

BORUSAN MANNESMANN

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Milestones Borusan Holding at a Glance Borusan Mannesmann in Brief **Global Presence** Your Total Solution Provider **QEHS Management** 10 Standards & Certificates **Automotive Tubes** 16 Hydraulic Applications 18 **Industrial Applications** 20

Production Ranges

Further Processing



1944 1958 1976 1979 1994 1968 1969 1998 Foundation Borusan Halkalı ERW First Gemlik ERW Borusan Port Borusan Borusan and Pipe Plant Pipe Plant of Borusan Boru was exports inagurated Boru quoted Mannesmann founded started started on İstanbul merged production, production, Stock their pipe İstanbul Bursa Exchange business activities in Turkey



Acquistion of cold drawn pipe plant in Vobarno, Italy

The company name is amended as "Borusan Mannesmann"

2004

Borusan Port expansion completed

2009

Gemlik HSAW Pipe Plant started production, Bursa

2011

Houston OCTG Plant started production, Texas

2014

Bursa Service Center started operations, Bursa

2016

Gemlik Cold Drawn Tube Plant started production, Bursa

2019

Acquisition LSAW pipe plant in Florida and HSAW pipe plant in

Alabama

2023

Romania Service Center Coming

Soon

2023

BORUSAN HOLDING AT A GLANCE

THE MAIN STRATEGY OF BORUSAN GROUP IS BASED ON CONTINUING TO CREATE ADDED VALUE FOR TÜRKİYE'S ECONOMY WHILE FOSTERING A MINDSET THAT FOCUSES ON GLOBAL MARKETS, AND CREATES INNOVATIVE PRODUCTS AND SERVICES.

Borusan Group has been among the pioneers of industrialization and corporate governance in Turkey throughout its 75 years of history. The group currently operates in four major business areas including steel, distributorship, logistics and energy. In 2006 Borusan Group signed the United Nations' Global Compact Policy and it supports and adheres by the principles of "good corporate governance" and "sustainability" as a prerequisite component for long-term and permanent success.













DISTRUBUTED BRANDS











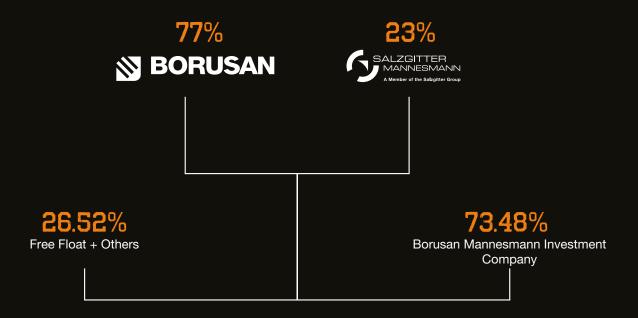
BORUSAN MANNESMANN IN BRIEF

"BORUSAN MANNESMANN IS AMONG THE LEADING MANUFACTURER OF STEEL PIPES IN THE WORLD."

Steel pipe manufacturing is the core business of the Borusan Group, a conglomerate spread over four different industries; steel, distributorship, logistics; and energy. Borusan Mannesmann continues its production activities with its 10 facilities in 3 different countries in Türkiye, Italy, USA, and Romania.

The company's product range includes; water pipes, oil and gas line pipes, industrial pipes and profiles, installation pipes, OCTG pipes, and hollow sections. Borusan Mannesmann has wide experience and a range of track records in oil and gas pipeline projects with high-grade API standards in domestic and international markets.

A dynamic, highly qualified staff, regularly trained to keep abreast of new manufacturing and management, ensure that production conforms to exacting quality standards. Borusan Mannesmann has become the standard-bearer for trust and quality in the sector by bringing added value to products and services with highly qualified employees and the continuously improving workforce.





11 FACILITIES IN 3 CONTINENTS





USA / Texas

Houston ERW Plant

Sectors served : Energy Sector

Workforce : 300

Area : 500.000 m²

USA / Texas

Houston SRM Plant (Coming Soon)

Sectors served : Water Transmission

Workforce: 300

Area : 500.000 m²

Italy

Vobarno Plant

Sectors served: Engineering Technologies

Workforce : 90 Area : 24.000 m²

USA / Florida

Panama City LSAW Pipe Plant

Sectors served : Energy Sector

USA / Alabama

Mobile Pipe HSAW Pipe Plant

Sectors served : Energy Sector

Workforce: 99

Area : 30.600 m²

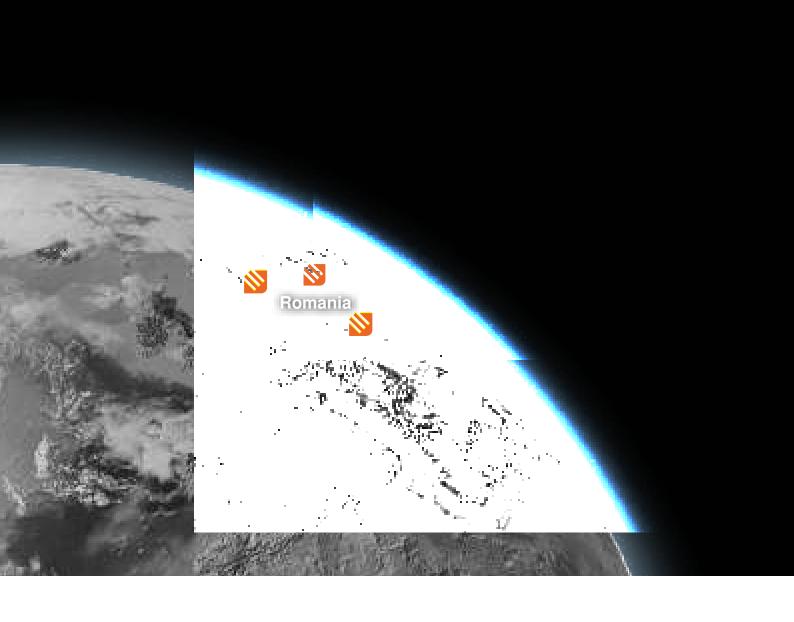
Romania

Ploiești Service Center (Coming Soon)

Sectors served : Automotive

Expected workforce till 2026: 99

Area : 4.800 m²



Türkiye

Gemlik ERW Pipe Plant

Sectors served: Energy, Construction,

Water Transmission

Workforce: 750

Area : 388.000 m²

Gemlik HSAW Pipe Plant

Sectors served: Energy, Construction,

Water Transmission

Workforce : 140

 $Area \qquad \qquad : 70.000 \; m^2$

Gemlik Automotive Tubes Plant

Sectors served: Automotive and

Engineering Technologies

Workforce : 50

Area : 20.000 m²

Halkalı Plant

Sectors served: Engineering

Technologies

Workforce: 450

Area : 67.000 m²

Bursa Service Center

Sectors served: Automotive

Workforce: 300

Area : 500.000 m²

YOUR TOTAL SOLUTION PROVIDER; BORUSAN MANNESMANN







EXCEEDING LIMITS WITH CONTINUOUS R&D

Borusan Mannesmann's research and development philosophy enables us to carry out research activities in all markets and develop new products for our customer's and market needs. As Borusan Mannesmann; we also conduct joint projects with our raw material suppliers to develop special material qualities for the manufacture of desired products. We collaborate in performing trial productions and troubleshooting activities to maintain excellence in product and process design and implementation to the best possible extent.

As a company that embraces Lean 6 Sigma methodology; launching breakthrough technologies, improving production and process control steps is a part of our daily life.

VOC - MOST VALUABLE DRIVING FORCE

Borusan Mannesmann has been capturing the requirements and feedback of our customers to provide the best product and service quality. We have been applying the VOC - Voice of Customer process since 2003. Serving to our customers and delivering synergetic solutions in the most cost effective way is a consistent discipline in Borusan Mannesmann. We aim to compose personal recipes for special market needs. This approach leads us to go beyond ourselves and present valuable services for our customers.

WELL ESTABLISHED SALES ORGANIZATION

Borusan Mannesmann's sales experts provide fast response and reliable technical consultation in close cooperation with our customers before and after the sales process. Our sales organization is made of professional local representatives who speak our customer's language in their market and always provide the best solutions for the business. Company's representatives are carefully picked from the best of highly qualified distributors in the local market. We provide the best solutions; in your country, in your language with equipped people.

QEHS MANAGEMENT





Borusan Group companies all share a common set of guiding principles, which help this vast enterprise to operate in complete harmony. These principles are commitments to productivity, innovation, and environmental responsibility.

From raw material to finished product, Borusan Mannesmann determines the impacts on the environment and reduce impacts control each step of the process. Our Environmental Management System Certificate (ISO 14001) proves our commitment to environment. Healthy performance is delivered through healthy people. In compliance with ISO 45001, Borusan Mannesmann's endeavors to protect the health and safety of its workforce and service providers. Borusan Mannesmann; exemplary with its modern management approach, as well as its investments, has been applying The Lean Six Sigma methodology since 2002 and Voice of Customer (VOC) process since 2003.

The Lean Six Sigma methodology is a highly disciplined business management strategy that seeks to remove the causes of defects in production and business processes, and to continuously improve productivity, profitability, and customer satisfaction. Besides with the VOC process, we capture the requirements and feedback from our customers to provide the best product and service quality.

Ongoing efforts to improve customer satisfaction brought Borusan Mannesmann, Complaints Handling Management Systems Certificate (ISO 10002), which is a first in the steel pipe sector globally.

Quality Management Certificates

IATF 16949 Quality Management Systems Standard For The Automotive Industry ISO 9001 Quality Management Systems

ISO 14001 Environmental Management Systems

ISO 10002 Quality Management Systems For Customer Satisfaction

ISO 45001 Occupational Health and Safety Management Systems

Quality System Certificates











STANDARDS & CERTIFICATES



PRODUCTION STANDARDS

Welded Cold Sized Tubes : EN 10305-3 Welded Cold Drawn Tubes : EN 10305-2 Welded Cold Sized Square and Rectangular Tubes : EN 10305-5

Note: Other standards such as ASTM A513, JIS G 3445 etc. upon request

STEEL GRADES

Structural Steels : S235, S275, S355 DQ Steels : DC01, DC03, DC04

HSLA Steels : S315MC, S355MC, S420MC, S460MC, S500MC, S550MC,

S600MC, S700MC

Dual Phase Steels : DP500, DP600, DP800, DP1000

Heat Treatable Steels : 20MnB5, 22MnB5, 26MnB5, 30MnB5, 34MnB5

Coated (Galvenized, aluminized) Steels: DX51, DX52, DX53, S220, S350

Note: Other grades upon request

TESTS & INSPECTIONS

- Visual Examination
- Dimensional Inspection
- Metallographic Inspection
- Tensile Test
- Drift Expanding / Flaring Test
- Flattening Test
- Hardness Testing (HV, HRB, HRC)
- Ultrasonic Testing
- Flanging Test
- Chemical Analysis
- Eddy Current Testing
- Surface Roughness Measurement

INSPECTION DOCUMENTS

MTC (Mill Test Certificates) acc. to EN 10204 3.1; 2.2

AUTOMOTIVE TUBES



SHOCK ABSORBER TUBES



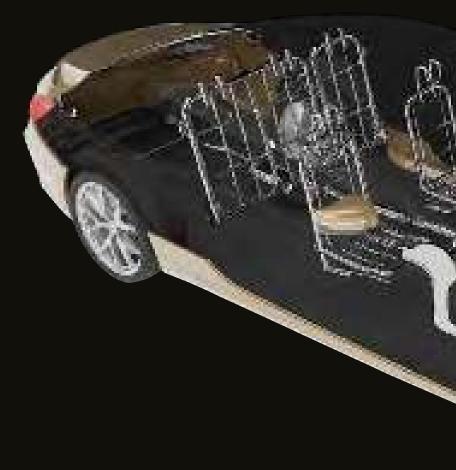
STABILIZER



STEERING COLUMN TUBES



TIE ROD TUBES



BORUSAN MANNESMANN IS A HIGHLY RECOGNIZED MANUFACTURER FOR ITS PRODUCT AND SERVICE QUALITY IN AUTOMOTIVE INDUSTRY.

Our plants, one in Vobarno-Italy, one in Gemlik-Turkey and one in Halkalı-Turkey are specialized in production of value added precision tubes that are used in crucial parts of vehicles. Working together; our sales, quality and design teams manage all kinds of technical, schematic inquires and response our customers with custom made solutions.

Products are commonly used in passenger cars, light and heavy commercial vehicles which are travelling around the globe.







TRUNK HINGE



CARDAN SHAFT TUBES





DOOR IMPACT



CROSS CAR BEAMS





GAS SPRING



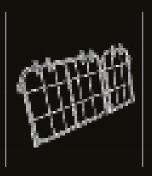
EXHAUST TUBES



FRONT SEAT FRAME TUBES TUBES

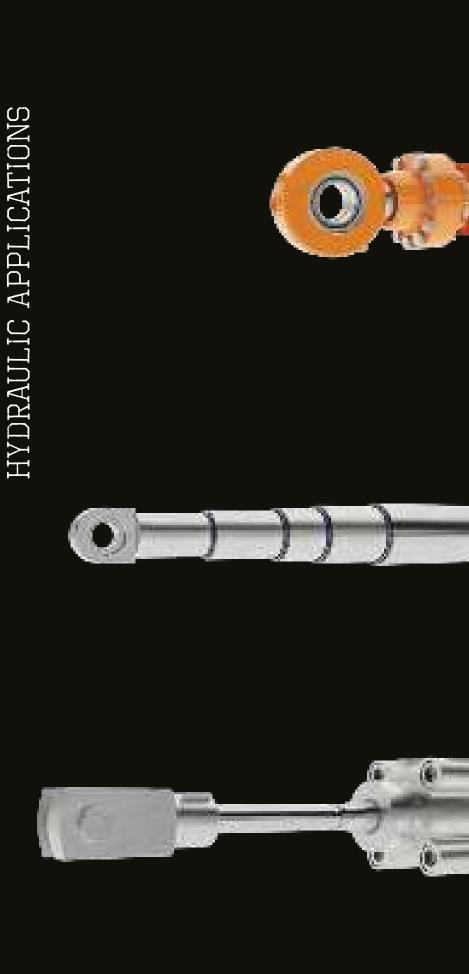


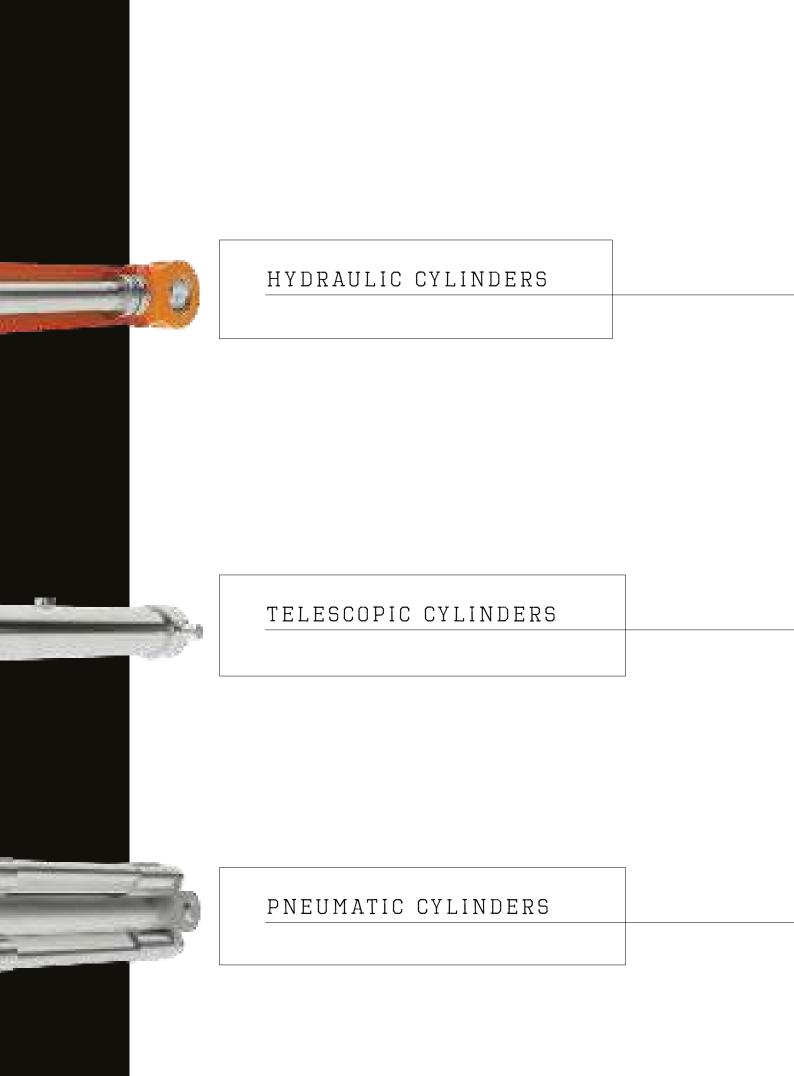
HEAD REST



REAR SEAT FRAME TUBES

Tubes of Borusan Mannesmann are used in earth moving machines, agricultural machines, trucks and several machineries. With the ability of producing ready to use tubes and suitable for honing and roller burnishing tubes, Borusan Mannesmann is an ideal supplier for hydraulic applications.





INDUSTRIAL APPLICATIONS <u>CUSTOM SHAPED STEEL PROFILES</u>



Borusan Mannesmann manufactures custom shaped profiles with the highest degree of functionality according to customer expectations. Custom designed profiles are used in a variety of applications for different sectors such as automotive, construction, agricultural machinery, towel rails, furniture etc...

We supply profiles with most accurate tolerances to meet customers' requirements and drawings. Borusan Mannesmann has the knowledge to select the most suitable forming technologies to meet specific requirements.

TECHNOLOGIES FOR SPECIAL SHAPE PROFILES

- Direct Roll Forming
- HFW + Cold Forming
- Forming by Cold Drawing

We are ready to produce according to different type of standards and/or customers specialized technical requirements.

Steel grades, wall thickness, dimensions and tolerances may vary according requirements of final product. Different pre-coated raw materials and final coating methods are available upon request.



FURTHER PROCESSING

- Length Cutting
- Bending
- Hole Drilling
- Online Die Stamping

TESTS & INSPECTIONS

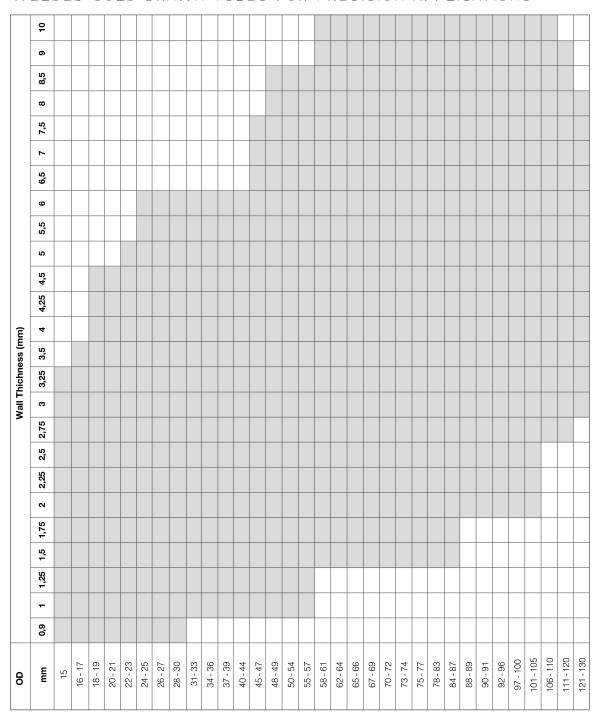
- Visual Examination
- Dimensional Inspection
- Metallographic Inspection
- Tensile Test
- Chemical Analysis
- Flattening Test
- Hardness Testing (HV, HRB, HRC)
- Eddy Current Testing
- 3D Scanning

INSPECTION DOCUMENTS

• MTC (Mill Test Certificates) acc. to EN 10204 2.2, 3.1

PRODUCTION RANGES

WELDED COLD DRAWN TUBES FOR PRECISION APPLICATIONS



Cold Drawn Welded Steel Tubes (EN 10305-2)

Please contact our sales department for intermediate sizes.

Delivery Conditions:

- + C (BK) = Cold finished/hard
- + LC (BKW) = Cold finished/soft
- + N (NBK) = Normalized
- + SR (BKS) = Cold finished and stress relieved
- + A (GBK) = Annealed

Standard Norms: TS EN 10305-2, UNI 7946, BS 6323 Part 6, NFA 49-341, ASTM A 513

Steel Grades mainly used: RSt 34-2, RSt 37-2, St 44-2, St 52-3

(E 195) (E 235) (E 275) (E 355)

WELDED COLD SIZED TUBES FOR PRECISION APPLICATIONS

mm	0.70	1 00	1 20	1 50	1 70	2 00	2 20	2 50	2 20	3 00	3 30			4 50			6.00	6 50	7 00	7 50	8 00	g 50	9.00	0.50	10,00	10 50	11.0
5	0,70	1,00	1,20	1,50	1,70	2,00	2,20	2,50	2,00	3,00	3,30	3,50	4,00	4,50	5,00	5,50	6,00	0,50	7,00	7,50	0,00	0,50	9,00	9,50	10,00	10,50	11,0
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67 68																											\vdash
70	1																										
76																											
80																											
83																											
8,9 93																											1

Welded Cold Sized Tubes (EN 10305-3)
Delivery Conditions:
BKM (+CR1 ve + CR2) = Standard
NBK (+N) = Normalized
GBK (+A) = Annealed
Steel Grades: St 14, St 13, St 12, St 34, S

WELDED COLD SIZED SQUARE AND RECTANGULAR TUBES FOR PRECISION APPLICATIONS

Side Length	Wall Thichness (mm)											
b x h (mm)	0,80	0,90	1,00	1,20	1,50	2,00	2,50	3,00	3,50	4,00	5,0	
8 x 20											\vdash	
10 x 10												
10 x 15												
10 x 18												
10 x 20											\vdash	
10 x 25											_	
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10 x 30											-	
10 x 33											-	
10 x 35											-	
10 x 40												
10 x 50												
12,7 x 12,7												
15 x 15												
15 x 20												
15 x 25												
15 x 30												
15 x 35												
15 x 40												
15 x 50											\vdash	
16 x 16											<u> </u>	
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17 x 21											-	
17 x 35											-	
18 x 18											-	
18 x 30											-	
19 x 19												
20 x 20												
20 x 25												
20 x 30												
20 x 35												
20 x 40												
20 x 45												
20 x 50												
20 x 55												
20 x 60												
20 x 80												
21 x 21												
23 x 30												
25 x 25												
25,4 x 25,4												
25,4 x 50,80												
25 x 30												
25 x 35												
25 x 40												
25 x 45												
25 x 50												
25 x 55												
25 x 60												
27 x 27												
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30 x 60												
30 x 70												
30 x 80												
30 x 90												
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40 x 80												
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45 x 45												
50 x 50												
50 x 60												
50 x 80												
50,8 x 50,8												
60 x 60												
70x70												
80x80												
90x90												
100x100												
110x110												
120x120												
120x130												
120x140												

(Thicknesses bigger than 5mm must be examined.) Grades stronger than \$700 must be examined.

ASTM A 513 MECHANICAL TUBING (TYPE V-VI)

Wall Thickness (inch)																								
OD (inch)	0.035	0.049	0.058	0.065	0.083	0.095	0.109	0.120	0.125	0.134	0.156	0.165	0.180	0.188	0.207	0.219	0.238	0.250	0.281	0.284	0.313	0.344	0.375	0.406
0.625																								
0.688																								
0.750																								
0.813																								
0.875																								
0.938																								
1.000																								
1.063																								
1.125																								
1.188																								
1.250																								
1.313																								
1.375																								
1.500																								
1.563																								
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4.095																								
4.125																								
4.250																								
4.375																								
4.500																								
4.562																								
4.593																								
4.625																								
4.750																								
5.000																								
5.125																								

Delivery Conditions: M.D., S.S.I.D. M.D.: Mandrel Drawn

S.S.I.D.: Special Smooth Inside Diameter Standard Norms Supplied: ASTM A 513 Steel Grades Mainly Used: 1008-1040

Please contact our sales department for any inquiries.

FURTHER PROCESSING

With more then 60 years of experience in tube production, we provide competitive prices in-line with the demands and special requests for both our export and domestic customers

PROVIDED SERVICES ACCORDING TO CUSTOMER SPECIFIC DEMANDS:

- Cut-to-length and emptying with laser tube cutting
- Cutting, brushing, washing (according to customer specifications)
- Double end chamfering
- Heat treatment (induction hardening)
- CNC bending
- CNC milling, CNC Turning
- Tube forming, end forming (diameter expanding, reduction, flattening,...etc.)

PACKING AND DELIVERY SERVICES;

- Loading directly into the customer strongboxes
- Packing as hexagon bundle
- Packing as square bundle
- Packing into cartoon box or wooden crate
- Packing with VCI, silica gel, jute matting, oil paper
- Protection against corrosion











