



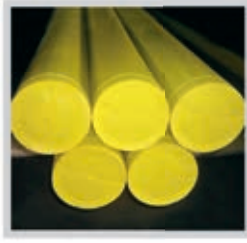
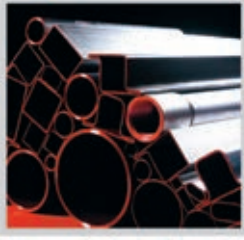
ERCIYAS TUBE INDUSTRY & TRADE CO. INC.



QUALITY POLICY

With an understanding based on modern management and innovation, and prioritizing customer satisfaction, we chose quality as our principle in order to expand continually and to progress rapidly towards significant targets.

It is our company's primary policy to ensure conformity to national and international standards with our concept of management based on the principles of Total Quality Management.



ERBOSAN, Erciyas Tube Industry and Trade Co. Inc. which was established in industrial and commercial center of Central Anatolia, Kayseri / Turkey, in 1974, as a joint stock company, produces welded steel black and galvanized water and gas pipes (size range: 3/8"-8"); square and rectangular hollow sections (size range: 10x10 mm - 200x200 mm); industrial tubes (size range: ø13 mm - ø219.1 mm); low pressure boiler and steam pipes hot and cold rolled sheets and plates with latest production technology, according to international standards.

Year by year, ERBOSAN increases its production and capacity while enlarging her market share in domestic market and increasing number of countries exported in the world. Thanks to geographical location ERBOSAN successfully serves to different markets with different specification product demands. As a result of that success presently Europe, America, Middle East and Africa are in the export range of ERBOSAN since 1982 and approximately 50 % of the production has been exported.

With high quality production ERBOSAN serves an important part of building and construction, agriculture, furniture and metal industries of domestic market and enjoys a well-deserved reputation in international markets through worldwide exports since 1982.

Yours very truly



ERCIYAS TUBE INDUSTRY & TRADE CO. INC.



5L-0398



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WATER, GAS and LINE PIPES

ERBOSAN BLACK PIPES

Outside Diameter: 17.2 mm – 219.1 mm
Wall Thickness : 1.50 mm – 8.20 mm
Length : Standard 6.00 meter

- Building Systems, Air Condition Systems, Watering, Government Projects
- During the production process the products die stamp marked as “ERB EN 10255 M” or “ERBOSAN”
- Plain Ended (Bevelled or Square Cut Ended) Grooved Ended, Threaded & Coupled Ended
- Between 4.00 - 12.80 meter length
- Black, Grey or Red Primer Painting
- Non - Destructive tests apply to all the products
- CE Marked



ERBOSAN GALVANIZED PIPES

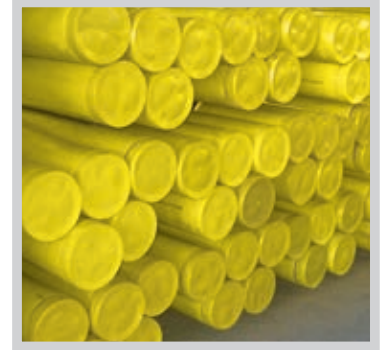
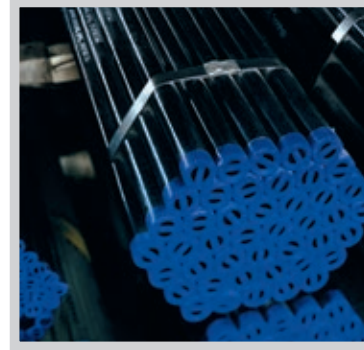
Outside Diameter : 17.2 mm – 168.3 mm
Wall Thickness : 2.00 mm - 8.00 mm
Length : Standard 6.00 meter

- Building, Fire Protecting, Heating Systems, Green Houses, Watering Projects
- All the products galvanized by hot dip galvanization system
- During the production process the products die stamped marked as “ERB EN 10255 M” or “ERBOSAN”
- Plain Ended (Bevelled or Square Cut Ended) Grooved Ended, Threaded & Coupled Ended
- Between 4.90 - 7.20 meter length can manufacture on customer request.
- Non - Destructive tests apply to all the products
- CE Marked

ERBOSAN GAS and LINE PIPES

Outside Diameter : 21.3 mm – 219.1 mm
Wall Thickness : 2.80 mm - 8.20 mm
Length : Standard 6.00 meter

- Heating System, Natural Gas, Petroleum & Gas Line Projects
- During the production process the products die stamp marked as “ERBOSAN DGB”
- Between 6.00 - 12.80 meter length
- Plain Ended (Bevelled or Square Cut Ended)
- Black, Grey or Red Primer Painting
- Polyethylene Coating 114.3 mm - 219.1 mm
- Non - Destructive tests and % 100 Hydrostatic Water Pressure Tests apply to all the products
- Heat Treatment apply acc. to standards
- CE Marked



SURFACE CONDITIONS

- Hot Dip Galvanized (EN 10240)
- Black, Self Colored
- Varnished
- Oil Protection
- Primer Painted
- Polyethylene Coated

MATERIAL

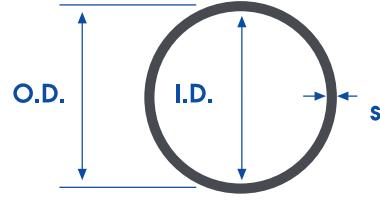
Hot Rolled Steel coils

According to norms:

- EN 10025
- API Spec 5L
- DIN 17100
- ASTM A 53
- JIS G3132

STANDARDS

- EN 10255
- EN 10217-1
- EN 10208
- ISO 65
- DIN 2440 / EN 10240
- DIN 2441 / EN 10240
- DIN 1626
- BS 1387
- NF A 49-145
- UNE 19040
- UNE 19043
- API Spec 5L
- ASTM A 53
- ASTM A 795
- TS 301
- TS 6047



- Plain Ended (Square Cut or Bevelled Ended)
- Threaded & Coupled
- Grooved Ended
- Cold Welded, Weld Seam Annealed or Normalized

Nom. Diameter		Wall Thickness (s) *				(O.D.) *					
		min.		max.		min.		opt.		max.	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
1/2"	15	0.079	2.0	0.118	3.0	0.825	21.0	0.840	21.3	0.858	21.8
3/4"	20	0.079	2.0	0.118	3.0	1.035	26.5	1.059	26.9	1.075	27.3
1"	25	0.098	2.5	0.158	4.0	1.311	33.3	1.327	33.7	1.346	34.2
1 1/4"	32	0.098	2.5	0.177	4.5	1.654	42.0	1.669	42.4	1.689	42.9
1 1/2"	40	0.106	2.7	0.177	4.5	1.886	47.9	1.900	48.3	1.921	48.8
2"	50	0.106	2.7	0.197	5.0	2.350	59.7	2.375	60.3	2.394	60.8
2 1/2"	65	0.114	2.9	0.217	5.5	2.965	75.3	2.996	76.1	3.016	76.6
3"	80	0.126	3.2	0.236	6.0	3.465	88.0	3.500	88.9	3.524	89.5
4"	100	0.142	3.6	0.236	6.0	4.453	113.1	4.500	114.3	4.527	115.0
5"	125	0.177	4.5	0.276	7.0	5.453	138.5	5.500	139.7	5.543	140.8
6"	150	0.177	4.5	0.315	8.0	6.453	163.9	6.503	165.1	6.555	166.5
8"	200	0.177	4.5	0.354	9.0	8.539	216.9	8.625	219.1	8.709	221.2

* Outside diameters and wall thickness may change according to required product specification.

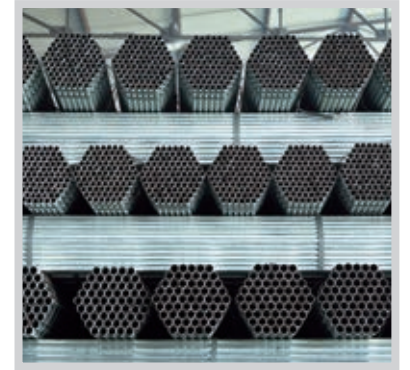


INDUSTRIAL and CONSTRUCTION TUBES

INDUSTRIAL & CONSTRUCTION TUBES

Outside Diameter: 13 mm – 219.1 mm
Wall Thickness : 0.60 mm – 8.00 mm
Length : Standard 6.00 meter

- Furniture, Automotive, Textile, Home Appliances, Fence, Industry & Building Construction, Transport, Green Houses, Solar Energy Systems
- Products Serve as Black , Galvanized, Painted, or Lightly Oiled
- OD 17.20 mm and up can serve as hot dip galvanized
- Between 4.00 - 12.00 meter length
- Cutting can be applied to the packed products
- Black, Grey or Red Primer Painting
- CE Marked



STANDARDS

- EN 10219
- EN 10305-3
- ISO 4019
- DIN 2394
- DIN 1615
- DIN 2458
- BS 6363
- BS 6323-5
- BS EN 39 (BS 1139)
- NFA 49-541
- NFA 49-643
- JIS G 3444
- TS 6476
- ASTM A-500

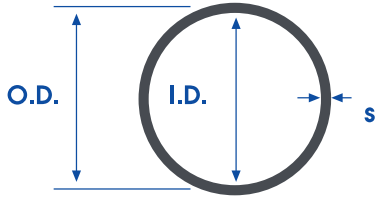
MATERIAL

Cold or Hot Rolled

Steel coils According to norms:

- EN 10130
- DIN 1623
- EN 10025
- DIN 17100
- DIN 1614
- ASTM A 568
- ASTM A 635





- Black, Self Color, Oiled or Primer Painted
- Cold Rolled
- Hot Dip Galvanized (2.00 mm and up OD 17.2 - 168.3 mm)

(O.D.) (mm)	s (mm)																	
	0.70	0.80	0.90	1.00	1.20	1.50	2.00	2.30	2.50	3.00	3.25	3.60	4.00	4.50	5.00	6.00	7.00	8.00
	approx. (kg/meter)																	
13	0.21	0.24	0.27	0.29														
16	0.27	0.30	0.34	0.37	0.44	0.54												
17.2	0.30	0.34	0.36	0.42	0.50	0.62	0.82											
19	0.31	0.36	0.40	0.45	0.53	0.65	0.87											
20	0.33	0.38	0.43	0.47	0.57	0.69	0.92											
21.3	0.36	0.42	0.46	0.50	0.60	0.75	1.00											
22	0.37	0.43	0.49	0.52	0.62	0.78	1.02											
25.4	0.42	0.48	0.55	0.61	0.72	0.89	1.19	1.36	1.47	1.75								
26.9	0.45	0.52	0.58	0.65	0.78	0.97	1.24	1.42	1.54	1.80								
28	0.47	0.54	0.60	0.67	0.79	0.98	1.28											
32	0.54	0.61	0.70	0.77	0.93	1.15	1.52	1.72	1.87	2.23	2.40	2.62	2.90					
33.7		0.65	0.73	0.80	0.97	1.20	1.59	1.84	1.92	2.27	2.54	2.80	3.05					
38		0.73	0.82	0.91	1.09	1.35	1.78	2.02	2.18	2.60	2.77	3.05	3.35					
40						1.42	1.87	2.15	2.30	2.70								
42.4		0.82	0.92	1.01	1.21	1.50	1.97	2.27	2.45	2.92	3.09	3.44	3.79	4.21				
45				1.09	1.30	1.61	2.12	2.39	2.59	3.08	3.29	3.63	4.00	4.44				
48.3					1.39	1.72	2.27	2.60	2.80	3.36	3.60	3.97	4.37	4.86				
51					1.47	1.83	2.42	2.77	2.99	3.56	3.83	4.21	4.64	5.16				
57					1.63	2.05	2.71	3.10	3.36	4.00	4.31	4.74	5.23	5.83				
60.3						2.16	2.86	3.28	3.55	4.25	4.58	5.03	5.55	6.19	6.82			
76.1						2.76	3.66	4.19	4.53	5.40	5.83	6.44	7.11	7.95	8.77			
88.9							4.29	4.90	5.33	6.35	6.85	7.70	8.50	9.39	10.3			
95							4.56	5.25	5.71	6.85	7.42	8.22	9.13	10.2	11.4			
101.6							4.90	5.62	6.10	7.28	7.89	8.70	9.63	10.8	11.9			
108							5.23	6.00	6.50	7.78	8.40	9.27	10.3	11.5	12.7			
114.3								6.35	6.88	8.24	8.90	9.83	10.9	12.2	13.5	16.1		
127										9.02	9.80	11.0	12.1	13.6	15.0	17.9		
139.7										10.1	11.0	12.1	13.4	15.0	16.6	20.0	23.2	
141.3										10.2	11.1	12.2	13.5	15.2	16.8	20.2	23.4	
165.1										12.2	13.0	14.3	15.9	17.8	19.7	24.0	27.9	31.8
168.3										12.4	13.3	14.6	16.2	18.2	20.1	24.5	28.5	32.4
219.1											17.3	19.1	21.2	23.8	26.4	31.6	36.9	41.9

* Special production sizes and thicknesses are also available on request.

HOLLOW SECTIONS

SQUARE, RECTANGULAR and SPECIAL SHAPE HOLLOW SECTIONS

Side Dimensions : 10 x 10 mm – 200 x 200 mm

Wall Thickness : 0.60 mm – 8.00 mm

Length : Standard 6.00 meter

- Furniture, Automotive, Textile, Home Appliances, Fence, Industry & Building, Construction, Transportation, Green Houses, Solar Energy Systems
- Products Serve as Black , Galvanized, Painted, or Lightly Oiled 2.00 mm & up can serve as hot dip galvanized
- Between 4.00 - 12.00 meter length
- Cutting can be applied to the packed products
- Black, Grey or Red Primer Painting
- CE Marked



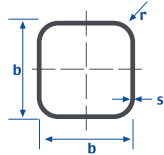
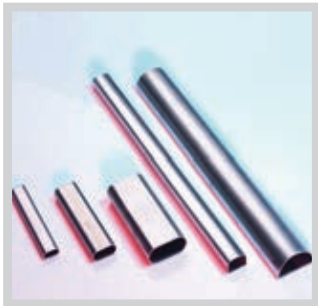
STANDARDS

- EN 10219
- EN 10305-5
- ISO 4019
- DIN 2395
- DIN 59411
- BS 6363
- NFA 49-541
- NFA 49-643
- ASTM A 500 Gr A, Gr B
- JIS G 3466
- TS 6475
- TS 5317
- ASTM A 500

MATERIAL

Cold or Hot Rolled Steel coils According to norms:

- EN 10130
- EN 10025
- DIN 1623
- DIN 17100
- DIN 1614
- ASTM A 568
- ASTM A 635



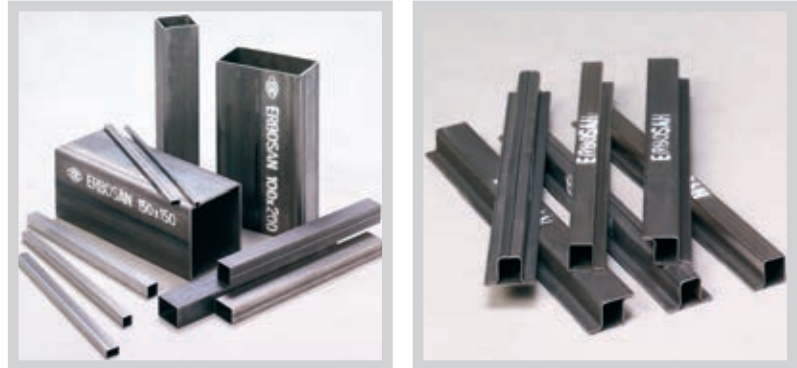
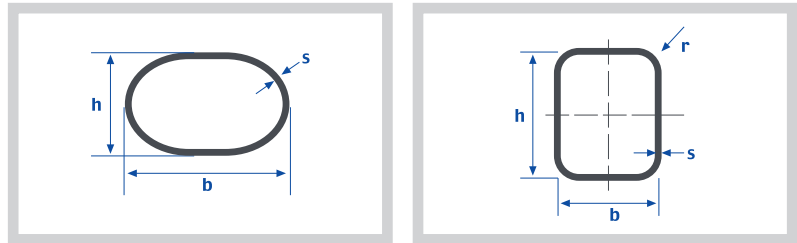
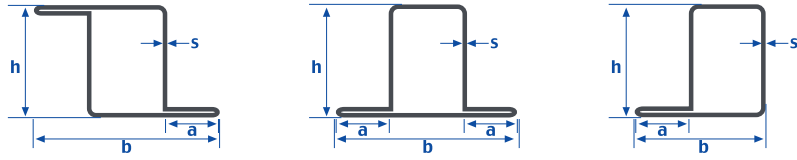
SIZE		SQUARE	
a x a	Wall Thick.	Approximate Weight	Corner Radius
(mm x mm)	s (mm)	(kg / m)	r (mm) (max)
10x10	0.8	0.24	1.3
	0.9	0.27	1.5
	1.0	0.30	1.7
	1.2	0.36	1.9
12.7x12.7	0.7	0.27	1.1
	0.8	0.31	1.3
	0.9	0.36	1.5
	1.0	0.38	1.7
	1.2	0.45	1.9
	1.5	0.55	2.7
15x15	0.8	0.36	1.3
	0.9	0.41	1.5
	1.0	0.45	1.7
	1.2	0.53	1.9
16x16	1.5	0.66	2.7
	0.8	0.39	1.1
	0.9	0.43	1.2
	1.0	0.48	1.7
20x20	1.2	0.57	1.8
	1.5	0.69	2.7
	0.7	0.42	1.1
	0.8	0.48	1.3
	0.9	0.54	1.5
	1.0	0.60	1.7
25x25	1.2	0.71	1.9
	1.5	0.90	2.7
	2.0	1.19	3.5
	0.7	0.53	1.1
	0.8	0.60	1.3
	0.9	0.68	1.5
30x30	1.0	0.76	1.7
	1.2	0.91	1.9
	1.5	1.12	2.7
	2.0	1.50	3.5
	2.5	1.85	4.1
	0.9	0.82	1.5
40x40	1.0	0.91	1.7
	1.2	1.08	1.9
	1.5	1.34	2.7
	2.0	1.77	3.5
	2.5	2.15	4.1
	1.2	1.45	1.9
50x50	1.5	1.81	2.7
	2.0	2.39	3.5
	2.5	2.96	4.1
	3.0	3.46	4.9
	1.5	2.25	2.7
	2.0	2.95	3.5
60x60	2.5	3.65	4.1
	3.0	4.36	4.9
	2.0	3.60	3.5
	2.5	4.52	4.1
70x70	3.0	5.34	4.9
	4.0	7.10	7.8
	2.0	4.27	3.5
	2.5	5.31	4.1
80x80	3.0	6.28	4.9
	4.0	8.21	7.8
	2.0	4.90	3.5
	2.5	6.09	4.1
90x90	3.0	7.22	4.9
	4.0	9.47	7.8
	2.5	6.81	4.1
	3.0	8.17	4.9
100x100	4.0	10.73	7.8
	2.5	7.60	4.1
	3.0	9.05	4.9
	4.0	11.84	7.8
120x120	5.0	14.90	9.7
	3.0	10.09	7.0
	4.0	13.54	9.2
	5.0	16.98	9.4
150x150	6.0	20.74	9.7
	4.0	17.90	10.0
	5.0	22.10	12.0
	6.0	26.10	15.0
200x200	4.0	24.20	10.0
	5.0	29.90	12.0
	6.0	35.40	15.0



* Special production sizes and thicknesses are also available on request.

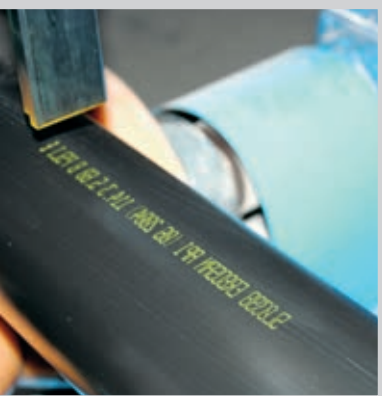
SIZE		RECTANGULAR	
b x h	Wall Thick.	Approximate Weight	Corner Radius
(mm x mm)	s (mm)	(kg / m)	r (mm) (max)
10x20	0.7	0.31	1.1
	0.8	0.36	1.3
	0.9	0.41	1.5
	1.0	0.45	1.7
	1.2	0.53	1.9
	1.5	0.66	2.7
10x30 15x25	0.8	0.48	1.3
	0.9	0.54	1.5
	1.0	0.60	1.7
	1.2	0.73	1.9
20x30	1.5	0.90	2.7
	0.7	0.53	1.1
	0.8	0.60	1.3
	0.9	0.68	1.5
	1.0	0.76	1.7
	1.2	0.91	1.9
20x40	1.5	1.12	2.7
	2.0	1.50	3.5
	0.8	0.73	1.3
	0.9	0.82	1.5
	1.0	0.91	1.7
	1.2	1.08	1.9
25x50	1.5	1.34	2.7
	2.0	1.77	3.5
	1.0	1.16	1.7
	1.2	1.39	1.9
30x40	1.5	1.73	2.7
	2.0	2.30	3.5
	0.9	0.97	1.5
	1.0	1.06	1.7
	1.2	1.27	1.9
	1.5	1.56	2.7
30x50	2.0	2.09	3.5
	2.5	2.59	4.1
	1.2	1.45	1.9
	1.5	1.81	2.7
30x60 40x50	2.0	2.39	3.5
	2.5	2.96	4.1
	3.0	3.46	4.9
	1.5	2.05	2.7
40x60	2.0	2.70	3.5
	2.5	3.29	4.1
	1.5	2.25	2.7
	2.0	2.95	3.5
40x80	2.5	3.65	4.1
	3.0	4.36	4.9
	4.0	5.70	7.8
	2.0	3.60	3.5
40x90 50x80	2.5	4.52	4.1
	3.0	5.34	4.9
	3.5	6.25	5.5
	4.0	7.10	7.8
50x90 40x100	2.0	4.27	3.5
	2.5	5.31	4.1
	3.0	6.28	4.9
	3.5	7.35	5.5
50x100	4.0	8.21	7.8
	2.0	4.54	3.5
	2.5	5.69	4.1
	3.0	6.75	4.9
60x100	3.5	8.01	5.5
	4.0	8.84	7.8
	2.0	4.90	3.5
	2.5	6.09	4.1
60x120 80x100	3.0	7.22	4.9
	3.5	8.46	5.5
	4.0	9.47	7.8
	2.5	6.81	4.1
100x150	3.0	8.17	4.9
	3.5	9.44	5.5
	4.0	10.73	7.8
	4.0	14.19	9.5
100x200	5.0	17.80	10.0
	6.0	21.70	10.6
	4.0	17.90	10.0
	5.0	22.10	12.0
150x250	6.0	26.10	15.0
	4.0	24.20	10.0
	5.0	29.90	12.0
	6.0	35.40	15.0

- Black, Self Color, Oiled or Primer Painted
- Cold Rolled or Hot Rolled
- Hot Dip Galvanized (2.00 mm and up)
- L-T-Z-D or Oval Shape Hollow Sections



* Special production sizes and thicknesses are also available on request.

PACKING AND MARKING

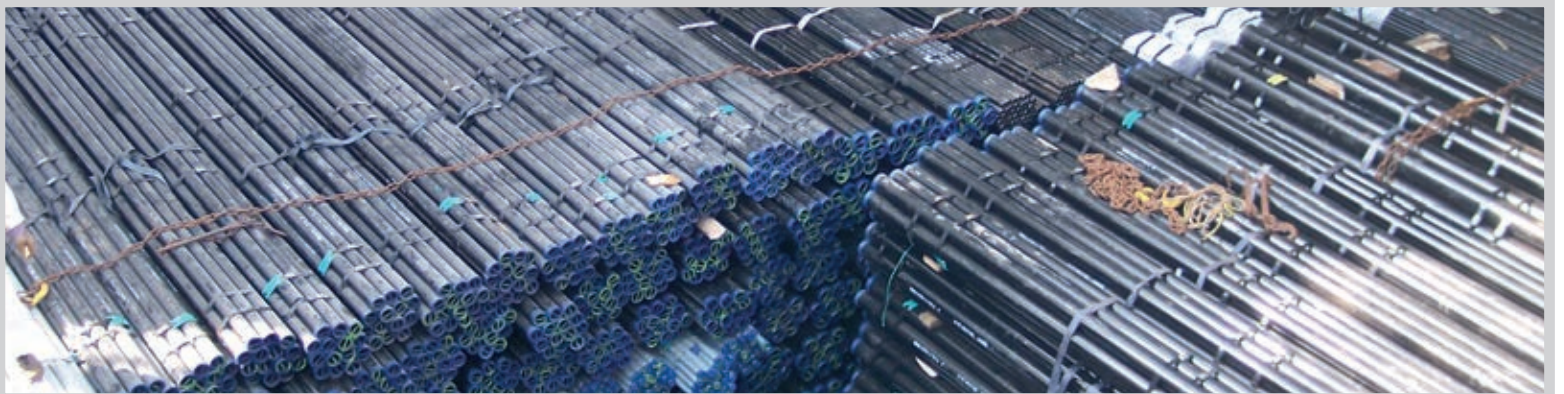


In order to assure proper delivery of goods to customers' warehouses, products are packaged in following types according to product types:

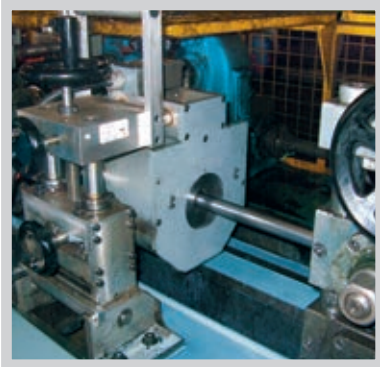
- Hexagonal, square or rectangular bundles
- Jute wrapped (completely or at bundle ends)
- Wooden frame protected

Pipes are marked according to the standards and customers request:

- Die stamping
- Stenciling
- Barcoded tags on each bundle
- Color marking on pipes and bundle ends



QUALITY MANAGEMENT SYSTEM & TESTS PERFORMED



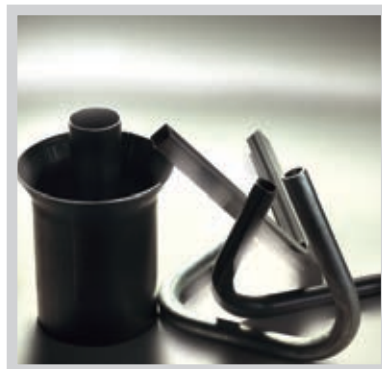
QUALITY MANAGEMENT SYSTEM

The quality system developed by Erbosan Inc., one of the leading tube and pipe production companies in Turkey, based on the principle of continual improvement, was first accredited by ISO 9002 certificate of BVQI in 1996, and then by ISO 9001:2000 in 2003. Erbosan quality, with its policy of adopting principles of customer satisfaction and total quality management in production and service, was certified in subsequent years by the institutes of national standards and quality in many countries. Furthermore, line pipes produced in our plant in conformity with national standards were also certified in 2001 by API American Petroleum Institute.

SOME TESTS PERFORMED

(according to product type and production standard)

- NDT (Eddy Current Test)
- Hydrostatic Test
- Dimensional Inspection
- Mechanical Tests
 - Flattenning Test
 - Drift Expanding Test
 - Bend Test
 - Weld Ductility Test
 - Guided Bend Test
- Tensile Test
- Chemical Analysis
- Visual Inspection
- Metallographic Examination
- Galvanizing Coating Inspection
- Polyethylene Coating Tests



EN 10255

Dimensions and Weights of Steel Tubes to EN 10255 EN 10255'e Uygun Boruların Ebat ve Ağırlık Ölçüleri

Series Sınıfı	Nominal Size Anma Çapı		Outside Diameter Dış Çap		Wall Thickness Kalınlıklar	Weight of Tube Boru Ağırlığı	
			Max.	Min.		Plain End Düz Uçlu	Screwed and Socketed Dişli Manşonlu
	inch	DN	mm	mm	mm	kg/m	kg/m
Light-I Hafif	3/8	10	17.4	16.7	2.0	0.742	0.748
	1/2	15	21.7	21.0	2.3	1.08	1.09
	3/4	20	27.1	26.4	2.3	1.39	1.40
	1	25	34.0	33.2	2.9	2.20	2.22
	1 1/4	32	42.7	41.9	2.9	2.82	2.85
	1 1/2	40	48.6	47.8	2.9	3.24	3.28
	2	50	60.7	59.6	3.2	4.49	4.56
	2 1/2	65	76.3	75.2	3.2	5.73	5.85
	3	80	89.4	87.9	3.6	7.55	7.72
Light-2 Hafif-2	4	100	114.9	113.0	4.0	10.8	11.1
	3/8	10	17.1	16.7	1.8	0.670	0.676
	1/2	15	21.4	21.0	2.0	0.947	0.956
	3/4	20	26.9	26.4	2.3	1.38	1.39
	1	25	33.8	33.2	2.6	1.98	2.00
	1 1/4	32	42.5	41.9	2.6	2.54	2.57
	1 1/2	40	48.4	47.8	2.9	3.23	3.27
	2	50	60.2	59.6	2.9	4.08	4.15
	2 1/2	65	76.0	75.2	3.2	5.71	5.83
Medium Orta	3	80	88.7	87.9	3.2	6.72	6.89
	4	100	113.9	113.0	3.6	9.75	10.0
	3/8	10	17.5	16.7	2.3	0.839	0.845
	1/2	15	21.8	21.0	2.6	1.21	1.22
	3/4	20	27.3	26.5	2.6	1.56	1.57
	1	25	34.2	33.3	3.2	2.41	2.43
	1 1/4	32	42.9	42.0	3.2	3.10	3.13
	1 1/2	40	48.8	47.9	3.2	3.56	3.60
	2	50	60.8	59.7	3.6	5.03	5.10
Heavy Ağır	2 1/2	65	76.6	75.3	3.6	6.42	6.54
	3	80	89.5	88.0	4.0	8.36	8.53
	4	100	115.0	113.1	4.5	12.2	12.5
	5	125	140.8	138.5	5.0	16.6	17.1
	6	150	166.5	163.9	5.0	19.8	20.4
	3/8	10	17.5	16.7	2.9	1.02	1.03
	1/2	15	21.8	21.0	3.2	1.44	1.45
	3/4	20	27.3	26.5	3.2	1.87	1.88
	1	25	34.2	33.3	4.0	2.93	2.95
Heavy Ağır	1 1/4	32	42.9	42.0	4.0	3.79	3.82
	1 1/2	40	48.8	47.9	4.0	4.37	4.41
	2	50	60.8	59.7	4.5	6.19	6.26
	2 1/2	65	76.6	75.3	4.5	7.93	8.05
	3	80	89.5	88.0	5.0	10.3	10.5
	4	100	115.0	113.1	5.4	14.5	14.8
	5	125	140.8	138.5	5.4	17.9	18.4
	6	150	166.5	163.9	5.4	21.3	21.9

SOCKETS (EN 10241 Medium) / Manşonlar

Nominal Size Anma Çapı		Out. D. Dış Çap	Length Boy
		Min.	Min.
Inch	DN	mm	mm
3/8	10	21.3	26
1/2	15	26.6	34
3/4	20	31.8	36
1	25	39.5	43
1 1/4	32	48.3	48
1 1/2	40	54.5	48
2	50	66.2	56
2 1/2	65	82.0	65
3	80	95.0	71
4	100	121.4	83
5	125	146.3	92
6	150	173.3	92

STANDARD LENGTH: 6.00 METERS		
Dimensions and weights are in accordance with ISO 65		
Tolerances		
Series	Wall Thickness	Weight
LIGHT	± 8.0 %	-8 / +10 %
MEDIUM	± 10 %	± 7.5 %
HEAVY	± 10 %	± 7.5 %

Light I: White - Light II: Brown - Medium: Blue - Heavy: Red

STANDARD BOY: 6.00 METRE		
Ebatlar ve ağırlıklar ISO 65'e uygundur.		
Toleranslar		
Sınıfı	Et Kalınlığı	Ağırlık
HAFİF	± 8.0 %	-8 / +10 %
ORTA	± 10 %	± 7.5 %
AĞIR	± 10 %	± 7.5 %

Hafif I: Beyaz - Hafif II: Kahverengi - Orta: Mavi - Ağır: Kırmızı

Series Sınıfı	Nominal Size Anma Çapı		Outside Diameter Dış Çap		Wall Thickness Kalınlıklar	Weight of Tube Boru Ağırlığı	
			Max.	Min.		Plain End Düz Uçlu	Screwed and Socketed Dişli Manşonlu
	inch	DN	mm	mm	mm	kg/m	kg/m
Light-I Hafif	3/8	10	17.4	16.7	2.0	0.742	0.748
	1/2	15	21.7	21.0	2.3	1.08	1.09
	3/4	20	27.1	26.4	2.3	1.39	1.40
	1	25	34.0	33.2	2.9	2.20	2.22
	1 1/4	32	42.7	41.9	2.9	2.82	2.85
	1 1/2	40	48.6	47.8	2.9	3.24	3.28
	2	50	60.7	59.6	3.2	4.49	4.56
	2 1/2	65	76.3	75.2	3.2	5.73	5.85
	3	80	89.4	87.9	3.6	7.55	7.72
	4	100	114.9	113.0	4.0	10.8	11.1
Light-2 Hafif-2	3/8	10	17.1	16.7	1.8	0.670	0.676
	1/2	15	21.4	21.0	2.0	0.947	0.956
	3/4	20	26.9	26.4	2.3	1.38	1.39
	1	25	33.8	33.2	2.6	1.98	2.00
	1 1/4	32	42.5	41.9	2.6	2.54	2.57
	1 1/2	40	48.4	47.8	2.9	3.23	3.27
	2	50	60.2	59.6	2.9	4.08	4.15
	2 1/2	65	76.0	75.2	3.2	5.71	5.83
	3	80	88.7	87.9	3.2	6.72	6.89
	4	100	113.9	113.0	3.6	9.75	10.0
Medium Orta	3/8	10	17.5	16.7	2.3	0.839	0.845
	1/2	15	21.8	21.0	2.6	1.21	1.22
	3/4	20	27.3	26.5	2.6	1.56	1.57
	1	25	34.2	33.3	3.2	2.41	2.43
	1 1/4	32	42.9	42.0	3.2	3.10	3.13
	1 1/2	40	48.8	47.9	3.2	3.56	3.60
	2	50	60.8	59.7	3.6	5.03	5.10
	2 1/2	65	76.6	75.3	3.6	6.42	6.54
	3	80	89.5	88.0	4.0	8.36	8.53
	4	100	115.0	113.1	4.5	12.2	12.5
	5	125	140.8	138.5	5.0	16.6	17.1
	6	150	166.5	163.9	5.0	19.8	20.4
Heavy Ağır	3/8	10	17.5	16.7	2.9	1.02	1.03
	1/2	15	21.8	21.0	3.2	1.44	1.45
	3/4	20	27.3	26.5	3.2	1.87	1.88
	1	25	34.2	33.3	4.0	2.93	2.95
	1 1/4	32	42.9	42.0	4.0	3.79	3.82
	1 1/2	40	48.8	47.9	4.0	4.37	4.41
	2	50	60.8	59.7	4.5	6.19	6.26
	2 1/2	65	76.6	75.3	4.5	7.93	8.05
	3	80	89.5	88.0	5.0	10.3	10.5
	4	100	115.0	113.1	5.4	14.5	14.8
	5	125	140.8	138.5	5.4	17.9	18.4
	6	150	166.5	163.9	5.4	21.3	21.9

STANDARD LENGTH: 6.00 METERS

Tolerances		
Series	Wall Thickness	Weight
LIGHT 1	± 12.5 %	± 7.5 %
LIGHT 2	± 8.0 %	± 5.0 %
MEDIUM	± 12.5 %	± 7.5 %
HEAVY	± 12.5 %	± 7.5 %

Light I: White - Light II: Brown - Medium: Blue - Heavy: Red

STANDARD BOY: 6.00 METRE

Toleranslar		
Sınıfı	Et Kalınlığı	Ağırlık
HAFİF 1	± 12.5 %	± 7.5 %
HAFİF 2	± 8.0 %	± 5.0 %
ORTA	± 12.5 %	± 7.5 %
AĞIR	± 12.5 %	± 7.5 %

Hafif I: Beyaz - Hafif II: Kahverengi - Orta: Mavi - Ağır: Kırmızı

ASTM A 53

Dimensions and Weights of Steel Tubes to ASTM A 53 Sch 40 ASTM A 53 Sch 40'a Uygun Boruların Ebat ve Ağırlık Ölçüleri

NPS Nominal Ebat	Outside Diameter Dış Çap		Wall Thickness Et Kalınlığı		Plain End Weight Düz Uçlu Boru Ağırlığı		Threaded and Coupled Weight Dişli Manşonlu Boru Ağırlığı		Test Pressure Plain End Düz Uçlu Test Basıncı Grade A		Test Pressure Threaded Coupled Dişli Manşonlu Test Basıncı Grade A		Test Pressure Plain End Düz Uçlu Test Basıncı Grade B		Test Pressure Threaded & Coupled Dişli Manşonlu Test Basıncı Grade B	
inch	inch	mm	inch	mm	lb/ft	kg/m	lb/ft	kg/m	psi	MPa	psi	MPa	psi	MPa	psi	MPa
3/8	0.675	17.1	0.091	2.31	0.57	0.84	0.57	0.84	700	4.80	700	4.80	700	4.80	700	4.80
1/2	0.840	21.3	0.109	2.77	0.85	1.27	0.86	1.27	700	4.80	700	4.80	700	4.80	700	4.80
3/4	1.050	26.7	0.113	2.87	1.13	1.69	1.14	1.69	700	4.80	700	4.80	700	4.80	700	4.80
1	1.315	33.4	0.133	3.38	1.68	2.50	1.69	2.5	700	4.80	700	4.80	700	4.80	700	4.80
1 1/4	1.660	42.2	0.140	3.56	2.27	3.39	2.28	3.4	1200	8.30	1000	6.90	1300	9.00	1100	7.60
1 1/2	1.900	48.3	0.145	3.68	2.72	4.05	2.74	4.04	1200	8.30	1000	6.90	1300	9.00	1100	7.60
2	2.375	60.3	0.154	3.91	3.66	5.44	3.68	5.46	2300	15.90	2300	15.90	2500	17.20	2500	17.20
2 1/2	2.875	73.0	0.203	5.16	5.80	8.63	5.85	8.67	2500	17.20	2500	17.20	2500	17.20	2500	17.20
3	3.500	88.9	0.216	5.49	7.58	11.29	7.68	11.35	2220	15.30	2200	15.20	2500	17.20	2500	17.20
3 1/2	4.000	101.6	0.226	5.74	9.12	13.57	9.27	13.71	2030	14.00	2000	13.80	2370	16.30	2400	16.50
4	4.500	114.3	0.237	6.02	10.80	16.07	10.92	16.23	1900	13.10	1900	13.10	2210	15.20	2200	15.20
5	5.563	141.3	0.258	6.55	14.63	21.77	14.90	22.07	1670	11.50	1700	11.70	1950	13.40	1900	13.10
6	6.625	168.3	0.280	7.11	18.99	28.26	19.34	28.58	1520	10.50	1500	10.30	1780	12.30	1800	12.40
8	8.625	219.1	0.322	8.18	28.58	42.55	29.35	43.73	1340	9.20	1300	9.00	1570	10.80	1600	11.00

TOLERANCES	
Wall Thickness	max. $\pm 12.5\%$
Weight	$\pm 10\%$
Outside Diameter	
NPS $\leq 1 \frac{1}{2}$ "	± 0.40 mm
NPS ≥ 2 "	$\pm 1 \%$

TOLERANSLAR	
Et Kalınlığı	max. $\pm 12.5\%$
Ağırlık	$\pm 10\%$
Dış Çap	
NPS $\leq 1 \frac{1}{2}$ "	± 0.40 mm
NPS ≥ 2 "	$\pm 1 \%$

THREAD / DİŞLER									
NPS	Number per inch Bir inç- deki diş sayısı	Pitch Diameter at Hand Tight Plane Elle Sıkma Noktasındaki Çap		End of Pipe to Hand Tight Plane Elle Sıkma Mesafesi		Thread Effective Length Etkin Vida Diş Boyu		Thread Total Length Toplam Vida Diş Boyu	
inch		inch	mm	inch	mm	inch	mm	inch	mm
3/8	18	0.62701	15.93	0.240	6.10	0.4078	10.36	0.6006	15.26
1/2	14	0.77843	19.77	0.320	8.13	0.5337	13.56	0.7815	19.85
3/4	14	0.98887	25.12	0.339	8.61	0.5457	13.86	0.7935	20.15
1	11 1/2	1.23863	31.46	0.400	10.16	0.6828	17.34	0.9845	25.01
1 1/4	11 1/2	1.58338	40.22	0.420	10.67	0.7068	17.95	1.0085	25.62
1 1/2	11 1/2	1.82234	46.29	0.420	10.67	0.7235	18.38	1.0252	26.04
2	11 1/2	2.29627	58.33	0.436	11.07	0.7565	19.22	1.0582	26.88
2 1/2	8	2.76216	70.16	0.682	17.32	1.1375	28.89	1.5712	39.91
3	8	3.38850	86.07	0.766	19.46	1.2000	30.48	1.6337	41.50
3 1/2	8	3.88881	98.78	0.821	20.85	1.2500	31.75	1.6837	42.77
4	8	4.38713	111.43	0.844	21.44	1.3000	33.02	1.7337	44.04
5	8	5.44929	138.41	0.937	23.80	1.4063	35.72	1.8400	46.74
6	8	6.50597	165.25	0.958	24.33	1.5125	38.42	1.9462	49.43

COUPLING / MANŞONLAR				
NPS	Out. Diameter Dış Çap		Length Boy	
inch	inch	mm	inch	mm
3/8	0.875	22.2	1.125	29
1/2	1.063	27.0	1.500	38
3/4	1.313	33.4	1.563	40
1	1.576	40.0	2.000	49
1 1/4	1.900	48.3	2.000	50
1 1/2	2.200	55.9	2.000	50
2	2.750	69.8	2.063	52
2 1/2	3.250	82.5	3.063	78
3	4.000	101.6	3.125	81
3 1/2	4.625	117.5	3.313	84
4	5.000	127.0	3.438	87
5	6.296	159.9	3.688	94
6	7.390	187.7	4.938	125

» For sizes 2 1/2" and over the couplings are with conic thread.
» 2 1/2" ve üzerinde manşonlar konik dişlidir.

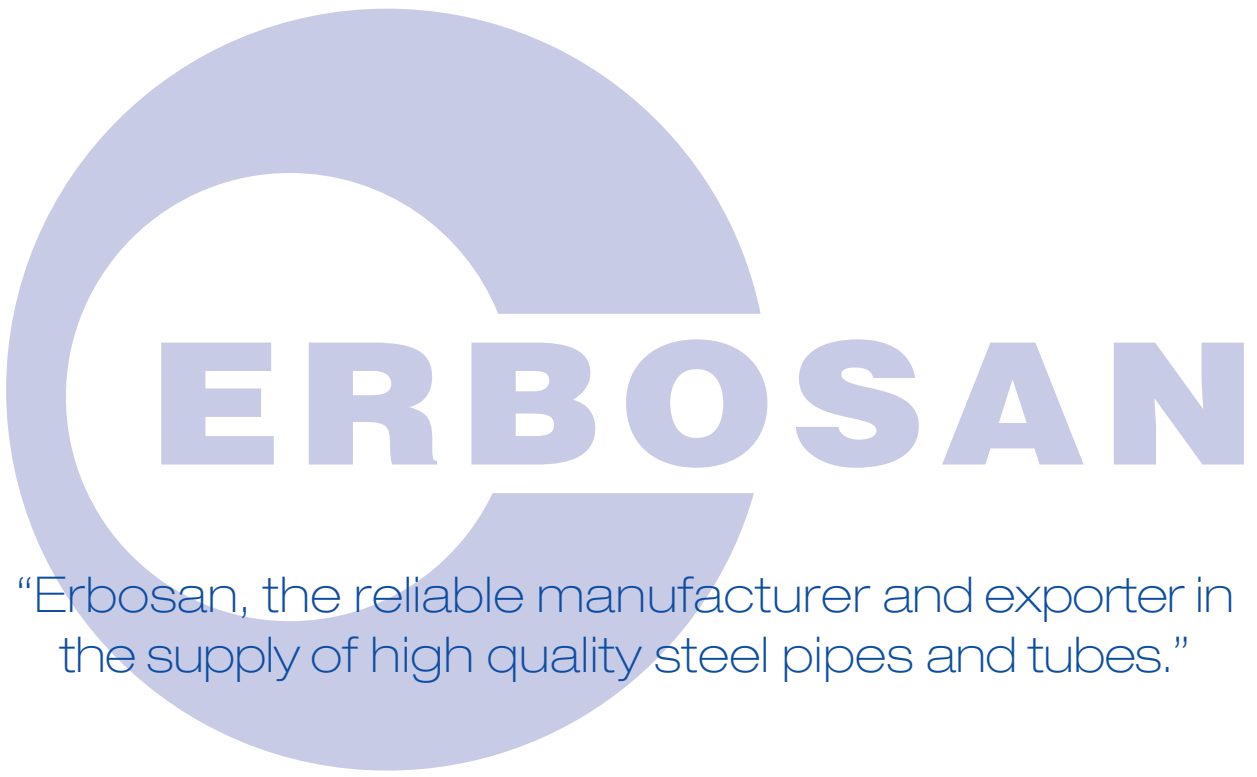
NPS Nominal Ebat	Outside Diameter Dış Çap		Wall Thickness Et Kalınlığı		Plain End Weight Düz Uçlu Boru Ağırlığı		Test Pressure Test Basıncı Grade A	Test Pressure Plain End Düz Uçlu Test Basıncı (min) Grade B	Test Pressure Test Basıncı (min) Grade A 25	Test Pressure Düz Uçlu Test Basıncı (min) Grade X 42 Plain End
inch	inch	mm	inch	mm	lb/ft	kg/m	100xkPa	100xkPa	100xkPa	100xkPa
3/8	0.675	17.1	0.091	2.3	0.57	0.84	48	48	48	-
1/2	0.840	21.3	0.109	2.8	0.85	1.28	48	48	48	-
3/4	1.050	26.7	0.113	2.9	1.13	1.70	48	48	48	-
1	1.315	33.4	0.133	3.4	1.68	2.52	48	48	48	-
	1.315	33.4	0.179	4.5	2.17	3.21	59	59	59	-
1 1/4	1.660	42.2	0.140	3.6	2.27	3.43	83	90	69	-
	1.660	42.2	0.191	4.9	3.00	4.51	124	131	90	-
1 1/2	1.900	48.3	0.145	3.7	2.72	4.07	83	90	69	-
	1.900	48.3	0.200	5.1	3.63	5.43	124	131	90	-
2 3/8	2.375	60.3	0.154	3.9	3.66	5.42	161	172	69	207
	2.375	60.3	0.172	4.4	4.05	6.07	172	172	76	207
	2.375	60.3	0.188	4.8	4.40	6.57	172	172	83	207
	2.375	60.3	0.218	5.5	5.03	7.43	172	172	90	207
2 7/8	2.875	73.0	0.156	4.0	4.53	6.81	136	158	69	191
	2.875	73.0	0.172	4.4	4.97	7.44	150	172	69	207
	2.875	73.0	0.188	4.8	5.40	8.07	163	172	69	207
	2.875	73.0	0.203	5.2	5.80	8.69	172	172	69	207
	2.875	73.0	0.216	5.5	6.14	9.16	172	172	76	207
3 1/2	3.500	88.9	0.172	4.4	6.12	9.17	123	143	69	172
	3.500	88.9	0.188	4.8	6.66	9.95	134	156	69	188
	3.500	88.9	0.216	5.5	7.58	11.31	154	172	69	207
	3.500	88.9	0.250	6.4	8.69	13.02	172	172	-	207
4	4.000	101.6	0.172	4.4	7.04	10.55	108	125	69	151
	4.000	101.6	0.188	4.8	7.66	11.46	117	137	83	164
	4.000	101.6	0.226	5.7	9.12	13.48	139	162	83	195
	4.000	101.6	0.250	6.4	10.02	15.02	156	182	-	207
4 1/2	4.500	114.3	0.172	4.4	7.96	11.92	96	111	-	134
	4.500	114.3	0.188	4.8	8.67	12.96	104	121	83	146
	4.500	114.3	0.203	5.2	9.32	13.99	113	132	-	158
	4.500	114.3	0.219	5.6	10.02	15.01	122	142	83	170
	4.500	114.3	0.237	6.0	10.80	16.02	130	152	83	183
	4.500	114.3	0.250	6.4	11.36	17.03	139	162	-	195
	4.500	114.3	0.281	7.1	12.67	18.77	154	180	-	207
5 9/16	5.563	141.3	0.188	4.8	10.80	16.16	84	98	70	118
	5.563	141.3	0.219	5.6	12.51	18.74	98	115	81	138
	5.563	141.3	0.258	6.6	14.63	21.92	116	135	83	163
	5.563	141.3	0.281	7.1	15.87	23.50	125	145	105	175
	5.563	141.3	0.312	7.9	17.51	25.99	139	162	116	195
6 5/8	6.625	168.3	0.188	4.8	12.94	19.35	71	82	-	124
	6.625	168.3	0.203	5.2	13.94	20.91	77	89	-	134
	6.625	168.3	0.219	5.6	15.00	22.47	83	96	-	145
	6.625	168.3	0.250	6.4	17.04	25.55	94	110	-	165
	6.625	168.3	0.280	7.1	18.99	28.22	105	122	-	184
	6.625	168.3	0.312	7.9	21.06	31.25	117	136	-	204
8 5/8	8.625	219.1	0.188	4.8	16.96	25.37	54	63	-	95
	8.625	219.1	0.203	5.2	18.28	27.43	59	69	-	103
	8.625	219.1	0.219	5.6	19.68	29.48	63	74	-	111
	8.625	219.1	0.250	6.4	22.38	33.57	73	84	-	127
	8.625	219.1	0.277	7.0	24.72	36.61	79	92	-	139
	8.625	219.1	0.312	7.9	27.73	41.14	90	104	-	157
	8.625	219.1	0.322	8.2	28.58	42.65	93	108	-	163
	8.625	219.1	0.344	8.7	30.45	45.14	99	115	-	173
	8.625	219.1	0.375	9.5	33.07	49.10	108	125	-	189

STEEL SPECIFICATIONS

Chemical Composition and Mechanical Properties of Hot and Cold Rolled Coils, Used In Our Production

İmalatımızda Kullanılan Sıcak ve Soğuk Haddelenmiş Rulo Sacların Kimyasal Bileşimleri ve Mekanik Özellikleri

Specification Standartlar	Grade Sınıfı	Deoxidation Type Oksijen Giderme	Chemical Composition, in % Maximum Ladle Analysis Kimyasal Bileşim, % Maksimum Olarak Pota Analizi						Mechanical Properties / Fiziksel Özellikler									
									Tensile Strength Çekme Dayanımı ≤3 mm ≥3 mm		Yield Point Akma Dayanımı	Elongation, % min. Long./Transverse Uzama, min. % Uzunlamasına/Enine Thickness(mm), Kalınlıklar (mm)						
			C	Mn	P	S	Si	N	N/mm2	N/mm2		N/mm2 (min)	0.5	1	1.5	2	2.5	3
DIN 17100	St 33	optional	-	-	-	-	-	-	310-540	290-510	185	10/8	11/9	12/10	13/11	14/12	18/16	
	ST 37-2	optional	0.17	-	0.050	0.050	-	0.009	360-510	340-470	235	17/15	18/16	19/17	20/18	21/19	26/24	
	USt 37-2	U	0.17	-	0.050	0.050	-	0.007										
	RSt 37-2	R	0.17	-	0.050	0.050	-	0.009										
	St 37-3	RR	0.17	-	0.040	0.040	-	-	430-580	410-540	275-	14/12	15/13	16/14	17/15	18/16	22/20	
	St 44-2	R	0.21	-	0.050	0.050	-	0.009										
	St 44-3	RR	0.20	-	0.040	0.040	-	-										
			C	Mn	P	S	Si	N	N/mm2	N/mm2	N/mm2 (min)							
EN 10025	S235JR	FN	0.17	1.40	0.035	0.035	-	0.012	360-510	360-510	235		18	19	20	21	26	
	S235J0	FN	0.17	1.40	0.030	0.030	-	0.012										
	S235J2	FF	0.17	1.40	0.025	0.025	-	-					16	17	18	19	24	
	S275JR	FN	0.21	1.50	0.035	0.035	-	0.012	430-580	410-560	275		16	17	18	19	23	
	S275J0	FN	0.18	1.50	0.030	0.030	-	0.012										
	S275J2	FF	0.18	1.50	0.025	0.025	-	-					14	15	16	17	21	
	S355JR	FN	0.24	1.60	0.035	0.035	0.55	0.012	510-680	470-630	355		15	16	17	18	22	
	S355J0	FN	0.20	1.60	0.030	0.030	0.55	0.012										
	S355J2	FF	0.20	1.60	0.025	0.025	0.55	-										
	S355K2	FF	0.20	1.60	0.025	0.025	0.55	-					13	14	15	16	20	
			C	Mn	P	S	Si	N	N/mm2	N/mm2	N/mm2 (min)	Elongation %min Uzama						
ERDEMİR	1110	-	0.10	0.50	0.025	0.025	0.050	-	-	-	-	-	-	-	-	-	-	
	2008	-	0.060-0.012	0.35-0.60	0.025	0.020	0.15-0.30	-	-	min 330	205	31	-	-	-	-	-	
	2009	-	0.10	0.70	0.025	0.030	0.300	-	330	min 330	205	22-36	-	-	-	-	-	
	3008	-	0.09	0.50	0.020	0.020	0.050	-	-	-	-	-	-	-	-	-	-	
	3110	-	0.10	0.50	0.025	0.025	0.050	-	-	-	-	-	-	-	-	-	-	
	3233	-	0.15	1.20	0.025	0.020	0.040	-	310-540	290-510	185	-	9	10	11	12	16	
	3237	-	0.17	1.00	0.025	0.020	0.040	0.009	360-510	340-470	235	-	16	17	18	19	24	
	4009	-	0.12	0.70	0.025	0.020	0.050	-	-	min 330	205	22-36	-	-	-	-	-	
	4237	-	0.17	1.00	0.025	0.020	0.050	0.009	360-510	340-470	235	-	16	17	18	19	24	
	4244	-	0.18	1.30	0.020	0.020	0.050	0.009	430-580	410-560	275	-	13	14	15	16	20	
	6222	-	0.07	0.40	0.020	0.020	-	-	-	min 440	170-360	-	-	23	24	24	28	
	9035	-	0.18	1.15	0.020	0.010	-	-	-	min 414	241	18-30	-	-	-	-	-	
			C	Mn	P	S	Si	N	N/mm2		N/mm2 (min)	Elongation %min Uzama						
EN 10130	DC01	optional	0.12	0.60	0.045	0.045	-	-	270-410		280	28						
	DC03	FF	0.10	0.45	0.035	0.035	-	-	270-370		240	34						
	DC04	FF	0.08	0.40	0.030	0.030	-	-	270-350		210	38						
	DC05	FF	0.06	0.35	0.025	0.025	-	-	270-330		180	40						
			C	Mn	P	S	Si	N	N/mm2		N/mm2 (min)	Elongation %min Uzama						
ASTM A 53	Gr A	-	0.25	0.95	0.050	0.045	-	-	min 330		205	22-36						
	Gr B	-	0.30	1.20	0.050	0.045	-	-	min 415		240	20-30						
			C	Mn	P	S	Si	N	N/mm2		N/mm2 (min)	Elongation %min Uzama						
API 5L	A25	-	0.21	0.60	0.030	0.030	-	-	min 310		172	16-38						
	A	-	0.22	0.90	0.030	0.030	-	-	min 331		207	15-36						
	B	-	0.26	1.20	0.030	0.030	-	-	min 414		241	12.5-29.5						
	X42	-	0.28	1.30	0.030	0.030	-	-	min 414		290	12.5-29.5						







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