

A TOTAL GUIDE TO FLANGES FROM



Socket Weld Flange



Blank Flange



Boss Flange



Weld-neck Flange

# Sipra Enterprise

S.S.I., N.S.I.C & ISO 9001-2008 Certified Unit

- ASA
- BSS
- DIN
- ISS
- IBR

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## PREFACE

Since 1966, WE ARE MANUFACTURING MILD STEEL FLANGES in all specifications to cater to the needs and requirements of all Industries engaged in Pipeline Construction, Namely, Petro-leum Industries, Gas and Fertilizer Plants, Jute and Cotton Industries, Sugar and Paper Mills, Collieries, Chemical and Oil Industries, Etc

We also Manufacture for Small Pipeline Contractors, having the pleasure of manufacturing as per special dimensions.

Our product range is from 1/2" to 72" in all specifications.

We always maintain ready stock of M. S. Flanges upto 24" in all Specifications for our Customers' Convenience.

Your Co-operation is most humbly solicited.

## **SPECIFICATION**

### **SCOPE**

The British Standard applies for a series of Carbon steel, Alloy Steel, Wrought Steel, Cast Iron etc., Pipe Flanges and Flanged fittings for use in the petroleum industry, for oil, water, steam air, gas and Chemical services.

### **TEMPERATURE**

328°F (-200.C) Up to and including 975°F (524°C). Pressure Upto and including 2800 Lbf/in<sup>2</sup>

The design temperature and pressure shall be stated by the purchaser except where the flange table is specified. Where there is an appropriate application standard it is the responsibility of the purchaser to ensure that the design temperature and pressure stated comply with the requirements of that standard.

### **DESIGNATION**

The flange sizes shall be designated by the nominal bores of their respective pipes.

### **FLANGE DIMENSIONS**

The dimensions of the flanges to the standard shall confirm to those specified in the appropriate tables.

### **THICKNESS**

The Thickness of the flanges are as per specified in respective tables and includes a raised face having a height not exceeding 1/16" in. where there is no raise face, the thickness shall be of those specified in Tables.

### **FLANGE DRILLINGS**

Unless otherwise specified by the purchaser all bolt holes shall be drilled, shall be equally spaced on the bolt pitch circle diameter, specified in different tables. For 1/2" inch and 5/8" inch bolts, the diameters of the holes shall be 1/16" inch larger than the diameters of the bolts. For 3/4" inch bolt and larger, the diameter of the holes shall not be more than 1/8" inch large than the diameters of the bolt in all cases.

### **TOLERANCES**

On the flange bore and socket diameter +1/32" in. to 1/16" in.  
- 0 in.

On the flange thickness :

Nominal sizes 18" in. and smaller + Upto 1/8" in.  
" 20" in. and larger + 3/16".



ISS

# Plate Flanges for Welding

ISS : 6392-1971

TABLE—5

Nominal Pressure—0.60 N/mm<sup>2</sup>

N. B.	Out Dia	Thickness	Bolt Circle Dia	No. of Bolts	Dia of Holes
10	75	12	50	4	11
15	80	12	55	4	11
20	90	14	65	4	11
25	100	14	75	4	11
32	120	16	90	4	14
40	130	16	100	4	14
50	140	16	110	4	14
65	160	16	130	4	14
80	190	18	150	4	18
100	210	18	170	4	18
125	240	20	200	8	18
150	265	20	225	8	18
200	320	22	280	8	18
250	375	24	335	12	18
300	440	24	395	12	22
350	493	26	445	12	22
400	540	28	495	16	22
500	645	30	600	20	22

All dimensions are in MM



ISS

# Plate Flanges for Welding

ISS : 6392-1971

With Raised Face

TABLE—17

Nominal Pressure—1.6 N/mm<sup>2</sup>

N. B.	Out Dia	Thickness	Bolt Circle Dia	No. of Bolts	Dia of Holes
10	90	14	60	4	14
15	95	14	65	4	14
20	105	16	75	4	14
25	115	16	85	4	14
32	140	16	100	4	18
40	150	16	110	4	18
50	165	18	125	4	18
65	185	18	145	4	18
80	200	20	160	8	18
100	220	20	180	8	18
125	250	22	210	8	18
150	285	22	240	8	22
200	340	24	295	12	22
250	405	26	355	12	26
300	460	28	410	12	26
350	520	32	470	16	26
400	580	36	525	16	30
500	715	44	650	20	33

All dimensions are in MM



B. S. S. 10-1962

M. S. Flanges Table D

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Bolts of Flanges	Dia of Bolts
1/2"	3 3/4"	3/16"	2 1/2"	4	1/2"
3/4"	4	3/16"	2 7/8"	4	1/2"
1"	4 1/2"	1/4"	3 3/8"	4	1/2"
1 1/4"	4 3/4"	5/16"	3 7/8"	4	3/8"
1 1/2"	5 1/4"	3/8"	3 3/4"	4	1/2"
2"	6	7/16"	4 1/8"	4	5/8"
2 1/2"	6 1/2"	1/2"	5"	4	5/8"
3"	7 1/4"	3/8"	5 3/4"	4	5/8"
4"	8 1/2"	3/8"	7	4	5/8"
5"	10	1/2"	8 1/4"	8	5/8"
6"	11	1/2"	9 1/4"	8	5/8"
8"	13 1/4"	1/2"	11 1/2"	8	5/8"
9"	14 1/2"	5/8"	12 3/4"	8	5/8"
10"	16	3/4"	14	8	3/4"
12"	18	7/8"	16	12	3/4"
14"	20 3/4"	1"	18 1/2"	12	7/8"
16"	22 3/4"	1 1/8"	20 1/2"	12	7/8"

M. S. Flanges Table E

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Bolts of Flanges	Dia of Bolts
1/2"	3 3/4"	1/4"	2 3/4"	4	1/2"
3/4"	4	1/4"	2 7/8"	4	1/2"
1"	4 1/2"	5/32"	3 1/4"	4	1/2"
1 1/4"	4 3/4"	5/16"	3 7/8"	4	1/2"
1 1/2"	5 1/4"	11/32"	3 3/4"	4	1/2"
2"	6	3/8"	4 1/2"	4	1/2"
2 1/2"	6 1/2"	7/16"	5	4	5/8"
3"	7 1/4"	1/2"	5 3/4"	4	5/8"
4"	8 1/2"	5/8"	7	4	5/8"
5"	10	3/4"	8 1/4"	8	5/8"
6"	11	7/8"	9 1/4"	8	3/4"
8"	13 1/4"	1"	11 1/2"	8	3/4"
9"	14 1/2"	1 1/8"	12 3/4"	12	3/4"
10"	16	1 1/4"	14	12	3/4"
12"	18	1 1/2"	16	12	7/8"
14"	20 3/4"	1 3/4"	18 1/2"	12	7/8"
16"	22 3/4"	1 7/8"	20 1/2"	12	7/8"

All dimensions are in Inch



B. S. S. 10-1962

M. S. Flanges Table F

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Bolts of Flanges	Dia of Bolts
1/2"	3 3/4"	3/8"	2 5/8"	4	1/2"
3/4"	4	3/8"	2 7/8"	4	1/2"
1"	4 3/4"	3/8"	3 1/8"	4	5/8"
1 1/4"	5 1/4"	1/2"	3 3/8"	4	5/8"
1 1/2"	5 1/2"	1/2"	4"	4	5/8"
2"	6 1/2"	5/8"	5"	4	5/8"
2 1/2"	7 1/4"	3/4"	5 3/4"	8	5/8"
3"	8	3/4"	6 1/4"	8	5/8"
4"	9	3/4"	7 1/4"	8	5/8"
5"	11	7/8"	9 1/4"	8	3/4"
6"	12	7/8"	10 1/4"	12	3/4"
8"	14 1/2"	1"	12 3/4"	12	3/4"
9"	16	1 1/4"	14	12	7/8"
10"	17	1 1/2"	15	12	7/8"
12"	19 1/4"	1 3/4"	17 1/4"	16	7/8"
14"	21 3/4"	1 7/8"	19 1/2"	16	1"

M. S. Flanges Table H

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Bolts of Flanges	Dia of Bolts
1/2"	4 1/2"	1/2"	3 1/4"	4	5/8"
3/4"	4 1/2"	1/2"	3 3/4"	4	5/8"
1"	4 3/4"	5/16"	3 1/8"	4	5/8"
1 1/4"	5 1/4"	11/16"	3 3/8"	4	5/8"
1 1/2"	5 1/2"	11/16"	4 1/8"	4	5/8"
2"	6 1/2"	3/4"	5	4	5/8"
2 1/2"	7 1/4"	3/4"	5 3/4"	8	5/8"
3"	8	7/8"	6 1/4"	8	5/8"
4"	9	1"	7 1/2"	8	5/8"
5"	11	1 1/8"	9 1/4"	8	3/4"
6"	12	1 1/4"	10 1/4"	12	3/4"
8"	14 1/2"	1 1/2"	12 3/4"	12	3/4"
9"	16	1 3/8"	14	12	7/8"
10"	17	1 3/8"	15	12	7/8"
12"	19 1/4"	1 1/2"	17 1/4"	16	7/8"
14"	21 3/4"	1 3/4"	19 1/2"	16	1"

All dimensions are in Inch



B. S. S. 10-1962

M. S. Flanges Table J

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Bolts of Flanges	Dia of Bolts
1/2"	4 1/2"	5/8"	3 1/2"	4	5/8"
3/4"	4 1/2"	5/8"	3 3/4"	4	5/8"
1"	4 3/4"	3/4"	3 1/2"	4	5/8"
1 1/4"	5 1/4"	3/4"	3 3/4"	4	5/8"
1 1/2"	5 1/2"	7/8"	4 1/4"	4	5/8"
2"	6 1/2"	1"	5"	4	3/4"
2 1/2"	7 1/4"	1 1/8"	6 1/2"	8	3/4"
3"	8"	1 1/8"	7 1/2"	8	3/4"
4"	9"	1 1/2"	9 1/4"	8	7/8"
5"	11"	1 1/2"	10 1/4"	12	7/8"
6"	12"	1 1/2"	12 3/4"	12	7/8"
8"	14 1/2"	1 1/2"	15"	12	1"
10"	17"	1 1/2"	17 1/4"	16	1"
12"	19 1/4"	2"			

M. S. Flanges Table K

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Bolts of Flanges	Dia of Bolts
1/2"	4 1/2"	3/4"	3 1/2"	4	5/8"
3/4"	4 1/2"	3/4"	3 3/4"	4	5/8"
1"	5"	7/8"	3 3/4"	4	5/8"
1 1/4"	5 1/4"	7/8"	3 3/4"	4	5/8"
1 1/2"	6"	1"	4 1/2"	4	3/4"
2"	6 1/2"	1"	5"	8	5/8"
2 1/2"	7 1/4"	1 1/8"	6 1/2"	8	3/4"
3"	8"	1 1/8"	7 1/2"	8	3/4"
4"	9 1/2"	1 1/8"	9 1/4"	8	7/8"
5"	11"	1 1/8"	10 1/4"	12	7/8"
6"	12"	1 1/8"	12 3/4"	12	7/8"
8"	14 1/2"	1 1/8"	15"	12	1"
10"	17"	2"	17 1/4"	16	1"
12"	19 1/4"	2 1/4"		16	1 1/8"

All dimensions are in Inch



DIMENSIONS OF FLANGES

As per IS : 1538 (Part V) - 1976

N. B.	Out Dia	Thickness	Bolt Circle Dia	No of Bolts	Dia of Holes
80	200	21	160	4	19.
100	220	22	180	8	19
125	250	22.5	210	8	19
150	285	23	240	8	23
200	340	24.5	295	8	23
250	395	26	350	12	23
300	445	27.5	400	12	23
350	505	29	460	16	23
400	565	30	515	16	28
450	615	31.5	565	20	28
500	670	33	620	20	28
600	780	36	725	20	31
700	895	38.5	840	24	31
750	960	40	900	24	31
800	1015	41.5	950	24	34

All dimensions are in MM



## DIN STEEL FLANGE STANDARD

NENDRUCK 64

Nominal Pressure - 64 Kg / Cm<sup>2</sup>

N. B.	Out Dia	Thickness	Bolt Circle Dia	No. of Bolts	Dia of Holes
10	100	20	70	4	14
15	105	20	75	4	14
25	140	24	100	4	18
40	170	26	125	4	23
50	180	26	135	4	23
65	205	26	160	8	23
80	215	28	170	8	23
100	250	30	200	8	27
125	295	34	240	8	30
150	345	36	280	8	33
175	375	40	310	12	33
200	415	42	345	12	36
250	470	46	400	12	36
300	530	52	460	16	36
350	600	56	525	16	39
400	670	60	585	16	42
500	800	68	705	20	48
600	930	76	820	20	56

All dimensions are in MM



## M. S. PLANE FACE OR RAISED FACE

Slipon Flanges As per P. N. 10

N. B.	Dia of Flanges	Thickness	R. F. Dia & thick	Bolt Circle Dia	Hole	Dia of Holes
10	90	14	40-2	60	4	14
15	95	14	45-2	65	4	14
20	105	16	58-2	75	4	14
25	115	16	68-2	85	4	14
32	140	18	78-2	100	4	18
40	150	18	88-3	110	4	18
50	165	20	102-3	125	4	18
65	185	20	122-3	145	4	18
80	200	22	138-3	160	8	18
100	220	22	158-3	180	8	18
125	250	24	188-3	210	8	18
150	285	24	212-3	240	8	22
200	340	26	268-3	295	8	22
250	395	28	320-3	350	12	22
300	445	28	370-4	400	12	22
350	505	30	430-4	460	16	22
400	565	32	482-4	515	16	27
450	615	32	532-4	565	20	27
500	670	34	585-4	620	20	27
600	780	36	685-5	725	20	30
700	895	46	800-5	840	24	30
800	1015	52	905-5	950	24	33

All dimensions are in MM



### MILD STEEL FLANGE STANDARD

ASA - 400

(Raisedface (Without Hub))

N. B.	Out Dia	Thickness	No of Bolts	Bolt Circle Dia	Bolt Hole Dia	Outside Dia of Raised Face
4	10"	1 3/8"	8	7 7/8"	7/8"	6 3/16"
5	11	1 1/2"	8	9 1/4"	7/8"	7 5/16"
6	12 1/2"	1 5/8"	12	10 5/8"	7/8"	8 1/2"
8	15	1 7/8"	12	13	1	10 5/8"
10	17 1/2"	2"	16	15 1/4"	1 1/8"	12 1/4"
12	20 1/2"	2 1/4"	16	17 3/4"	1 1/4"	15
14	23	2 5/8"	20	20 1/4"	1 1/4"	16 1/4"
16	25 1/2"	2 7/8"	20	22 1/2"	1 3/8"	18 1/2"
18	28	3 1/8"	24	24 3/4"	1 3/8"	21
20	30 1/2"	3 1/2"	24	27	1 1/2"	23
24	36	4 1/4"	24	32	1 3/4"	27 1/4"

**ALL DIMENSIONS IN INCHES**

A. S. A.



### M.S. FLANGES AS PER AMERICAN STANDARD FLAT-FACE (RAISED FACE TYPE) without HUB.

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Flanges	No. of Bolts	Dia of Bolts	Dia of Raised Face	Out Side
								Dia of Bolt Circle
1/2"	3 3/4"	9/16"	2 1/2"	4	4	1/2"	1 3/8"	1 1/8"
3/4"	3 3/4"	1/2"	2 3/4"	4	4	1/2"	1 1/8"	2
1"	4 1/4"	5/16"	3"	4	4	1/2"	2 1/8"	2 1/2"
1 1/4"	4 1/4"	3/4"	3 1/2"	4	4	1/2"	2 3/8"	3
1 1/2"	5	7/8"	4"	4	4	1/2"	3 1/8"	4
2"	6	1 1/8"	5 1/2"	4	4	5/8"	4 1/8"	5
2 1/2"	7	1 1/4"	6"	4	4	5/8"	5 1/8"	6 3/16"
3"	7 1/2"	1 1/2"	7 1/4"	8	8	3/4"	6 1/4"	7 5/8"
4"	9	1 3/8"	8"	8	8	3/4"	7 1/4"	8 1/2"
5"	10	1 1/2"	9 1/4"	8	8	3/4"	8 1/4"	10
6"	11	1 5/8"	10 1/4"	8	8	3/4"	9 1/4"	12 1/4"
8"	13 1/2"	2 1/8"	11 1/4"	12	12	7/8"	11 1/4"	15
10"	16	2 1/4"	14"	12	12	7/8"	14 1/4"	17 1/4"
12"	19	2 7/8"	17"	12	12	7/8"	17 1/4"	20 1/4"

### CLASS - 300

Pipe Size	Dia of Flanges	Thickness of Flanges	Dia of Bolt Circle	No. of Flanges	No. of Bolts	Dia of Bolts	Dia of Raised Face	Out Side
								Dia of Bolt Circle
1/2"	3 3/4"	9/16"	2 1/2"	4	4	1/2"	1 3/8"	1 1/8"
3/4"	4 1/4"	5/16"	3 1/4"	4	4	5/8"	1 1/8"	2
1"	4 7/8"	11/16"	3 3/4"	4	4	5/8"	2 1/8"	2 1/2"
1 1/4"	5 1/4"	3/4"	4 1/2"	4	4	5/8"	2 3/8"	3
1 1/2"	6 1/8"	7/8"	5"	8	8	5/8"	3 1/8"	4 1/4"
2"	7 1/2"	1 1/8"	6 1/4"	8	8	3/4"	4 1/8"	5
2 1/2"	8 1/4"	1 1/4"	7 1/4"	8	8	3/4"	5 1/8"	6 3/16"
3"	10	1 3/8"	9 1/4"	8	8	3/4"	6 1/4"	7 5/8"
4"	11	1 5/8"	10 1/4"	12	12	7/8"	7 1/4"	8 1/2"
6"	15	2 1/8"	13"	12	12	7/8"	10 1/4"	15
8"	17 1/2"	2 1/4"	15 1/4"	12	12	7/8"	13 1/4"	17 1/4"
10"	20 1/2"	2 7/8"	17 1/4"	16	16	7/8"	15 1/4"	20 1/4"
12"	24 1/2"	3 1/2"	20 1/4"	16	16	7/8"	17 1/4"	21 1/4"

Dimension of Class 600, Class 900, Class 1500 will be intimated on request against specific Size.



DIN

### DIN STEEL FLANGE STANDARD

NENNRUCK 16

Nominal Pressure - 16 Kg / Cm<sup>2</sup>

N. B.	Out Dia	Thickness	Bolt Circle Dia	No. of Bolts	Dia of Holes
10	90	14	60	4	14
15	95	14	65	4	14
20	105	16	75	4	14
25	115	16	85	4	14
32	140	16	100	4	18
40	150	16	110	4	18
50	165	18	125	4	18
65	185	18	145	4	18
80	200	20	160	8	18
100	220	20	180	8	18
125	250	22	210	8	18
150	285	22	240	8	23
175	315	24	270	8	23
200	340	24	295	12	23
250	405	26	355	12	27
300	460	28	410	12	27
350	520	30	470	16	27
400	580	32	525	16	30
500	715	36	650	20	33
600	840	40	770	20	36

All dimensions are in MM



DIN

### DIN STEEL FLANGE STANDARD

NENNRUCK 25

Nominal Pressure - 25 Kg / Cm<sup>2</sup>

N. B.	Out Dia	Thickness	Bolt Circle Dia	No. of Bolts	Dia of Holes
10	90	16	60	4	14
15	95	16	65	4	14
20	105	18	75	4	14
25	115	18	85	4	14
32	140	18	100	4	18
40	150	18	110	4	18
50	165	20	125	4	18
65	185	22	145	8	18
80	200	24	160	8	18
100	235	24	190	8	23
125	270	26	220	8	27
150	300	28	250	8	27
175	330	28	280	12	27
200	360	30	310	12	27
250	425	32	370	12	30
300	485	34	430	16	30
350	555	38	490	16	33
400	620	40	550	16	36
500	730	44	660	20	36
600	845	46	770	20	39

All dimensions are in MM





DIN

**FLANGES SLIP-ON TYPE FOR BRAZING WELDING NP-10**

DIN - 2576

Working Pressure 10 Kg /Cm<sup>2</sup>  
Temperature - 120°C

N. B.	Out Dia	Thickness	Bolt Circle Dia	No. of Bolts	Dia of Holes
10	90	14	60	4	14
15	95	14	65	4	14
20	105	16	75	4	14
25	115	16	85	4	14
32	140	16	100	4	18
40	150	16	110	4	18
50	165	18	125	4	18
65	185	18	145	4	18
80	200	20	160	4	18
100	220	20	180	8	18
125	250	22	210	8	18
150	285	22	240	8	23
175	315	24	270	8	23
200	340	24	295	8	23
250	395	26	350	12	23
300	445	26	400	12	23
350	505	28	460	16	23
400	565	32	515	16	27
500	670	38	620	20	27

**All dimension are in mm.**

**Note :-** During the process of converting the Flanges standard to the dimensions of the Standard DIN-2448-Seamless Steel Tubes and DIN-2458 welded steel tubes the Advisory Committee of Flanges in the contact of the pipes, Pipe joints and pipe lines decided to issue the standard for slip —on Flanges for brazing & welding for nominal pressure 10. In this connection both DIN-2573 and the previously valid shipbuilding standard DIN-86031 which is superseded by the present standard, were taken into account.

(ii) Machining of contact surface reduced the Flanges thickness by 1 to 1.5 mm.



**WHILE GOING TO PLACE YOUR INDENT WITH US**

**Please Note**

It is advisable that in the enquiry or order, the purchaser should specify the following :—

1. The design temperature and pressure for which the flanges required, or the Flanges Tables.
2. Flanges size designation (Pipe Bore).
3. If the flanges are required Undrilled.
4. If the flanges are required overall machined or one side faced.
5. If a raised face is required.
6. If any Manufacturer's test certificates is required.
7. If flanges are required 1/2" minima basis thick upto size 4" in Table "D" and 3" in Table "E" according to the latest amendment in BSS-10—1962.
8. If the flanges are required to be manufactured specially, as per your own drawings.
9. If grooves are required.
10. If Serration (Recording) are required.
11. If Delivery in Loose, Wire bindings or "EXPORT" Spc. packings.



### Suggested Min / Maximum Working Pressures

FOR STEAM FLANGES AS PER B. 5. 5. 10-1962

Table 'D' Working pressure	Water		Steam	
	175 lbs.	50 lbs. per square inch	upto 100 lbs. inch	upto 150 lbs. "
Table 'E'	—	above 50 lbs.	150 lbs. "	250 lbs. "
Table 'F'	—	above 100 lbs.	250 lbs. "	350 lbs. "
Table 'H'	—	above 150 lbs.	350 lbs. "	450 lbs. "
Table 'J'	—	above 250 lbs.	—	—
Table 'K'	—	above 350 lbs.	—	—

### WEIGHT OF PLATES ( M. S. as per IS: 2062 OR IS : 226)

Thickness mm.	Weight		Thickness mm.	Weight	
	per sq. metre	kg.		per sq. metre	kg.
6	47.10	141.30	18	157.00	172.70
8	62.80	196.25	20	219.80	251.20
10	78.50	—	22	—	—
12	94.20	—	25	—	—
14	109.90	—	28	—	—
16	125.60	—	32	—	—

### CONVERSION INCHES AND THEIR EQUIVALENT MILLIMETERS

Inch	0	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"
"0	0.0	6.4	9.5	12.7	15.9	19.1	22.2
"1	25.4	31.7	34.9	38.1	41.3	44.4	47.6
"2	50.8	57.1	60.3	63.5	66.7	69.8	73.0
"3	76.2	82.5	86.7	88.9	92.1	95.2	98.4
"4	101.6	108.0	111.1	114.3	117.5	120.7	123.8
"5	127.0	133.4	136.5	139.7	142.9	146.1	149.2
"6	152.4	158.8	161.9	165.1	168.3	171.5	174.6

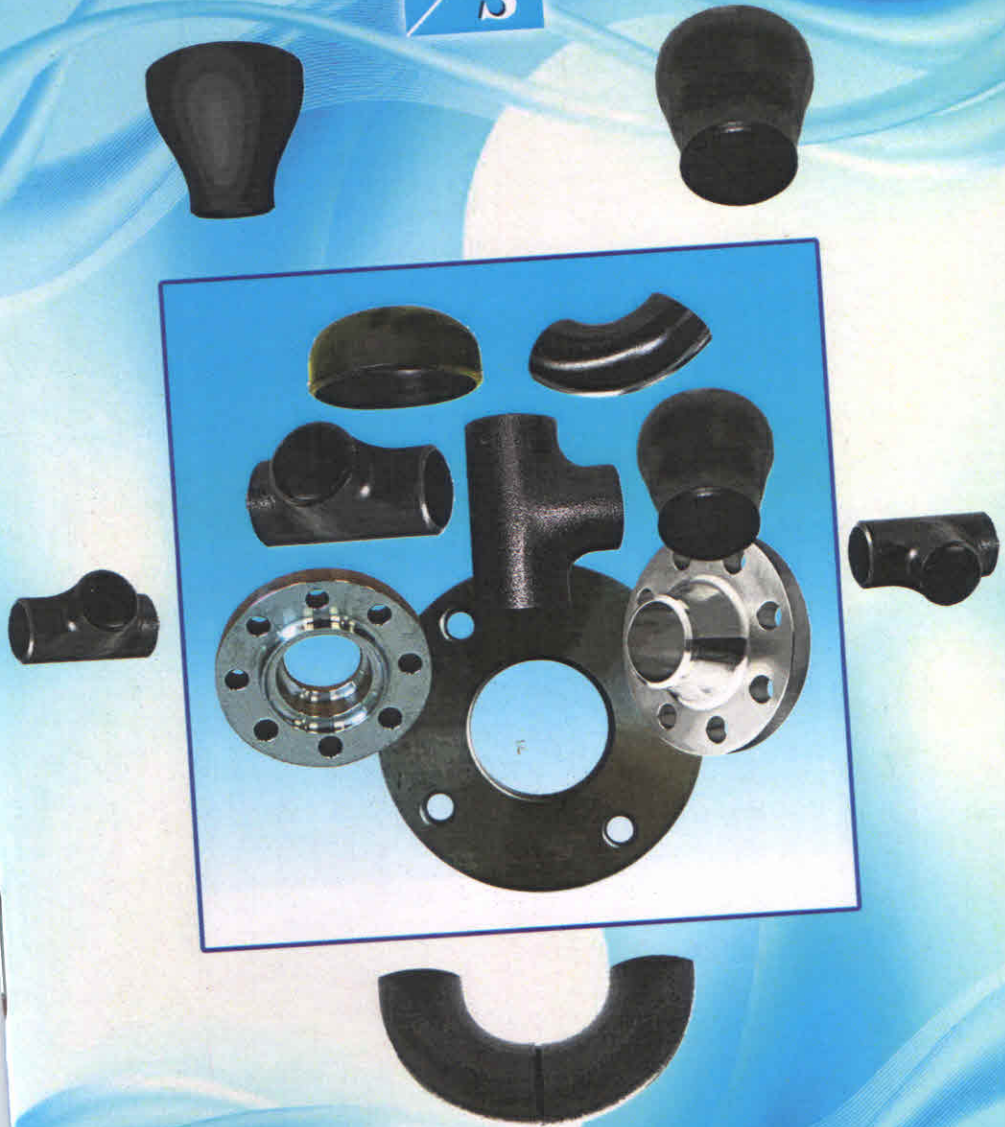
**BE COST CONCIIOUS**  
By Accurate & Perfect Components

## DIMENSIONS AND WEIGHTS OF STEEL TUBES IN ACCORDANCE WITH IS 1239 : 1964

### METRIC UNITS

Nominal Bore	Outside Diameter of Black Tube		Thickness		Weight per Foot of		Approx Outside Diam	in.
	Light	Medium & Heavy	Light	Heavy	Light	Heavy		
1/8"	10.2	10.1	2.0	2.65	2.65	0.378	17	17
1/4"	13.5	13.6	2.35	2.35	2.35	0.659	25	25
3/8"	17.2	17.1	2.9	2.35	2.9	0.850	26	26
1/2"	21.3	21.4	3.25	2.65	3.25	1.21	34	34
3/4"	26.9	26.9	3.25	2.65	3.25	1.89	36	36
1	33.7	33.8	4.05	2.65	4.05	2.95	43	43
1.1/4"	42.4	42.5	4.05	2.65	4.05	3.11	48	48
1-1/2"	48.3	48.4	4.05	2.65	4.05	3.59	48	48
2	60.3	60.2	4.5	3.65	4.5	4.14	56	56
2.1/2"	76.1	76.0	4.5	3.65	4.5	5.80	65	65
3	88.9	88.7	4.85	3.65	4.85	6.81	71	71
3.1/2"	101.6	101.2	4.85	3.65	4.85	8.76	75	75
4	114.3	113.9	5.4	4.5	5.4	9.90	83	83
5	139.7	139.7	5.4	4.85	5.4	16.60	92	92
6	165.1	165.1	—	—	—	—	92	92

Tolerance : (i) Light Tubes + not limited  
 (ii) Medium & Heavy Tubes But Welded + not limited  
 (iii) Single tube + 10 per cent  
 and over of one size + 8 per cent  
 Sockets : Outside diameter, + 2.5 per cent  
 + 4 per cent  
 Weight (i) For quantities of 150 metres  
 (ii) For quantities of 150 metres  
 (iii) Single tube + 10 per cent  
 and over of one size + 8 per cent  
 Sockets : Outside diameter, + 2.5 per cent  
 + 4 per cent  
 Unless otherwise specified the tubes shall be supplied screwed as per IS. 554-1955 and fitted with a socket at one end.  
 Tubes shall be supplied in random lengths from 4 to 7 M. each.  
 Each tube shall be hydraulically tested to withstand a test pressure of 50 Kg/cm<sup>2</sup> without showing defects of any kind.



**B. W. Fittings - Elbows, Tees,  
Reducers, Caps and Flangs**