

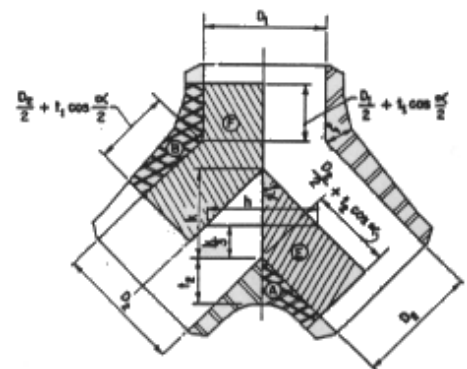
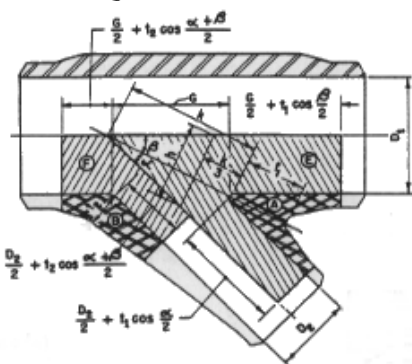
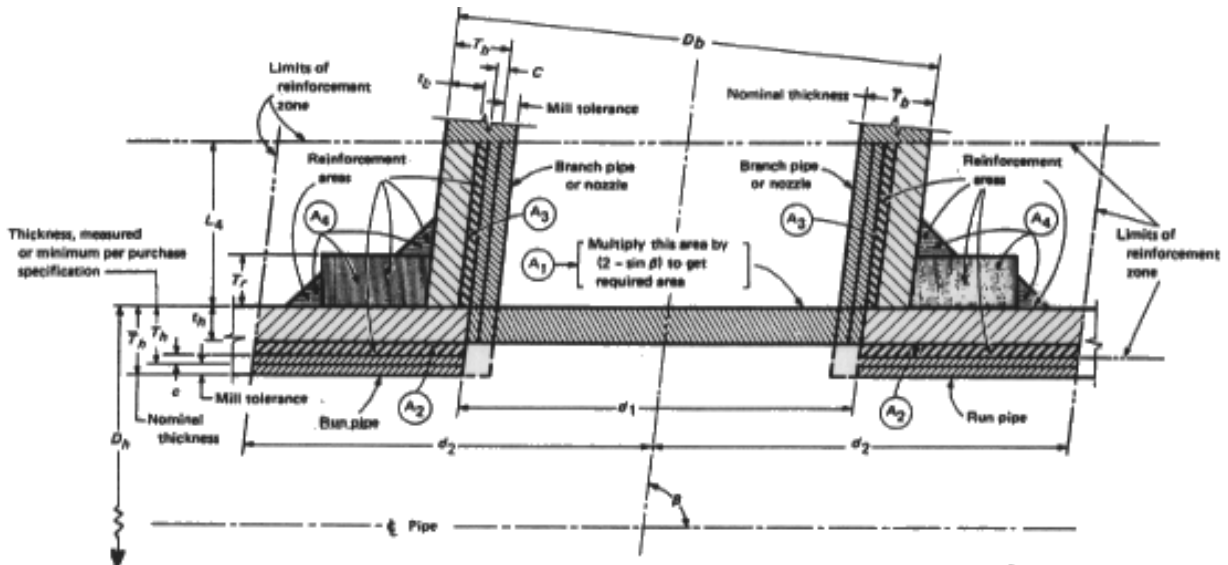


Lateral Wye Design Information and End Options

The intersection of the branch into the main produces an elliptical hole (oval). The hoop of the pipe main is more severely breached than a line tee with its circular hole. The derating of the wye is based on geometry and the stress intensification at the intersection joint.

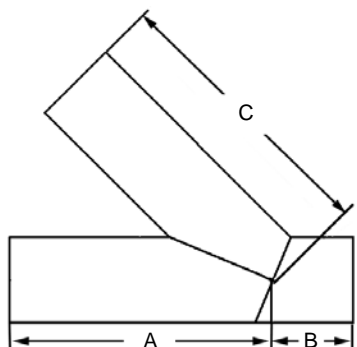
As the angle goes from a 90° tee to a 60° to 45° to 30° wye, the derating factor becomes more severe as the loss in “hoop” increases accordingly. The loss in pressure capacity or the reinforcement necessary to keep full pressure rating is determined in ASME B31.3, Paragraph #304.3.3, which includes the “beta” angle of the wye. The pressure capacity of an unreinforced 45° lateral wye using a 2:1 safety factor is about 45% of the pressure rating of the straight pipe used for its fabrication.

End options available are whatever may be required for the project, such as butt-end, flanged, DIMJA, etc.



NOMENCLATURE

- | | | |
|--|---|---|
| $S_A \geq \frac{p(E + \frac{1}{2}A)}{A}$ $S_B \geq \frac{p(F + \frac{1}{2}B)}{A}$ <p>45° LATERAL WYE</p> | <ul style="list-style-type: none"> A, B - METAL AREA, (sq. in.) D1, D2 - INSIDE DIAMETER OF FITTINGS, (in.) E, F - INDICATED PRESSURE AREA, (sq. in.) G, h, k - INDICATED LENGTHS, (in.) P - DESIGN PRESSURE, AT DESIGN TEMPERATURE, (psi) S_A, S_B - ALLOWABLE STRESS AT DESIGN TEMPERATURE, (psi) t1, t2 - INDICATED METAL THICKNESS, (in.) t3 - AVERAGE METAL, THICKNESS OF FLAT SURFACE, (in.) αβ - INDICATED ANGLES | $S_A \geq \frac{p(E + \frac{1}{2}A)}{A}$ $S_B \geq \frac{p(F + \frac{1}{2}B)}{A}$ <p>45° TRUE WYE</p> |
|--|---|---|



IPS Fabricated 45° Lateral Wye Unreinforced

(Dimensions in Inches)

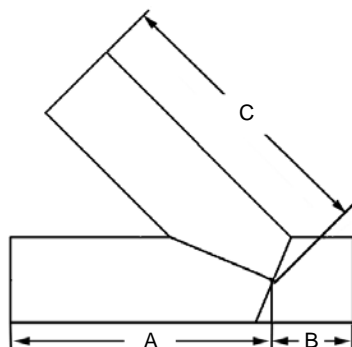
IPS Size	A	B	C	SDR	WPR (psi)	Weight (lbs)
2"	18.0	6.0	14.0	7	200	3
				9	160	2
				11	128	2
3"	18.0	7.0	14.0	7	200	7
				9	160	6
				11	128	5
4"	22.0	7.0	22.0	7	200	16
				9	160	14
				11	128	12
6"	28.0	7.0	28.0	7	200	42
				9	160	33
				11	128	30
8"	30.0	8.0	30.0	7	200	74
				9	160	59
				11	128	51
10"	31.0	8.0	31.0	7	200	119
				9	160	98
				11	128	79
				17	80	55
12"	33.0	11.0	33.0	7	200	181
				9	160	148
				11	128	124
				17	80	84
14"	42.0	11.0	42.0	7	200	271
				9	160	217
				11	128	181
				17	80	123
16"	44.0	13.0	44.0	7	200	383
				9	160	311
				11	128	258
				17	80	174
18"	57.0	14.0	57.0	7	200	605
				9	160	493
				11	128	415
				17	80	280

• IPS 45° Lateral Wyes Continued Next Page •

Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

WPR represents the long term hydrostatic pressure capacity of the fabricated wye with a 1.5:1 safety factor. To achieve a 2:1 safety factor like that of the straight pipe the WPR will be reduced.



IPS Fabricated 45° Lateral Wye Unreinforced (continued) (Dimensions in Inches)

IPS Size	A	B	C	SDR	WPR (psi)	Weight (lbs)
20"	65.0	14.0	65.0	7	200	838
				9	160	675
				11	128	563
				17	80	382
22"	67.0	14.0	67.0	7	200	1044
				9	160	845
				11	128	710
				17	80	477
24"	69.0	15.0	69.0	7	200	1272
				9	160	1033
				11	128	861
				17	80	583
26"	70.0	17.0	70.0	9	100	1272
				11	80	1071
				17	50	723
28"	71.0	18.0	71.0	9	100	1495
				11	80	1256
				17	50	832
30"	90.0	18.0	90.0	11	80	1759
				17	50	1191
32"	91.0	19.0	91.0	11	80	2030
				17	50	1365
34"	93.0	20.0	93.0	11	80	2344
				17	50	1575
36"	95.0	20.0	95.0	11	80	2683
				17	50	1807
42"	109.0	25.0	109.0	17	50	2835
				21	40	2310
48"	113.0	26.0	113.0	21	40	3045
				26	32	2479
54"	118.0	29.0	118.0	26	32	3412
				32.5	25	2742

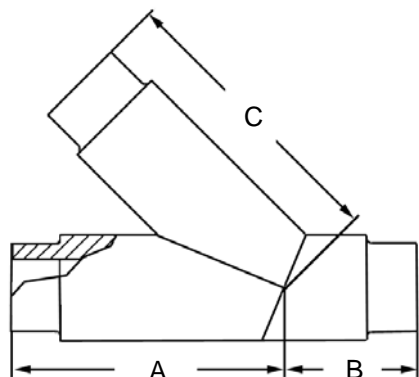
Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

WPR represents the long term hydrostatic pressure capacity of the fabricated wye with a 1.5:1 safety factor. To achieve a 2:1 safety factor like that of the straight pipe the WPR will be reduced.



IPS HDPE PE Reinforced 45° Lateral Wye Fully Pressure Rated With Full Flow ID (Dimensions in Inches)

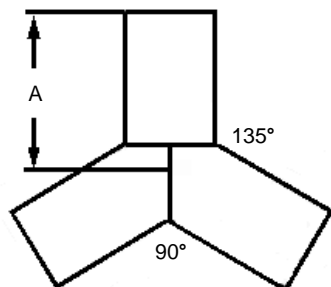


These fittings offer a full pressure rating without restricting the ID flow or lowering the fitting WPR design factor!

IPS Nominal Size	Feedstock OD	A	B	C	SDR	WPR (psi)
4"	6.625	28.0	13.0	28.0	9	200
					11	160
					17	100
6"	8.625	30.0	14.0	30.0	9	200
					11	160
					17	100
8"	10.750	31.0	14.5	31.0	9	200
					11	160
					17	100
10"	12.750	33.0	17.5	33.0	9	200
					11	160
					17	100
12"	14.000	42.0	19.0	42.0	9	200
					11	160
					17	100
14"	16.000	44.0	21.0	44.0	9	200
					11	160
					17	100
16"	18.000	57.0	22.0	57.0	9	200
					11	160
					17	100
18"	20.000	65.0	22.0	65.0	9	200
					11	160
					17	100
20"	22.000	67.0	22.0	67.0	9	200
					11	160
					17	100
22"	24.000	69.0	23.0	69.0	9	200
					11	160
					17	100
24"	26.000	70.0	23.0	70.0	9	200
					11	160
					17	100

WPR represents the long term hydrostatic pressure capacity of the Reinforced Fabricated Wye with a 2:1 design factor.

IPPI's HDPE Design-Flow® Pipe Fittings are designed to meet AWWA C901/C906 fitting requirements and are manufactured from PPI and NSF listed resins in accordance with the material specifications listed in ASTM D3350 with a cell classification of 345464C or better. Suitable for butt welding to pipe manufactured to ASTM D2513, D3035, F714 with similar resins.



IPS Fabricated True Equal Wye Unreinforced

(Dimensions in Inches)

IPS Size	A	SDR	WPR (psi)	Weight (lbs)
4"	9.0	11	128	6
6"	12.0	11	128	17
8"	16.0	11	128	36
10"	20.0	11	128	69
12"	24.0	11	128	115
14"	28.0	11	80	161
16"	32.0	11	80	246
18"	36.0	11	80	348
20"	40.0	11	80	475
22"	44.0	11	80	631
24"	48.0	11	80	816

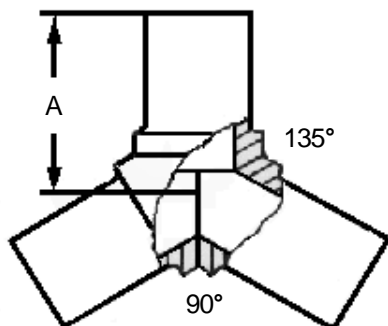
Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

WPR represents the long term hydrostatic pressure capacity of the fabricated tee with a 1.5:1 safety factor. To achieve a 2:1 safety factor like that of the straight pipe the WPR will be reduced.



IPS HDPE PE Reinforced True Equal Wye Fully Pressure Rated With Full Flow ID (Dimensions in Inches)

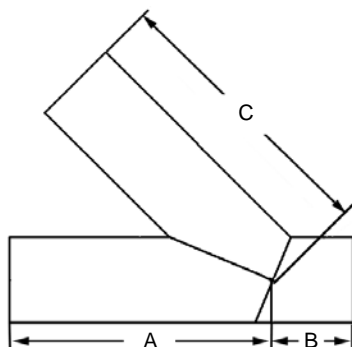


These fittings offer a full pressure rating without restricting the ID flow or lowering the fitting WPR design factor!

IPS Nominal Size	Feedstock OD	A	SDR	WPR (psi)
4"	6.625	12.0	9	200
			11	160
			17	100
6"	8.625	16.0	9	200
			11	160
			17	100
8"	10.750	20.0	9	200
			11	160
			17	100
10"	12.750	24.0	9	200
			11	160
			17	100
12"	14.000	28.0	9	200
			11	160
			17	100
14"	16.000	32.0	9	200
			11	160
			17	100
16"	20.000	40.0	9	200
			11	160
			17	100
18"	22.000	44.0	9	200
			11	160
			17	100
20"	24.000	48.0	9	200
			11	160
			17	100
22"	26.000	48.0	11	160
			17	100
24"	28.000	48.0	11	160
			17	100

WPR represents the long term hydrostatic pressure capacity of the Reinforced Fabricated Wye with a 2:1 design factor.

IPPI's HDPE Design-Flow® Pipe Fittings are designed to meet AWWA C901/C906 fitting requirements and are manufactured from PPI and NSF listed resins in accordance with the material specifications listed in ASTM D3350 with a cell classification of 345464C or better. Suitable for butt welding to pipe manufactured to ASTM D2513, D3035, F714 with similar resins.



DIPS Fabricated 45° Lateral Wye Unreinforced

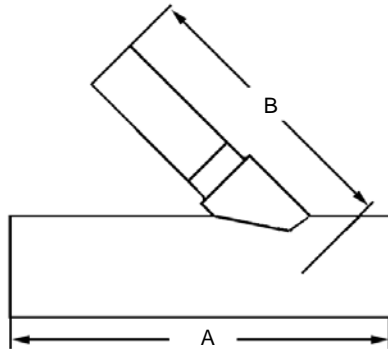
(Dimensions in Inches)

DIPS Size	A	B	C	SDR	WPR (psi)	Weight (lbs)
4"	22.0	7.0	22.0	9	160	16
				11	128	11
				17	80	7
6"	28.0	7.0	28.0	9	160	35
				11	128	29
				17	80	17
8"	30.0	8.0	30.0	9	160	60
				11	128	54
				17	80	38
10"	31.0	8.0	31.0	9	160	97
				11	128	78
				17	80	56
12"	33.0	11.0	33.0	9	160	155
				11	128	124
				17	80	87
14"	42.0	11.0	42.0	9	160	241
				11	128	203
				17	80	135
16"	44.0	13.0	44.0	9	160	334
				11	128	286
				17	80	191
18"	57.0	14.0	57.0	9	160	542
				11	128	442
				17	80	306
20"	65.0	14.0	65.0	9	160	747
				11	128	609
				17	80	414
24"	69.0	15.0	69.0	9	160	1096
				11	128	926
				17	80	622
30"	91.0	19.0	91.0	11	80	1840
				17	50	1238

Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.

WPR represents the long term hydrostatic pressure capacity of the fabricated wye with a 1.5:1 safety factor. To achieve a 2:1 safety factor like that of the straight pipe the WPR will be reduced.



IPS Branch Saddle 45° Lateral Reducing Wye Full Pressure Rated

(Dimensions in Inches)

IPS Size	A	B	SDR	WPR	Weight (lbs)
8 x 4	38.0	30.0	11	160	37
10 x 4	39.0	31.0	11	160	51
12 x 4	44.0	33.0	11	160	87
10 x 6	39.0	31.0	11	160	72
12 x 6	44.0	33.0	11	160	96
14 x 6	53.0	42.0	11	160	129
12 x 8	44.0	33.0	11	160	109
14 x 8	53.0	42.0	11	160	143

Other sizes and DR's not listed are available - Call For Quick Quote

Sizes 24" and smaller meet AWWA C906 fitting requirements, sizes 26" and larger are quoted per fitting.



Reducing Outlet Wyes

Due to the complexity of the concave/convex elliptical (oval) heater plates required to make unreinforced or poly-reinforced reducing outlet wyes, it is standard practice to add a compact reducer to the outlet branch of the line-size wye in order to provide a reduced outlet branch. Call for a Quick Quote on the reduced outlet wye fabrications. Refer to the sketches below for design illustrations:

