IBR Approved

MSS-SP-75

Armech Alloys	IBR Approved	Manufacturer in India
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MSS-SP-75 standard cover testing, chemical and tensile properties, tolerances, heat treatment, ratings, dimensions. MSS-SP-75 material made by welded and seamless pipe for use in high pressure gas and oil distribution systems. MSS SP-75 fittings available in Grade WPHY 42, WPHY 46, WPHY-52, WPHY-56, WPHY-60, WPHY-65, and WPHY 70. MSS-SP-75 have high tensile strength and longer functional life. MSS-SP-75 applies to high test wrought butt welding fittings such as elbow, tee, reducer, end cap and pipe bend. MSS-SP-75 butt-welding fittings shall be capable of withstanding a hydrostatic test-pressure. MSS-SP-75 high strength wrought fittings sized from DN400 (NPS 16) through DN 1500 (NPS 60).

MSS-SP-75 Specification for Wrought Butt Welding Fittings

MSS-SP-75 Specification

Standard MSS-SP-75	**Size** 14” To 60”	**Material** Carbon Steel
Testing Hydrostatic Test	**Coatings** Black Painted Varnished Epoxy Coated	**Grade** WPHY 42 & WPHY 52 WPHY 56 & WPHY 60 WPHY 65 & WPHY 70
Wall Thickness SCH 10 SCH 40 SCH 80	**Method** Seamless Welded Fabricated	**Machines** Beveling Machine CNC

MSS-SP-75 Butt-Welding Fittings for Use in High Pressure Gas and Oil Transmission

Application of MSS-SP-75 Fittings

Tensile Requirements For MSS-SP-75 WPHY 52/ WPHY 60/ WPHY 65

Tensile Requirements for MSS-SP-75 Butt-Welding Fittings

MSS SP 75	Tensile Strength (Min.)
MSS SP-75 WPHY 42	60000 PSI
MSS SP-75 WPHY 46	63000 PSI
MSS SP-75 WPHY 52	66000 PSI
MSS SP-75 WPHY 56	71000 PSI
MSS SP-75 WPHY 60	75000 PSI

MSS SP-75 WPHY 65	77000 PSI
MSS SP-75 WPHY 70	82000 PSI

WPHY Full Form

- W = Wrought
- P = Pipe & Plate
- H = High
- Y = Yield

Grade Of MSS-SP-75

- MSS SP-75 WPHY 42
- MSS SP-75 WPHY 46
- MSS SP-75 WPHY 52
- MSS SP-75 WPHY 60
- MSS SP-75 WPHY 65
- MSS SP-75 WPHY 70
- MSS SP-75 WPHY 80

MSS-SP-75 Welding Fittings Heat Treatment

- Stress Relief
- Normalizing
- Normalizing and tempering
- Quenching and tempering

Welding for MSS-SP-75 Wrought Fittings

- SMAW (Shielded Metal Arc) Welding
- GTAW (Gas Tungsten Arc) Welding
- GMAW (Gas Metal Arc Welding) Welding

Testing of MSS-SP-75 High Strength Fittings

- Hydrostatic test
- Proof test
- Tensile test
- Charpy test
- Radiographic examination test
- PMI test
- Ultrasonic examination test
- Liquid penetration examination test

Check Chemical Elements and Mechanical Strength Of MSS-SP-75 Welding Fittings

MSS-SP-75 Material Chemical Elements

Columbium (Cb)	Titanium (Ti)	Vanadium (V)	Molybdenum (Mo)	Chromium (Cr)
≤0.10	≤0.05	≤0.13	≤0.13	≤0.25
Silicon (Si)	Nickel (Ni)	Copper (Cu)	Sulfur (S)	Phosphorus (P)
≤0.50	≤0.50	≤0.50	≤0.035	≤0.035
Manganese (Mn)	Carbon (C)	-	-	-
≤1.60	≤0.30	-	-	-

Mechanical Strength Of MSS-SP-75 Butt Weld Fittings

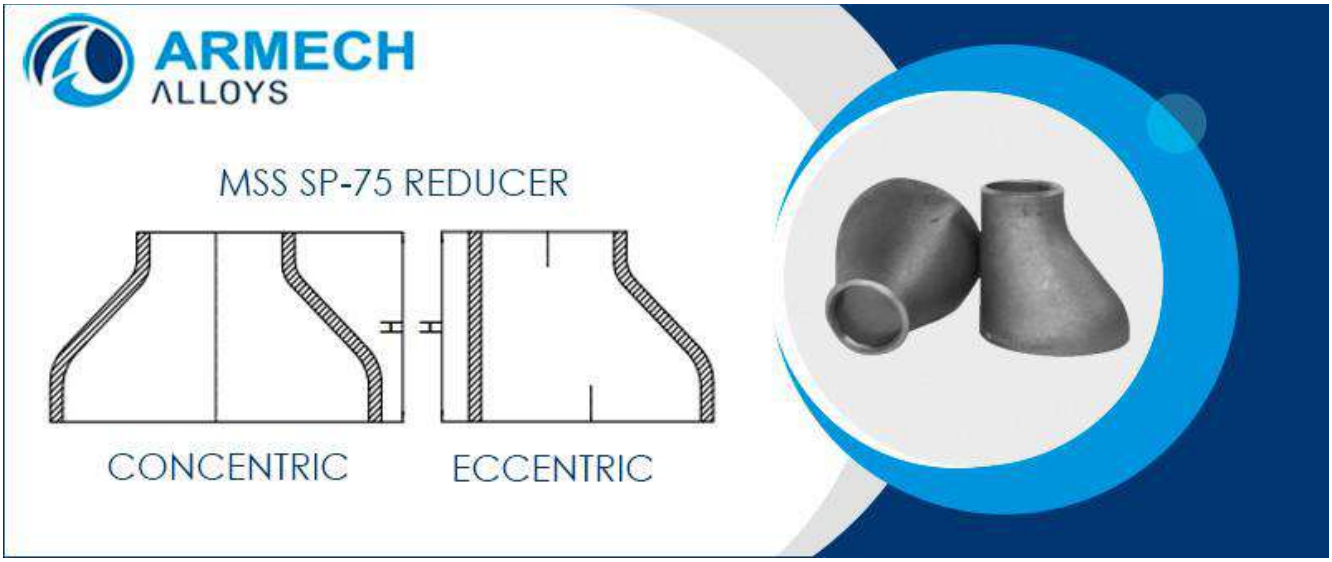
Grade	Yield Strength in PSI	Elongation in %	Charpy Test
	(Min.)	min.	20°F
MSS SP 75 WPHY 42	42000 PSI	25%	≥20ft*lbs
MSS SP 75 WPHY 46	46000 PSI	25%	
MSS SP 75 WPHY 52	52000 PSI	25%	
MSS SP 75 WPHY 56	56000 PSI	20%	
MSS SP 75 WPHY 60	60000 PSI	20%	
MSS SP 75 WPHY 65	65000 PSI	20%	
MSS SP 75 WPHY 70	70000 PSI	18%	

MSS SP-75 Elbow Dimensions

Normal Pipe Size	MSS SP-75 90 Degree Elbow (A)	O.D.
16	24.00	16.00
18	27.00	18.00
22	33.00	22.00
24	36.00	24.00
26	39.00	26.00
30	45.00	30.00
32	48.00	32.00
34	51.00	34.00
36	54.00	36.00
40	60.00	40.00
42	63.00	42.00
44	66.00	44.00
48	72.00	48.00
50	75.00	50.00
54	81.00	54.00

56	84.00	56.00
58	87.00	58.00
60	90.00	60.00

MSS SP-75 Reducer Dimensions



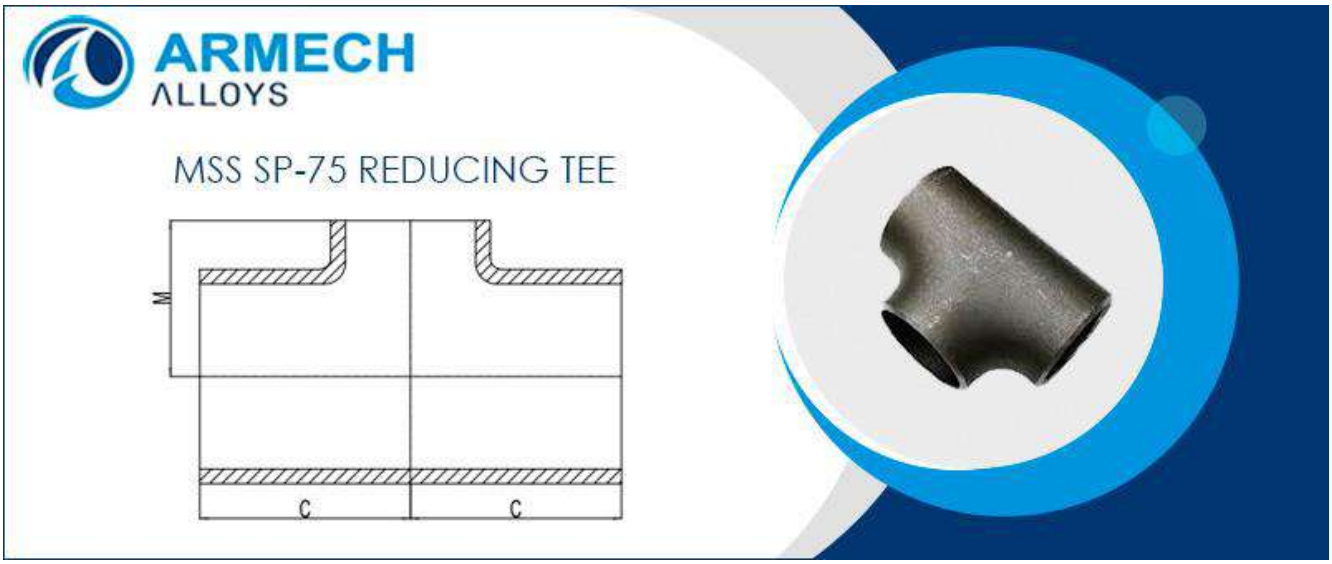
NSP	End to End	O.D. at Bevel	O.D. at Bevel
Size in Inch	Length	Large End	Small End
16X14	14.00	16.00	14.00
16X10	14.00	16.00	10.75
18X14	15.00	18.00	14.00
18X12	15.00	18.00	12.75
20X18	20.00	20.00	18.00
20X16	20.00	20.00	16.00
22X20	20.00	22.00	20.00
22X18	20.00	22.00	18.00
24X22	20.00	24.00	22.00
24X20	20.00	24.00	20.00
24X18	20.00	24.00	18.00
26X24	24.00	26.00	24.00
26X18	24.00	26.00	18.00

28X26	24.00	28.00	26.00
28X20	24.00	28.00	20.00
30X28	24.00	30.00	28.00
30X22	24.00	30.00	22.00
30X20	24.00	30.00	20.00
32X30	24.00	32.00	30.00
32X24	24.00	32.00	24.00
34X32	24.00	34.00	32.00
34X26	24.00	34.00	26.00
34X24	24.00	34.00	24.00
36X34	24.00	36.00	34.00
36X28	24.00	36.00	28.00
38X36	24.00	38.00	36.00
38X34	24.00	38.00	34.00
38X28	24.00	38.00	28.00
38X22	24.00	38.00	22.00
38X20	24.00	38.00	20.00
40X34	24.00	40.00	34.00
40X32	24.00	40.00	32.00
40X30	24.00	40.00	30.00
40X22	24.00	40.00	22.00
40X20	24.00	40.00	20.00
42X40	24.00	42.00	40.00
42X34	24.00	42.00	34.00
42X32	24.00	42.00	32.00
42X30	24.00	42.00	30.00
42X28	24.00	42.00	28.00
42X26	24.00	42.00	26.00
42X24	24.00	42.00	24.00
44X40	24.00	44.00	40.00
44X38	24.00	44.00	38.00
44X36	24.00	44.00	36.00
44X30	24.00	44.00	30.00

44X28	24.00	44.00	28.00
44X26	24.00	44.00	26.00
46X44	28.00	46.00	44.00
46X42	28.00	46.00	42.00
46X40	28.00	46.00	40.00
46X38	28.00	46.00	38.00
46X36	28.00	46.00	36.00
46X34	28.00	46.00	34.00
46X28	28.00	46.00	28.00
46X26	28.00	46.00	26.00
46X24	28.00	46.00	24.00
48X46	28.00	48.00	46.00
48X44	28.00	48.00	44.00
48X42	28.00	48.00	42.00
48X36	28.00	48.00	36.00
48X34	28.00	48.00	34.00
48X32	28.00	48.00	32.00
48X30	28.00	48.00	30.00
48X24	28.00	48.00	24.00
50X48	28.00	50.00	48.00
50X42	28.00	50.00	42.00
50X36	28.00	50.00	36.00
50X30	28.00	50.00	30.00
50X24	28.00	50.00	24.00

52X48	28.00	52.00	48.00
52X42	28.00	52.00	42.00
52X36	28.00	52.00	36.00
52X30	28.00	52.00	30.00
54X48	28.00	54.00	48.00
54X42	28.00	54.00	42.00
54X36	28.00	54.00	36.00
54X30	28.00	54.00	30.00
56X48	28.00	56.00	48.00
56X42	28.00	56.00	42.00
56X36	28.00	56.00	36.00
56X30	28.00	56.00	30.00
58X54	28.00	58.00	54.00
58X48	28.00	58.00	48.00
58X42	28.00	58.00	42.00
58X36	28.00	58.00	36.00
60X54	28.00	60.00	54.00
60X36	28.00	60.00	36.00
60X30	28.00	60.00	30.00

MSS SP-75 Reducing Tee Dimensions



Size	Center to End	Center to End	Outside Diameter	Outside Diameter
NPS	Outlet M	Run-C	Outlet	Run
16 X 16 X 14	12.00	12.00	14.00	16.00
16 X 16 X 10	11.12	12.00	10.75	16.00
18 X 18 X 16	13.00	13.50	16.00	18.00
18 X 18 X 14	13.00	13.50	14.00	18.00
18 X 18 X 8	11.75	13.50	8.62	18.00
20 X 20 X 18	14.50	15.00	18.00	20.00
20 X 20 X 16	14.00	15.00	16.00	20.00
20 X 20 X 12	13.62	15.00	12.75	20.00
20 X 20 X 10	13.12	15.00	10.75	20.00
22 X 22 X 18	15.50	16.50	18.00	22.00
22 X 22 X 16	15.00	16.50	16.00	22.00
24 X 24 X 22	17.00	17.00	22.00	24.00
24 X 24 X 20	17.00	17.00	20.00	24.00
24 X 24 X 16	16.00	17.00	16.00	24.00
24 X 24 X 14	16.00	17.00	14.00	24.00

26 X 26 X 24	19.00	19.50	24.00	26.00
26 X 26 X 22	18.50	19.50	22.00	26.00
28 X 28 X 24	20.00	20.50	24.00	28.00
28 X 28 X 22	19.50	20.50	22.00	28.00
28 X 28 X 20	19.00	20.50	20.00	28.00
28 X 28 X 12	17.62	20.50	12.75	28.00
30 X 30 X 28	21.50	22.00	28.00	30.00
30 X 30 X 22	20.50	22.00	22.00	30.00
30 X 30 X 20	20.00	22.00	20.00	30.00
32 X 32 X 30	23.00	23.50	30.00	32.00
32 X 32 X 24	22.00	23.50	24.00	32.00
34 X 34 X 32	24.50	25.00	32.00	34.00
34 X 34 X 30	24.00	25.00	30.00	34.00
34 X 34 X 24	23.00	25.00	24.00	34.00
34 X 34 X 22	22.50	25.00	22.00	34.00
34 X 34 X 20	22.00	25.00	20.00	34.00
36 X 36 X 26	24.50	26.50	26.00	36.00
36 X 36 X 24	24.00	26.50	24.00	36.00
36 X 36 X 22	23.50	26.50	22.00	36.00
36 X 36 X 20	23.00	26.50	20.00	36.00
38 X 38 X 36	28.00	28.00	36.00	38.00
38 X 38 X 34	27.50	28.00	34.00	38.00
38 X 38 X 28	25.50	28.00	28.00	38.00
38 X 38 X 26	25.50	28.00	26.00	38.00
38 X 38 X 20	24.00	28.00	20.00	38.00
38 X 38 X 18	23.50	28.00	18.00	38.00
40 X 40 X 34	28.50	29.50	34.00	40.00
40 X 40 X 30	27.50	29.50	30.00	40.00
40 X 40 X 24	26.00	29.50	24.00	40.00

40 X 40 X 22	25.50	29.50	22.00	40.00
42 X 42 X 36	28.00	30.00	36.00	42.00
42 X 42 X 34	28.00	30.00	34.00	42.00
42 X 42 X 32	28.00	30.00	32.00	42.00
42 X 42 X 30	28.00	30.00	30.00	42.00
42 X 42 X 22	26.00	30.00	22.00	42.00
42 X 42 X 20	26.00	30.00	20.00	42.00
42 X 42 X 18	25.50	30.00	18.00	42.00
42 X 42 X 16	25.00	30.00	16.00	42.00
44 X 44 X 42	30.00	32.00	42.00	44.00
44 X 44 X 32	28.00	32.00	32.00	44.00
44 X 44 X 30	28.00	32.00	30.00	44.00
44 X 44 X 24	27.50	32.00	24.00	44.00
44 X 44 X 22	27.00	32.00	22.00	44.00
44 X 44 X 20	27.00	32.00	20.00	44.00
46 X 46 X 44	31.50	33.50	44.00	46.00
46 X 46 X 38	30.00	33.50	38.00	46.00
46 X 46 X 36	30.00	33.50	36.00	46.00
46 X 46 X 34	29.50	33.50	34.00	46.00
46 X 46 X 28	29.00	33.50	28.00	46.00
46 X 46 X 26	29.00	33.50	26.00	46.00
46 X 46 X 24	28.50	33.50	24.00	46.00
48 X 48 X 44	33.00	35.00	44.00	18.00
48 X 48 X 42	32.00	35.00	42.00	18.00
48 X 48 X 34	31.00	35.00	34.00	18.00
48 X 48 X 32	31.00	35.00	32.00	18.00
48 X 48 X 30	30.00	35.00	30.00	18.00
48 X 48 X 28	30.00	35.00	28.00	18.00
48 X 48 X 26	30.00	35.00	26.00	18.00

48 X 48 X 16	28.00	35.00	16.00	18.00
50 X 50 X 48	34.50	36.75	48.00	50.00
50 X 50 X 30	31.50	36.75	30.00	50.00
50 X 50 X 24	30.00	36.75	24.00	50.00
50 X 50 X 20	30.00	36.75	20.00	50.00
52 X 52 X 42	34.50	38.50	42.00	52.00
52 X 52 X 36	34.00	38.50	36.00	52.00
52 X 52 X 30	32.75	38.50	30.00	52.00
52 X 52 X 24	31.25	38.50	24.00	52.00
54 X 54 X 42	35.63	40.00	42.00	54.00
54 X 54 X 36	35.00	40.00	36.00	54.00
56 X 56 X 54	38.50	41.50	54.00	56.00
56 X 56 X 48	37.00	41.50	48.00	56.00
56 X 56 X 30	33.75	41.50	30.00	56.00
56 X 56 X 24	33.75	41.50	24.00	56.00
58 X 58 X 48	38.50	43.00	48.00	58.00
58 X 58 X 42	37.50	43.00	42.00	58.00
58 X 58 X 36	36.50	43.00	36.00	58.00
58 X 58 X 30	35.00	43.00	30.00	58.00
60 X 60 X 48	40.00	44.00	48.00	60.00
60 X 60 X 42	39.00	44.00	42.00	60.00
60 X 60 X 30	36.00	44.00	30.00	60.00