TUBINEU

A product of NEUMIRA

PIPES & TUBES

INTRODUCTION

Tubineu is a global producer of steel tubular products, we supply seamless and welded pipes and tubes meeting the highest standard of product quality. The products are carefully monitored at all stages throughout the process keeping in mind the requirements of the customer.

Our top priority is providing every customer with a competitive price, good quality and quick delivery.

Listening to the customer, working as partners and growing together has always been the focus of our company.

Over the years we have come to believe that long term loyal associations can lead to decades of healthy and prosperous business relationships.

We continuously strive to widen our product range in order to penetrate a larger customer base throughout the world.

OUR PRODUCTS ARE USED IN VARIOUS INDUSTRIES

OIL AND GAS

POWER PLANTS

CHEMICAL INDUSTRY

SHIP BUILDING

PETROCHEMICAL INDUSTRY

PHARMACEUTICAL INDUSTRY

FOOD AND MILK

STEEL INDUSTRY

DRINKS

WATER TREATMENT

PULP AND PAPER

GENERAL ENGINEERING

PRODUCT

SEAMLESS AND WELDED PIPES AND TUBES.
Standards:

ASTM A213/A213M ASME SA213/SA213M	Ferritic and austenitic alloy steel seamless tubes
ASTM A268/A268M ASME SA268/SA268M	Ferritic and martensitic seamless and welded tubes
ASTM A269/A269M	Austenitic seamless and welded tubes
ASTM A312/A312M ASME SA312/SA312M	Austenitic seamless and welded pipes
ASTM A376/A376M ASME SA376/SA376M	Austenitic seamless pipes for high temperature
ASTM A789/A789M ASME SA789/A789M	Ferritic and austenitic seamless and welded tubes
ASTM A790/A790M ASME SA790/SA790M	Ferritic and austenitic seamless and welded pipes

MATERIALS:
Austenitic Steel Grades:

TP304 / TP304L / TP304H
1.4301 / 1.4306 / 1.4948

TP310S / TP310H
1.4845 / TP1.4335

TP316 / TP316L / TP316H / TP316Ti
1.4401 / 1.4404 / 1.4918 / 1.4571

TP321 / TP321H
1.4541 / 1.4941

TP347 / TP347H
1.4550 / 1.4912

TP317 / TP317L
1.4438 / 1.4466

MATERIALS:
Duplex Steel Grades:

UNS S32304
1.4362

UNS S31803
1.4462

UNS S32750
1.4410

UNS S32760
1.4501

SIZES:

Pipes
1/8" to 48"

Tubes
6mm to 101.60mm

Steel pipe - Dimensions and weights

ANSI/ASME B36.19M

Nominal	OD		Schedule 5S			Schedule 10S			Schedule 40S			Schedule 80S		
Pipe Size	in	mm	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m
1/8	0.405	10.3	-	-	-	0.049	1.24	0.28	0.068	1.73	0.37	0.095	2.41	0.47
1/4	0.540	13.7	-	-	-	0.065	1.65	0.49	0.088	2.24	0.63	0.119	3.02	0.80
3/8	0.675	17.1	-	-	-	0.065	1.65	0.63	0.091	2.31	0.84	0.126	3.20	1.10
1/2	0.840	21.3	0.065	1.65	0.80	0.083	2.11	1.00	0.109	2.77	1.27	0.147	3.73	1.62
3/4	1.050	26.7	0.065	1.65	1.03	0.083	2.11	1.28	0.113	2.87	1.69	0.154	3.91	2.20
1	1.315	33.4	0.065	1.65	1.30	0.109	2.77	2.09	0.133	3.38	2.50	0.179	4.55	3.24
$1^{1/4}$	1.660	42.2	0.065	1.65	1.65	0.109	2.77	2.70	0.140	3.56	3.39	0.191	4.85	4.47
$1^{1/2}$	1.900	48.3	0.065	1.65	1.91	0.109	2.77	3.11	0.145	3.68	4.05	0.200	5.08	5.41
2	2.375	60.3	0.065	1.65	2.40	0.109	2.77	3.93	0.154	3.91	5.44	0.218	5.54	7.48
$2^{1/2}$	2.875	73.0	0.083	2.11	3.69	0.120	3.05	5.26	0.203	5.16	8.63	0.276	7.01	11.41
3	3.500	88.9	0.083	2.11	4.51	0.120	3.05	6.45	0.216	5.49	11.29	0.300	7.62	15.27
$3^{1/2}$	4.000	101.6	0.083	2.11	5.18	0.120	3.05	7.40	0.226	5.74	13.57	0.318	8.08	18.63
4	4.500	114.3	0.083	2.11	5.84	0.120	3.05	8.36	0.237	6.02	16.07	0.337	8.56	22.32
5	5.563	141.3	0.109	2.77	9.47	0.134	3.40	11.57	0.258	6.55	21.77	0.375	9.53	30.97
6	6.625	168.3	0.109	2.77	11.32	0.134	3.40	13.84	0.280	7.11	28.26	0.432	10.97	42.56
8	8.625	219.1	0.109	2.77	14.79	0.148	3.76	19.96	0.322	8.18	42.55	0.500	12.70	64.64
10	10.750	273.1	0.134	3.40	22.63	0.165	4.19	27.78	0.365	9.27	60.31	0.500[2]	12.70[2]	96.01[2]
12	12.750	323.9	0.156	3.96	31.25	0.180	4.57	36.00	0.375[2]	9.53[2]	73.88[2]	0.500[2]	12.70[2]	132.08[2]
14	14.000	355.6	0.156	3.96	34.36	0.188[2]	4.78[2]	41.30[2]	-	-	-	-	-	-
16	16.000	406.4	0.165	4.19	41.56	0.188[2]	4.78[2]	47.29[2]	-	-	-	-	-	-
18	18.000	457	0.165	4.19	46.81	0.188[2]	4.78[2]	53.26[2]	-	-	-	-	-	-
20	20.000	508	0.188	4.78	59.25	0.218[2]	5.54[2]	68.61[2]	-	-	-	-	-	-
22	22.000	559	0.188	4.78	65.24	0.218[2]	5.54[2]	75.53[2]	-	-	-	-	-	-
24	24.000	610	0.218	5.54	82.47	0.250	6.35	94.45	-	-	-	-	-	-
30	30.000	762	0.250	6.35	118.31	0.312	7.92	147.36	-	-	-	-	-	-

Note: Although the above specification is applicable to stainless steel, quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.

Steel pipe - Dimensions and weights

ANSI/ASME B36.10M

Nominal	OD		Schedule 10			Schedule 20			Schedule 30			Schedule 40		
Pipe Size	in	mm	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m
1/8	0.405	10.3	-	-	-	-	-	-	0.057	1.45	0.32	0.068	1.73	0.37
1/4	0.540	13.7	-	-	-	-	-	-	0.073	1.85	0.54	0.088	2.24	0.63
3/8	0.675	17.1	-	-	-	-	-	-	0.073	1.85	0.70	0.091	2.31	0.84
1/2	0.840	21.3	-	-	-	-	-	-	0.095	2.41	1.12	0.109	2.77	1.27
3/4	1.050	26.7	-	-	-	-	-	-	0.095	2.41	1.44	0.113	2.87	1.69
1	1.315	33.4	-	-	-	-	-	-	0.114	2.90	2.18	0.133	3.38	2.50
$1^{1/4}$	1.660	42.2	-	-	-	-	-	-	0.117	2.97	2.87	0.140	3.56	3.39
$1^{1/2}$	1.900	48.3	-	-	-	-	-	-	0.125	3.18	3.53	0.145	3.68	4.05
2	2.375	60.3	-	-	-	-	-	-	0.125	3.18	4.48	0.154	3.91	5.44
$2^{1/2}$	2.875	73.0	-	-	-	-	-	-	0.188	4.78	8.04	0.203	5.16	8.63
3	3.500	88.9	-	-	-	-	-	-	0.188	4.78	9.92	0.216	5.49	11.29
$3^{1/2}$	4.000	101.6	-	-	-	-	-	-	0.188	4.78	11.41	0.226	5.74	13.57
4	4.500	114.3	-	-	-	-	-	-	0.188	4.78	12.91	0.237	6.02	16.07
5	5.563	141.3	-	-	-	-	-	-	-	-	-	0.258	6.55	21.77
6	6.625	168.3	-	-	-	-	-	-	-	-	-	0.280	7.11	28.26
8	8.625	219.1	-	-	-	0.250	6.35	33.31	0.277	7.04	36.81	0.322	8.18	42.55
10	10.750	273.0	-	-	-	0.250	6.35	41.77	0.307	7.80	51.03	0.365	9.27	60.31
12	12.750	323.8	-	-	-	0.250	6.35	49.73	0.330	8.38	65.20	0.406	10.31	79.73
14	14.000	355.6	0.250	6.35	54.69	0.312	7.92	67.90	0.375	9.53	81.33	0.438	11.13	94.55
16	16.000	406.4	0.250	6.35	62.64	0.312	7.92	77.83	0.375	9.53	93.27	0.500	12.70	123.30
18	18.000	457	0.250	6.35	70.57	0.312	7.92	87.71	0.438	11.13	122.38	0.562	14.27	155.80
20	20.000	508	0.250	6.35	78.55	0.375	9.53	117.15	0.500	12.70	155.12	0.594	15.09	183.42
22	22.000	559	0.250	6.35	86.54	0.375	9.53	129.13	0.500	12.70	171.09	-	-	-
24	24.000	610	0.250	6.35	94.53	0.375	9.53	141.12	0.562	14.27	209.64	0.688	17.48	255.41
26	26.000	660	0.312	7.92	127.36	0.500	12.70	202.72	-	-	-	-	-	-
28	28.000	711	0.312	7.92	137.32	0.500	12.70	218.69	0.625	15.88	271.21	-	-	-
30	30.000	762	0.312	7.92	147.28	0.500	12.70	234.67	0.625	15.88	292.18	-	-	-
32	32.000	813	0.312	7.92	157.24	0.500	12.70	250.64	0.625	15.88	312.15	0.688	17.48	342.91
34	34.000	864	0.312	7.92	167.20	0.500	12.70	266.61	0.625	15.88	332.12	0.688	17.48	364.90
36	36.000	914	0.312	7.92	176.96	0.500	12.70	282.27	0.625	15.88	351.70	0.750	19.05	420.42
38	38.000	965	-	-	-	-	-	-	-	-	-	-	-	-
40	40.000	1016	-	-	-	-	-	-	-	-	-	-	-	-
42	42.000	1067	-	-	-	-	-	-	-	-	-	-	-	-
44	44.000	1118	-	-	-	-	-	-	-	-	-	-	-	-
46	46.000	1168	-	-	-	-	-	-	-	-	-	-	-	-
48	48.000	1219	-	-	-	-	-	-	-	-	-	-	-	-

Note: The above specification is applicable to all steel pipe including stainless steel. Quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.

Steel pipe - Dimensions and weights

ANSI/ASME B36.10M

Nominal	OD		Schedule (STD)			Schedule 60			Extra Strong (XS)			Schedule 80		
Pipe Size	in	mm	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m
1/8	0.405	10.3	0.068	1.73	0.37	-	-	-	0.095	2.41	0.47	0.095	2.41	0.47
1/4	0.540	13.7	0.088	2.24	0.63	-	-	-	0.119	3.02	0.80	0.119	3.02	0.80
3/8	0.675	17.1	0.091	2.31	0.84	-	-	-	0.126	3.20	1.10	0.126	3.20	1.10
1/2	0.840	21.3	0.109	2.77	1.27	-	-	-	0.147	3.73	1.62	0.147	3.73	1.62
3/4	1.050	26.7	0.113	2.87	1.69	-	-	-	0.154	3.91	2.20	0.154	3.91	2.20
1	1.315	33.4	0.133	3.38	2.50	-	-	-	0.179	4.55	3.24	0.179	4.55	3.24
$1^{1/4}$	1.660	42.2	0.140	3.56	3.39	-	-	-	0.191	4.85	4.47	0.191	4.85	4.47
$1^{1/2}$	1.900	48.3	0.145	3.68	4.05	-	-	-	0.200	5.08	5.41	0.200	5.08	5.41
2	2.375	60.3	0.154	3.91	5.44	-	-	-	0.218	5.54	7.48	0.218	5.54	7.48
$2^{1/2}$	2.875	73.0	0.203	5.16	8.63	-	-	-	0.276	7.01	11.41	0.276	7.01	11.41
3	3.500	88.9	0.216	5.49	11.29	-	-	-	0.300	7.62	15.27	0.300	7.62	15.27
$3^{1/2}$	4.000	101.6	0.226	5.74	13.57	-	-	-	0.318	8.08	18.63	0.318	8.08	18.63
4	4.500	114.3	0.237	6.02	16.07	-	-	-	0.337	8.56	22.32	0.337	8.56	22.32
5	5.563	141.3	0.258	6.55	21.77	-	-	-	0.375	9.53	30.97	0.375	9.53	30.97
6	6.625	168.3	0.280	7.11	28.26	-	-	-	0.432	10.97	42.56	0.432	10.97	42.56
8	8.625	219.1	0.322	8.18	42.55	0.406	10.31	53.08	0.500	12.70	64.64	0.500	12.70	64.64
10	10.750	273.0	0.365	9.27	60.31	0.500	12.70	81.55	0.500	12.70	81.55	0.594	15.09	96.01
12	12.750	323.8	0.375	9.53	73.88	0.562	14.27	108.96	0.500	12.70	97.46	0.688	17.48	132.08
14	14.000	355.6	0.375	9.53	81.33	0.594	15.09	126.71	0.500	12.70	107.39	0.750	19.05	158.10
16	16.000	406.4	0.375	9.53	93.27	0.656	16.66	160.12	0.500	12.70	123.30	0.844	21.44	203.53
18	18.000	457	0.375	9.53	105.16	0.750	19.05	205.74	0.500	12.70	139.15	0.938	23.83	254.55
20	20.000	508	0.375	9.53	117.15	0.812	20.62	247.83	0.500	12.70	155.12	1.031	26.19	311.17
22	22.000	559	0.375	9.53	129.13	0.875	22.23	294.25	0.500	12.70	171.09	1.125	28.58	373.83
24	24.000	610	0.375	9.53	141.12	0.969	24.61	355.26	0.500	12.70	187.06	1.219	30.96	442.08
26	26.000	660	0.375	9.53	152.87	-	-	-	0.500	12.70	202.72	-	-	-
28	28.000	711	0.375	9.53	164.85	-	-	-	0.500	12.70	218.69	-	-	-
30	30.000	762	0.375	9.53	176.84	-	-	-	0.500	12.70	234.67	-	-	-
32	32.000	813	0.375	9.53	188.82	-	-	-	0.500	12.70	250.64	-	-	-
34	34.000	864	0.375	9.53	200.31	-	-	-	0.500	12.70	266.61	-	-	-
36	36.000	914	0.375	9.53	212.56	-	-	-	0.500	12.70	282.27	-	-	-
38	38.000	965	0.375	9.53	224.54	-	-	-	0.500	12.70	298.24	-	-	-
40	40.000	1016	0.375	9.53	236.53	-	-	-	0.500	12.70	314.22	-	-	-
42	42.000	1067	0.375	9.53	248.52	-	-	-	0.500	12.70	330.19	-	-	-
44	44.000	1118	0.375	9.53	260.50	-	-	-	0.500	12.70	346.16	-	-	-
46	46.000	1168	0.375	9.53	272.25	-	-	-	0.500	12.70	351.82	-	-	-
48	48.000	1219	0.375	9.53	284.24	-	-	-	0.500	12.70	377.79	-	-	-

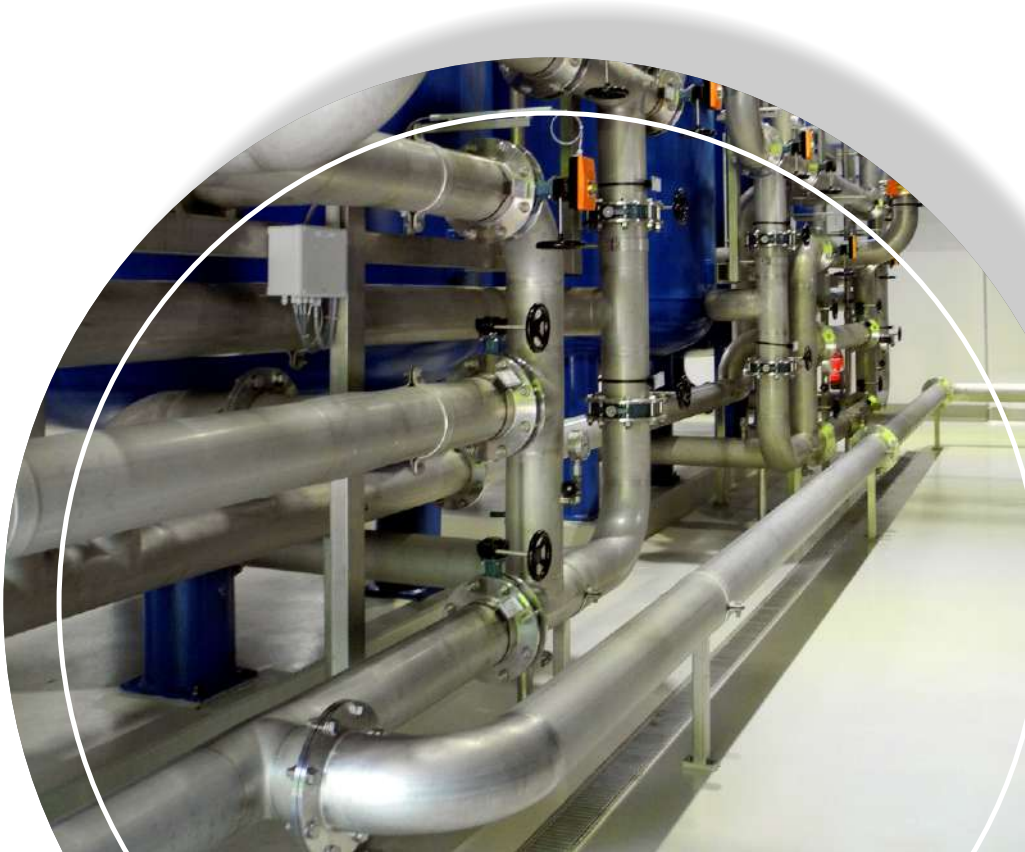
Note: The above specification is applicable to all steel pipe including stainless steel. Quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.

Steel pipe - Dimensions and weights

ANSI/ASME B36.10M

Nominal	OD		Schedule 100			Schedule 120			Schedule 140			Schedule 160		
Pipe Size	in	mm	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m	in	mm	kg/m
1/2	0.840	21.3	-	-	-	-	-	-	-	-	-	0.188	4.78	1.95
3/4	1.050	26.7	-	-	-	-	-	-	-	-	-	0.219	5.56	2.90
1	1.315	33.4	-	-	-	-	-	-	-	-	-	0.250	6.35	4.24
$1^{1/4}$	1.660	42.2	-	-	-	-	-	-	-	-	-	0.250	6.35	5.61
$1^{1/2}$	1.900	48.3	-	-	-	-	-	-	-	-	-	0.281	7.14	7.25
2	2.375	60.3	-	-	-	-	-	-	-	-	-	0.344	8.74	11.11
$2^{1/2}$	2.875	73.0	-	-	-	-	-	-	-	-	-	0.375	9.53	14.92
3	3.500	88.9	-	-	-	-	-	-	-	-	-	0.438	11.13	21.35
$3^{1/2}$	4.000	101.6	-	-	-	-	-	-	-	-	-	-	-	-
4	4.500	114.3	-	-	-	0.438	11.13	28.32	-	-	-	0.531	13.49	33.54
5	5.563	141.3	-	-	-	0.500	12.70	40.28	-	-	-	0.625	15.88	49.11
6	6.625	168.3	-	-	-	0.562	14.27	54.20	-	-	-	0.719	18.26	67.56
8	8.625	219.1	0.594	15.09	75.92	0.719	18.26	90.44	0.812	20.62	100.92	0.906	23.01	111.27
10	10.750	273.0	0.719	18.26	114.75	0.844	21.44	133.06	1.000	25.40	155.15	1.125	28.58	172.33
12	12.750	323.8	0.844	21.44	159.91	1.000	25.40	186.97	1.125	28.58	208.14	1.312	33.32	238.76
14	14.000	355.6	0.938	23.83	194.96	1.094	27.79	224.65	1.250	31.75	253.56	1.406	35.71	281.70
16	16.000	406.4	1.031	26.19	245.56	1.219	30.96	286.64	1.438	36.53	333.19	1.594	40.49	365.35
18	18.000	457	1.156	29.36	309.62	1.375	34.93	363.56	1.562	39.67	408.26	1.781	45.24	459.37
20	20.000	508	1.281	32.54	381.53	1.500	38.10	441.49	1.750	44.45	508.11	1.969	50.01	564.81
22	22.000	559	1.375	34.93	451.42	1.625	41.28	527.02	1.875	47.63	600.63	2.125	53.98	672.26
24	24.000	610	1.531	38.89	547.71	1.812	46.02	640.03	2.062	52.37	720.15	2.344	59.54	808.22

Note: Although the above specification is applicable to stainless steel, quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.



ASTM SPECIFICATION & TOLERANCE FOR TUBING & PIPING

Specification	Allowable Outside Diameter Variation in mm			Allowable Wall Thickness Variation		Exact Length Tolerance in mm		Testing
	Nominal Diameter	Over	Under	%Over	%Under	Over	Under	
ASTM-A213 Seamless Boiler Superheater and Heat Exchanger Tubes	Under 25.4	.1016	.1016	+20	-0	3.175	0	Flattening Test Tension Test Flare Test Hardness Test 100% Hydrostatic test Refer to ASTM A-450
	25.4-38.1 incl	.1524	.1524	+22	-0	3.175	0	
	38.1-50.8 excl	.2032	.2032	+22	-0	3.176	0	
	50.8-63.5 excl	.254	.254	+22	-0	4.46	0	
	63.5-76.2 excl	.3048	.3048	+22	-0	4.76	0	
	76.2-101.6 incl	.381	.381	+22	-0	4.76	0	
ASTM-A249 Welded Boiler Superheater, Heat Exchanger And Condenser Tubes	Under 25.4	.1016	.1016	+10	-10	3.175	0	Tension Test Flattening Test Flange Test Reverse Bend Test Hardness Test 100% Hydrostatic Test Refer to ASTM A-450
	25.4-38.1 incl	.1524	.1524	+10	-10	3.175	0	
	38.1-50.8 Excl	.2032	.2032	+10	-10	3.175	0	
	50.0-63.5 excl	.254	.254	+10	-10	4.762	0	
	63.5-76.2 excl	.3848	.3048	+10	-10	4.762	0	
	76.2-101.6 incl	.381	.381	+10	-10	4.762	0	
				Minimum Wall tubes + 18% 0 available On request				
ASTM-A269 Seamless & Welded Tubing for General Service	Untp 12.7	.13	.13	+15	-15	3.2	0	Flare Test (Seamless Only) Flange Test (Welded Only) Hardness Test Reverse Flattening Test (Welded only) 100% Hydrostatic Test Refer to ASTM-A269
	12.7-38.1 excl	.13	.13	+10	-10	3.2	0	
	38.1-88.9 excl	.25	.25	+10	-10	4.8	0	
	88.9-139.7 excl	.38	.38	+10	-10	4.8	0	
	139.7-203.2 excl	.76	.76	+10	-10	4.8	0	
ASTM-A270 Seamless & Welded Sanitary Tubing	25.4	.05	.20	+10.0	-10.0	3.2	0	Reverse flattening Test 100% Hydrostatic Test External' polish on all tubes Refer to ASTM A-270
	38.1	0.5	.20	+10.0	-10.0	3.2	0	
	50.8	.05	.28	+10.0	-10.0	3.2	0	
	60.5	.05	.28	+10.0	-10.0	3.2	0	
	76.2	.08	.30	+10.0	-10.0	3.2	0	
	101.6	.08	.38	+10.0	-10.0	4.8	0	
ASTM-A312 Seemless & Welded pipe	3.175-38.1 incl	.4	.79	Minimum Wall 12.5% under nominal wall Specified		6.4 6.4 6.4 (Normally Random Lengths ordered)	0 0 0	Tension Test Flattening Test 100% Hydrostatic Test Refer to ASTM A-530
	38.1-1016 incl	.79	.79					
	101.6-203.2 incl	1.59	.79					
ASTM A-358 Welded pipe	219.08-750mm	+0.5%		-0.3		6.0		Refer to ASTM A-530

CHEMICAL COMPOSITION

Grade	Tube Standard	C	Si	Mn	P	S	Ni	Cr	Mo	Others
Austenitic stainless steels										
TP 304	A269, A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	8.00-11.00	18.00-20.00	-	-
TP304L	A269, A213, A312	< 0.035	< 0.75	< 2.00	< 0.040	< 0.030	8.00-13.00	18.00-20.00	-	-
TP304N	A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	8.00-11.00	18.00-20.00	-	N 0.10-0.16
TP304LN	A269, A213, A312	< 0.035	< 0.75	< 2.00	< 0.040	< 0.030	8.00-11.00	18.00-20.00	-	N 0.10-0.16
TP304H	A213, A312	0.04-0.10	< 0.75	< 2.00	< 0.040	< 0.030	8.00-11.00	18.00-20.00	-	-
TP 316	A269, A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	11.00-14.00	16.00-18.00	2.00-3.00	-
TP 316L	A269, A213, A312	< 0.035	< 0.75	< 2.00	< 0.040	< 0.030	10.00-15.00	16.00-18.00	2.00-3.00	-
TP 316N	A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	11.00-14.00	16.00-18.00	2.00-3.00	N 0.10-0.16
TP 316LN	A269, A213, A312	< 0.035	< 0.75	< 2.00	< 0.040	< 0.030	11.00-14.00	16.00-18.00	2.00-3.00	N 0.10-0.16
TP 316Ti	A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	10.00-14.00	16.00-18.00	2.00-3.00	Ti 5(C+N)-0.70
TP 316H	A213, A312	0.04-0.10	< 0.75	< 2.00	< 0.040	< 0.030	11.00-14.00	16.00-18.00	2.00-3.00	-
TP 321	A269, A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	9.00-13.00	17.00-20.00	-	Ti > 5xC, max 0.60%
TP 321H	A213, A312	0.04-0.10	< 0.75	< 2.00	< 0.040	< 0.030	9.00-13.00	17.00-20.00	-	Ti > 5xC, max 0.60%
TP 317	A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	11.00-14.00	18.00-20.00	3.00-4.00	-
TP 317L	A213, A312	< 0.035	< 0.75	< 2.00	< 0.040	< 0.030	11.00-15.00	18.00-20.00	3.00-4.00	-
TP 310S	A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	19.00-22.00	24.00-26.00	0.75 max	-
TP 310H	A213, A312	< 0.10	< 1.0	< 2.00	< 0.040	< 0.030	19.00-22.00	24.00-26.00	-	-
TP 347	A269, A213, A312	< 0.08	< 0.75	< 2.00	< 0.040	< 0.030	9.00-13.00	17.00-20.00		Co + Ta > 10xC, max 1.00%
TP 347H	A213, A312	0.04-0.10	< 0.75	< 2.00	< 0.040	< 0.030	9.00-13.00	17.00-20.00	-	Co + Ta > 8xC, max 1.00%
TP 904L	A269, A312	< 0.02	< 1,0	< 2.00	< 0.040	< 0.030	23.00-28.00	19.00-23.00	4.00-5.00	N 0.10, Cu 1.0-2.0
1.4301	EN 10216-5	< 0.07	< 1.00	< 2.00	< 0.040	< 0.030	8.0-10.5	17.0-19.5	-	0.11
1.4306	EN 10216-5	< 0.03	< 1.00	< 2.00	< 0.040	< 0.030	10.0-12.0	18.0-20.0	-	0.11
1.4307	EN 10216-5	< 0.03	< 1.00	< 2.00	< 0.040	< 0.030	8.0-10.0	17.5-19.5	-	0.11
1.4311	EN10216-5	< 0.03	< 1.00	< 2.00	< 0.040	< 0.030	8.5-11.5	17.0-19.5	-	0.12-0.22
1.4401	EN 10216-5	< 0.07	< 1.00	< 2.00	< 0.040	< 0.030	10.0-13.0	16.5-18.5	2.0-2.5	0.11
1.4404	EN 10216-5	< 0.03	< 1.00	< 2.00	< 0.040	< 0.030	10.0-13.0	16.5-18.5	2.0-2.5	0.11
1.4435	EN 10216-5	< 0.03	< 1.00	< 2.00	< 0.040	< 0.030	12.5-15.0	17.0-19.0	2.5-3.0	-
1.4429	EN 10216-5	< 0.03	< 1.00	< 2.00	< 0.040	< 0.015	11.0-14.0	16.5-18.5	2.5-3.0	0.12-0.22
1.4436	EN 10216-5	< 0.05	< 1.00	< 2.00	< 0.040	< 0.030	10.5-13.0	16.5-18.5	2.5-3.0	-
1,4541	EN 10216-5	< 0.08	< 1.00	< 2.00	< 0.040	< 0.015	9.0-12.0	17.0-19.0	-	5*C-0.70
1.4571	EN 10216-5	< 0.08	< 1.00	< 2.00	< 0.040	< 0.030	10.5-13.5	16.5-18.5	2.0-2.5	5*C-0.70
1.4828	SEW 470	< 0.20	1.5-2.5	< 2.00	< 0.045	< 0.030	11.0-13.0	19.0-21.0	-	-
1.4845	SEW 470	< 0.15	< 0.75	< 2.00	< 0.045	< 0.030	19.0-22.0	24.0-26.0	-	-
1.4878	SEW 470	< 0.12	< 1.00	< 2.00	< 0.045	< 0.030	9.0-12.0	17.0-19.0	-	4*C-0.80
Duplex stainless steel										
S31803	A790	< 0.03	< 1,0	< 2.00	< 0.030	< 0.020	4.50-6.50	21.0-23.0	2.50-3.50	N 0.08-0.20
S32205	A790	< 0.03	< 1,0	< 2.00	< 0.030	< 0.020	4.50-6.50	22.00-23.00	3.00-3.50	N 0.14-0.20
1.4462	10216-5	< 0.03	< 1,0	< 2.00	< 0.035	< 0.020	4.50-6.50	21.0-23.0	2.50-3.50	-
Superduplex stainless steel										
S32750	A790	< 0.03	< 1,0	< 2.00	< 0.030	< 0.020	4.50-6.50	21.0-23.0	2.50-3.50	N 0.08-0.20
S32760	A790	< 0.03	< 1,0	< 2.00	< 0.030	< 0.020	4.50-6.50	22.00-23.00	3.00-3.50	N 0.14-0.20

Austenitic Steel

TYPES OF APPLICATIONS

TP304	Chemical processing equipment, Chemical tubing, Food preparation equipment, Food processing equipment, Bar rails, Pharmaceutical processing equipment, Piping systems, Railings, Water pipes, Heat exchanger tubes, Mechanical & structural components General purpose stainless steel with good corrosion resistance for most application.
TP304L	Chemical plant and food processing equipment, where freedom from sensitization is required
TP304H	Higher carbon content than 304L, for increased strength at high temperatures.
TP316/316L	Where higher corrosion resistance is required. Chemical processing equipment, Chemical tubing, Food preparation equipment, Food processing equipment, Bar rails, Pharmaceutical processing equipment, Piping systems, Railings, Water pipes, Heat exchanger tubes, Mechanical & structural components General purpose stainless steel with good corrosion resistance for most application.
TP316H	Heat exchangers, furnaces, chemical and petrochemical plant. Similar oxidation resistance to TP 316.
TP316Ti	A titanium stabilized version of 316 used where good resistance to intergranular corrosion and high temperature strength is required
TP321	Heat exchanger tubing, Chemical processing tubing, Pressure tank tubing.
TP321H	Heat exchangers, furnaces, boilers in chemical and petrochemical plant. High carbon version of TP 321 which ensures greater resistance.
TP317	Ink manufacturing equipment, Pulp & paper manufacturing equipment,Chemical processing tubing.
TP347	Boilers in the thermal power plant, reheaters and super heaters
TP904L	High resistance to general corrosion in e.g. sulphuric and acetic acids, crevice corrosion, stress corrosion cracking, pitting in chloride bearing solutions

DUPLEX

S31803	Heat exchangers, fans, chemical tanks, flow lines, marine and refinery.
S32750	Oil & gas, chemical process, power industries. Where heat-exchangers is main application.
S31254	High levels of chromium, molybdenum, and nitrogen is especially suited for high-chloride environments such as sea water and other high-chloride process flows.

QUALITY ASSURANCE

Pipe Inspection is a continuous process, Various inspections and tests are performed at all stages of manufacturing to produce a good quality pipe.

Metallurgical
To confirm that the chemical requirements of pipe are as per the material standard. Normally known as Micro and Macro pipe inspection & testing.

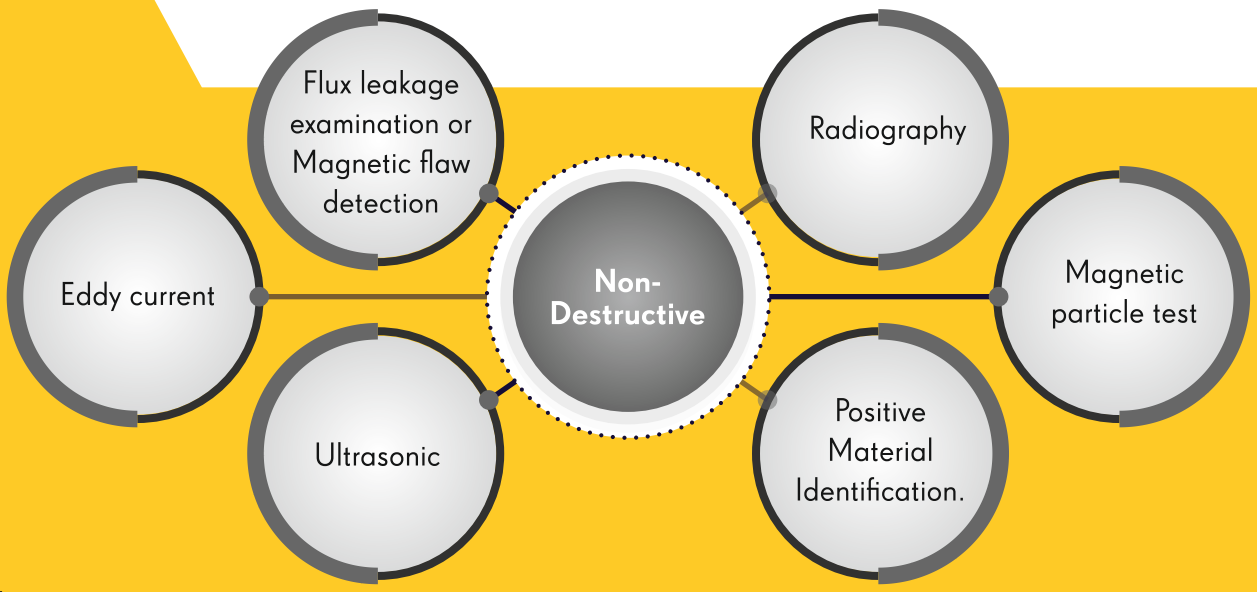
Micro Analysis or Chemical Analysis of Raw material and Product

Destructive
To confirm the mechanical requirements of pipe are as per the material standard.

Tensile test is done to check the yield and ultimate tensile of the pipe Bend test / Guided bend test is used to check the integrity of weld joint Flattening test examines the ability of plastic deformation in a pipe Impact test / Charpy V-Notch Test, check the ability of a material to withstand low-temperature conditions

Hydro Test
To Ensure that pipe is 100% leak proof and the ability of the pipe to withstand pressure

Non-destructive
To check whether any physical defects are present in the pipe/weld, which may affect its performance during the service. These testing are



Visual
To check for surface imperfections such as mechanical marks, lamination, tears or any other visual imperfections and also check weld defects such as porosity and undercuts,

Dimension
During a dimensional inspection, following to be confirmed with the standard Diameter, Length, Thickness, Straightness, Ovality and Weight

Marking
To consist of Manufacturer logo, ASTM material code, Material Grade, Size, Thickness/schedule, Length and Heat number.

Packing
To prevent the damage during transportation, pipe ends are covered with plastic cap,

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