BORUSAN PIPE

OUR PRODUCTS OUR COMMITMENT

Our Commitment is to Create Added Value For Our Business Partners

BORUSAN
PIPE

CONTENTS

MILESTONES

1958

Borusan Boru A.Ş. began its journey under the leadership of its founder, the late Asım Kocabıyık with 27 employees and five product varieties

1968

Halkalı ERW Pipe Plant started production, İstanbul, Türkiye

1969

First exports

1976

Gemlik ERW Pipe Plant started production, Bursa, Türkiye

1994

The company's shares started trading on the Istanbul Stock Exchange

2001

First investment abroad, acquisition of cold drawn tube plant in Vobarno, Italy

2011

Gemlik HSAW Pipe Plant started production, Bursa, Türkiye

2012

Our founder, Asım Kocabıyık, has passed away

2014

Baytown ERW started its operations, Texas, USA

2016

Bursa Service Center started its operations, Bursa, Türkiye

2023

Acquisition of SAWL pipe plant in Florida, USA and HSAW pipe plant in Alabama, USA

2024

Ploieşti Service Center started its operations, Romania. Baytown SRM Plant started production, Texas, USA

2019

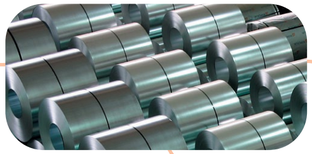
Gemlik Cold Drawn Tube Plant started production, Bursa, Türkiye

BORUSAN HOLDING AT A GLANCE

Borusan Group's basic strategy is based on a vision that focuses on developing innovative products and services while continuing to create added value for the Turkish economy, with a global perspective.
Celebrating its 80th anniversary in 2024, Borusan Group continues its steady growth across the manufacturing, machinery, and power systems, automotive, logistics, and energy sectors in different markets worldwide, especially in Türkiye.

PRODUCTION GROUP

Borusan Pipe **Borçelik** **Supsan**



LOGISTICS GROUP

Borusan Logistics **Borusan Port**

AUTOMOTIVE GROUP

Borusan Otomotiv Group **Parcapazari.com**

ENERGY GROUP

Borusan EnBW Enerji

Machinery and Power Systems Group

Borusan CAT

Corporate Venture Capital

Borusan Ventures

BUSINESS PARTNERS

ArcelorMittal · BMW · MINI · CAT · BMW MOTORRAD · EATON · EnBW · GIWA · JAGUAR · LAND ROVER

BORUSAN GROUP SUSTAINABILITY STRATEGY

A Better Life and Sustainable Future.

At Borusan, we view sustainability as a crucial strategic element that not only shapes our future existence but also plays a central role in our operations through an integrated management approach.

With our "Inspiring Future" approach, we inspire a brand new future by being inspired by innovative ideas. We are aware of our responsibilities to our planet and society. We effectively manage our Environmental, Social and Governance (ESG) risks through our investments in sustainability, focus on long-term value creation, and shape our future existence by earning the trust of all stakeholders in our value chain.

Based on this approach, we address our sustainability strategy within the framework of Climate, People, and Innovation (i^3) value areas (first letters of the Turkish words for climate, human, and innovation). Our "i^3" approach, which supports the United Nations Sustainable Development Goals on the one hand and overlaps with the strategies and material issues of our Group companies on the other, has guided us in setting our medium- and long-term sustainability goals. As we take firm steps towards the future we envision, we have also determined our performance indicators for these goals. Our group companies plan and implement the roadmaps they will follow to achieve these goals and monitor their progress.

Climate

We dream, design, and produce for a healthy climate. We use our innovative ideas, manufacturing skills, competencies, and creativity to overcome the climate crisis. Our goal is to help heal the disruptions in the climate system. With all of our resources, we dream of building, designing, and realizing healthier systems for a healthier climate, both in our own operations and throughout our value chain.

Human

We dream, design, and bring to life a human-oriented corporate culture and drive social development. We work with our colleagues and stakeholders to create a bright future. We design innovative relationship models for the benefit of our society. Our goal is to inspire a refreshing and sustainable future for all. With our human resources, we dream of, design, and bring a bright future to life.

Innovation

We dream, design, and produce for a new era. We are inspired by innovative ideas, and in turn, inspire a brand-new future. Our priority is to implement innovative and sustainable business models that are fit for the future. With our corporate resources and innovative capacities, we dream, design, and bring an innovative future to life.

BORUSAN PIPE IN BRIEF

A Global Leader in Steel Pipe Manufacturing: Borusan Pipe

Celebrating 65 years of excellence in 2023, Borusan Pipe is proud to be the first industrial investment of Borusan Group, a leader in Türkiye's industrial landscape. Since its establishment, the company has adopted a global perspective and provided value-added solutions to partners around the world. This dedication to development and innovation continues to drive Borusan Pipe's forward-looking investments today.

With nearly 2,400 employees and a diverse portfolio of over 4,000 products, Borusan Pipe is a trusted name in the global steel pipe industry. Operating ten production facilities across three continents, the company has established a strong footprint in international markets through its extensive manufacturing network and technology-driven approach.

In Türkiye, Borusan Pipe operates with an annual production capacity of 800,000 tons across its Istanbul and Bursa plants, serving a wide range of sectors—from automotive and construction to energy and machinery. With expertise and experience, Borusan Pipe continues to build its global market presence. In 2001, the company took its first step onto the international stage with the acquisition of the Vobarno facility in Italy, establishing Borusan Vobarno Tubi S.p.A. This facility specializes in high-value cold-drawn specialty pipes, primarily serving the European automotive market.

In 2014, Borusan Pipe made a landmark investment by establishing Borusan Pipe US Inc. in Baytown, Houston, Texas. The facility specializes in the production of casing and tubing pipes for the oil and gas industry, with an impressive annual capacity of 300,000 tons. Borusan Pipe was recognized as the "Best Pipe Manufacturer" by American Metal Market in 2016, 2017, and 2020, highlighting its commitment to excellence and innovation.

As part of its strategy to become a local player in global markets, Borusan Pipe acquired Berg Pipe in 2023—a company known for its high-quality, large-scale production capabilities in the United States. This acquisition significantly increased the company's growth potential in North America's infrastructure and project markets by adding two major production facilities in Mobile and Panama City to Borusan Pipe.

In 2024, Borusan Pipe reinforced its global footprint with an SRM investment at its Houston Baytown facility, driving operational excellence and further establishing its position as a local producer in the U.S. industrial and construction markets. The same year, the company expanded its European operations with the launch of the Ploieşti Service Center in Romania, increasing its production and storage capacity to meet the growing demand for short-cut shock absorber tubes, positioning Borusan Pipe as a key player in the European market.

As one of Türkiye's pioneering international investors, Borusan Pipe continues to explore new investment opportunities worldwide, strengthening Türkiye's global competitiveness. In addition to contributing to the national economy through exports to the Americas, Europe, Africa, and Asia, Borusan Pipe plays a key role in driving Türkiye's economic development, ensuring sustainable growth for the future.

BORUSAN PIPE'S SUSTAINABILITY STRATEGY

From 1958 to Future Generations.

Borusan Pipe's value creation strategy includes focusing on climate, people, and innovation while offering products that add value to business processes together with all internal and external stakeholders.

With the responsibility of being a pioneer in the industry, we always embrace more innovative approaches and drive innovation forward.

We work with all our might to achieve the zero-waste and zero-emission targets set by the Holding. At the same time, we are progressing with our strategy of contributing to the protection of the ecological balance. We have set our sustainability targets for 2030 in collaboration with the Borusan Holding, taking 2021 as the basis. We share our results with all of our stakeholders through our sustainability report, which we publish annually. We regularly track and update our progress by monitoring our priority issues, stakeholder expectations, and national and international developments.

Our company's key strategic focus areas are commercial excellence, operational excellence, sustainability, and new product innovation.

Digital technologies and human resources management are structured to support these focus areas. Borusan Pipe has adopted the mission of offering processes and products that add value to all internal and external stakeholders by continuously developing its value-creation strategy focused on climate, people, and innovation. As an organization operating in the international market, Borusan Pipe considers international developments and evolving stakeholder expectations when developing its sustainability strategy.

Our company closely follows developments in international sustainability reporting standards and has also considered the Corporate Sustainability Reporting Directive (CSRD), a new EU reporting directive, in its reporting approach. Borusan Pipe gives equal weight to financial and sustainability data and regularly receives verification from third parties to ensure the reliability of the data.

We own the climate by creating benefits for the planet

Within the scope of the climate theme, which we have set as our goal of making a difference, we proceed with the inspiration we receive from nature. We focus on protecting the ecological balance in the face of the climate crisis, which is critical for our future, and develop projects that help reduce our environmental footprint by paying attention to resource consumption. We work for a healthy climate by designing new carbon-free and circular business models.

We dream, we design, we turn it into reality through our people

We believe that the difference in business life comes from "People" and we consider it our priority to offer a happy, healthy, safe and transparent work environment to our employees. We dream of the future with them and get inspired by our speed of making it a reality; We design the future.

We own innovation by designing innovative ideas

We know that maintaining our success depends on investing in the future with an innovative perspective. We work to transform our business model in line with the needs of the future, and we carry forward our new product and innovation processes, which are one of the most important links in achieving this goal, with the high meticulousness brought by our industry experience. In addition to the responsibility of being a pioneer in the sector, we undertake projects, investments and affiliates that nurture the entrepreneurial and innovative spirit with the responsibility we feel towards our nature and our stakeholders.

BEYOND BORDERS, BEYOND EXPECTATIONS

Türkiye / İstanbul

Halkalı Plant

Capacity : 100,000 Tons - Welded
40,000 Tons - Cold Drawn
Product Portfolio : Industrial & Construction Pipes, Automotive Tubes

Türkiye / Bursa

Gemlik ERW Pipe Plant

Capacity : 550,000 Tons

Product Portfolio : Industrial, Constrcution & OCTG Pipes

Türkiye / Bursa

Bursa Service Center

Capacity : 21,000,000 Units

Product Portfolio : Automotive Tubes

Türkiye / Bursa

Gemlik Automotive Tubes Plant

Capacity : 60,000 Tons - Welded
50,000 Tons - Cold Drawn
Product Portfolio : Automotive Tubes

USA / Texas

Baytown ERW Pipe Plant

Capacity : 300,000 Tons

Product Portfolio : OCTG Pipes

USA / Texas

Baytown SRM Pipe Plant

Capacity : 100,000 Tons

Product Portfolio : SRM Pipes, API and Mechanical Tubes

USA / Florida

Borusan Berg Pipe Panama City Plant

Capacity : 330,000 Tons

Product Portfolio : SAWL Pipes

USA / Alabama

Borusan Berg Pipe Mobile Plant

Capacity : 220,000 Tons

Product Portfolio : HSAW Pipes

Italy / Vobarno

Vobarno Plant

Capacity : 30,000 Tons

Product Portfolio : Automotive, Hydraulic and Mechanical Application Tubes

Romania / Ploieşti

Ploieşti Service Center

Capacity : 21,000,000 Units

Product Portfolio : Automotive Tubes

CUSTOMER BENEFITS

Exceeding Limits with Continuous R&D

Borusan Pipe's research and development philosophy enables us to carry out research activities and develop new products to meet the needs of the market and our customers. As Borusan Pipe, we also conduct joint projects with our raw material suppliers to develop special material qualities for the manufacture of desired products. We collaborate in carrying out 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 and improving production and process control steps is a part of our daily life.

Integrated Delivery Services

Challenging the dynamics of global competition, Borusan Pipe gets the maximum benefits from the location advantage of its plants. Borusan Pipe's state-of-the-art Houston Plant has direct rail and barge access with dedicated trucks. Also owned solely by Borusan Group, Borusan Port in Gemlik is one of Europe's most important ports in terms of both size and location. Its physical conditions and Equipment Park enable Borusan Port to serve container and bulk vessels at the same time with the capacity to handle 5 million tons of cargo, 250.000 vehicles, and 400.000 TEU containers.

Borusan Pipe regularly provides shipping to many different destinations in the world - a capability that gives the company a competitive edge in sea transportation. Borusan Logistics is our delivery partner that provides chartering and project transportation services, as well as international bulk, container, land, railway and air transportation. As a solution partner with its reliable services and tracking systems in international transportation, Borusan Logistics creates value for us in terms of our "port-to-door" deliveries.

Turnkey Synergetic Solutions

Our customers are assured that all of our products meet their expectations ranging from internationally recognized specifications to custom requirements. Borusan Pipe provides turnkey products through its modern integrated facilities and trusted processing suppliers.

VOC - Most Valuable Driving Force

Borusan Pipe has been gathering the requirements and feedback from our customers to provide the best product and service quality. We have been applying the VOC (Voice of the Customer) process since 2003. Serving our customers and delivering synergistic solutions in the most cost-effective way is a consistent discipline in Borusan Pipe. We aim to create tailored solutions for specific market needs. This approach drives us to exceed our own limits and provide valuable services to our customers.

Well Established Sales Organization

Borusan Pipe's sales experts provide rapid response and reliable technical consultation in close cooperation with our customers before and after the sales process. Our sales organization consists of professional local representatives who speak the language of our customers in their market and always provide the best solutions for the business. The 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 highly skilled professionals.

OUR TEAM

There is no limit to human potential. Success brings the desire to achieve more. Having a principle of 'being one step ahead', our talented workforce is dedicated to delivering excellent customer service. Our sales organization comprises planning, sales, and trade operations experts. The educational and developmental programs create a significant difference for Borusan members in terms of business processes and personal development are designed by the Borusan Academy. The Leadership and Sales Faculty programs are jointly offered in collaboration with Sabancı University, Executive Development Unit. They consist of various certification programs, including long-term postgraduate education and professional development programs prepared by locally and internationally renowned experts in their fields.

QEHS MANAGEMENT

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

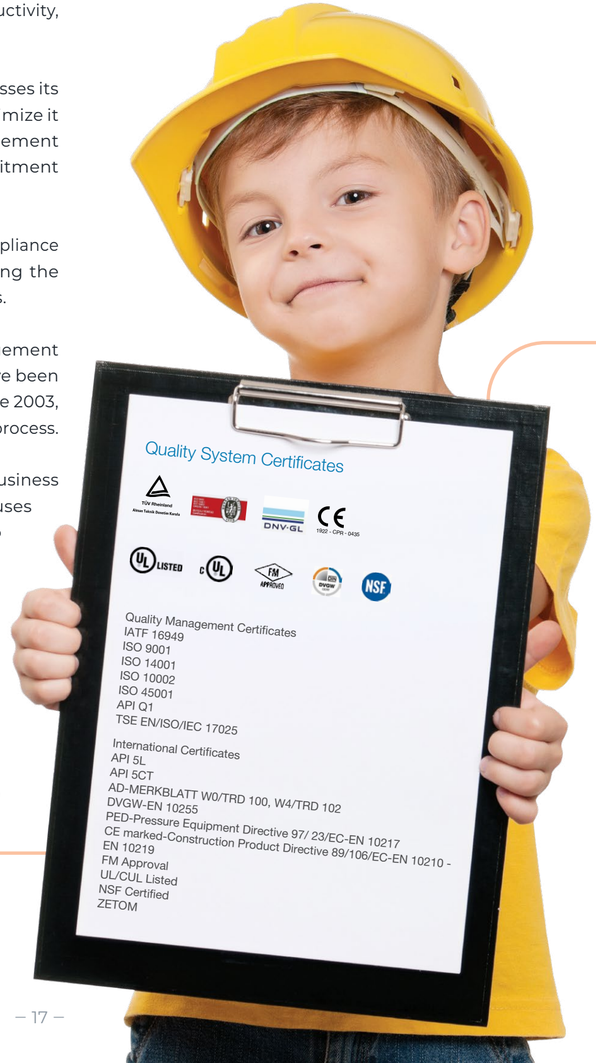
From raw material to finished product, Borusan Pipe assesses its environmental impact and implements measures to minimize it at every stage of the process. Our Environmental Management System Certificate (ISO 14001) demonstrates our commitment to environmental sustainability.

Strong performance is driven by a healthy workforce. In compliance with ISO 45001, Borusan Pipe is committed to protecting the health and safety of its employees and service providers.

Borusan Pipe is exemplary not only for its modern management approach, but also for its investments. Since 2002, we have been implementing the Lean Six Sigma methodology, and since 2003, we have been implementing the Voice of Customer (VOC) process.

The Lean Six Sigma methodology is a highly disciplined business management strategy aimed at eliminating the root causes of defects in production and business processes, to continuously improve productivity, profitability, and customer satisfaction. Additionally, through the VOC process, we gather customer requirements and feedback to ensure the highest level of product and service quality.

Our continuous efforts to enhance customer satisfaction have earned Borusan Pipe the Complaints Handling Management Systems Certificate (ISO 10002), making us the first company in the global steel pipe industry to achieve this certification.



ENERGY

OCTG-CASING AND TUBING

Sizes

Outside Diameter	Wall Thickness	Length
26.7 mm - 339.7 mm	2.87 mm - 13.06 mm	6.00 m - 18.30 m
1.050" - 13.375"	0.113" - 0.514"	19.68 ft - 60.04 ft

Production Standards & Material Qualities

- API 5CT certified for threaded and coupled casing and tubing (According to API 5B)
- Full ERW grade range: H40, J55/K55, L80, N80, FBNAU, P110 and Q125
- Proprietary as rolled 80, 90 grade available
- Enhanced high collapse versions of L80 and P110 grades available

Tests & Certificates

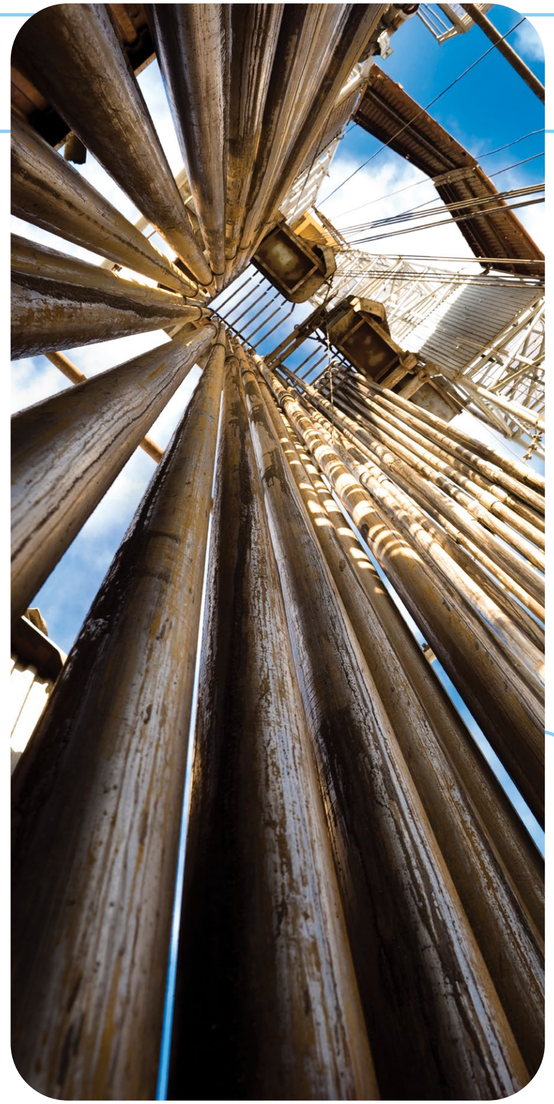
- API 5CT
- Visual and dimensional inspection
- Mechanical Tests: Tensile, Flattening, Expanding
- Steady scarfing with 100% weld line ultrasonic testing
- 100% hydrotesting in place
- Consistent wall thickness with oversize drift options available
- Reduced tolerances through statistical process control
- Uniform concentricity, roundness, straightness and cylindricity
- Fully normalized weld zones
- NDT Standards: U/S (ASTM E 213 Level 3)
- Suitable for directional drilling and multiple fracturing operations
- Accredited lab tests and third party inspection available (full body and weld line UT, EMI, SEA)

Finishing Operations

- Plain end square cut or high-quality API 5B certified threading and coupling
- Premium and semi-premium threads available
- High-quality threaded compound, couplings and protectors
- Torque-coupling application
- External corrosion prevention with a durable and environmentally safe coating

Tubing - Production Range

Range Lengths	Range 1	Range 2	Range 3
(ft)	20.0 - 24.0	20.0 - 24.0	38.0 - 42.0



Labels

Nominal linear mass shown for information and assistance in ordering only (T&C: threaded and coupled)

OD (inch)	Non-Upset T&C Nominal Linear mass (lb/ft)	External Upset T&C Nominal Linear mass (lb/ft)	Wall Thickness (inch)
1.050	1.14	1.20	0.113
1.050	1.48	1.54	0.154
1.315	1.70	1.80	0.133
1.315	2.19	2.24	0.179
1.660	2.09	-	0.125
1.660	2.30	2.40	0.140
1.660	3.03	3.07	0.191
1.900	2.40	-	0.125
1.900	2.75	2.90	0.145
1.900	3.65	3.73	0.200
1.900	4.42	-	0.250
1.900	5.15	-	0.300
2.063	3.24	-	0.156
2.063	4.50	-	0.225
2.375	4.00	-	0.167
2.375	4.60	4.70	0.190
2.375	5.80	5.95	0.254
2.375	6.60	-	0.295
2.375	7.35	7.45	0.336
2.875	6.40	6.50	0.217
2.875	7.80	7.90	0.276
2.875	8.60	8.70	0.308
2.875	9.35	9.45	0.340
2.875	10.50	-	0.392
3.500	7.70	-	0.216
3.500	9.20	9.30	0.254
3.500	10.20	-	0.289
3.500	12.70	12.95	0.375
4.000	9.50	-	0.226
4.000	10.70	11.00	0.262
4.500	12.60	12.75	0.271
4.500	15.20	-	0.337

API 5CT Tubing grades
J55, J55N, N80Q, L80, P110, FBNAU

Casing - Production Range

Range Lengths	Range 1	Range 2	Range 3	Extra Long
(ft)	18.0 - 25.0	25.0 - 34.0 (95% 28ft min)	34.0 - 48.0 (95% 36ft min)	48.0 - 65.00

Labels

Nominal linear mass shown for information and assistance in ordering only (T&C: threaded and coupled)

OD (inch)	T&C Nominal linear mass (lb/ft)	Wall Thickness (inch)	OD (inch)	T&C Nominal linear mass (lb/ft)	Wall Thickness (inch)
4.5	9.50	0.205	7.625	26.40	0.328
4.5	10.50	0.224	7.625	29.70	0.375
4.5	11.60	0.250	7.625	33.70	0.430
4.5	13.50	0.290	7.625	39.00	0.500
4.5	15.10	0.337	7.625	42.80	0.562
4.5	16.60	0.375	7.625	45.30	0.595
4.5	18.90	0.430	8.625	24.00	0.264
4.5	21.50	0.500	8.625	28.00	0.304
5	11.50	0.220	8.625	32.00	0.352
5	13.00	0.253	8.625	36.00	0.400
5	15.00	0.296	8.625	40.00	0.450
5	18.00	0.362	8.625	44.00	0.500
5.5	14.00	0.244	9.625	32.30	0.312
5.5	15.50	0.275	9.625	36.00	0.352
5.5	17.00	0.304	9.625	40.00	0.395
5.5	20.00	0.361	9.625	43.50	0.435
5.5	23.00	0.415	9.625	47.00	0.472
5.5	26.00	0.476	9.625	53.50	0.545
5.5	26.80	0.500	9.625	58.40	0.595
5.5	29.70	0.562	10.75	32.75	0.279
6.00	24.1	0.400	10.75	40.50	0.350
6.625	24.00	0.352	10.75	45.50	0.400
6.625	28.00	0.417	10.75	51.00	0.450
6.625	32.00	0.475	10.75	55.50	0.495
6.625	35.00	0.525	10.75	60.70	0.545
7	17.00	0.231	10.75	65.70	0.595
7	20.00	0.272	11.75	42.00	0.333
7	23.00	0.317	11.75	47.00	0.375
7	26.00	0.362	11.75	54.00	0.435
7	29.00	0.408	11.75	60.00	0.489
7	32.00	0.453	13.375	48.00	0.330
7	35.00	0.498	13.375	54.50	0.380
7	38.00	0.540	13.375	61.00	0.430
7	41.00	0.590	13.375	68.00	0.480
7.625	24.00	0.300	13.375	72.00	0.514

Grades
— API 5CT: H40, J55, N80, L80, L80-D10, P110
— API 5CT Monogrammed Proprietary: N80HC, L80HC, L80 EHC, P110 HC, P110 EHC, P110 HSCY
— Proprietary (no API Monogram): B-80, B90, Borusan-K55HC, B-110CY,
— End finish options*: PE, STC, LTC, BTC, P110CY
— Please contact our sales department for premium and semi-premium connections availability

ERW LINE PIPES

Sizes

Outside Diameter	Wall Thickness	Length
21.3 mm - 339.7 mm	2.8 mm - 12.7 mm*	6.00 m - 18.30 m
1/2" - 13 3/8"	0.109" - 0.500"	19.68 ft - 60.04 ft

Please contact our sales team for lengths shorter than 6.00 m.
* For US mill up to 15.88 mm available

Production Standards & Material Qualities

API 5L, PSL 1, PSL 2	A, B, X42, X46, X52, X56, X60, X65, X70
CSA Z 245.1	Gr 241-Gr 359
EN ISO 3183	L245-L485 (N, M, NE, ME)
SI 530	Grade B

Tests & Certificates

- Visual and Dimensional Inspection
- Mechanical Tests:
  Tensile, Flattening, Expanding, Bending
  Weld Ductility, Fracture Toughness, PP, PE Testing
- Metallographic Examination Purity Analysis
- Chemical Analysis
- Hydrostatic Test
- Non-destructive Inspection:
  Eddy Current, Ultrasonic Test (Weld Check)
  Ultrasonic (full body, optional)
- Mill Test Certificates
  according to EN 10204 2.1; 2.2; 3.1; 3.2
- NDT Standards
  UT (EN ISO 10893-11 Level U2),
  ET (EN ISO 10893-2 Level E2),
  API, EN ISO 3183, CSA, CSA Z245.1

Threading

114.3 mm≤OD≤ 339.7 mm: API 5L
(Line Pipe according to API 5B)

Finishing Operations

Plain end-square cut or beveled / Zaplok
Black self-colored / uncoated
Mill protective coating (black varnish) on the outer surface
Epoxy lining and coating (AWWA C210), API RP5L2
3-Layer coating (DIN 30670, ISO 21809-1)
3-Layer PP coating (DIN 30678, ISO 21809-1)

Heat Treatment

21.3 mm≤OD≤88.9 mm: full body
114.3 mm≤OD≤339.7 mm: weld seam

Production Range

OD	Wall Thickness (mm & inch)																									
	mm	2.8	3.0	3.2	3.6	3.68	3.7	4.0	4.5	5.1	5.2	6	6.6	7	7.1	8.1	8.4	8.6	9.0	9.5	10.0	11	12	12.7
mm	inch	0.109	0.113	0.133	0.140	0.145	0.147	0.154	0.179	0.200	0.203	0.237	0.258	0.277	0.280	0.318	0.331	0.337	0.354	0.375	0.394	0.432	0.472	0.500
21.3	1/2	1.28	1.35	1.43	1.57	1.60	1.61	1.71																
26.9	3/4	1.66	1.77	1.87	2.07	2.11	2.12	2.26	2.49															
33.7	1	2.13	2.27	2.41	2.67	2.72	2.74	2.93	3.24	3.60														
42.4	1 1/4	2.73	2.91	3.09	3.44	3.51	3.53	3.79	4.21	4.69	4.77													
48.3	1 1/2	3.14	3.35	3.56	3.97	4.05	4.07	4.37	4.86	5.43	5.53													
60.3	2 3/8	3.97	4.24	4.51	5.03	5.14	5.16	5.55	6.19	6.94	7.07													
73	2 7/8	4.85	5.18	5.51	6.16	6.29	6.32	6.81	7.60	8.54	8.69	9.91	10.81	11.39	11.54									
88.9	3 1/2	5.95	6.35	6.76	7.57	7.73	7.77	8.37	9.37	10.54	10.73	12.27	13.39	14.14	14.32									
114.3	4 1/2		8.23	8.77	9.83	10.04	10.09	10.88	12.18	13.73	13.99	16.02	17.53	18.52	18.77	21.21	21.94	22.42	23.37	24.55				
141.3	5 9/16		10.23	10.90	12.22	12.49	12.55	13.54	15.18	17.13	17.45	20.02	21.92	23.18	23.50	26.61	27.53	28.14	29.36	30.88	32.38			
168.3	6 5/8			13.03	14.62	14.94	15.02	16.21	18.18	20.53	20.91	24.01	26.32	27.84	28.22	32.00	33.12	33.87	35.36	37.20	39.04	42.67		
219.1	8 5/8				19.13	19.55	19.65	21.22	23.81	26.91	27.43	31.53	34.59	36.61	37.12	42.15	43.65	44.64	46.63	49.10	51.56	56.45	61.29	64.64
273	10 3/4							26.53	29.80	33.69	34.34	39.51	43.36	45.92	46.56	52.91	54.81	56.07	58.59	61.73	64.86	71.07	77.24	81.52
323.9	12 3/4							31.55	35.44	40.09	40.87	47.04	51.64	54.70	55.47	63.08	65.35	66.87	69.89	73.65	77.41	84.88	92.30	97.46
339.7	13 3/8								37.20	42.08	42.89	49.37	54.21	57.43	58.23	66.24	68.63	70.22	73.40	77.36	81.30	89.16	96.97	102.41

up to X 52 | up to X 60 | up to X 65 | up to X 70

HELICALLY WELDED LINE PIPES (HSAW)

Sizes

Outside Diameter	Wall Thickness	Length
610 mm - 1.524 mm	Up to 25.4 mm	Single lengths up to 24.00 m
24" - 60"	Up to 1.000"	up to 80"

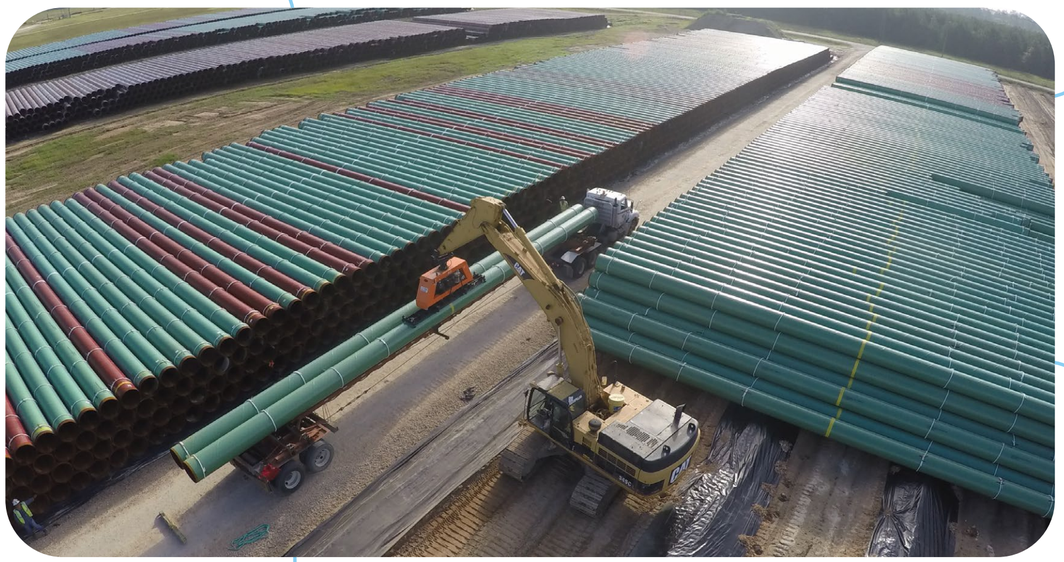
Production Standards

API, CSA, EN, ISO

Specifications

NACE

DNV



Pipe Coatings

OD Coatings

- FBE (Fusion Bonded Epoxy)
- Moisture-Resistant Overcoat (MRO)
- Abrasion-Resistant Overlay (ARO)
- Rough Coating (RC)
- Concrete Weigt Coating (CWC)

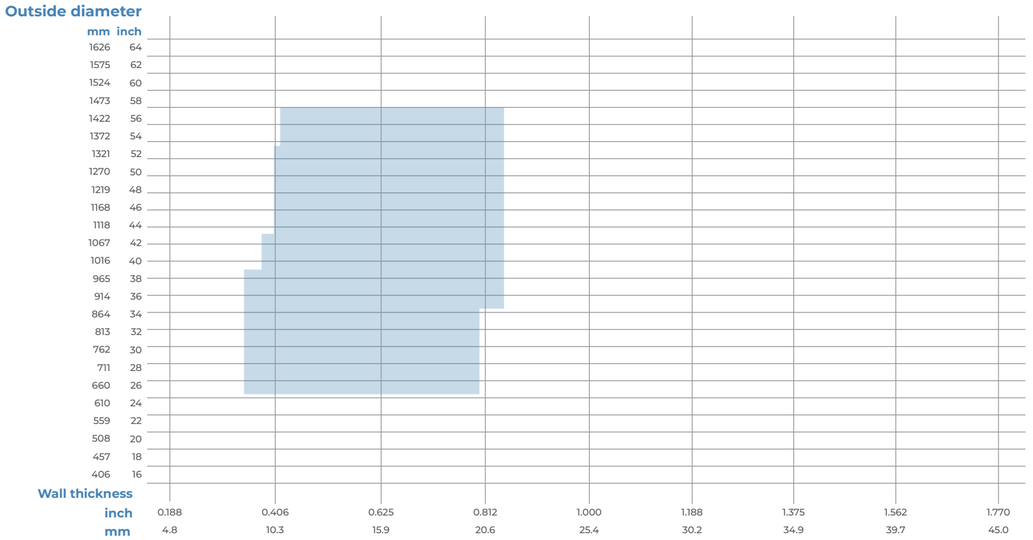
ID Coatings

- Flow Coat Epoxy

Quality Certificates

- API 5L
- API Q1
- ISO9001
- ISO14001
- ISO45001
- EN ISO/IEC 17025
- EN ISO 3183

Production Range



LONGITUDINALLY WELDED LINE PIPES (SAWL)

Sizes

Outside Diameter	Wall Thickness	Length
610 mm - 1524 mm	9.5 mm - 38.1 mm	Single lengths up to 12 m
24" – 60"	0.375" – 1.500"	Double jointed lengths up to 24 m

Production Standards & Material Qualities

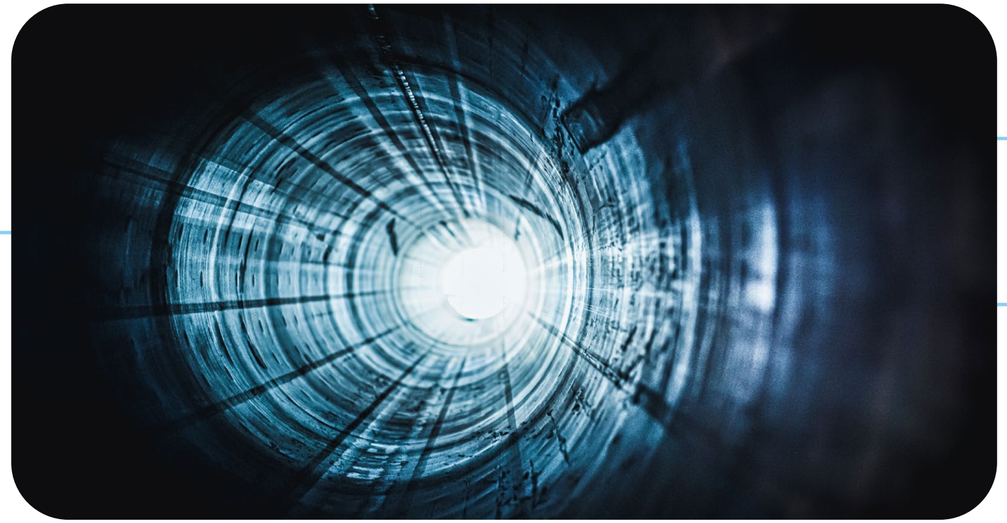
API 5L PSL1 - PSL2 GRA - X80 (M)
CSA Z245.1 : Requirement of category I, II, III

Coating Standards

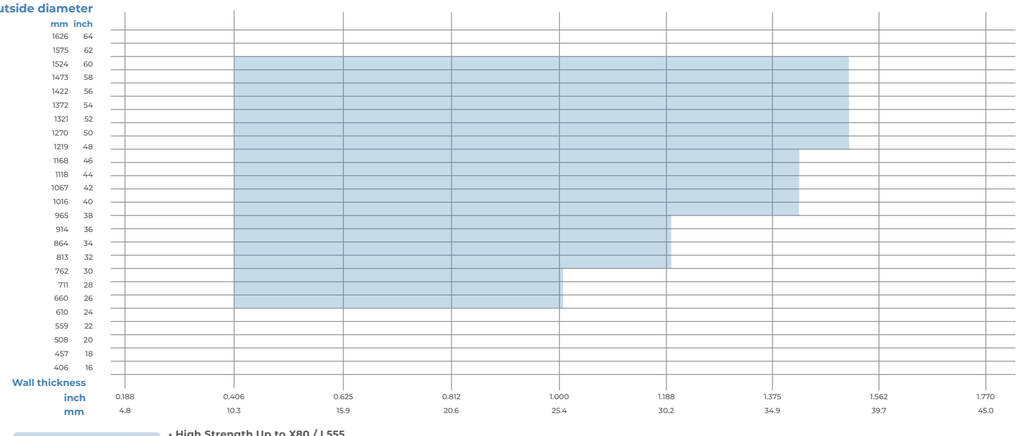
- Abrasion-Resistant Overlay (ARO) OD Coating: CSA Z245.20, NACE RP 0394
- FBE (Fusion Bonded Epoxy) OD Coating: CSA Z245.20, NACE RP 0394
- Flow-coat Epoxy ID Coating: API RP 5L2

Quality Certificates

- API 5L
- API Q1
- ISO9001



Production Range



- **High Strength Up to X80 / L555**
- **Sour Service Up to X70 / L485**
- **Heavy Wall Up to 1.5"**
- **Pipe length up to 80' (double jointing)**

Pipe Coatings

OD Coatings
- FBE (Fusion Bonded Epoxy)
- Moisture-Resistant Overcoat (MRO)
- Abrasion-Resistant Overlay (ARO)
- Rough Coating (RC)
- Concrete Weigt Coating (CWC)

ID Coatings
- Flow Coat Epoxy

Quality Certificates

- API 5L
- API Q1
- ISO9001
- ISO14001
- ISO45001
- EN ISO/IEC 17025
- EN ISO 3183

TUBES FOR PRESSURE PURPOSE / BOILER TUBES

Sizes

Outside Diameter	Wall Thickness	Length
21.3 mm - 339.7 mm	2.0 mm - 12.7 mm	5.00 m - 18.30 m
1/2" - 13 3/8"	0.079" - 0.500"	16.40 ft - 60 ft

Please ask for shorter lengths.

Production Standards & Material Qualities

ASTM A 178	GrA, GrC, GrD
EN 10217-1 (BS 3059 Part 1)	P195 TR1/TR2, P235 TR1/TR2, P265 TR1/TR2
EN 10217-2 (BS 3059 Part 2)	P195 GH, P235 GH, P265 GH
EN 10217-3	P355 N, P355 NH

Finishing Operations

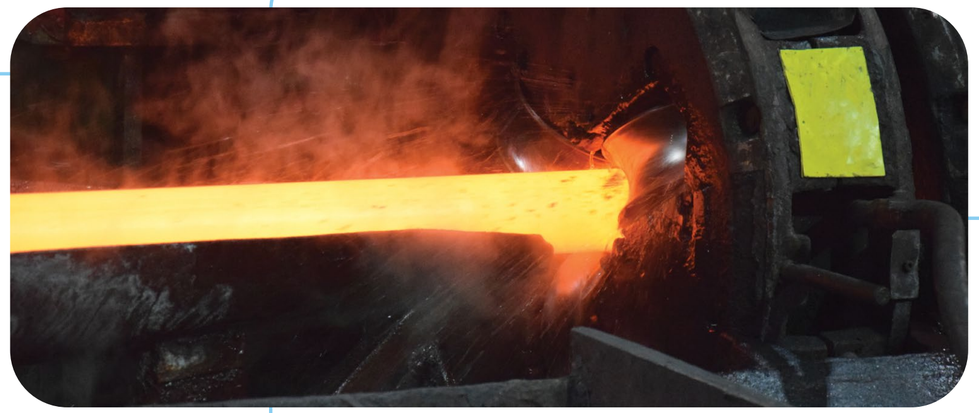
- Plain end-square cut or bevelled
- Black, self-colored / uncoated
- Surface protective coating (black-varnished)

Quality Certificates

AD-2000 WO
AD-2000 W4
PED

NDT Standards

UT (EN ISO 10893-11)
ET (EN ISO 10893-2)
UT (EN ISO 10893-8)



Tests & Certificates

- Visual and Dimensional Inspection
- Mechanical Tests:
  - Tensile, Flattening, and Flaring Test
  - Expanding Test
- Metallographic Examination
- Chemical Analysis
- Hydrostatic Test
- Non-Destructive Inspection:
  - In-Line Ultrasonic (weld check)
  - Eddy Current
- Mill Test Certificates

According to EN 10204: 2.1, 2.2, 3.1, 3.2
PED Certified – Pressure Equipment Directive 2014/68/EU Certified

Production Range

OD	Wall Thickness (mm)																									
mm	2.0	2.3	2.7	2.9	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.5	4.7	5.0	5.2	5.4	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
21.3																										
21.3<D<23																										
23.0																										
23.<D<25.0																										
25.0																										
25.0<D<26.9																										
26.9																										
26.9<D<28.0																										
28.0																										
28.0<D<30.0															Wall Thick. Tol. ± 0,60 mm											
30.0																										
30.0<D<32.0																										
32.0																					Wall Thick. Tol. ± 0,70 mm					
32.0<D<33.7																										
33.7																										
33.7<D<38.0															Wall Thick. Tol. ± 0,45 mm											
38.0																										
38.0<D<42.4																										
42.4																										
42.4<D<45.0																					Wall Thick. Tol. ± 0,60 mm				Wall Thick. Tol. ± 0,75 mm	
45.0																										
45.0<D<48.3												Wall Thick. Tol. ± 0,20 mm ± 0,35 mm														
48.3																										
48.3<D<51.0																										
51.0																										
51.0<D<54.0																										
54.0																										
54.0<D<57.0																										
57.0																										
57.0<D<60.3																										
60.3																										
60.3<D<63.5													Wall Thick. Tol. ± 0,25 mm													
63.5																										
63.5<D<67.0																										
67.0																										
67.0<D<70.0																										
70.0																										
70.0<D<73.0																				Wall Thick. Tol. ± 0,35 mm						
73.0																										
73<D<76.1																										
76.1																										
76.1<D<80.0																										
80.0																										
80.0<D<82.5																							Wall Thick. Tol. ± 0,60 mm			
82.5																										
82.5<D<85.0																										
85.0																										
85.0<D<88.9																										
88.9																										

Please contact our sales department for tolerances.
This size of pipe has an angular interior.

WATER TRANSMISSION

ERW WATER PIPES

Sizes

Outside Diameter	Wall Thickness	Length
21.3 mm - 339.7 mm	2.0 mm - 12.7 mm	3.00 m - 18.30 m
1/2" - 13 3/8"	0.079” - 0.500”	9.8 ft - 60 ft

Production Standards & Material Qualities

- Production Norms
  EN 10224, EN 10255, ISO 65, ASTM A 53, ASTM A 795, ASTM A 589
- Galvanizing Norms
  EN 10240, EN ISO 1461 (BS 729), ASTM A 53, NFA 49-700, UNI 5745
- Production Standards for Threading and Coupling (1/2"- 6")
  ISO 7/1, ANSI B.1.20.1, EN 10255
- Grooving (3/4"-12") according to the Victaulic Standard
- Our medium-series pipes can be guaranteed
  up to 25 bar operating pressure for water

- Material Qualities
  DIN 17100 St 37, St 44, St 52
  EN 10025 S 195, S 235, S 275, S 355
  Gr A, Gr B

Production Range (EN 10255)

Outside Diameter	Nominal Bore		Wall Thickness (mm)									
mm	mm	inch	2.0	2.3	2.6	2.9	3.2	3.6	4.0	4.5	5.0	5.4
21.3	15	1/2	L2	L/L1	M		H					
26.9	20	3/4		L2/L1/L	M		H					
33.7	25	1			L2	L/L1	M		H			
42.4	32	1 1/4			L2	L/L1	M		H			
48.3	40	1 1/2				L2/L/L1	M		H			
60.3	50	2				L2	L/L1	M		H		
76.1	65	2 1/2					L2/L/L1	M		H		
88.9	80	3					L2/L	L1	M		H	
114.3	100	4						L2/L	L1	M		H
139.7	125	5								L	M	H
165.1	150	6								L	M	H

Heavy Series Medium Series Light Series

Unit Weights for Black Plain End Pipes						
Outside Diameter (ich)	Outside Diameter (mm)	Unit Weights L Series (kg/mt)	Unit Weights L1 Series (kg/mt)	Unit Weights L2 Series (kg/mt)	Unit Weights M Series (kg/mt)	Unit Weights H Series (kg/mt)
1/2	21.30	1.08	1.08	0.95	1.21	1.44
3/4	26.90	1.40	1.39	1.38	1.56	1.87
1	33.70	2.20	2.20	1.98	2.41	2.93
11/4	42.40	2.82	2.82	2.54	3.10	3.79
11/2	48.30	3.25	3.24	3.23	3.56	4.37
2	60.30	4.51	4.49	4.08	5.03	6.19
21/2	76.10	5.75	5.73	5.71	6.42	7.93
3	88.90	6.76	7.55	6.72	8.36	10.30
4	114.30	9.83	10.80	9.75	12.20	14.50
5	139.70	15.00			16.60	17.90
6	165.10	17.80			19.80	21.30

Tests & Certificates

- Visual and Dimensional Inspection
- Leak-Tightness testing: Hydrostatic Test, Eddy Current Test
- Destructive Tests: Flattening, Bending
- Mechanical Tests
- Chemical Analysis
- Metallographic Examination
- Other tests as required by the standards
- Ultrasonic weld seam test, if applicable, for gas pipes
- Mill Test Certificates
  - Issued upon request according to EN 10204: 2.1, 2.2, 3.1, 3.2
- NDT Standards:
  - ET (EN ISO 10893-2), ET (ASTM E309)
- UKCA Certification

Finishing Operations

- Plain end (square cut or beveled)
- Threaded and coupled (Max. OD: 168.3 mm)
- Grooved
- Outside protective coating (black or red varnished)
- Temporary oil application
  (Other colors are available upon request.)
- Hot-dip galvanizing
- PE, PP Coating
- Bare Pipe (Uncoated)

TABLE X2.2 Dimensions, Weights (Masses) per Unit Length, and Test Pressures for Plain-End Pipe

NPS Designator	DN Designator	Specified Outside Diameter, in (mm)	Specified Wall Thickness, in (mm)	Nominal Weight (Mass) per Unit Length, Plain End,lb/ft (kg/m)	Weight Class	Schedule No.	Test Pressure, psi (kPa)	
							Grade A	Grade B
1/2	15	0.840 (21.3)	0.109 (2.77) 0.147 (3.73) 0.188 (4.78) 0.294 (7.47)	0.85 (1.27) 1.09 (1.62) 1.31 (1.95) 1.72 (2.55)	STD XS ... XXS	40 80 160 ...	700 (4800) 850 (5900) 900 (6200) 1000 (6900)	700 (4800) 850 (5900) 900 (6200) 1000 (6900)
3/4	20	1.050 (26.7)	0.113 (2.87) 0.154 (3.91) 0.219 (5.56) 0.308 (7.82)	1.13 (1.69) 1.48 (2.20) 1.95 (2.90) 2.44 (3.64)	STD XS ... XXS	40 80 160 ...	700 (4800) 850 (5900) 950 (6500) 1000 (6900)	700 (4800) 850 (5900) 950 (6500) 1000 (6900)
1	25	1.315 (33.4)	0.133 (3.38) 0.179 (4.55) 0.250 (6.35) 0.358 (9.09)	1.68 (2.50) 2.17 (3.24) 2.85 (4.24) 3.66 (5.45)	STD XS ... XXS	40 80 160 ...	700 (4800) 850 (5900) 950 (6500) 1000 (6900)	700 (4800) 850 (5900) 950 (6500) 1000 (6900)
1 1/4	32	1.660 (42.2)	0.140 (3.56) 0.191 (4.85) 0.250 (6.35) 0.382 (9.70)	2.27 (3.39) 3.00 (4.47) 3.77 (5.61) 5.22 (7.77)	STD XS ... XXS	40 80 160 ...	1200 (8300) 1800 (12400) 1900 (13100) 2200 (15200)	1300 (9000) 1900 (13000) 2000 (13800) 2300 (15900)
1 1/2	40	1.900 (48.3)	0.145 (3.68) 0.200 (5.08) 0.281 (7.14) 0.400 (10.16)	2.72 (4.05) 3.63 (5.41) 4.86 (7.25) 6.41 (9.56)	STD XS ... XXS	40 80 160 ...	1200 (8300) 1800 (12400) 1950 (13400) 2200 (15200)	1300 (9000) 1900 (13100) 2050 (14100) 2300 (15900)
2	50	2.375(60.3)	0.154 (3.91) 0.218 (5.54) 0.344 (8.74) 0.436 (11.07)	3.66 (5.44) 5.03 (7.48) 7.47 (11.11) 9.04 (13.44)	STD XS ... XXS	40 80 160 ...	2300 (15900) 2500 (17200) 2500 (17200) 2500 (17200)	2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200)
2 1/2	65	2.875 (73.0)	0.203 (5.16) 0.276 (7.01) 0.375 (9.52) 0.552 (14.02)	5.80 (8.63) 7.67 (11.41) 10.02 (14.90) 13.71 (20.39)	STD SXS ... XXS	40 80 160 ...	2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200)	2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200)
3	80	3.500 (88.9)	0.125 (3.18) 0.156 (3.96) 0.188 (4.78) 0.216 (5.49) 0.250 (6.35) 0.281 (7.14) 0.300 (7.62) 0.438 (11.13) 0.600 (15.24)	4.51 (6.72) 5.58 (8.29) 6.66 (9.92) 7.58 (11.29) 8.69 (12.93) 9.67 (14.40) 10.26 (15.27) 14.34 (21.35) 18.60 (27.68)	... ... STD ... ... XS ... XXS	... ... 40 ... ... 80 160 ...	1290 (8900) 1600 (11000) 1930 (13330) 2220 (15300) 2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200)	1500 (1000) 1870 (12900) 2260 (15600) 2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200) 2500 (17200)
3 1/2	90	4.000 (101.6)	0.125 (3.18) 0.156 (3.96) 0.188 (4.78) 0.226 (5.74) 0.250 (6.35) 0.281(7.14) 0.318 (8.08)	5.18 (7.72) 6.41 (9.53) 7.66 (11.41) 9.12 (13.57) 10.02 (14.92) 11.17 (16.63) 12.52 (18.63)	... ... STD ... ... XS	... ... 40 80	1120 (7700) 1400 (6700) 1690 (11700) 2030 (14000) 2250 (15500) 2500 (17200) 2800 (19300)	1310 (19000) 1640 (11300) 1970 (13600) 2370 (16300) 2500 (17200) 2500 (17200) 2800 (19300)
4	100	4.500 (114.3)	0.125 (3.18) 0.156 (3.96) 0.188 (4.78) 0.219 (5.56) 0.237 (6.02) 0.250 (6.35) 0.281 (7.14) 0.312 (7.92) 0.337 (8.56) 0.438 (11.13) 0.531 (13.49) 0.674(17.12)	5.85 (8.71) 7.24 (10.78) 8.67 (12.91) 10.02 (14.91) 10.80 (16.07) 11.36 (16.90) 12.67 (18.87) 13.97 (20.78) 15.00 (22.32) 19.02 (28.32) 22.53 (33.54) 27.57 (41.03)	... ... STD ... ... XS ... ... XXS	... ... 40 ... ... 80 120 160 ...	1000 (6900) 1250 (8600) 1500 (10300) 1750 (12100) 1900 (13100) 2000 (13800) 2250 (15100) 2500 (17200) 2700 (18600) 2800 (19300) 2800 (19300) 2800 (19300)	1170 (8100) 1460 (10100) 1750 (12100) 2040 (14100) 2210 (15200) 2330 (16100) 2620 (18100) 2800 (19300) 2800 (19300) 2800 (19300) 2800 (19300) 2800 (19300)
5	125	5.563 (141.3)	0.156 (3.96) 0.188 (4.78) 0.219 (5.56) 0.258 (6.55) 0.281 (7.14) 0.312 (7.92) 0.344 (8.74) 0.375 (9.52) 0.500 (12.70) 0.625 (15.88) 0.750 (19.05)	9.02 (13.41) 10.80 (16.09) 12.51 (18.61) 14.63 (21.77) 15.87 (23.62) 17.51 (26.05) 19.19 (28.57) 20.80 (30.94) 27.06 (40.28) 32.99 (49.11) 38.59 (57.43)	... ... STD ... ... XS ... ... XXS	... ... 40 ... ... 80 120 160 ...	1010 (7000) 1220 (8400) 1420 (9800) 1670 (11500) 1820 (12500) 2020 (13900) 2230 (15400) 2430 (16800) 2800 (19300) 2800 (19300) 2800 (19300)	1180 (8100) 1420 (9800) 1650 (11400) 1950 (13400) 2120 (14600) 2360 (16300) 2600 (17900) 2800 (19300) 2800 (19300) 2800 (19300) 2800 (19300)

NPS Designator	DN Designator	Specified Outside Diameter, in (mm)	Specified Wall Thickness, in (mm)	Nominal Weight (Mass) per Unit Length, Plain End,lb/ft (kg/m)	Weight Class	Schedule No.	Test Pressure, psi (kPa)	
							Grade A	Grade B
6	150	6.625 (168.3)	0.188 (4.78 0.219 (5.56) 0.250 (6.35) 0.280 (7.11) 0.312 (7.92) 0.344 (8.74) 0.375 (9.52) 0.432 (10.97) 0.562 (14.27) 0.719 (18.26) 0.864 (21.95)	12.94 (19.27) 15.00 (22.31) 17.04 (25.36) 18.99 (28.26) 21.06 (31.32) 23.10 (34.39) 25.05 (37.28) 28.60 (42.56) 36.43 (54.20) 45.39 (67.56) 53.21 (79.22)	... ... STD ... ... XS ... ... XXS	... ... 40 ... ... 80 120 160 ...	1020 (7000) 1190 (8200) 1360 (9400) 1520 (10500) 1700 (11700) 1870 (12900) 2040 (14100) 2350 (16200) 2800 (19300) 2800 (19300) 2800 (19300)	1190 (8200) 1390 (9600) 1580 (10900) 1780 (12300) 1980 (13700) 2180 (15000) 2380 (16400) 2740 (18900) 2800 (19300) 2800 (19300) 2800 (19300)
8	200	8.625 (219.1)	0.188 (4.78) 0.203 (5.16) 0.219 (5.56) 0.250 (6.35) 0.277 (7.04) 0.312 (7.92) 0.322 (8.18) 0.344 (8.74) 0.375 (9.52) 0.406 (10.31) 0.438 (11.13) 0.500 (12.70) 0.594 (15.09) 0.719 (18.26) 0.812 (20.62) 0.875 (22.22) 0.906 (23.01)	16.96 (25.26) 18.28 (27.22) 19,68 (29.28) 22.38 (33.31) 24.72 (36.31) 27.73 (41.24) 28.58 (42.55) 30.45 (45.34) 33.07 (49.20) 35.67 (53.08) 38.33 (57.08) 43.43 (64.64) 51.00 (75.92) 60.77 (90.44) 67.82 (100.92) 72.49 (107.88) 74.76 (111.27)	... ... STD ... ... XS ... ... XXS ...	... ... STD ... ... XS ... ... XXS ...	780 (5400) 850 (5900) 910 (6300) 1040 (7200) 1160 (7800) 1300 (9000) 1340 (9200) 1440 (9900) 1570 (10800) 1700 (11700) 1830 (12600) 2090 (14400) 2500 (17200) 2800 (19300) 2800 (19300) 2800 (19300)	920 (6300) 1000 (6900) 1070 (7400) 1220 (8400) 1350 (9300) 1520 (10500) 1570 (10800) 1680 (11600) 1830 (12600) 2000 (13800) 2130 (14700) 2430 (16800) 2800 (19300) 2800 (19300) 2800 (19300) 2800 (19300)
10	250	10.750 (273.0)	0.188 (4.78) 0.203 (5.16) 0.219 (5.56) 0.250 (6.35) 0.279 (7.09) 0.307 (7.80) 0.344 (8.74) 0.365 (9.27) 0.438 (11.13) 0.500 (12.70) 0.594 (15.09) 0.719 (18.26) 0.844 (21.44) 1.000 (25.40) 1.125 (28.57)	21.23 (31.62) 22.89 (34.08) 24.65 (36.67) 28.06 (41.75) 31.23 (46.49) 34.27 (51.01) 38.27 (56.96) 40.52 (60.29) 48.28 (71.87) 54.79 (81.52) 64.49 (95.97) 77.10 (114.70) 89.38 (133.00) 104.23 (155.09) 115.75 (172.21)	... ... STD ... XS ... ... XXS ...	... ... STD ... XS ... ... XXS ...	630 (4300) 680 (4700) 730 (5000) 840 (5800) 930 (6400) 1030 (7100) 1150 (7900) 1220 (8400) 1470 (10100) 1670 (11500) 1990 (13700) 2410 (16600) 2800 (19300) 2800 (19300) 2800 (19300)	730 (5000) 800 (5500) 860 (5900) 980 (6800) 1090 (7500) 1200 (8300) 1340 (9200) 1430 (9900) 1710 (11800) 1950 (13400) 2320 (16000) 2800 (19300) 2800 (19300) 2800 (19300) 2800 (19300)
12	300	12.750 (323.8)	0.203 (5.16) 0.219 (5.56) 0.250 (6.35) 0.281 (7.14) 0.312 (7.92) 0.330 (8.38) 0.344 (8.74) 0.375 (9.52) 0.406 (10.31) 0.438 (11.13) 0.500 (12.70) 0.562 (14.27) 0.688 (17.48) 0.844 (21.44) 1.000 (25.40) 1.125 (28.57) 1.312 (33.32)	27.23 (40.55) 29.34 (43.63) 33.41 (49.71) 37.46 (55.75) 41.48 (61.69) 43.81 (65.18) 45.62 (67.90) 49.61 (73.78) 53.57 (79.70) 57.65 (85.82) 65.48 (97.43) 73.22 (108.92) 88.71 (132.04) 107.42 (159.86) 125.61 (186.91) 139.81 (208.00) 160.42 (238.68)	... ... STD ... ... XS ... ... XXS	... ... 20 ... ... 30 ... ... 40 ... ... 60 80 100 120 140 160	570 (3900) 620 (4300) 710 (4900) 790 (5400) 880 (6100) 930 (6400) 970 (6700) 1060 (7300) 1150 (7900) 1240 (8500) 1410 (9700) 1590 (11000) 1940 (13400) 2390 (16500) 2800 (19300) 2800 (19300) 2800 (19300)	670 (4600) 720 (5000) 820 (5700) 930 (6400) 1030 (7100) 1090 (7500) 1130 (7800) 1240 (8500) 1340 (9200) 1440 (9900) 1650 (11400) 1850 (12800) 2270 (15700) 2780 (19200) 2800 (19300) 2800 (19300) 2800 (19300)

TABLE 1 Dimensions, Weights, and Test Pressure for Light-Weight Fire Protection Pipe-Schedule

NPS Designator	DN Designator	Outside Diameter		Nominal Wall Thickness		Weight Plain End		Electric - Resistance - Welded		
		inch	mm	inch	mm	lb/ft	kg/m	kPa	kPa	kPa
3/4	20	1.050	(26.7)	0.083	(2.11)	0.86	(1.28)	(3400)	700	(4800)
1	25	1.315	(33.4)	0.109	(2.77)	1.41	(2.09)	(3400)	700	(4800)
1 1/4	32	1.660	(42.2)	0.109	(2.77)	1.81	(2.69)	(3400)	1000	(6900)
1 1/2	40	1.900	(48.3)	0.109	(2.77)	2.09	(3.11)	(3400)	1000	(6900)
2	50	2.375	(60.3)	0.109	(2.77)	2.64	(3.93)	(3400)	1000	(6900)
2 1/2	65	2.875	(73.0)	0.120	(3.05)	3.53	(5.26)	(3400)	1000	(6900)
3	80	3.500	(88.9)	0.120	(3.05)	4.34	(6.46)	(3400)	1000	(6900)
3 1/2	90	4.000	(101.6)	0.120	(3.05)	4.98	(7.41)	(3400)	1200	(8300)
4	100	4.500	(114.3)	0.120	(3.05)	5.62	(8.37)	(3400)	1200	(8300)
5	125	5.563	(141.3)	0.134	(3.40)	7.78	(11.58)	B	1200	(8300)
6	150	6.625	(168.3)	0.134	(3.40)	9.30	(13.85)	B	1000	(6900)
8	200	8.625	(219.1)	0.188C	(4.78)	16.96	(25.26)	B	800	(5500)
10	250	10.750	(273.1)	0.188C	(4.78)	21.23	(31.62)	B	700	(4800)

TABLE 2 Dimensions, Weights, Test Pressures for Standard-Weight Fire Protection Pipe - Schedule 30 and Schedule 40

NPS Designator	DN Designator	Specified Outside Diameter		Nominal Wall Thickness		Weight Plain End		Weight Threaded and Coupled		Electric - Resistance - Welded		
		inch	mm	inch	mm	lb/ft	kg/m	lb/ft	kg/m	kPa	kPa	kPa
1/2	15	0.840	(21.3)	0.109	(2.77)	0.85	(1.27)	0.85	(1.27)	(4800)	700	(4800)
3/4	20	1.050	(26.7)	0.113	(2.87)	1.13	(1.69)	1.13	(1.68)	(4800)	700	(4800)
1	25	1.315	(33.4)	0.133	(3.38)	1.68	(2.50)	1.68	(2.50)	(4800)	700	(4800)
1 1/4	32	1.660	(42.2)	0.140	(3.56)	2.27	(3.39)	2.28	(3.40)	(6900)	1000	(6900)
1 1/2	40	1.900	(48.3)	0.145	(3.68)	2.72	(4.05)	2.73	(4.07)	(6900)	1000	(6900)
2	50	2.375	(60.3)	0.154	(3.91)	3.66	(5.45)	3.69	(5.50)	(6900)	1000	(6900)
2 1/2	65	2.875	(73.0)	0.203	(5.16)	5.80	(8.64)	5.83	(8.68)	(6900)	1000	(6900)
3	80	3.500	(88.9)	0.216	(5.49)	7.58	(11.29)	7.62	(11.35)	(6900)	1000	(6900)
3 1/2	90	4.000	(101.6)	0.226	(5.74)	9.12	(13.58)	9.21	(13.71)	(8300)	1200	(8300)
4	100	4.500	(114.3)	0.237	(6.02)	10.80	(16.09)	10.91	(16.25)	(8300)	1200	(8300)
5	125	5.563	(141.3)	0.258	(6.55)	14.63	(21.79)	14.82	(22.07)	C	1200	(8300)
6	150	6.625	(168.3)	0.280	(7.11)	18.99	(28.29)	19.20	(28.60)	C	1200	(8300)
8	200	8.625	(219.1)	0.277A	(7.04)	24.72	(36.82)	25.57	(38.09)	C	1200	(8300)
10	250	10.750	(273.1)	0.307A	(7.80)	34.27	(51.05)	35.78	(53.29)	C	1000	(6900)

FIRE SPRINKLER PIPES
FIRESIST®

FIRESIST PLUS EPOXY COATED SPRINKLER PIPES

Premium epoxy-coated Firesist plus pipes are certified as corrosivity category C4-M and proven to exhibit outstanding mechanical performance by European independent third-party testing laboratories. They are suitable for difficult environmental conditions and ideal for continuous operation up to 98 °C. Firesist plus pipes are specially developed with ease of on-site use in mind. They allow regrooving with no flaking or peeling on pipe ends. The coating color and texture are not visually affected by heat during cutting and drilling.

Firesist Plus Product Specifications

- Superior epoxy coating up to 250 microns
- C4-M certified for corrosivity category
- Available in Gray (RAL 7012) and Red (RAL 3000)
- Roll-grooved threaded & coupled or beveled pipe ends
- Eliminates field painting
- Widest range of UL and FM approvals CE certified, UKCA certified for EN 10217-1/2
- Produced according to ASTM, EN, AS 1074, and AS/NZS 1163 standards
- Pressure ratings up to 300 psi
- Size range: 1/2” – 12”
- Reliable in all sizes
- Inner weld seam removal and custom length upon request
- Tight tolerances, consistent roundness, and straightness
- Regroovable

FIRESIST PLUS TECHNICAL DATA SHEET

CORROSION RESISTANCE		
Corrosivity Category	C4-M (urban, industrial, coastal, seashore)	ISO 12944-6:2018
Water Condensation (240 h)	No visual change (incl. blistering, rusting, cracking, flaking) 21,4 MPa adhesion	ISO 6270-1
Neutral Salt Spray (480 h)	No visual change 0,0 mm corrosion from scribe 21,9 MPa adhesion	ISO 9227

MECHANICAL PERFORMANCE		
Cathodic Disbondment	R < 4 mm (168 hours, 24 °C)	ASTM G8-96
Cross-cut	Gt 0	ISO 2409:2007
Adhesion	22,9 MPa	ISO 4624-B
Impact Resistance	≥ 2,0 N.m	ASTM D2794
Mandrel Bend Test	≥ 2 mm	ISO 1519:2011
Cupping Test (Erichsen Drawing)	≥ 11 mm	ISO 1520:2006
Buchholz Hardness	> 250 (0,0 mm)	ISO 2815:2003
Gloss	90 – 94 (60°) 40 – 48 (20°)	DIN EN ISO 2813:2014

CHEMICAL RESISTANCE		
Immersion (45 days at 24°C) · Distilled water · 3 molar calcium chloride · 3 molar sodium chloride · Sat. calcium hydroxide	No holidays No undercutting No blistering No loss of bond No softening	ASTM A775
Chloride Permeability	1.4 x 10^{-5} M (45 days at 24°C)	ASTM A775

(*): DEKRA approval is available upon request.

FIRESIST EPOXY COATED SPRINKLER PIPES

- Powder epoxy coating up to 100 microns
- Available in Red (RAL 3000), Red Brown (RAL 3009), Grey (RAL 7012), White (RAL 9016) and Yellow (RAL 1018)
- Roll-grooved threaded & coupled or beveled pipe ends
- Eliminates field painting
- Widest range of UL and FM approval, CE certified, UKCA certified for EN 10217-1/2
- Produced according to ASTM, EN, AS 1074, and AS/NZS 1163 standards
- Pressure ratings up to 300 psi
- Size range Size range: 1/2” – 12”
- Reliable in all sizes
- Inner weld seam removal and custom length upon request
- Tight tolerances, consistent roundness and straightness

FIRESIST PRIMER VARNISHED SPRINKLER PIPES

Primer varnished sprinkler pipes provide protection against corrosion with low overhead cost.

- Varnishing coating between 20 – 25 microns
- Protects against atmospheric rust
- Available in Black (RAL 9005), Gray (RAL 7012), Red (RAL 3000), Red-Brown (RAL 3009), and Blue (RAL 5017, RAL 5005)
- Roll-grooved threaded & coupled or beveled pipe end
- Saves time, labor, cost and scrap
- Inner weld seam removal and custom length upon request
- Widest range of UL and FM approvals CE certified, UKCA certified for EN 10217-1/2
- Produced according to ASTM, EN, AS 1074, and AS/NZS 1163 standards
- Pressure ratings up to 300 psi
- Size range: 1/2” – 12”
- Reliable in all sizes
- Tight tolerances, consistent roundness, and straightness

Primer varnished sprinkler pipes provide protection against corrosion for up to 60 days under appropriate shipping and storage conditions.

GALVANIZED SPRINKLER PIPES

Zinc coated sprinkler pipes provide long lasting protection against corrosion.
They are compatible for use in wet, dry, pre-action and deluge sprinkler systems.

- Superior zinc coating between 50 – 55 microns
- Maintains corrosion resistance
- Roll-grooved threaded & coupled or beveled pipe ends
- Easy to weld and install
- Compliant with European project requirements
- Inner weld seam removal and custom length upon request
- Widest range of UL and FM approvals CE and DVGW Certified
- Produced according to ASTM and EN standards
- Pressure ratings up to 300 psi
- Size range: 1/2” – 12”
- Reliable in all sizes
- Tight tolerances, consistent roundness and straightness

TECHNICAL DATA SHEET

CORROSION RESISTANCE

Galvanized Technical Data Sheet	C4-M (industrial and potable water)	ISO 12944-6:2018
Water Condensation (240 h)	No visual change (incl. blistering, rusting, cracking, flaking) 13,1 MPa adhesion	ISO 6270-1
Neutral Salt Spray (480 h)	No visual change 0,0 mm corrosion from scribe 3,8 MPa adhesion	ISO 9227

OVERVIEW

	C4-M Corrosivity Category	Regrooveable	Color	Eliminating Field Painting
FIRESIST PLUS	✓	✓	RAL 7012 RAL 3000	✓
FIRESIST EPOXY			RAL 7012 RAL 3000 RAL 3009 RAL 9016 RAL 1018	✓
FIRESIST VARNISHED			RAL 9005 RAL 7012 RAL 3000 RAL 3009 RAL 5017 RAL 5005	
GALVANIZED	✓	✓	Galvanized	✓

ASTM A53 – ASTM A795 – EN 10217-1

	OD (mm)	OD (inch)	Wall Thickness (mm)	Wall Thickness (inch)	Weight (kg/m)	Weight (lb/ft)	UL	FM
EASY FLOW LIGHTWALL	33.7	1"	2	0.079	1.56	1.05		✓
	33.7	1"	2.60	0.102	1.99	1.34		✓
	42.4	1 1/4"	2.00	0.079	1.99	1.34		✓
	42.4	1 1/4"	2.30	0.091	2.27	1.53		✓
	42.4	1 1/4"	2.60	0.102	2.55	1.71		✓
	48.3	1 1/2"	2.00	0.079	2.28	1.53		✓
	48.3	1 1/2"	2.30	0.091	2.61	1.75		✓
	48.3	1 1/2"	2.60	0.102	2.93	1.97		✓
	60.3	1 1/2"	2.00	0.079	2.88	1.93		✓
	60.3	2"	2.60	0.102	3.70	2.49		✓
	60.3	2"	2.90	0.114	4.10	2.76		✓
	76.1	2 1/2"	2.18	0.086	3.97	2.67		✓
	76.1	2 1/2"	2.60	0.102	4.71	3.17		✓
	76.1	2 1/2"	2.90	0.114	5.23	3.52		✓
	88.9	3"	2.36	0.093	5.04	3.38		✓
	88.9	3"	2.90	0.114	6.15	4.13		✓
	88.9	3"	3.20	0.126	6.76	4.54		✓
	114.3	4"	2.60	0.102	7.16	4.81		✓
	114.3	4"	3.60	0.142	9.83	6.60		✓
	139.7	5"	3.40	0.134	11.43	7.68		✓
SCH 7	33.4	1"	2.00	0.079	1.55	1.04	✓	✓
	42.2	1 1/4"	2.00	0.079	1.98	1.33	✓	✓
	48.3	1 1/2"	2.13	0.084	2.42	1.62	✓	✓
	60.3	2"	2.13	0.084	3.05	2.05	✓	✓
	73	2 1/2"	2.18	0.086	3.80	2.55	✓	✓
	88.9	3"	2.36	0.093	5.04	3.38	✓	✓
	114.3	4"	2.60	0.102	7.16	4.81	✓	✓
	141.3	5"	3.40	0.134	11.56	7.76	✓	
SCH 10	26.7	3/4"	2.11	0.083	1.28	0.86	✓	
	33.4	1"	2.77	0.109	2.09	1.41	✓	✓
	42.2	1 1/4"	2.77	0.109	2.69	1.81	✓	✓
	48.3	1 1/2"	2.77	0.109	3.11	2.09	✓	✓
	60.3	2"	2.77	0.109	3.93	2.64	✓	✓
	73	2 1/2"	3.05	0.120	5.26	3.53	✓	✓
	88.9	3"	3.05	0.120	6.46	4.34	✓	✓
	101.6	3 1/2"	3.05	0.120	7.41	4.98	✓	✓
	114.3	4"	3.05	0.120	8.37	5.62	✓	✓
	139.7	5 1/2"	3.6	0.142	12.08	8.12		✓
	141.3	5"	3.4	0.134	11.58	7.78	✓	✓
	168.3	6"	3.4	0.134	13.85	9.30	✓	✓
	219.1	8"	3.76	0.148	19.97	13.4	✓	✓
	219.1	8"	4.78	0.188	25.26	16.96	✓	✓
	273.1	10"	4.19	0.165	27.79	18.67	✓	✓
	273.1	10"	4.78	0.188	31.62	21.23	✓	✓
	323.8	12"	4.78	0.188	37.61	25.28		✓

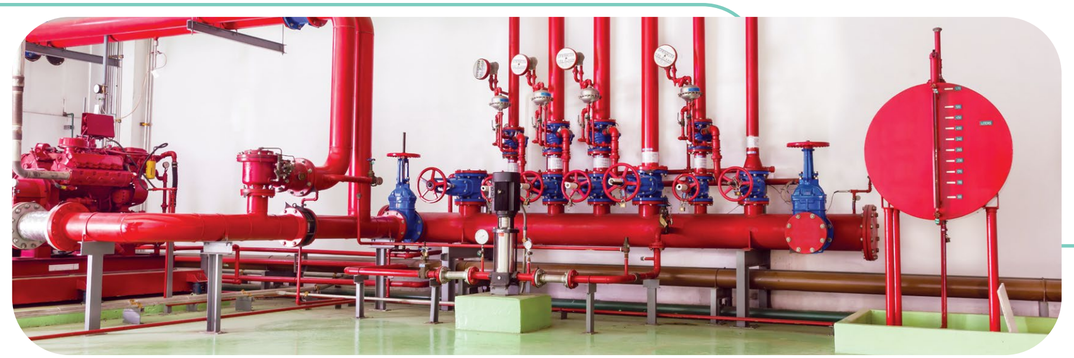
ASTM A53 – ASTM A795 – EN 10217-1

	OD (mm)	OD (inch)	Wall Thickness (mm)	Wall Thickness (inch)	Weight (kg/m)	Weight (lb/ft)	UL	FM
SCH 30	33.4	1"	2.90	0.114	2.18	1.46		✓
	42.2	1 1/4"	2.97	0.117	2.87	1.93		✓
	48.3	1 1/2"	3.18	0.125	3.53	2.37		✓
	60.3	2"	3.18	0.125	4.48	3.00		✓
	73	2 1/2"	4.78	0.188	8.04	5.40		✓
	88.9	3"	4.78	0.188	9.92	6.65		✓
	101.6	3 1/2"	4.78	0.188	11.41	7.65		✓
	114.3	4"	4.78	0.188	12.91	8.66		✓
	141.3	5"	5.56	0.219	18.61	12.51		✓
	168.3	6"	5.56	0.219	22.31	15.00		✓
	219.1	8"	7.04	0.277	36.82	24.72		✓
	273.1	10"	7.8	0.307	51.05	34.27		✓
SCH 40	21.3	1/2"	2.77	0.109	1.27	0.85	✓	✓
	26.7	3/4"	2.87	0.113	1.69	1.13	✓	✓
	33.4	1"	3.38	0.133	2.50	1.68	✓	✓
	42.2	1 1/4"	3.56	0.140	3.39	2.27	✓	✓
	48.3	1 1/2"	3.68	0.145	4.05	2.72	✓	✓
	60.3	2"	3.91	0.154	5.45	3.66	✓	✓
	73	2 1/2"	5.16	0.203	8.64	5.80	✓	✓
	88.9	3"	5.49	0.216	11.29	7.58	✓	✓
	101.6	3 1/2"	5.74	0.226	13.58	9.12	✓	✓
	114.3	4"	6.02	0.237	16.09	10.80	✓	✓
	141.3	5"	6.55	0.258	21.79	14.63	✓	✓
	168.3	6"	7.11	0.280	28.29	18.99	✓	✓
	219.1	8"	8.18	0.322	45.34	30.45	✓	✓
	273.1	10"	9.27	0.365	60.29	40.52	✓	✓
SCH 80	21.3	1/2"	3.73	0.147	1.62	1.09		✓
	26.7	3/4"	3.91	0.154	2.20	1.48		✓
	33.4	1"	4.55	0.179	3.25	2.19		✓
	42.2	1 1/4"	4.85	0.191	4.49	3.03		✓
	48.3	1 1/2"	5.08	0.200	5.39	3.65		✓
	60.3	2"	5.54	0.218	7.55	5.08		✓
	73	2 1/2"	7.01	0.276	11.52	7.75		✓
	88.9	3"	7.62	0.300	15.39	10.35		✓
	101.6	3 1/2"	8.08	0.318	18.82	12.67		✓
	114.3	4"	8.56	0.337	22.60	15.20		✓
	141.3	5"	9.52	0.375	31.42	21.04		✓
	168.3	6"	10.97	0.432	43.05	28.88		✓
	219.1	8"	12.70	0.500	65.41	44.00		✓

EN 10255 UL & FM

	OD (mm)	OD (inch)	Wall Thickness (mm)	Wall Thickness (inch)	UL	FM
EN 10255 Medium	21.3	1/2"	2.6	0.102		
	26.9	3/4"	2.6	0.102		
	33.7	1"	3.2	0.126		✓
	42.4	1 1/4"	3.2	0.126	✓	✓
	48.3	1 1/2"	3.2	0.126	✓	✓
	60.3	2"	3.6	0.142	✓	✓
	76.1	2 1/2"	3.6	0.142	✓	✓
	88.9	3"	4	0.157	✓	✓
	114.3	4"	4.5	0.177	✓	✓
	139.7	5"	5	0.197	✓	✓
	165.1	6"	5	0.197	✓	✓

	OD (mm)	OD (inch)	Wall Thickness (mm)	Wall Thickness (inch)	FM
EN 10255 Heavy	21.3	1/2"	3.2	0.126	✓
	26.9	3/4"	3.2	0.126	✓
	33.7	1"	4	0.157	✓
	42.4	1 1/4"	4	0.157	✓
	48.3	1 1/2"	4	0.157	✓
	60.3	2"	4.5	0.177	✓
	76.1	2 1/2"	4.5	0.177	✓
	88.9	3"	5	0.197	✓
	114.3	4"	5.4	0.213	✓
	139.7	5"	5.4	0.213	✓
	165.1	6"	5.4	0.213	✓



WATER WELL CASING PIPES

Sizes

Outside Diameter	Wall Thickness	Length
33,4 mm - 323,9 mm	3,2 mm - 9,5 mm	6,00 m - 18,30 m
1,314"- 12,751"	0,126" - 0,374"	19,68 ft - 60 ft

Production Standards & Material Qualities

- ASTM A 589 Type I, II, III, IV Production Standard
- ASTM A 53
- Reliable High Steel Quality
- From Grade A or Grade B Material Quality
- Weldable
- Threadable

Tests & Certificates

- Visual and Dimensional Inspection
- Leak tightness testing: Hydrostatic Test, Eddy Current Test
- Destructive Tests: Flattening, Bending
- Mechanical Tests
- Chemical Analysis
- Metallographic Examination
- Others as required by the standards
- Mill Test Certificates - Issued upon request according to EN 10204 2.1; 2.2; 3.1; 3.2
- NDT Standards: - ET (EN ISO 10893-2), ET (ASTM E309)
- Glass fibre reinforced plastic (GRP), OD Coating

Finishing Operations

- Threaded up to 6-5/8"
- Hot Dip Galvanised up to 6-5/8"

Production Options

OD (inch)	OD (mm)	Wall Thickness (inch)	Wall Thickness (mm)
4 1/2''	114.3	0.237	6.02
5 1/2''	141.3	0.188	4.78
5 1/2''	141.3	0.258	6.55
6 5/8''	168.3	0.188	4.78
6 5/8''	168.3	0.219	5.56
6 5/8''	168.3	0.25	6.35
6 5/8''	168.3	0.28	7.11
8 5/8''	219.1	0.219	5.56
8 5/8''	219.1	0.25	6.35
8 5/8''	219.1	0.277	7.04
8 5/8''	219.1	0.322	8.18
10 3/4''	273	0.25	6.35
10 3/4''	273	0.279	7.09
10 3/4''	273	0.365	9.27
12 3/4''	323.8	0.25	6.35
12 3/4''	323.8	0.33	8.38
12 3/4''	323.8	0.375	9.52

CONSTRUCTION

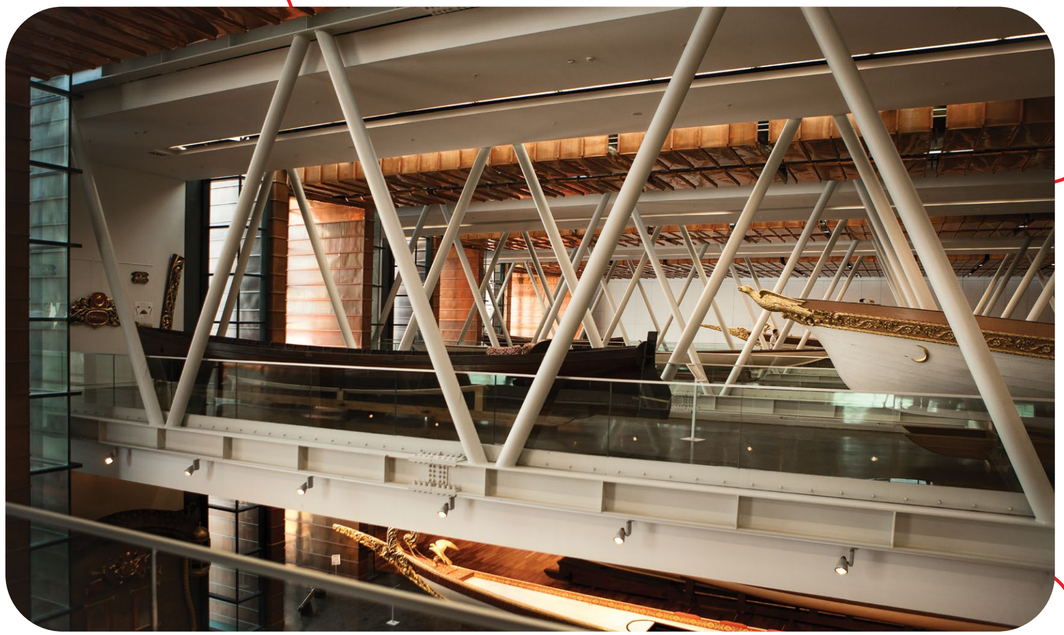
CIRCULAR HOLLOW SECTIONS

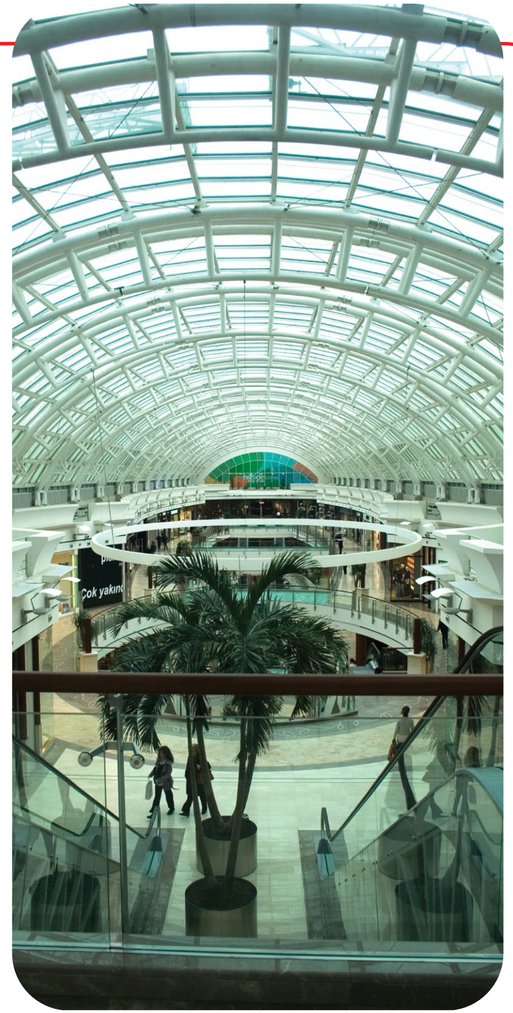
Sizes

Outside Diameter	Wall Thickness	Length
21.3 mm - 339.7 mm	2.0 mm - 12.7 mm	5.00 m - 18.3 m
1/2" - 13 3/8"	0.079" - 0.500"	16.40 ft - 60.00 ft

Production Standards & Material Qualities

EN 10305-3	E 195, E 235, E 275, E 355
ASTM A 500	GR A, GR B, GR C
EN 10219 (BS 6363)	S 235, S 275, S 355, S 460 MH, NH (J0H, JRH, J2H, K2H, GR 34/26, GR 43/36)
EN 10210	S 235, S 275, S 355, S 460 MH, NH (J0H, JRH, J2H, K2H)





Tests & Certificates

- Visual and Dimensional Inspection
- Mechanical Tests:
  Tensile Test, Flattening Test, Flaring Test,
  Expanding Test, Impact Test
- Metallographic Examination
- Chemical Analysis
- Non-Destructive Inspection: In-Line Ultrasonic
  (weld check)
  In-Line and Offline Eddy Current (for round tubes)
- Mill Test Certificates
  - According to EN 10204: 2.1, 2.2, 3.1, 3.2
- NDT Standards
  - ET (ISO 10893-2)
- Quality Certificates
  - EN 10219 - EN10210 CE marked

Finishing Operations

- Plain End-Square cut or bevelled
  Black, self-colored/uncoated
- Mill protective oil coating; for both round, square
  and rectangular tubes, black & red varnish for
  outside surface of round tubes.

Production Range (EN 10219)

Outside Diameter	Wall Thickness (mm)																		
mm	2.0	2.5	2.7	2.9	3.0	3.2	3.6	4.0	5.0	5.5	6.0	7.0	8.0	8.5	9.20	10.0	11.0	12.0	12.7
21.3	■	■	■	■	■	■	■	■	■	■									
25.0	■	■	■	■	■	■	■	■	■	■									
26.9	■	■	■	■	■	■	■	■	■	■									
32.0	■	■	■	■	■	■	■	■	■	■	■								
33.7	■	■	■	■	■	■	■	■	■	■	■	■							
38.0	■	■	■	■	■	■	■	■	■	■	■	■							
42.4	■	■	■	■	■	■	■	■	■	■	■	■							
48.3	■	■	■	■	■	■	■	■	■	■	■	■							
51.0	■	■	■	■	■	■	■	■	■	■	■	■							
57.0	■	■	■	■	■	■	■	■	■	■	■	■							
60.3	■	■	■	■	■	■	■	■	■	■	■	■							
63.5		■	■	■	■	■	■	■	■	■	■	■							
70.0		■	■	■	■	■	■	■	■	■	■	■							
73.0		■	■	■	■	■	■	■	■	■	■	■							
76.1		■	■	■	■	■	■	■	■	■	■	■							
82.5			■	■	■	■	■	■	■	■	■	■							
88.9			■	■	■	■	■	■	■	■	■	■							
101.6				■	■	■	■	■	■	■	■	■	■						
114.3					■	■	■	■	■	■	■	■	■						
127.0					■	■	■	■	■	■	■	■	■						
133.0					■	■	■	■	■	■	■	■	■						
139.7					■	■	■	■	■	■	■	■	■	■	■	■			
141.3					■	■	■	■	■	■	■	■	■	■	■	■			
159.0					■	■	■	■	■	■	■	■	■	■	■	■	■		
165.1					■	■	■	■	■	■	■	■	■	■	■	■	■		
168.3					■	■	■	■	■	■	■	■	■	■	■	■	■		
177.8						■	■	■	■	■	■	■	■	■	■	■	■	■	
219.1						■	■	■	■	■	■	■	■	■	■	■	■	■	■
244.5								■	■	■	■	■	■	■	■	■	■	■	■
273.0								■	■	■	■	■	■	■	■	■	■	■	■
323.9								■	■	■	■	■	■	■	■	■	■	■	■
339.7								■	■	■	■	■	■	■	■	■	■	■	■

SELF DRILLING ANCHOR PIPES

Sizes

Outside Diameter

21,3 mm - 88,9 mm

½" - 3 1/2"

Wall Thickness

Up to 10.00 mm

Up to 0.394"

Production Standards

EN 10210

FOUNDATION / PILING TUBES

Sizes

For Large Diameter Welded Pipes

Outside Diameter	Wall Thickness	Length
610 mm - 1,524 mm	a wall thickness up to 38.1mm	Can be determined based on customer requirements and logistics limitations
24" - 60"	a wall thickness up to 1.500”	

For ERW Micro Piling Pipes

Outside Diameter	Wall Thickness	Length
21.3 mm - 339.7 mm	2.0 mm - 12.7 mm	5.00 m - 18.30 m
1/2" - 13 3/8"	0.078” - 0.500”	16.40 ft - 60.00 ft

Production Standards & Material Qualities

EN 10219-1	Grade including S355 J2H, CE marking according to S355, S460 MH, S550 J2H
ASTM A252	Grade including Grade 3

Inner weld bead removed

Coating Standards

- Dual-Layer Abrasion-Resistant FBE OD Coating:
  API 5L7, CSA Z245.2 NACE RP 0394, AWWA C213
- FBE (Fusion Bonded Epoxy) OD Coating:
  API 5L7, CSA Z245.20 NACE RP 0394, AWWA C213
- Polyethylene OD Coating:
  DIN 30670, TS 5139, NF A 49-710, UNI 9099, EN ISO 21809-1
- Polypropylene OD Coating:
  DIN 30678, NF A 49-711, EN ISO 21809-1
- Epoxy ID Coating:
  AWWA C210 Dual-Layer Abrasion-Resistant FBE OD Coating:
  API 5L7, CSA Z245.20, NACE RP 0394, AWWA C213
- FBE (Fusion Bonded Epoxy) OD Coating:
  API 5L7, CSA Z245.20 NACE RP 0394, AWWA C213
- Polyethylene OD Coating:
  DIN 30670, TS 5139, NF A 49-710, UNI 9099, EN ISO 21809-1
- Polypropylene OD Coating:
  DIN 30678, NF A 49-711, EN ISO 21809-1
- Epoxy ID Coating: AWWA C210

Protective Paint Systems

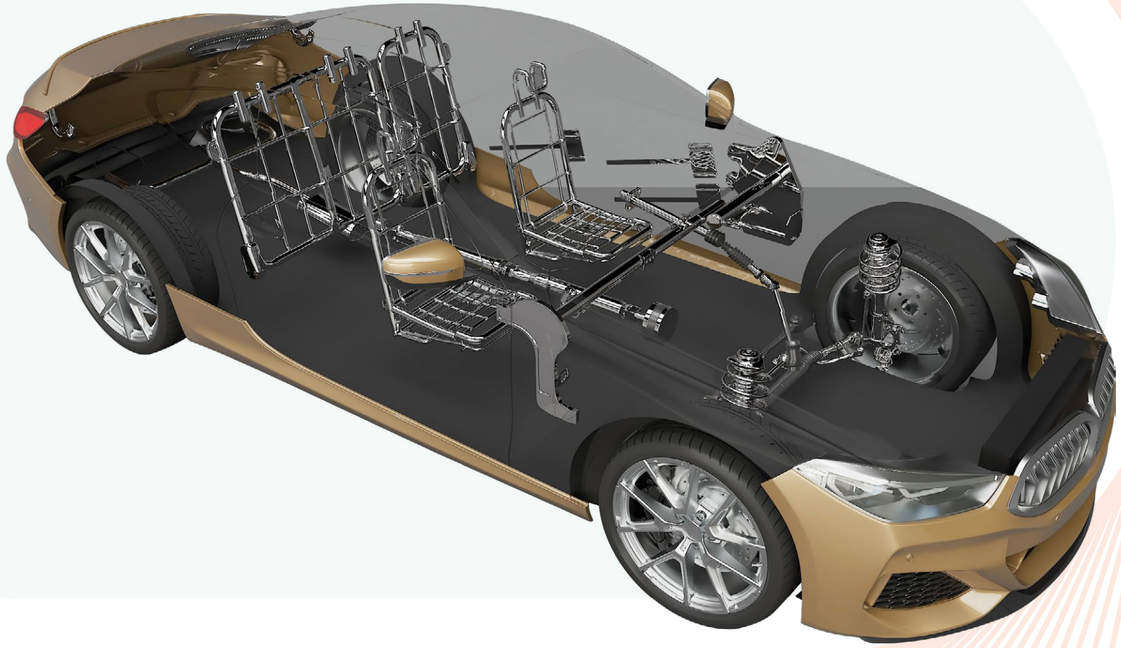
BS EN ISO 12944-5:2019
Paints and varnishes. Corrosion protection of steel structures by protective paint systems.

Most Common ERW Piling Tube Sizes

Diameter	Wall Thickness	kg/meter
mm	mm	
76.1	6.3	10.84
88.9	6.3	12.83
114.3	6.3	16.78
114.3	8	20.97
139.7	8	25.98
139.7	10	31.99
168.3	10	39.04
168.3	12.5	48.03
219.1	10	51.57
219.1	12.5	63.69
273.0	10	64.86
273.0	12.5	80.30
323.9	10	77.41
323.9	12.5	95.99

Chemical (max)	C	Mn	P	S	CEV%
S 460 MH	0.20%	1.70%	0.035%	0.03%	0.46%
S 550 J2H	0.16%	2.20%	0.03%	0.03%	0.47%

Mechanical	Yield Strenght (MPa) min	Tensile Strength (MPa) min	Elongation min	Impact Energy at -20°C
S 460 MH	460	530 - 720	17%	40 Joule
S 550 J2H	550	605 - 760	14%	27 Joule



AUTOMOTIVE AND INDUSTRIAL APPLICATIONS

AUTOMOTIVE AND INDUSTRIAL APPLICATIONS

Production Standards

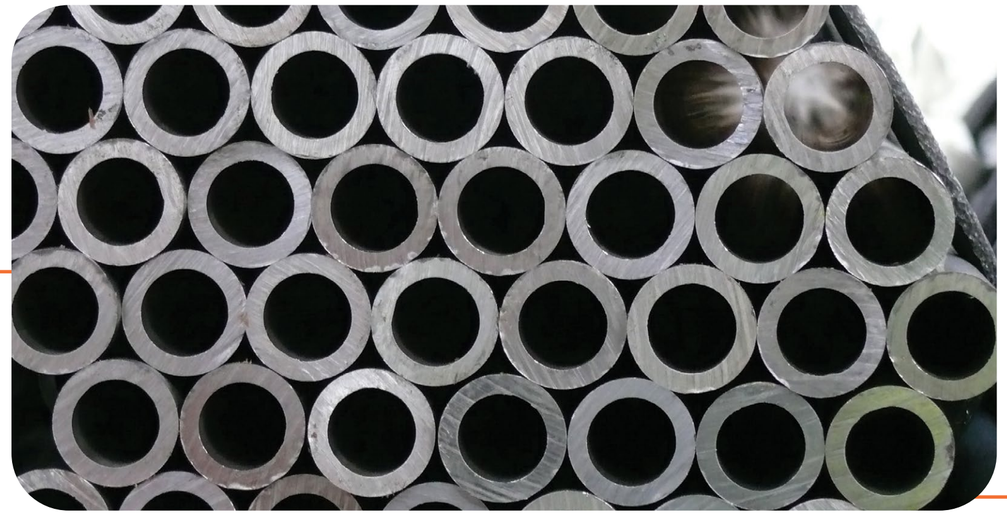
- Welded Cold Sized Tubes: EN 10305-3
- Welded Cold Drawn Tubes: EN 10305-2
- Welded Cold Sized Square and Rectangular Tubes: EN 10305-5

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: HC260LA, HC300LA, HC340LA, HC380LA, HC420LA, S315MC, S355MC, S420MC, S460MC, S500MC, S550MC, S600MC, S700MC
- Dual-Phase Steels: DP500, DP600, DP800, DP1000
- Heat Treatable Steels: 20MnB5, 22MnB5, 26MnB5, 30MnB5, 34MnB5
- Coated (Galvanized, aluminized) Steels: DX51, DX52, DX53, S220, S350, DX54, HX300LAD, HX340LAD

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

Borusan Pipe is a highly recognized manufacturer for its product and service quality in the automotive industry.

With facilities in Vobarno, Italy; Halkalı, Bursa, Gemlik, Türkiye and Ploieşti, Romania, it specializes in the production of value-added precision tubes used in critical vehicle components. Our sales, quality, and design teams work together to manage various technical and schematic inquiries, providing our customers with custom-made solutions. Its products are commonly used in passenger cars, light and heavy commercial vehicles which are traveling the globe.

SHOCK ABSORBER

FRONT SEAT FRAME

CARDAN SHAFT

TIE ROD

HEAD REST

CROSS CAR BEAMS

STEERING COLUMN

STABILIZER

EXHAUST

REAR SEAT FRAME

GAS SPRING

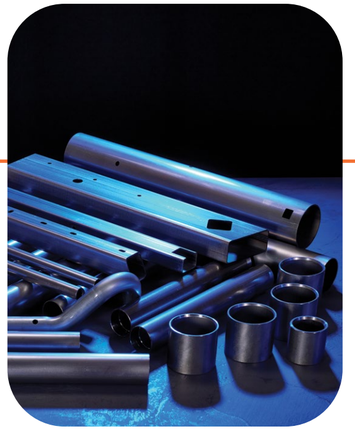
AXLE

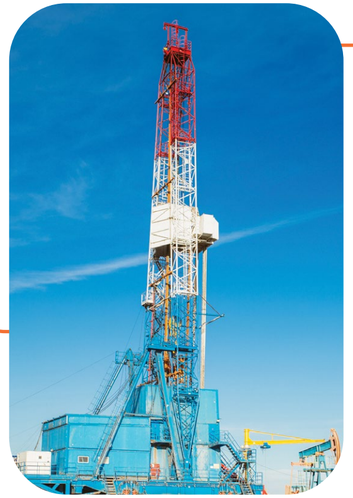
TRUNK HINGE

SIDE SHAFT

HYDRAULIC APPLICATION

Borusan Pipe's wide product range in the precision business enables the company to serve various industries, ranging from hydraulic-pneumatic and drilling to mechanical applications. We take pride in being a preferred supplier of the industry for many years thanks to our meticulous approach to meeting the most stringent customer requirements.





INDUSTRIAL APPLICATIONS
CUSTOM SHAPED STEEL PROFILES

Borusan Pipe manufactures custom-shaped profiles with the highest level of functionality according to customer expectations.

Custom-designed profiles are used in a wide variety of applications for different sectors such as automotive, construction, agricultural machinery, towel rails, furniture, etc.

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

Technologies For Special Shaped Profiles

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

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

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

Further Processing

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

Inspection Documents

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

Tests & Inspections

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

Welded Cold Sized Tubes for Precision Applications

Outside Diameter	Wall Thickness (mm)																											
mm	0.70	1.00	1.20	1.50	1.70	3.2	2.00	2.20	2.50	2.80	3.00	3.30	3.50	4.00	4.50	10.0	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00	10.50	11.00
5	■	■	■																										
5.5	■	■	■																										
6	■	■	■																										
7	■	■	■																										
8	■	■	■																										
8.2	■	■	■																										
9	■	■	■																										
9.3	■	■	■																										
9.5	■	■	■																										
10	■	■	■	■	■	■																							
11	■	■	■	■	■	■																							
11.1	■	■	■	■	■	■																							
12	■	■	■	■	■	■	■	■																					
12.6	■	■	■	■	■	■	■	■																					
12.7	■	■	■	■	■	■	■	■																					
13	■	■	■	■	■	■	■	■																					
13.5	■	■	■	■	■	■	■	■																					
14	■	■	■	■	■	■	■	■	■																				
15	■	■	■	■	■	■	■	■	■																				
15.5	■	■	■	■	■	■	■	■	■																				
16	■	■	■	■	■	■	■	■	■																				
17	■	■	■	■	■	■	■	■	■																				
18	■	■	■	■	■	■	■	■	■																				
19	■	■	■	■	■	■	■	■	■																				
20	■	■	■	■	■	■	■	■	■																				
20.5	■	■	■	■	■	■	■	■	■																				
21	■	■	■	■	■	■	■	■	■	■																			
21.5	■	■	■	■	■	■	■	■	■	■																			
22	■	■	■	■	■	■	■	■	■	■																			
23	■	■	■	■	■	■	■	■	■	■																			
24	■	■	■	■	■	■	■	■	■	■																			
24.5	■	■	■	■	■	■	■	■	■	■	■	■	■																
25	■	■	■	■	■	■	■	■	■	■	■	■	■																
25.4	■	■	■	■	■	■	■	■	■	■	■	■	■																
26	■	■	■	■	■	■	■	■	■	■	■	■	■																
26.9	■	■	■	■	■	■	■	■	■	■	■	■	■																
27.2	■	■	■	■	■	■	■	■	■	■	■	■	■																
28	■	■	■	■	■	■	■	■	■	■	■	■	■																
28.6	■	■	■	■	■	■	■	■	■	■	■	■	■																
30	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
31.8	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
32	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
33.7	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
34	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
35		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■											
36		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■											
38		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■									
40		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■									
41		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■									
41.5		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
42		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
44		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
44.5		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
45		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
48		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
48.6		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
50		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
51		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
54		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
55		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
55.6		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
56.4		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
56.8		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
57		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
60		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
63.5			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
65			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
67			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
68			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
70			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
76			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
80				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
83				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
88.9				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
93				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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, St 37, St 44, St 52 (E155) (E195) (E235) (E275) (E355)

Welded Cold Drawn Tubes for Precision Applications

Outside Diameter	Wall Thickness (mm)																								
mm	0.9	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	4.00	4.25	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.5	9.00	10.00
15	■	■	■	■	■	■	■	■	■	■	■														
16 - 17	■	■	■	■	■	■	■	■	■	■	■	■													
18 - 19	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
20 - 21	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
22 - 23	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■									
24 -25	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
26 - 27	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
28 - 30	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
31 - 33		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
34 - 36		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
37 - 39		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
40 - 44		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
45 - 47		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
48 - 49		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
50 - 54		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
55 - 57		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
58 - 61				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
62 - 64				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
65 - 66				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
67 - 69				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
70 - 72				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
73 - 74				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
75 - 77				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
78 - 83				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
84 - 87				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
88 - 89						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
90 - 91						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
92 - 96						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
97 - 100						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
101 - 105						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
106 - 110									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
111 - 120									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
121 - 130										■	■	■	■	■	■	■	■	■	■	■	■	■			

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)

ASTM A 513 Mechanical Tubing (Type V-VI)

Outside Diameter	Wall Thickness (inch)																							
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	■	■	■	■	■	■	■	■																
1.625	■	■	■	■	■	■	■	■																
1.688	■	■	■	■	■	■	■	■																
1.750	■	■	■	■	■	■	■	■	■															
1.768	■	■	■	■	■	■	■	■	■															
1.875	■	■	■	■	■	■	■	■	■															
2.000	■	■	■	■	■	■	■	■	■															
2.125	■	■	■	■	■	■	■	■	■															
2.250	■	■	■	■	■	■	■	■	■															
2.375	■	■	■	■	■	■	■	■	■															
2.438	■	■	■	■	■	■	■	■	■															
2.500	■	■	■	■	■	■	■	■	■															
2.563	■	■	■	■	■	■	■	■	■	■														
2.625	■	■	■	■	■	■	■	■	■	■														
2.750	■	■	■	■	■	■	■	■	■	■														
2.875	■	■	■	■	■	■	■	■	■	■														
3.000	■	■	■	■	■	■	■	■	■	■														
3.063	■	■	■	■	■	■	■	■	■	■														
3.125	■	■	■	■	■	■	■	■	■	■	■	■	■											
3.250	■	■	■	■	■	■	■	■	■	■	■	■	■											
3.375	■	■	■	■	■	■	■	■	■	■	■	■	■											
3.500	■	■	■	■	■	■	■	■	■	■	■	■	■											
3.555	■	■	■	■	■	■	■	■	■	■	■	■	■											
3.625	■	■	■	■	■	■	■	■	■	■	■	■	■											
3.688	■	■	■	■	■	■	■	■	■	■	■	■	■											
3.750	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
3.875	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
4.000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
4.022	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
4.062	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
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

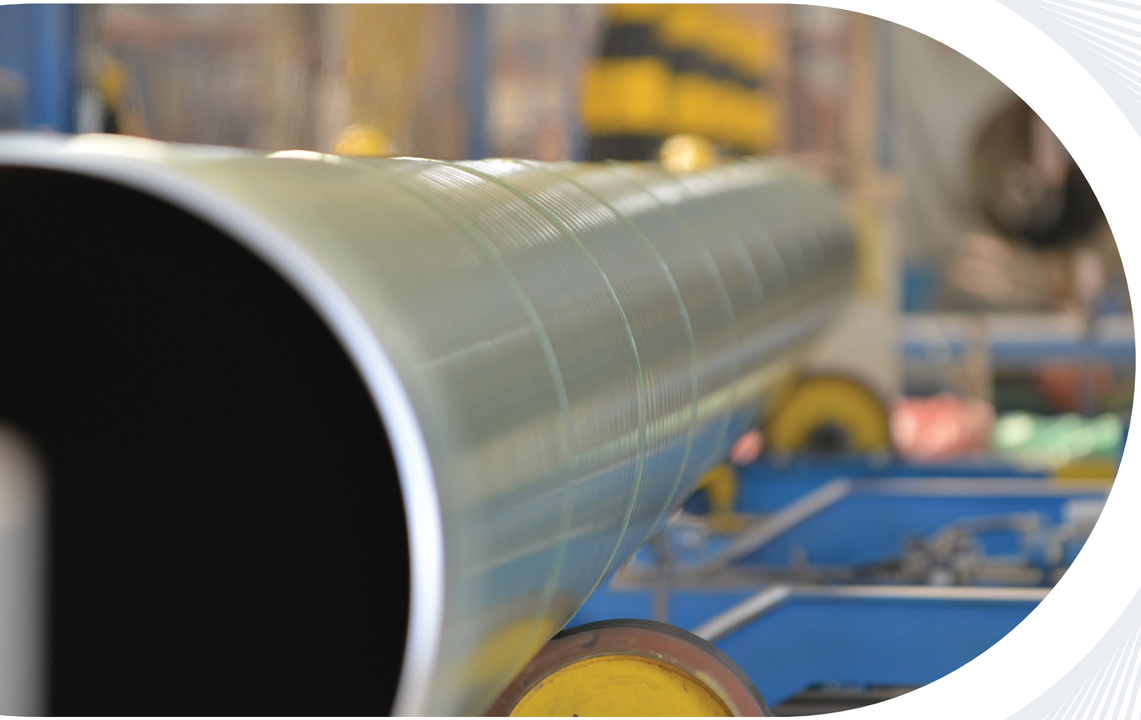
Please contact our sales department for any inquiries.

Welded Hollow Sections for Precision Applications (EN 10305-5)

Side Length	Wall Thickness (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	5.00
8 x 20	■	■	■	■							
10 x 10	■	■	■	■	■						
10 x 15	■	■	■	■	■						
10 x 18	■	■	■	■	■						
10 x 20	■	■	■	■	■						
10 x 25	■	■	■	■	■						
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	■	■	■	■	■	■	■				
16 x 16	■	■	■	■	■	■	■				
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	■	■	■	■	■	■	■	■	■	■	■

Thicknesses bigger than 5 mm must be examined.
Grades stronger than S700 must be examined.

Side Length	Wall Thickness (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	5.00
25 x 50	■	■	■	■	■	■	■	■	■	■	■
25 x 55			■	■	■	■	■	■	■	■	■
25 x 60			■	■	■	■	■	■	■	■	■
27 x 27	■	■	■	■	■	■	■	■	■	■	■
30 x 30	■	■	■	■	■	■	■	■	■	■	■
30 x 35	■	■	■	■	■	■	■	■	■	■	■
30 x 40		■	■	■	■	■	■	■	■	■	■
30 x 45		■	■	■	■	■	■	■	■	■	■
30 x 50		■	■	■	■	■	■	■	■	■	■
30 x 60			■	■	■	■	■	■	■	■	■
30 x 70			■	■	■	■	■	■	■	■	■
30 x 80			■	■	■	■	■	■	■	■	■
30 x 90			■	■	■	■	■	■	■	■	■
32 x 32			■	■	■	■	■	■	■	■	■
32 x 60			■	■	■	■	■	■	■	■	■
33 x 60			■	■	■	■	■	■	■	■	■
35 x 35			■	■	■	■	■	■	■	■	■
35 x 40			■	■	■	■	■	■	■	■	■
35 x 45			■	■	■	■	■	■	■	■	■
35 x 50			■	■	■	■	■	■	■	■	■
35 x 75			■	■	■	■	■	■	■	■	■
38 x 38			■	■	■	■	■	■	■	■	■
40 x 40			■	■	■	■	■	■	■	■	■
40 x 50			■	■	■	■	■	■	■	■	■
40 x 60			■	■	■	■	■	■	■	■	■
40 x 70			■	■	■	■	■	■	■	■	■
40 x 80			■	■	■	■	■	■	■	■	■
44.5 x 44.5			■	■	■	■	■	■	■	■	■
45 x 45			■	■	■	■	■	■	■	■	■
50 x 50			■	■	■	■	■	■	■	■	■
50 x 60			■	■	■	■	■	■	■	■	■
50 x 80			■	■	■	■	■	■	■	■	■
50.8 x 50.8			■	■	■	■	■	■	■	■	■
60 x 60			■	■	■	■	■	■	■	■	■
70 x 70			■	■	■	■	■	■	■	■	■
80 x 80			■	■	■	■	■	■	■	■	■
90 x 90			■	■	■	■	■	■	■	■	■
100 x 100			■	■	■	■	■	■	■	■	■
110 x 110			■	■	■	■	■	■	■	■	■
120 x 120			■	■	■	■	■	■	■	■	■
120 x 130			■	■	■	■	■	■	■	■	■
120 x 140			■	■	■	■	■	■	■	■	■
130 x 130			■	■	■	■	■	■	■	■	■

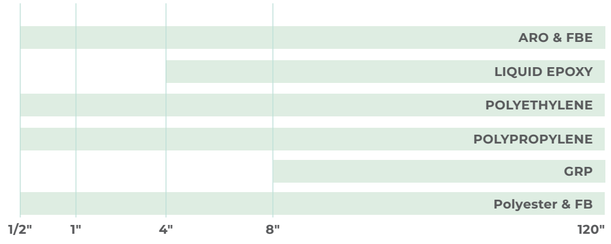


COATINGS AND LININGS

COATINGS AND LININGS

Scope and Field of Application

Borusan Pipe products are manufactured with modern equipment, offering a wide range of anti-corrosive coatings. The graph below illustrates the types of coatings applied externally and internally according to standards and particular customer requirements.



Surface Preparation

The process that ensures the appropriate surface cleanliness and smoothness level, depending on the type of coating, is applied using the blasting method. (Sa 2 1/2)
(DIN 55928, SIS 55900)

Galvanizing

Especially for water pipes, Borusan Pipe galvanizing operations are currently applied for exports to the U.S. and many European countries. (ASTM A53, TS EN 10240)

Polyethylene - Polyproplene Coating

Provides excellent protection for buried pipes, high mechanical strength, and corrosion resistance.
Low, medium, or high-density polyethylene or polypropylene coating.
3-Layer Coating Method:
Layer 1: Electrostatic epoxy primer.
Layer 2: Extrusion adhesive wrapping for spiral, an electrostatic adhesive layer for ERW.
Layer 3: Extruded polyethylene or polypropylene wrapping for spiral, hot extrusion for ERW.
For PE: EN ISO 21809-1 (DIN 30670, NF A 49-710, UNI 9099)
For PP: EN ISO 21809-1 (DIN 30678, NFA 49-711)

Flow-Coat Epoxy Laining

For gas transmission lines, to reduce pipe wall roughness and increase throughput.
Average coating thickness: 60 µm.
(API RP 5L2)

Liquid Epoxy

Various epoxy coatings enable a hygienic inner surface for potable water transportation and an outer surface to resist soil or seawater corrosion. Coating thickness of up to 600 microns. (AWWA C 210, TS 5140, EN 12944-5)

Fusion Bonded Epoxy (FBE)

Provides high protection of pipe lines used for oil, gas, and water transmission.
(AWWA C 213, API 5L7, CSA Z 245-20, NACE RP 0394)

Abrasion-Resistant Overlay (ARO)

Dual-layer fusion-bonded epoxy provides excellent abrasion and impact resistance while maintaining superior protection for gas and oil line pipes. (AWWA C 213, API 5L7, CSA Z 245-20, NACE RP 0394)

Glass Fibra Reinforced Plastic (GRP) Coating

For buried and HDD line pipes, GRP coating provides excellent mechanical protection.

Tests Performed

Coating Thickness
Holiday Testing
Impact Strength
Adhesion Test
Indentation Strength
Coating Resistivity
Elongation at Break (%)
Strain at Break Test
MFR (Melt Flow Rate) and MVR (Melt Volume Rate) Tests
CD (Cathodic Disbondment) Test
Differential Scanning Calorimetry (DSC) Test
Manual Holiday Test Shore A & Shore D Hardness Measurement
Wet Sponge Pinhole Test
Hot Water Immersion Test
Buchholz Hardness Test
Shore A & Shore D Measurement
PE/PP Breaking Elongation Test
Cross Cut Test
Epoxy Bending Test
V-Cut Test
FBE Porosity Test
Porosity Test
Cross-Porosity
Low-Temperature Flexibility Test
Curing and Gel Time Test
Moisture Content Test
FBE Particle Size Test

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