			Large End	Small End	
2 x1-1/2"	60.3	48.3	76	10 x 8	273.0	219.1	381
2 x 1-1/4"	60.3	42.2	76	10 x 6	273.0	168.3	381
2 x 1"	60.3	33.4	76	10 x 5	273.0	141.3	381
2-1/2 x 2"	73.0	60.3	95	12 x 10	323.8	273.0	457
2-1/2X 1-1/2"	73.0	48.3	95	12 x 8	323.8	219.1	457
2-1/2 x 1-1/4"	73.0	42.2	95	12 x 6	323.8	168.3	457
3 x 2-1/2"	88.9	73.0	114	14 x 12	355.6	323.8	533
3x2"	88.9	60.3	114	14 X 10	355.6	273.0	533
3 x 1-1/2"	88.9	48.3	114	14 X 8	355.6	219.1	533
3-1/2x 3"	101.6	88.9	133	16 x 14	406.4	355.6	610
3-1/2 x 2-1/2"	101.6	73.0	133	16 x 12	406.4	323.8	610
3-1/2 x 2"	101.6	60.3	133	16 x 10	406.4	273.0	610
4 x 3-1/2"	114.3	101.6	152	18 x 16	457.0	406.4	686
4x3"	114.3	88.9	152	18 x 14	457.0	355.6	686
4 x 2-1/2"	114.3	73.0	152	18 x 12	457.0	323.8	686
4X2"	114.3	60.3	152	18 x 10	457.0	273.0	686
5x4"	141.3	114.3	190	20 x 18	508.0	457.0	762
5 x 3-1/2"	141.3	101.6	190	20 x 16	508.0	406.4	762
5X3"	141.3	88.9	190	20 x 14	508.0	355.6	762
5 x 2-1/2"	141.3	73.0	190	20 x 12	508.0	323.8	762
				20 x 10	508.0	273.0	762
6x5"	168.3	141.3	229				
6X4"	168.3	114.3	229	24 x 22	610.0	559.0	914
6 x 3-1/2"	168.3	101.6	229	24 x 20	610.0	508.0	914
6x3"	168.3	88.9	229	24 x 18	610.0	457.0	914
				24 x 16	610.0	406.4	914
8X6"	219.1	168.3	305	24 X 14	610.0	355.6	914
8X5"	219.1	141.3	305	24 X 12	610.0	323.8	914
8X4"	219.1	114.3	305	• • •	• - •	• . •	• . •

Table 3 Dimensions of Long Radius Returns Table 4 Dimensions of Short Radius Elbows

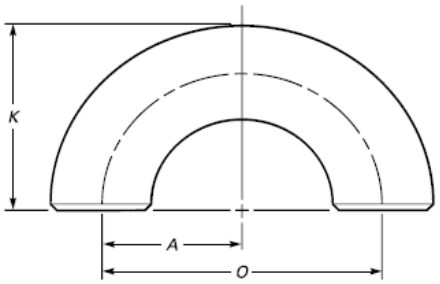


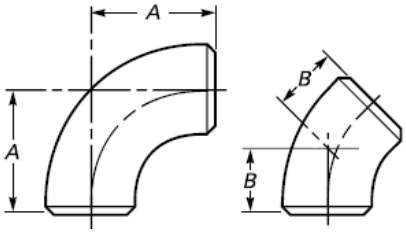


Nominal Pipe Size	Outside Diameter at	Center-to-Center	Back-to-Face	Nominal Pipe Size	Outside Diameter at	Center-to-End,
			K	(NPS)		A

NPS	Bevel				Bevel	
1/2	21.3	76	48			
3/4	26.7	76	51			
1	33.4	76	56	1	33.4	25
1 1/4	42.2	95	70	1 1/4	42.2	32
1 1/2	48.3	114	83	1 1/2	48.3	38
2	60.3	152	106	2	60.3	51
2 1/2	73.0	190	132	2 1/2	73.0	64
3	88.9	229	159	3	88.9	76
3 1/2	101.6	267	184	3 1/2	101.6	89
4	114.3	305	210	4	114.3	102
5	141.3	381	262	5	141.3	127
6	168.3	457	313	6	168.3	152
8	219.1	610	414	8	219.1	203
10	273.0	762	518	10	273.0	254
12	323.8	914	619	12	323.8	305
14	355.6	1 067	711	14	355.6	356
16	406.4	1 219	813	16	406.4	406
18	457.0	1 372	914	18	457.0	457
20	508.0	1 524	1 016	20	508.0	508
22	559.0	1 676	1 118	22	559.0	559
24	610.0	1 829	1 219	24	610.0	610

Table 5 Dimensions of Short Radius 180-deg Returns Table 6 Dimensions of 3D Elbow





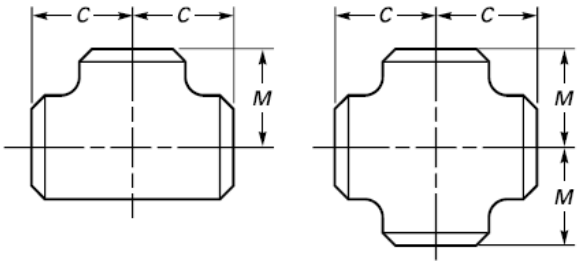
Nominal Pipe Size	Outside Diameter	Center-to-Center	Back-to-Face
(NPS)		0	K
1	33.4	51	41
1-1/4"	42.2	64	52
1-1/2"	48.3	76	62
2	60.3	102	81
2-1/2"	73.0	127	100
3	88.9	152	121
3-1/2"	101.6	178	140
4	114.3	203	159
5	141.3	254	197
6	168.3	305	237
8	219.1	406	313
10	273.0	508	391
12	323.8	610	467
14	355.6	711	533
16	406.4	813	610
18	457.0	914	686
20	508.0	1 016	762
22	559.0	1 118	838
24	610.0	1 219	914

GENERAL NOTES:All dimensions are in millimeters.

Pipe Size	Outside Diameter	90-deg Elbows	45-deg Elbows
(NPS)	at Bevel	A	B
3/4	26.7	57	24
1	33.4	76	31
1 1/4	42.2	95	39
1 1/2	48.3	114	47
2	60.3	152	63
2 1/2	73.0	190	79
3	88.9	229	95
3 1/2	101.6	267	111
4	114.3	305	127
5	141.3	381	157
6	168.3	457	189
8	219.1	610	252
10	273.0	762	316
12	323.8	914	378
14	355.6	1 067	441
16	406.4	1 219	505
18	457.0	1 372	568
20	508.0	1 524	632
22	559.0	1 676	694
24	610.0	1 829	757
26	660.0	1 981	821
28	7H.0	2 134	883
30	762.0	2 286	964
32	813.0	2 438	1 010
34	864.0	2 591	1 073
36	914.0	2 743	1 135
38	965.0	2 896	1 200
40	1 016.0	3 048	1 264
42	1 067.0	3 200	1 326
44	1 118.0	3 353	1 389
46	1 168.0	3 505	1 453

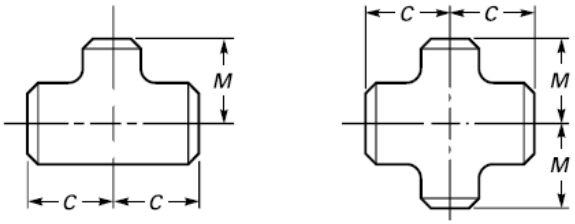
	48	1 219.0	3 658	1 516

Dimensions of Straight Tees and Crosses



Nominal Pipe Size (NPS)	Outside Diameter at Bevel	Center-to-End	
		Run, C	Outlet, M [Notes (1) and (2)]
72	21.3	25	25
%	26.7	29	29
1	33.4	38	38
174	42.2	48	48
i72	48.3	57	57
2	60.3	64	64
272	73.0	76	76
3	88.9	86	86
372	101.6	95	95
4	114.3	105	105
5	141.3	124	124
6	168.3	143	143
8	219.1	178	178
10	273.0	216	216
12	323.8	254	254
14	355.6	279	279
16	406.4	305	305
18	457.0	343	343
20	508.0	381	381
22	559.0	419	419
24	610.0	432	432
26	660.0	495	495
28	711.0	521	521
30	762.0	559	559
32	813.0	597	597
34	864.0	635	635
36	914.0	673	673
38	965.0	711	711
40	1 016.0	749	749
42	1 067.0	762	711
44	1 118.0	813	762
46	1 168.0	851	800
48	1 219.0	889	838

Dimensions of Reducing Outlet Tees and Reducing Outlet Crosses



Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center-to-End	
	Run	Outlet	Run, C	Outlet, M [Note (1)]		Run	Outlet	Run, C	Outlet, M [Note (1)]
1/2 x1/2 x3/8	21.3	17.3	25	25	4 x 4 x 3-1/2	114.3	101.6	105	102
1/2 x1/2 x1/4	21.3	13.7	25	25	4x4x3	114.3	88.9	105	98
3/4 x 3/4 x1/2	26.7	21.3	29	29	4 X 4 X 2-1/2	114.3	73.0	105	95
3/4 x 3/4 x3/8	26.7	17.3	29	29	4x4x2	114.3	60.3	105	89
1 X 1 X 3/4	33.4	26.7	38	38	4 x 4 x 1-1/2	114.3	48.3	105	86
1 x 1 x 1/2	33.4	21.3	38	38					

					5X5X4	141.3	114.3	124	117
1-1/4 x 1-1/4 x 1	42.2	33.4	48	48	5 X 5 X 3-1/2	141.3	101.6	124	114
1-1/4 x 1-1/4 x3/4	42.2	26.7	48	48	5X5X3	141.3	88.9	124	111
1-1/4 x 1-1/4 x1/2	42.2	21.3	48	48	5 X 5 X 2-1/2	141.3	73.0	124	108
					5X5X2	141.3	60.3	124	105
1-1/2 x1-1/2 x 1-1/4	48.3	42.2	57	57	6X6X5	168.3	141.3	143	137
1-1/2 x1-1/2 x 1	48.3	33.4	57	57	6x6x4	168.3	114.3	143	130
1-1/2 x1-1/2 x3/4	48.3	26.7	57	57	6 x 6 x 3-1/2	168.3	101.6	143	127
1-1/2 x1-1/2 x 1/2	48.3	21.3	57	57	6x6x3	168.3	88.9	143	124
					6 x 6 x 2-1/2	168.3	73.0	143	121
2 x 2 x 1-1/2	60.3	48.3	64	60					
2 x 2 x 1-1/4	60.3	42.2	64	57	8x8x6	219.1	168.3	178	168
2 X 2 X 1	60.3	33.4	64	51	8x8x5	219.1	141.3	178	162
2 x 2 x 3/4	60.3	26.7	64	44	8X8X4	219.1	114.3	178	156
					8 x 8 x 3-1/2	219.1	101.6	178	152
2-1/2 X 2-1/2 X 2	73.0	60.3	76	70					
2-1/2 X 2-1/2 X 1-1/2	73.0	48.3	76	67	10 x 10 x 8	273.0	219.1	216	203
2-1/2 X 2-1/2 X 1-1/4	73.0	42.2	76	64	10 x 10 x 6	273.0	168.3	216	194
2-1/2 X 2-1/2 X 1	73.0	33.4	76	57	10 x 10 x 5	273.0	141.3	216	191
					10 x 10 x 4	273.0	114.3	216	184
3 X 3 X 2-1/2	88.9	73.0	86	83	12 x 12 x 10	323.8	273.0	254	241
3x3x2	88.9	60.3	86	76	12 x 12 x 8	323.8	219.1	254	229
3 x 3 x 1-1/2	88.9	48.3	86	73	12 X 12 X 6	323.8	168.3	254	219
3 x 3 x 1-1/4	88.9	42.2	86	70	12 x 12 x 5	323.8	141.3	254	216
3-1/2 x 3-1/2 x 3	101.6	88.9	95	92	14 X 14 X 12	355.6	323.8	279	270
3-1/2 x 3-1/2 x 2-1/2	101.6	73.0	95	89	14 X 14 X 10	355.6	273.0	279	257
3-1/2 x 3-1/2 x 2	101.6	60.3	95	83	14 X 14 X 8	355.6	219.1	279	248
3-1/2 x 3-1/2 x 1-1/2	101.6	48.3	95	79	14 x 14 x 6	355.6	168.3	279	238

Size (NPS)	Outside Diameter at Bevel		Center to Ends		Nominal Pipe Size (NPS)	Outside Diameter at Bevel		Center to Ends	
	Run	Outlet	Run, C	Outlet, M [Note (1)]		Run	Outlet	Run, C	Outlet, M [Note (1)]
16 x 14	406.4	355.6	305	305	28 X 28 X 26	711	660.0	521	521
16 x 12	406.4	323.8	305	295	28 X 28 X 24	711	610.0	521	508
16 x 10	406.4	273.0	305	283	28 x 28 x 22	711	559.0	521	495
16 x 8	406.4	219.1	305	273	28 x 28 x 20	711	508.0	521	483
16 x 6	406.4	168.3	305	264					
					28 X 28 X 18	711	457.0	521	470
18 x 16	457.0	406.4	343	330	28 X 28 X 16	711	406.4	521	457
18 x 14	457.0	355.6	343	330	28 x 28 x 14	711	355.6	521	457
18 X 12	457.0	323.8	343	321	28 X 28 X 12	711	323.8	521	448
18 x 10	457.0	273.0	343	308					
18 X 8	457.0	219.1	343	298	30 X 30 X 28	762	711.0	559	546
					30 x 30 x 26	762	660.0	559	546
20 X 18	508.0	457.0	381	368	30 x 30 x 24	762	610.0	559	533
20 x 16	508.0	406.4	381	356	30 x 30 x 22	762	559.0	559	521
20 x 14	508.0	355.6	381	356	30 x 30 x 20	762	508.0	559	508
20 X 12	508.0	323.8	381	346					
20 X 10	508.0	273.0	381	333	30 x 30 x 18	762	457.0	559	495
20 X 8	508.0	219.1	381	324	30 x 30 x 16	762	406.4	559	483

					30 x 30 x 14	762	355.6	559	483
22 X 20	559.0	508.0	419	406	30 x 30 x 12	762	323.8	559	473
22 x 18	559.0	457.0	419	394	30 x 30 x 10	762	273.0	559	460
22 x 16	559.0	406.4	419	381					
22 X 14	559.0	355.6	419	381	32 x 32 x 30	813	762.0	597	584
22 X 12	559.0	323.8	419	371	32 X 32 X 28	813	711.0	597	572
22 X 10	559.0	273.0	419	359	32 X 32 X 26	813	660.0	597	572
					32 x 32 x 24	813	610.0	597	559
24 X 22	610.0	559.0	432	432					
24 X 20	610.0	508.0	432	432	32 X 32 X 22	813	559.0	597	546
24 X 18	610.0	457.0	432	419	32 X 32 X 20	813	508.0	597	533
					32 X 32 X 18	813	457.0	597	521
24 X 16	610.0	406.4	432	406	32 x 32 x 16	813	406.4	597	508
24 X 14	610.0	355.6	432	406	32 X 32 X 14	813	355.6	597	508
24 X 12	610.0	323.8	432	397					
24 x 10	610.0	273.0	432	384	34 x 34 x 32	864	813.0	635	622
					34 x 34 x 30	864	762.0	635	610
26 X 24	660.0	610.0	495	483	34 x 34 x 28	864	711.0	635	597
26 x 22	660.0	559.0	495	470	34 x 34 x 26	864	660.0	635	597
26 X 20	660.0	508.0	495	457					
					34 x 34 x 24	864	610.0	635	584
26 x 18	660.0	457.0	495	444	34 x 34 x 22	864	559.0	635	572
26 X 16	660.0	406.4	495	432	34 x 34 x 20	864	508.0	635	559
26 x 14	660.0	355.6	495	432	34 x 34 x 18	864	457.0	635	546
26 X 12	660.0	323.8	495	422	34 x 34 x 16	864	406.4	635	533

Application/Usage

Low and middle pressure fluid pipeline, boiler, petroleum and natural gas industry, drilling, chemical industry, electric industry, shipbuilding, fertilizer equipment and pipeline, structure, petrochemical, pharmaceutical industries, etc.

Material Specification

Designation: A 234/A 234M – 05 Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service

This specification covers wrought carbon steel and alloy steel fittings of seamless and welded construction covered by the latest revision of ASME B16.9, B16.11, MSS SP-79, and MSS SP-95. These fittings are for use in pressure piping and in pressure vessel fabrication for service at moderate and elevated temperatures. Fittings differing from these ASME and MSS standards shall be furnished in accordance with Supplementary Requirement S58 of Specification A 960.

Chemical Requirements (Composition, %)

Grade and Material	C	Mn	P	S	Silicon	Chromium	Molybdenum	Nickel	Copper
WPB[B,C,D,E,F]	0.30 max	0.29–1.06	0.05	0.058	0.10 min	0.40 max	0.15 max	0.40 max	0.40 max
WPC[C,D,E,F]	0.35 max	0.29–1.06	0.05	0.058	0.10 min	0.40 max	0.15 max	0.40 max	0.40 max
WP1	0.28 max	0.30–0.90	0.045	0.045	0.10–0.50	. . .	0.44–0.65		
WP12 CL1,	0.05–0.20	0.30–0.80	0.045	0.045	0.60 max	0.80–1.25	0.44–0.65		
WP12 CL2									
WP11 CL1	0.05–0.15	0.30–0.60	0.03	0.03	0.50–1.00	1.00–1.50	0.44–0.65		
WP11 CL2,	0.05–0.20	0.30–0.80	0.04	0.04	0.50–1.00	1.00–1.50	0.44–0.65		
WP11 CL3									

WP22 CL1,	0.05–0.15	0.30–0.60	0.04	0.04	0.50 max	1.90–2.60	0.87–1.13		
WP22 CL3									
WP5 CL1,	0.15 max	0.30–0.60	0.04	0.03	0.50 max	4.0–6.0	0.44–0.65		
WP5 CL3									
WP9 CL1,	0.15 max	0.30–0.60	0.03	0.03	1.00 max	8.0–10.0	0.90–1.10		
WP9 CL3 WPR	0.20 max	0.40–1.06	0.045	0.05	. . .	. . .	. . .	1.60–2.24	0.75–1.25
WP91	0.08–0.12	0.30–0.60	0.02	0.01	0.20–0.50	8.0–9.5	0.85–1.05	0.40 max	. . .
WP911	0.09–0.13	0.30–0.60	0.02	0.01	0.10–0.50	8.5–9.5	0.90–1.10	0.40 max	. .

Mechanical Performance Requirements

		WPC,		WP11 CL1,		WP11 CL3,			
Grade and Marking Symbol	WPB	WP11 CL2, WP12 CL2	WP1	WP22 CL1, WP5 CL1	WPR	WP22 CL3 WP5 CL3	WP91	WP911	WP12 CL1
				WP9 CL1		WP9 CL3			
Tensile strength, range ksi [MPa]	60–85	70–95	55–80	60–85	63–88	75–100	85–110	90–120	60–85
	[415–585]	[485–655]	[380–550]	[415–585]	[435–605]	[520–690]	[585–760]	[620–840]	[415–585]
Yield strength, min, ksi [MPa]	35 [240]	40 [275]	30 [205]	30 [205]	46 [315]	45 [310]	60 [415]	64 [440]	32 [220]
(0.2 % offset or 0.5 % extension-under-load)									

Production Process

Elbow Marking process and reequipment

ELBOW Shaper Machining

Tee form Process and equipment

Reducer Form process and equipment

Sand blasted process and equipment

Beveling Process


Painting Shop

Package For shipment




Reference Standards

ASME B16.9 Specification for Butt Welded Fittings
ASME B16.9 specification is designed for butt welded fittings applied in industrial construction pipelines. Including elbow, tee, cross, cap, reducer, and etc.

Standard Scope
The standard includes specifications of NPS 1/2 to NPS 48 (DN15-DN1200) factory-made wrought butt-welded pipe fittings overall dimensions, tolerances ratings, test methods and markings.

Special Fittings
Special fittings here refer to special sizes, forms and tolerances that agreed between buyer and manufacturer.

Fabricated Fittings
Fabricated laterals and other fittings by circumferential or intersection welds are considered pipe fabrication could not apply this standard.

Units under ASME B16.9 shall be stated in both SI (Metric) and U.S. Customary units. Designation for size is NPS.

Reference Standards
It is not considered practical to identify the specific edition of each standard and specification in the individual references. A product made comply with a prior edition of referenced standards and in all other respects conforming to this standard will be considered complied.

ASME B16.5: Pipe Flanges and Flanged Fittings: NPS 1⁄2 Through NPS 24 Metric/Inch Standard
ASME B16.25: For Buttwelding Ends
ASME B31: Code for Pressure Piping
ASME B31.3: Process Piping
ASME B36.10M, Welded and Seamless Wrought Steel Pipe
ASME B36.19M, Stainless Steel Pipe
ASME Boiler and Pressure Vessel Code
ASTM A234/A234M-17, Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
ASTM A403/A403M-16, Specification for Wrought Austenitic Stainless Steel Piping Fittings
ASTM A420/A420M-16, Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for LowTemperature Service
ASTM A815/A815M-14e1, Specification for Wrought Ferritic, Ferritic/Austenitic and Martensitic Stainless Steel Piping Fittings
ASTM A960/A960M-16a, Specification for Common Requirements for Wrought Steel Piping Fittings
ASTM E29-13, Practice for Using Significant Digits in Test Data to Determine Conformance With Specifications
ASTM B361-16, ASTM B363-14, ASTM B366/B366M-17: For other material metals. (Aluminum, Titanium, Nickel, and alloy).

FAQ/ Customer Question and Answers

Q: Customer asked for butt weld fittings in A105:
A: Most common carbon steel buttweld fitting material is A234WPB. It is equivalent to A105 flanges, however there is no such thing as an A105 or A106 butt weld fitting A106 Gr.B is for pipe grade. The A234WPB fittings are made from A106GR.B pipes. A105 is a material from Bar forged to be High pressure Fittings or Flange

Q: Customer requests “Normalized” butt weld fittings:
A: This is also a misconception since flanges are available in A105 and A105 N, where N stands for normalized. However, there is no such thing as A234WPBN. Manufactures normalize their butt weld fittings was considered that normalized heat treating process was done, Especially for the elbows and Tees Customer needing “normalized” butt weld fittings should request WPL6 fittings which are high yield and are normalized as a standard procedure.

Q: Customer forgets to mention pipe schedule:
A: Buttweld fittings are sold as per pipe size but pipe schedule must be specified to match the ID of the fitting to the ID of the pipe. If no schedule is mentioned, we will assume a standard wall is requested.

Q; Customer forgets to mention welded or seamless butt weld fitting:
A: Butt weld fittings are available in both welded and seamless configuration. A seamless butt weld carbon steel or stainless-steel fitting is made of seamless pipe and is generally more expensive. Seamless pipe fittings are NOT common in sizes bigger than 12”. Welded pipe fittings are made of ERW welded carbon steel or stainless-steel pipe. They are available in sizes ½” to 72” and are more affordable than seamless fittings.

Q: What does Short Radius (SR) or Long Radius (LR) means?
A: You will often hear SR45 elbow or LR45 elbow. The 45 or 90 refers to the angle of the bend for buttweld fitting to change the direction of flow.A long radius elbow (LR 90 Elbow or LR 45 elbow) will have a pipe bend that will be 1.5 times the size of the pipe. So, a 6 inch LR 90 has bending radius that is 1.5 x nominal pipe size. A short radius elbow (SR45 or SR90) has a pipe bend that is equal to the size of the fitting, so a 6” SR 45 has a bending radius that is 6” nominal pipe size.

Q: What is a 3R or 3D elbow pipe fitting?
A: First, the terms 3R or 3D are used synonymously. A 3R butt weld elbow has a bending radius that is 3 times the nominal pipe size. A 3R elbow is equal to 3D Elbows

DEYE PIPING COMPANY Service

1. Technical support
2. Raw Material Quality control.
3. Inspection during the production time.
4. Final Test includes Surface, Dimension, PT Test, RT test, ultrasonic Test
5. Test Report each shipment
4. Flexible Delivery terms. EXW FOB CIF CFR DDP DDU
5. Flexible payment Ways: LC. TT. DP
6. Customized Package includes Logo. Cases Dimension.
7. 18 months quality Guarantee time.
9. Free replacement by air if any error founded
10. 24 hours to Feedback your questions

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