

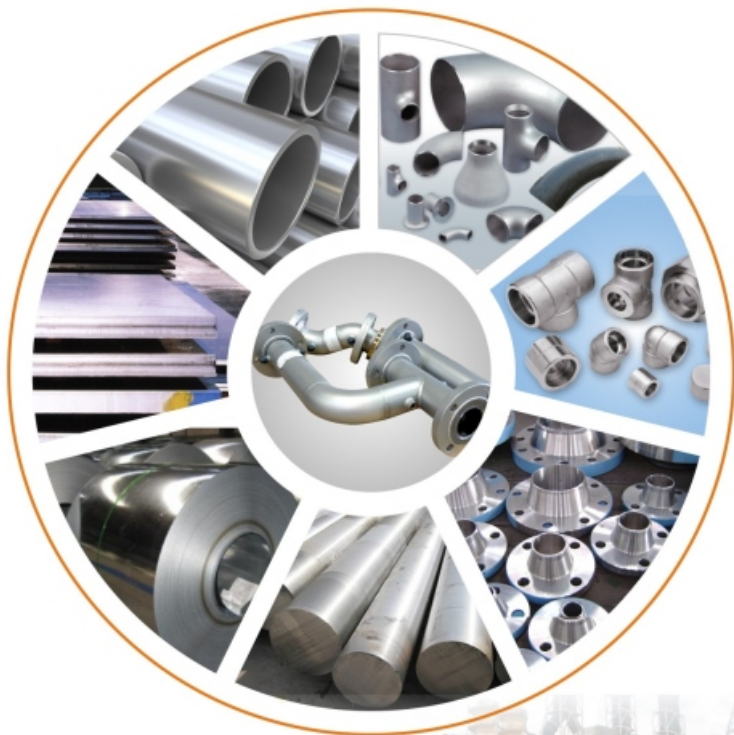


**MESTA INC**

ISO 9001:2015

AWARDED 1 NATIONAL AWARD

Nickel Alloys • Stainless Steel • Alloy Steel





**MESTA INC**

ISO 9001:2015

# INTRODUCTION

Nickel Alloys • Stainless Steel • Alloy Steel

## Manufacturing

### Butt Weld Pipe Fittings & Flanges

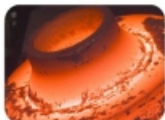
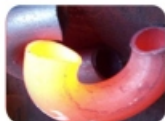
This is to introduce ourselves as the most reliable outstanding partners for manufacturing of butt welding pipe fittings, socket weld, pipe fittings, flanges & tubular components in all kinds of steel. Our panel of 25 years past experienced manufacturers ensures excellent quality fittings meeting exacting standards of National & International quality.

These Pipe Fitting are manufactured from ferrous metals & non ferrous metals such as Carbon Steel, Alloy Steel, Low Temperature Carbon Steel & Stainless Steel, Hastelloy, Titanium, Inconel, Monel, etc. Both Seamless and E.R.W. Pipe Fittings are produced by our special manufacturing process involving either hot or cold forming. We are fully capable of manufacturing Pipe fittings made to customer's specifications in terms of type, dimensions, material & quantity under any third party inspection.

These Pipe Fittings are perfectly round, rugged, leak proof, corrosion resistant (Where ever required), meeting all the requirements to ASTM/BS/DIN/ISI codes. These quality fittings extend the life of piping systems, facilitate direct pipe welding, permit compact installing a piping network.

### FACILITIES

- Hydraulic Press
- Oil Fired Furnace with Temp. Recorder
- Universal Testing Machine
- Hardness Tester
- Chemical Laboratory
- Hacksaw Cutting Machines
- Lathe Machines
- Plate Rolling Machines
- Grinding Machines
- Drilling Machines
- Motor Generator Welding Set (Advani)
- AC Welding Sets (Advani)
- DC Rectifier Welding Sets (Advani)
- Computer & Software





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**QUALITY EXCELLENCE**



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## Pipe Fittings & Bends (Buttweld)

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

### Size

Fittings : Seamless 15NB To 600NB  
 : Split / Welded 100NB To 1200NB  
 Schedule : Sch. 5 to Sch. XXS

### Types

Stubend - (Long & Short)	Elbow (45 DEG, 90 DEG, 180 DEG)
U Bend	Tee - (Barred, Equal, Reducing)
End Cap	Reducer - (Concentric & Eccentric)
Laterals	Nipple - (Swage & Barrel)

### Stainless Steel & Duplex Steel

**Stainless Steel** : ASTM A 403 WP - 304/304H/304L/316/316H  
 316/316Ti, 309, 310, 317L, 321, 347, 904L

**Duplex & Super Duplex** : Standard  
 ASTM A815 - UNS S31803, S32205 (2205)  
 Lean  
 ASTM A815, 790 - UNS S32304 (2304)  
 Super Duplex  
 ASTM A815, 790 - UNS S32750 (2507)  
 UNS S32760 (Zeron 100)

### Hi-Nickel & Titanium

#### Hi-Nickel

**Nickel** : ASTM B 366 N02200, N02201  
**Inconel** : ASTM B 366 N06600, N06601, N06617  
 ASTM B 366 N07718  
 ASTM B 366 N06625  
**Incoloy** : ASTM B 366 N08800, N08810  
 ASTM B 366 N08825  
 ASTM B 366 N08020  
**Hastelloy** : ASTM B 366 N10276, N06022  
 ASTM B 366 N10665  
 ASTM B 366 N06455

### Titanium

**Commercially** : ASTM B 363  
**Titanium Pure** : Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)  
 Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1)  
 Gr.7 R 52400 Gr.11 R 52250

**Titanium Alloys** : ASTM B 363  
 Gr.5 R 56400 (6Al-4V)  
 Gr.23 R 56401 (6Al-4V-ELI)  
 Gr.12 R 53400

### Cupro Nickel

ASTM B 171 C70600 (90:10),  
 ASTM B 171 C71500 (70:30)

### Monel

ASTM B 366 N04400  
 DIN N05500

### Alloy Steel & Carbon Steel

**Alloy Steel** : ASTM A 234 WPB WP5, WP9, WP11,  
 WP12, WP22, WP91

**Carbon Steel** : ASTM A 234 WPB, IS 1239 PART II

**Low Temp. CS** : ASTM A-420 WPL6

**Other Service** : Hot Dip Galvanizing, Sand Blasting

### Specializing in:

### Hi-Nickel & Stainless Steel Series

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## Forged Fittings

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

### Size

Size : 15NB To 100NB (Socket Weld & Threaded)  
Class : 3000#, 6000#, 9000#, In ANSI B 16.11

### Types

Elbow (45 & 90 Deg)	Coupling
Tee	Cap
Union	Plug
Cross	Bushing
Swage Nipple	Boss

### Stainless Steel & Duplex Steel

Stainless Steel : ASTM A 182F - 304/304H/304L/316/316H  
316/316Ti, 309, 310, 317L, 321, 347, 904L  
Duplex & Super Duplex : ASTM A 182 - F51, F53, F55

### Hi-Nickel & Titanium

#### Hi-Nickel

Nickel : ASTM B 564 N02200, N02201  
Inconel : ASTM B 564 N06600, N06601, N06617  
ASTM B 564 N07718  
ASTM B 564 N06625  
Incoloy : ASTM B 564 N08800, N08810  
ASTM B 564 N08825  
ASTM B 564 N08020  
Hastelloy : ASTM B 564 N10276, N06022  
ASTM B 564 N10665  
ASTM B 564 N06455

### Titanium

Commercially : ASTM B 381  
Titanium Pure : Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)  
Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1)  
Gr.7 R 52400 Gr.11 R 52250

Titanium Alloys : ASTM B 381  
Gr.5 R 56400 (6Al-4V)  
Gr.23 R 56401 (6Al-4V-ELI)  
Gr.12 R 53400

### Cupro Nickel

ASTM B 171 C70600 (90:10),  
ASTM B 171 C71500 (70:30)

### Monel

ASTM B 564 N04400  
DIN N05500

### Alloy Steel & Carbon Steel

Alloy Steel : ASTM A 234 WPB WP5, WP9, WP11,  
WP12, WP91  
Carbon Steel : ASTM A 234 WPB, IS 1239 PART II  
Low Temp. CS : ASTM A-420 WPL6  
Other Service : Hot Dip Galvanizing, Sand Blasting

### Specializing in: Hi-Nickel & Stainless Steel Series

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## Flanges

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

### Size

15NB To 1200NB, ANSI B 16.5

### Class

150#, 300#, 600#, 900#, 1500#, 2500#,

### Types

Weldneck	Screwed / Threaded
Socketweld	Long Weldneck
Slip on	Lapped Joint
Blind	Spectacle Blind

### Stainless Steel & Duplex Steel

**Stainless Steel** : ASTM A 182F - 304/304H/304L/316/  
316H/316/316Ti, 309, 310, 317L, 321,  
347, 904L

**Duplex & Super Duplex** : ASTM A 182 - F51, F53, F55

### Hi-Nickel & Titanium

#### Hi-Nickel

<b>Nickel</b>	: ASTM B 564 N02200, N02201
<b>Inconel</b>	: ASTM B 564 N06600, N06601, N06617 ASTM B 564 N07718 ASTM B 564 N06625
<b>Incoloy</b>	: ASTM B 564 N08800, N08810 ASTM B 564 N08825 ASTM B 564 N08020
<b>Hastelloy</b>	: ASTM B 564 N10276, N06022 ASTM B 564 N10665 ASTM B 564 N06455

### Titanium

**Commercially** : ASTM B 861, 862, 338 Gr.1 R 56250 (CP4)

**Titanium Pure** : Gr.2 R 50400 (CP3) Gr.3 R 50550 (CP2)  
Gr.4 R 50700 (CP1) Gr.7 R 52400  
Gr.11 R 52250

**Titanium Alloys** : ASTM B 861, 862, 338 Gr.5 R 56400 (6Al-4V)  
Gr.23 R 56401 (6Al-4V-ELI)  
Gr.12 R 53400

### Cupro Nickel

ASTM B 171 C70600 (90:10),  
ASTM B 171 C71500 (70:30)

### Monel

ASTM B 564 N04400  
DIN N05500

### Alloy Steel & Carbon Steel

<b>Alloy Steel</b>	: ASTM A 234 WPB WPS, WP9, WP11, WP12, WP91
<b>Carbon Steel</b>	: ASTM A 234 WPB, IS 1239 PART II
<b>Low Temp. CS</b>	: ASTM A-420 WPL6
<b>Other Service</b>	: Hot Dip Galvanizing, Sand Blasting

### Specializing in: Large Diameter CS Pipes & Duplex Steel

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## Long Radius Piggable Bends

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

### Size

15NB to 900NB  
Schedule : Sch. 5 to Sch. XXS

### Bend - Angle

10 Degree To 360 Degree

### " J " & " S " Bends

We Manufacture As Per Drawing

### Bend - Radius

We Manufacture Upto 22 D

### Dimension Standard

ASME/ ANSI B16.9, MSS SP - 44 & 75  
Also As Per Drawing

### Materials

Stainless Steel, Duplex, Super Duplex, Alloy Steel,  
Carbon Steel, Mild Steel, WPHY A860 X 42,  
WPHY A860 X 52, WPHY A860 X 60,  
WPHY A860 X 65, WPHY A860 X 70,  
WPHY A860 X 80, LTCS Etc.

### High Nickel Alloy

Titanium, Inconel, Monel, Hastelloy,  
Cupro Nickel, Etc.





## Piping Spool Fabrication

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

Pipe Spool typically are lengths of pipe fitting with flanged ends & plain ends that have access fittings welded on in pre-determined locations. The fitting holes are pre-drilled and ready for the installation of monitoring equipment.

**PIPING / PRE FABRICATION SPOOLS ARE MANUFACTURE AS PER ISOMETRIC DRAWINGS**

**Prefabricating pipe spools have certain advantages, such as :**

- Supervision and verification of fitting location & weld quality.
- Pre-drilling & preparation of fitting without being under full operating conditions.
- Ability to apply specialty coatings.
- Pressure & Weld testing in a safe shop environment.
- Ease of installation in the field.







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## Fabricated Fittings

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

### Products

- Pipe Header
- Heat Exchanger
- Critical Fabrication As Per Drawing
- Y Pieces
- Lateral Tee
- Flow Tee
- Bar Tee
- Fabricated Mitre Bends
- Puddle Pipe / Fittings
- Tank & Vessels

### NDT Test

- 100% Radiography
- 100% D.P.
- 100% M.P.I.
- 100% Hydro

### High Nickel Alloy

Titanium, Inconel, Monel, Hastelloy,  
Cupro Nickel, Etc.

### Materials

Stainless Steel, Duplex, Super Duplex, Alloy Steel,  
Carbon Steel, Mild Steel,

### Fabricated Fittings As Per Drawing





## Casting Products

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

We are Specialized in Ferrous & Non Ferrous Castings As Per Drawings

### Casting Products

- Flanged Elbow
- Flanged Equal Tee & Unequal Tee
- Flanged Reducer Concentric & Eccentric
- Flanged Pipe
- Bush
- Spare Parts
- As Per Drawing & Client Requirement

### NDT Test

- 100% Radiography
- 100% D.P.
- 100% M.P.I.
- 100% Hydro

### High Nickel Alloy

Titanium, Inconel, Monel, Hastelloy,  
Cupro Nickel, Etc.

### Materials

PB2, LG2, LG4, Gun Metal, Aluminum  
Bronze, Aluminum Alloys, Bronze, Cobalts,  
Copper, Berliyum & Cardium Copper Etc.

### Standards

BS 1400 & As Per Drawing





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## Coating

### Test Certificate

Manufacturer Test Certification  
En 3.1 & 3.2, IBR Test Certificate

### We are Specialized in Internal & External Coatings

We Are Engaged In Offering A Comprehensive Range of Coatings (Internal & External). The Offered Pipe, Fittings, Fabrication Jobs, Spools Are Appreciated for their Excellence Abrasion & Anti Corrosion Properties.

#### Range

50NB To 1800NB

#### Type

Single or Double Length, Fabricated Jobs, Spools, Puddle Spools, Pipe Fittings, Etc.

#### Ends

Plain, Bevelled, Flanged Ends

#### Methods

Brush, Roller, Air Spray

#### Types of Coatings

Epoxy Coating, Fusion Bonded Coating, Wrapping Coating ( 3LPE ) , Polyethylene, Polypropelene, Also As Per Client Requirements.

#### Testings

DFT, Holiday Test, Peel Test, Etc.

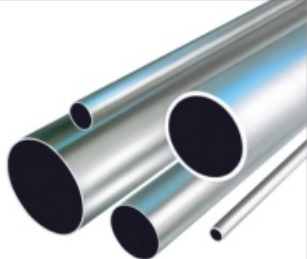




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## Pipes & Tubes

### Size

Pipes	: 1/4" to 48"
Schedule	: Sch. 5 to Sch. XXS
Tubes	: 6 mm OD to 219.08 mm OD
Thickness	: 0.6mm-10mm-Gauge : 22 SWG/BWG to 10 SWG/BWG
Form	: Round, Square, Rectangle, Coil, 'U' Shape
Length	: Standard Length & Cut Length

### Stainless Steel & Duplex Steel

**Stainless Steel** : ASTM A 312, 249, 269, 312, 358 - TP 304, 304L, 316, 316L, 316Ti, 309, 310, 317, 317L, 321, 347, 904L, SMO 254

**Duplex &** : Standard

**Super Duplex** : ASTM A 789, 790 - UNS S31803, S32205 (2205)  
**Lean**  
 ASTM A 789, 790 - UNS S32304 (2304)  
**Super Duplex**  
 ASTM A 789, 790 - UNS S32750 (2507)  
 UNS S32760 (Zeron 100)

### Hi-Nickel & Titanium

#### Hi-Nickel

<b>Nickel</b>	: ASTM B 161, 622, N02200, N02201
<b>Inconel</b>	: ASTM B 167, 517, 163 N06600, N06601, N06617 ASTM B 444 N07718 ASTM B 444, 705, 704, N06625
<b>Incoloy</b>	: ASTM B 407, 154, 163, 515, N08800, N08810 ASTM B 423 N08825 ASTM B 729, 464, 468 N08020
<b>Hastelloy</b>	: ASTM B 622, 619, 626 N10276, N06022 N10665, N06455

### Test Certificate

Manufacturer Test Certification  
 En 3.1 & 3.2, IBR Test Certificate

### Trading Unit

### Titanium

<b>Commercially</b>	: ASTM B 861, 862, 338
<b>Pure</b>	Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3) Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1) Gr.7 R 52400 Gr.11 R 52250
<b>Alloys</b>	: ASTM B 861, 862, 338 Gr.5 R 56400 (6Al-4V) Gr.23 R 56401 (6Al-4V-ELI) Gr.12 R 53400

### Cupro Nickel

ASTM B111 C70600 (90:10), C71500 (70:30)

### Monel

ASTM B165, B 725, B163 N04400, N05500,

### Alloy Steel, Carbon Steel & LTCS

<b>Alloy Steel</b>	: ASTM A335 Gr. P5, P9, P11, P22 & P91
<b>Low Alloy</b>	: ASTM A 213 - T-11, T-12, T-22,
<b>Steel Tube</b>	T-5, T-9 etc.
<b>Carbon Steel</b>	: ASTM A 106 Gr. B, ASTM A53
<b>Carbon Steel Tube</b>	: BS 3059 Gr. 360 / 440, SA 179, SA / ASTM A210 Gr. A1
<b>Low Temp. (LTCS)</b>	: ASTM A 333 Gr. 6
<b>Line Pipe</b>	: API 5L, X 42, 46, 52, 56, 60, 70
<b>Mild Steel &amp;</b>	: IS 1239, IS 3589
<b>Galvanized</b>	

### Specializing in:

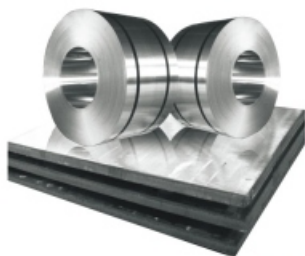
### Large Diameter CS Pipes & Duplex Steel

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## Sheets, Plates & Coils

### Size

- Sheets** : 0.8mm to 4mm thk. in 1000 upto 2000 mm Width & 2000 upto 6000 Length
- Plates** : 5mm to 100 mm thk. In 1000 upto 2000 mm Width & 2000 upto 8000 Length
- Coils** : 0.1 mm thk. to 12mm thk. in 10mm upto 1500 Width
- Foils** : 0.01 mm thk. to 0.3 mm thk. in any width
- Strips** : 1mm thk. to 100 mm thk. in 10 mm upto 900 mm Width & 1000 upto 6000 Length

### Finish

HR No.1, 2B, BA, Matt, Matt+1 side PVC, BA + 1side PVC, Chequered

### Stainless Steel & Duplex Steel

- Stainless Steel** : ASTM A240 304/304L/316/316L/316Ti/309/310/317/317L/321/347/409/410/430/904L/SMO 254 / AL6XN
- Duplex & Super Duplex** : **Standard**  
ASTM A240 - UNS S31803/S32205 (2205)  
**Lean**  
ASTM A240 - UNS S32304 (2304)  
**Super Duplex**  
ASTM A240 - UNS S32750 (2507)  
ASTM A240 - UNS S32760 (Zeron 100)

### Hi-Nickel & Titanium

#### Hi-Nickel

- Nickel** : ASTM B162 N02200, N02201
- Inconel** : ASTM B 168 N06600, N06601, N06617  
ASTM B 670 N07718  
ASTM B 443 N06625
- Incoloy** : ASTM B 409 N08800, N08810  
ASTM B 424 N08825  
ASTM B 462 N08020
- Hastelloy** : ASTM B 575 N10276, N06022  
ASTM B 333 N10665

### Trading Unit

#### Titanium

- Commercially** : ASTM B 265
- Titanium Pure** Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)  
Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1)  
Gr.7 R 52400 Gr.11 R 52250
- Titanium Alloys** : ASTM B 265  
Gr.5 R 56400 (6Al-4V)  
Gr.23 R 56401 (6Al-4V-ELI)  
Gr.12 R 53400

#### Cupro Nickel

ASTM B171 C70600 (90:10), C71500 (70:30)

#### Monel

ASTM B127 N04400, DIN N05500

#### Alloy Steel, Carbon Steel / Mild Steel

- Alloy Steel Pipe** : ASTM A387 Gr. 11, 12, 22, 5, 91 (CL 1/2)
- Carbon Steel** : ASTM A 36  
S275 JR  
IS 2062 Gr. A/B

#### Aluminium

ASTM B 928  
5083 (A95083), 5086 (A95086),  
5052 (A95052) T6061 (A96061)

#### Spring Steel Coils

CR C55, C80, C62, C45

#### Quenched & Tempered

ASTM A537 CL.1 &amp; 2

#### Boiler Quality

SA 516 Gr. 70

#### Hardox

Hardox 400 / 500

#### Specializing in:

#### Hi-Nickel & Stainless Steel Series

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**Stainless Steel Pipe Dimension As Per Astm And Weight-kg. Per Mtr. (ansi B 36.19-1965)**

Nominal Bore		Outside Diameter	Schedule 5S		Schedule 10S		Schedule 40S		Schedule 80S		Schedule 160S		Schedule XXS	
mm	INCH	mm	Wt mm	Weight (Kg/m)	Wt mm	Weight (Kg/m)	Wt mm	Weight (Kg/m)	Wt mm	Weight (Kg/m)	Wt mm	Weight (Kg/m)	Wt mm	Weight (Kg/m)
3	1/8	10.3	1.24	0.276	1.24	0.28	1.73	0.37	2.41	0.47	-	-	-	-
6	1/4	13.7	1.24	0.390	1.65	0.49	2.24	0.631	3.02	0.80	-	-	-	-
10	3/8	17.1	1.24	0.490	1.65	0.63	2.31	0.845	3.20	1.10	-	-	-	-
15	1/2	21.3	1.65	0.800	2.11	1.00	2.77	1.27	3.75	1.62	4.75	1.94	7.47	2.55
20	3/4	26.7	1.65	1.03	2.11	1.28	2.87	1.68	3.91	2.20	5.54	2.89	7.82	3.63
25	1	33.4	1.65	1.30	2.77	2.09	3.38	2.50	4.55	3.24	6.35	4.24	9.09	5.45
32	1.1/4	42.2	1.65	1.65	2.77	2.70	3.56	3.38	4.85	4.47	6.35	5.61	9.70	7.77
40	1.1/2	48.3	1.65	1.91	2.77	3.11	3.68	4.05	5.08	5.41	7.14	7.25	10.16	9.54
50	2	60.3	1.65	2.40	2.77	3.93	3.91	5.44	5.54	7.48	8.74	11.1	11.07	13.44
65	2.1/2	73.0	2.11	3.69	3.05	5.26	5.16	8.63	7.01	11.4	9.53	14.9	14.2	20.39
80	3	88.9	2.11	4.51	3.05	6.45	5.49	11.30	7.62	15.2	11.1	21.3	15.24	27.65
100	4	114.3	2.11	5.84	3.05	8.36	6.02	16.07	8.56	22.3	13.49	33.54	17.12	41.03
125	5	141.3	2.77	9.47	3.40	11.57	6.55	21.8	9.53	31.97	15.88	49.11	19.05	57.43
150	6	168.3	2.77	11.32	3.40	13.84	7.11	28.3	10.97	42.7	18.2	67.56	21.95	79.22
200	8	219.1	2.77	14.79	3.76	19.96	8.18	42.6	12.7	64.6	23.0	111.2	22.23	107.8
250	10	273.1	3.40	22.63	4.19	27.78	9.27	60.5	12.7	96.0	28.6	172.4	25.40	155.15
300	12	323.9	3.96	31.25	4.57	36.00	9.52	73.88	12.7	132.0	33.32	238.76	25.40	186.97
350	14	355.6	3.96	34.36	4.78	41.3	11.13	94.59	19.05	158.08	35.71	281.70	-	-
400	16	406.4	4.19	41.56	4.78	47.29	12.7	123.30	21.41	203.33	40.46	365.11	-	-
450	18	457.2	4.19	46.80	4.78	53.42	14.27	155.80	23.8	254.36	45.71	466.40	-	-
500	20	508.0	4.78	59.25	5.54	68.71	15.09	183.42	26.19	311.2	49.99	564.68	-	-
600	24	609.6	5.54	82.47	6.35	94.45	17.48	255.41	30.96	442.08	59.54	808.22	-	-
650	26	660.4			7.92	129.40	9.53	155.32	12.70	205.97	-	-	-	-
700	28	711.2			7.92	139.47	9.53	167.44	12.70	222.13	-	-	-	-
750	30	762.0	6.35	120.15	7.92	149.55	9.53	179.56	12.70	238.28	-	-	-	-
800	32	812.8	-	-	7.92	159.62	9.53	191.69	12.70	254.44	-	-	-	-
850	34	863.6	-	-	7.92	169.64	9.53	203.74	12.70	270.50	-	-	-	-
900	36	914.4	-	-	7.92	179.77	9.53	215.93	12.70	286.75	-	-	-	-



**BUTT-WELDING FITTINGS ASTM SPECIFICATION**

**MATERIAL SPECIFICATION FOR SEAMLESS/WELDED BUTT-WELDING PIPE-FITTINGS.**

SPECIFICATION (ASTM-3002)	CHEMICAL PROPERTIES				MECHANICAL PROPERTIES				OTHERS			
	C%	Mn%	P% (Max)	S% (Max)	Cr%	Mo%	N%	Y <sub>s</sub> (Min)		Y <sub>t</sub> (Max)	Hardness (Rockwell C)	
<b>STAINLESS STEEL</b>												
A 303 Gr. WP 304	0.080 Max	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-11.0	515	205	28	20	-
A 303 Gr. WP 304L	0.030 Max	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-12.0	485	170	28	20	-
A 303 Gr. WP 304H	0.04-0.10	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-11.0	515	205	28	20	-
A 303 Gr. WP 304LN	0.030 Max	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-11.0	515	205	28	20	N%≤0.10-0.16
A 303 Gr. WP 309	0.20 Max	2.00 Max	0.045	0.030	22.0-24.0	-	12.0-15.0	515	205	28	20	-
A 303 Gr. WP 310S	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	2.0-3.0	19.0-22.0	515	205	28	20	-
A 303 Gr. WP 316	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	2.0-3.0	10.0-14.0	515	205	28	20	-
A 303 Gr. WP 316L	0.030 Max	2.00 Max	0.045	0.030	1.00 Max	2.0-3.0	10.0-14.0	485	170	28	20	-
A 303 Gr. WP 316H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	2.0-3.0	10.0-14.0	515	205	28	20	-
A 303 Gr. WP 316LN	0.030 Max	2.00 Max	0.045	0.030	1.00 Max	2.0-3.0	10.0-13.0	515	205	28	20	-
A 303 Gr. WP 317	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	3.0-4.0	11.0-15.0	515	205	28	20	-
A 303 Gr. WP 317L	0.030 Max	2.00 Max	0.045	0.030	1.00 Max	3.0-4.0	11.0-15.0	515	205	28	20	-
A 303 Gr. WP 321	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	-	9.0-12.0	515	205	28	-
A 303 Gr. WP 321H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	-	9.0-12.0	515	205	28	-
A 303 Gr. WP 347	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	-	9.0-12.0	515	205	28	-
A 303 Gr. WP 347H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	-	9.0-12.0	515	205	28	-
<b>CARBON STEEL</b>												
A 234 Gr. WPB	0.30 Max	0.29-1.06	0.050	0.058	0.10 Min	0.40 Max	0.15 Max	0.40 Max	415-655	240	30	197
A 234 Gr. WPC	0.35 Max	0.29-1.06	0.050	0.058	0.10 Min	0.40 Max	0.15 Max	0.40 Max	485-655	275	30	197
<b>LOW TEMPERATURE CARBON STEEL</b>												
A 420 Gr. WPL6	0.30 Max	0.50-1.35	0.035	0.040	0.15-0.40	0.30 Max	0.12 Max	0.40 Max	415-655	240	30	16.5
A 420 Gr. WPL3	0.20 Max	0.31-0.64	0.050	0.050	0.13-0.37	-	-	3.20-3.80	450-620	240	30	197
<b>ALLOY STEEL</b>												
A 234 Gr. WP 1	0.28 Max	0.30-0.90	0.045	0.045	0.10-0.50	-	0.44-0.65	-	380-550	205	30	20
A 234 Gr. WP 5	0.15 Max	0.30-0.60	0.040	0.030	0.50 Max	4.0-6.0	0.44-0.65	-	415-585	205	30	217
A 234 Gr. WP 9	0.15 Max	0.30-0.60	0.030	0.030	0.50 Max	8.0-10.0	0.90-1.10	-	415-585	205	30	217
A 234 Gr. WP 11 CL1	0.05-0.15	0.30-0.60	0.030	0.030	0.50-1.0	1.0-1.5	0.44-0.65	-	415-585	205	30	197
A 234 Gr. WP 11 CL2	0.05-0.20	0.30-0.80	0.040	0.040	0.50-1.0	1.0-1.5	0.44-0.65	-	485-655	275	30	197
A 234 Gr. WP 11 CL3	0.05-0.20	0.30-0.80	0.040	0.040	0.50-1.0	1.0-1.5	0.44-0.65	-	520-690	310	30	197
A 234 Gr. WP 12 CL1	0.05-0.20	0.30-0.80	0.045	0.045	0.60 Max	0.80-1.25	0.44-0.65	-	415-585	220	30	197
A 234 Gr. WP 12 CL2	0.05-0.20	0.30-0.80	0.045	0.045	0.60 Max	0.80-1.25	0.44-0.65	-	485-655	275	30	197
A 234 Gr. WP 22 CL1	0.05-0.15	0.30-0.60	0.040	0.040	0.50 Max	1.90-2.60	0.87-1.13	-	415-585	205	30	197
A 234 Gr. WP 22 CL3	0.05-0.15	0.30-0.60	0.040	0.040	0.50 Max	1.90-2.60	0.87-1.13	-	520-690	310	30	197
A 234 Gr. WP 91	0.06-0.12	0.30-0.60	0.020	0.010	0.20-0.50	8.0-9.5	0.85-1.05	0.40 Max	585-760	415	20	-

Wt% = 0.0025 Cb% = 0.06-0.10 Ni = 0.0007  
As = 0.01 Max



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