

Stainless Steel & High Nickel Alloys Tubular Solutions



TUBACEX: GLOBAL SOLUTIONS PROVIDER

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Tubacex: A Global Leader in Seamless Stainless and High Nickel Alloys Pipes & Tubes



The Tubacex Group has become one of the world's main seamless stainless steel and nickel alloy tubular solutions provider.

Founded in 1963, Tubacex brings the experience of a world leader combined with a strong R&D effort which is needed to fulfill the future needs of the industry.

Nowadays the Tubacex Group, exporting into more than 100 countries worldwide, has a share of around 15% of the world market of seamless stainless steel tubular solutions, with a total workforce of around 2.400 employees. The headquarters are located in Llodio, 25 Km (15 miles) from the seaport city of Bilbao, in northern Spain.

Tubacex Group's integrated production process includes a steel making plant, several extrusion and cold finishing mills, trepanning facilities, fitting and special components producers and wide network of service centers which provide a wide range of added value operations to group's portfolio.

Tubacex: a global integrated group to your service

Worldwide presence

Through our commercial offices

Competitiveness

Thanks to our lean manufacturing process

Service

Cooperation with our customers

Flexibility

In materials chemical composition & deliveries

Reliability

Of a fully integrated company

Our Customers are the main driver of Tubacex Group's activity and efforts. Our organization and investments are continuously being adapted to fulfil the increasing requirements that companies are facing everyday in high demanding activities in the oil & gas, petrochemical, chemical and power generation industries among others. These new challenging needs are driving us to implement in our mills the most advanced verification equipment and inspection procedures to assure product quality and a high service, guaranteed by a fully integrated company with worldwide presence.



STAINLESS STEEL & HIGH NICKEL ALLOYS INGOTS, BARS AND BILLETS

Stainless steel and high nickel alloy long products are produced by the group's subsidiary Aceralava, either rolled or forged up to 20":

- Round bar
- Round billet
- Square billet
- Ingot



SEAMLESS PIPES & TUBES EXTRUDED/COLD DRAWN

Seamless pipes up to 8" are the bulk of Tubacex portfolio, with focus in Stainless steel and high nickel alloy materials. This includes:

- Mechanical tubing
- Pipes and tubes for several applications
- Straight / U-bended tubes
- Welded and coiled seamless tubes (for umbilical application)



SEAMLESS PIPES & TUBES TREPANED

Tubacex groups completes its seamless portfolio with trepanning/ boring technology that expands manufacturing range to 42" OD, in all materials from carbon steel to titanium – with main focus in stainless Steel and High nickel alloys.



FITTINGS AND SPECIAL COMPONENTS

Tubacex range includes the design and manufacturing of butt welding fittings, tube bends, elbows, tees, reducers and caps (both seamless and welded), complementing the wide offer of tubular solutions, in a complete manufacturing range that goes up to 72" in any thickness.

INNOVATION (WITH FOCUS IN NEW SOLUTIONS AND VALUE ADDED OPERATIONS) AND SERVICE AS MAIN GROWTH DRIVERS



OIL & GAS EXPLORATION & PRODUCTION

New challenging corrosive environments and applications are driving Tubacex product portfolio of corrosion resistant alloys in both on-shore and off-shore E&P, with a particular focus in:

- Oil Country Tubular Goods (OCTG)
- Umbilical tubes along with a wide range of seamless stainless and high nickel alloys for subsea application (risers, flowlines, manifolds...)
- Tubes for platforms (piping systems, separators...).



REFINING, PETROCHEMICAL & CHEMICAL

Tubacex offers extensive grade and size portfolio to achieve designers expectations regarding several areas & equipments in the petrochemical and Chemical industry, particularly:

- Regas Facilities
- Refineries
- Heat exchangers
- Reactors
- Furnaces, heaters and re-heaters
- Other process industries.



FERTILIZER PRODUCTION

Fertilizer production materials need to bear severe corrosion conditions. Tubacex provides pipes & tubes for the equipment involved in the production of Urea, Ammonia, Nitric acid, Sulphuric acid, Phosphoric acid and Melamine.

- Strippers
- Condensers
- Scrubbers
- Reactors
- Piping



POWER GENERATION

Tubacex's manufacturing range covers the main stainless steel heat resistant grades used in boiler equipments, in both:

- Critical equipment
- Ultra Super Critical (USC) equipment
- Industrial power plants
- Nuclear power plants.



STOCK FOR DISTRIBUTION





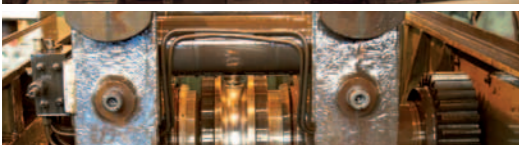













Tubacex's manufacturing range covers the main seamless stainless steel portfolio for distributors worldwide:

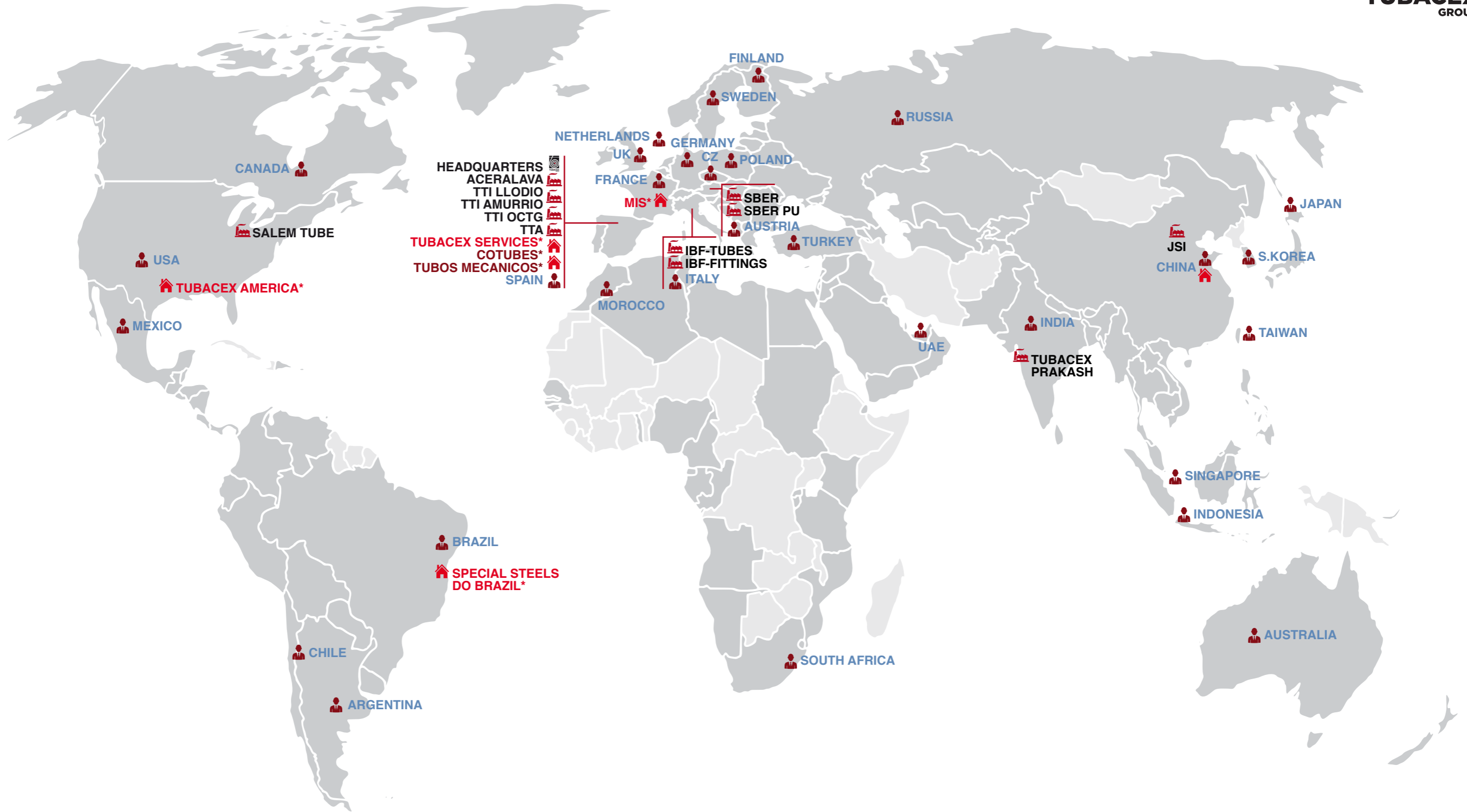
- Pipes and Tubes according to all relevant standards
- Hollow Bars for metal-mechanic industry through our master distributor COTUBES
- Instrumentation & hydraulic tubing for a wide range of high added value industries, including aerospace.
- Round Bars.

The Widest Portfolio in Stainless Steel

Tubacex: A truly global solutions provider at your service



	SOLUTIONS	BUSINESS UNIT	RANGE
	Stainless Steel & High Nickel alloys bars & billets	ACERALAVA 	Round and Square Stainless and nickel alloy billets Rolled from 120 to 280mm (4 ¾" – 11") Forged from 230 to 508 mm (9" – 20") Aceralava is the main steel supplier of the Tubacex Group's companies. It also supplies its products to the Stainless Steel Market. Aceralava's manufacturing range covers the main stainless steel grades requested by the industry, with exceptions possible on request.
	Seamless Pipe and Tubes to 8" (extrusion, piercing, cold finishing)	TTI 	Seamless stainless steel and nickel alloy tubes and pipes The size manufactured through the extrusion press and the 11 cold rolling machines, goes from ½" up to 8" NPS, or 19 – 250 mm OD, at manufacturing facilities located at Llodio and Amurrio (Spain). A specific line is fully devoted to OCTG (oil country tubular goods) manufacturing, in a range that goes to 9 5/8" (currently in trial).
		SCHOELLER BLECKMANN 	Seamless stainless steel pipes and tubes Schoeller Bleckmann Edelstahlrohr, located in Ternitz, Austria, manufactures Seamless Stainless steel in dimensions between 1/8" and 8" NPS, or 6 – 250 mm OD. A specific plant is devoted to special tube manufacturing, with focus in straight and welded tubes for umbilical application and other high demanding applications (Nuclear, Fertilizer).
		SALEM TUBE 	Welded and seamless stainless steel and nickel alloy tubes. Located in Greenville, PA (USA) Salem tube's manufacturing range goes from 1/8" to 2" OD. The company is highly specialized in precision tubing for the most demanding industries as military and aerospace, with a heavy concentration of high nickel alloy in their product portfolio.
		TUBACEX PRAKASH 	Seamless Stainless Steel tubes and pipes Located in Umbergaon (Gujarat- India), Tubacex Prakash manufactures cold finished tubes and pipes from 6 mm OD to 273.1 mm OD The company is able to deliver tubes up to 28 m length, straight and U-Shape, to a wide range of customers. The company is ISO 9000 and ISO 14000 certified
		Seamless Pipe and tubes to 42" (mechanical boring)	IBF 
	Fittings and special connections from ½" to 72"	TUBACEX GROUP 	Fittings Located in San Niccolo, Italy, IBF fittings and special parts division manufactures fittings, elbows, and special components in a manufacturing range that goes from ½" to 72" NPS.
	Fittings and special connections from ½" to 72"	TTA 	Stainless steel (also carbon and alloy) butt welding fittings Size range goes from ½" up to 14" NPS, in short and long radius as well as in special radii. Located in Artziniega, Spain, Tubacex Taylor Accesorios (TTA) manufactures fittings (elbows and return bends) mainly for the Petrochemical industry, perfectly complementing the portfolio of the rest of The Group.
	Stock, Service and trading Value added operations	TUBACEX SERVICE SOLUTIONS 	Global Network of Service Centers (Cotubes, MIS, Tubacex America and Tubos Mecánicos) Service centers located in Spain, France, Brazil, China and the United States. Special added value operations in Tubacex Services.



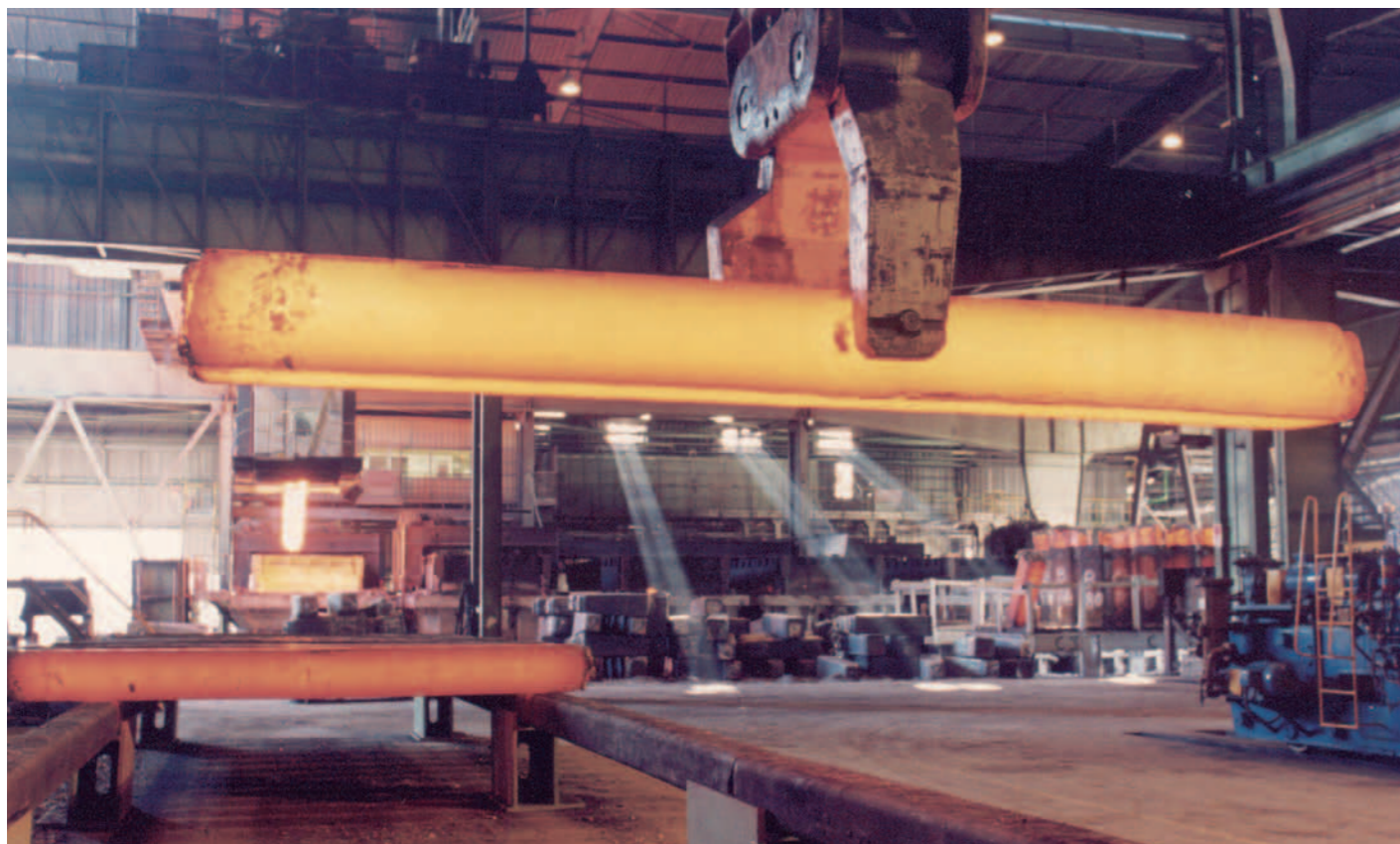
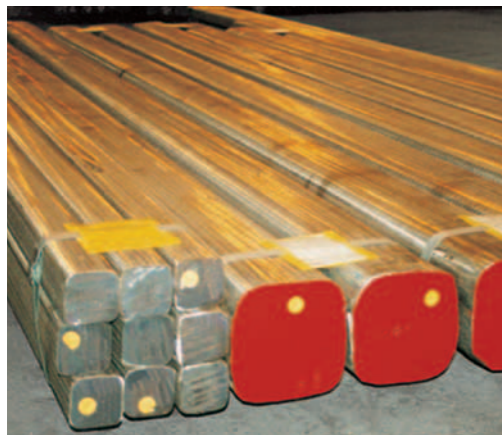
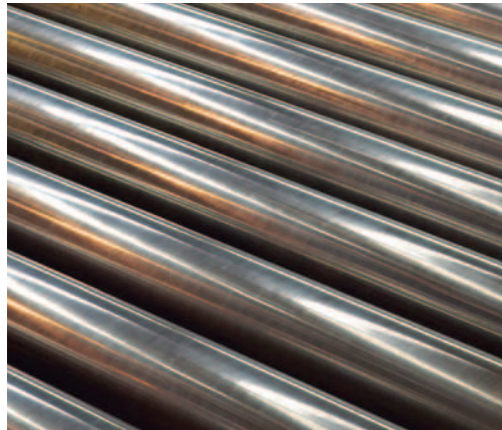
 MANUFACTURING

 SERVICE CENTER

 SALES REPRESENTATION

*TUBACEX SERVICES SOLUTIONS

Acerálava's product range includes stainless steel long products such as square and round bars, billets and ingots, rolled and forged. Our standard portfolio can be defined as follows:



ROUNDS BARS & BILLETS			
Products	Size range	Condition	Grades
●	165 mm. up to 230 mm. (6 1/2" - 9")	Rolled	Martensitics Austenitics Ferritic - Austenitics High Nickel Alloys
●	230 mm. up to 500 mm. (9" - 19 3/4")	Forged	

SQUARE BILLETS			
Products	Size range	Condition	Grades
■	120 mm. up to 280 mm. (4 3/4" - 11")	Rolled	Martensitics Austenitics Ferritic - Austenitics High Nickel Alloys
■	280 mm. up to 508 mm. (11" - 20")	Forged	



Tubacex manufacturing range covers the main stainless steel grades requested by the industry. From our steel plant Aceralava (Spain) we offer a tailor made list of steels. Our metallurgical engineers are devoted to the development of sophisticated steels capable of operating in the demanding environments of the future. Exceptions over the standard steel grades are satisfied through Aceralava.



STAINLESS STEEL GRADES									
	ASTM	WNR	AFNOR	C max*	Cr	Ni	Mo	Other	
AUSTENITIC	304	1.4301	TU Z 6 CN 18-09	0,08	17/20	8/11			
	304 L	1.4306	TU Z 2 CN 18-10	0,03	18/20	10/12			
	304 L	1.4307	TU Z 3 CN 19-09	0,03	17,5/19,5	8/10,5			
	304 H		TU Z 6 CN 19-10	0,04/0,10	18/20	8/11			
	TX304HB**	1.4907		0,07	17/19	7,5/10,5		Nb 0,3/0,6 Cu 2,5/3,5	
	321	1.4541	TU Z 6 CNT 18-10	0,08	17/19	9/12		5 C < Ti < 0,60	
	321 H		TU Z 6 CNT 18-12 B	0,04/0,10	17/20	9/13		4 C < Ti < 0,60	
	347	1.4550	TU Z 6 CNNb 18-10	0,08	17/19	9/12		10 C < Nb < 1,0	
	347 H		TU Z 6 CNNb 18-12 B	0,04/0,08	17/20	9/13		8 C < Nb < 1,0	
	347 H FG	1.4908		0,07	17/19	9/13		8 C < Nb < 1,1	
	316	1.4401	TU Z 6 CND 17-11	0,08	16/18	11/14	2/3		
	316 L	1.4404	TU Z 2 CND 17-12	0,03	16/18	11/14	2/3		
	316 Ti	1.4571	TU Z 6 CNDT 17-12	0,08	16,5/18,5	10,5/13,5	2/2,5	5 C < Ti < 0,80	
	(316 L)	1.4435	TU Z 2 CND 17-13	0,03	17/18,5	12,5/15	2,5/3		
	(316)	1.4436	TU Z 6 CND 17-12	0,07	16,5/18,5	11/14	2,5/3		
	316 Nb	1.4580		0,08	16/18	11/13	2/2,5	10 C < Nb < 1,0	
	316 N/316 LN			0,03	16/18	11/14	2/3	N 0,10/0,16	
	316 L urea			0,03	17/18	13/15	2/3		
	317			TU Z 2 CND 19-15	0,08	18/20	11/15	3/4	
	317 L	1.4438		TU Z 2 CND 19-15	0,03	18/20	11/15	3/4	
309 S/309 H	1.4833		TU Z 12 CN 24-12	0,08	22/24	12/15	< 0,75		
310 S/310 H	1.4845		TU Z 12 CN 25-20	0,08	24/26	19/22	< 0,75		
310 HCbN	1.4952			0,07	24/26	19/22		0,2 < Nb < 0,6	
310 MoLN	1.4466			0,02	24/26	21/23	2/2,5	N=0,1/0,15 Si<0,4 P<0,02	
	1.4828		TU Z 17 CNS 20-12	0,20	19/21	11/13		Si 1,5/2,5	
314	1.4841		TU Z 15 CNS 25-20	0,15	24/26	19/21		Si 1,5/2,5	
UNS S31254	1.4547			0,02	19,5/20,5	17,5/18,5	6,0/6,5	Cu 0,50/1,00 N 0,18/0,22	
FERRITIC AUSTENITIC	UNS S31803	1.4462	TU Z 2 CND 22-05-03	0,03	21/23	4,5/6,5	2,5/3,5	N 0,12/0,20	
	UNS S32750	1.4410			24,0/26,0	6,0/8,0	3,0/5,0		
	UNS S32760	1.4501	TU Z 3 CND 25-06-Az	0,03	24/26	6/8	3/5	N 0,2/0,3 Cu & W 0,5/1,0	
HIGH NICKEL	904 L	1.4539	TU Z 1 CNDU 25-20	0,02	19/21	24/26	4/5	N 0,20/2,00 N 0,04/0,10	
	800-H-HT	1.4876	(TU Z10 NC 32-21)	0,6/0,10	19/23	30/35		Al & Ti 0,15/0,60	
	UNS N08020	2.4660		0,07	19/21	32/38	2/3	Cu 3/4 Nb 8xC-1,0 Fe Balance	
	UNS N08825	2.4858		0,05	19,5/23,5	38/46	2,5/3,5	Cu 1,5/3,0 Al 0,2 max Ti 0,6/1,2 Fe Balance	
	UNS N08028	1.4563	TU Z2 CNDU 31-27	0,03	26/28	30/32	3/4	Cu=0,8/1,4 N=0,04/0,15 Fe Balance	
G-3 N06985					21,0/23,5	44,0/52,0	6,5/8,0	Fe: 18,0/21,0	

* Maximum unless otherwise indicated. ** Tubacex name.

In addition to these standards, Tubacex's capabilities include a wide range of stainless steel and high nickel alloy grades depending on the requirements of our customers.

Main applicable standards

The more efficiency is requested, the more challenging is the environment for the steel. Stainless steel use is growing in seamless pipes & tubes manufacturing as the industry moves towards new applications, more efficient technologies are developed and new equipments are built.

New challenging corrosive environments and applications are increasing the use of high nickel alloys in the seamless tubes production, particularly in the oil & gas industry. Tubacex Group's manufacturing range covers the main high nickel alloy grades requested by the industry. Exceptions over the standard steel grades are satisfied through our Steel Melting Shop Aceralava.

Main applicable standards

The manufacturing methods employed at Tubacex Group's main production units reflect the most advanced technologies. Production of seamless stainless steel pipes and tubes is carried out according to all common international delivery and tolerance standards.

Main standards applicable to seamless stainless steel pipes & tubes

MAIN AMERICAN STANDARDS FOR SEAMLESS STAINLESS STEEL TUBES AND PIPES	
SPECIFICATION	DESCRIPTION
ASTM A213	Standard specification for seamless, ferritic and austenitic alloy-steel boiler, superheater and heat exchanger tubes.
ASTM A269	Standard specification for seamless and welded austenitic stainless steel tubing for general service.
ASTM A312	Standard specification for seamless welded and heavily cold worked austenitic stainless steel pipes.
ASTM A450	Standard specification for general requirements for carbon and low alloy steel tubes.
ASTM A530	Standard specification for general requirements for specialized carbon and alloy steel pipe.
ASTM A789	Standard specification for seamless and welded ferritic/austenitic stainless steel tubing for general service.
ASTM A790	Standard specification for seamless and welded ferritic/austenitic stainless steel pipe.
ASTM A999	Standard specification for general requirements for alloy and stainless steel pipe.
ASTM A1016	Standard specification for general requirements for ferritic alloy steel, austenitic alloy steel and stainless steel tubes.

MAIN EUROPEAN STANDARDS FOR SEAMLESS STAINLESS STEEL TUBES AND PIPES	
SPECIFICATION	DESCRIPTION
EN ISO 1127	Stainless steel tubes – dimensions, tolerances and conventional masses per length unit.
EN ISO 9692-1	Welding and allied processes recommendations for joint preparation - Part 1: Manual metalarc welding, gasshielded metalarc welding, gas welding, TIG welding and beam welding of steels.
EN 10204	Metallic products – types of inspection documents.
EN 10216-5	Seamless tubes for pressure purposes – Technical delivery conditions – Part 5: Stainless Steel Tubes.
EN 10297-2	Seamless Tubes for mechanical and general engineering purposes – technical delivery conditions – Part 2: Stainless Steel.
EN 10305-1. PT.	Steel tubes for precision applications – Technical delivery conditions – Part 1: Seamless Cold Drawn tubes.

Quality valued around the world

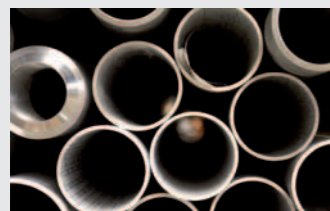
Tubacex brings the experience of a world leader in the manufacturing of seamless stainless steel pipes & tubes, constantly increasing quality standard. Our organization and investments are continuously being adapted to the high demanding conditions that our customers face everyday.

MAIN STANDARDS APPLICABLE TO SEAMLESS HIGH NICKEL ALLOYS PIPES & TUBES

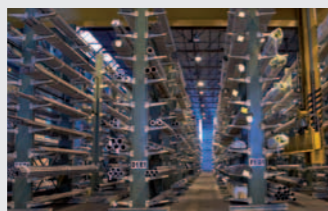
HIGH NICKEL ALLOYS SEAMLESS STEEL TUBES AND PIPES		
ALLOY	BASIC CHARACTERISTICS	USUAL APPLICATIONS
UNS N08904	Good resistance to severe corrosion conditions	Pipelines and different equipment for the chemical industry and desalinization plants
UNS N08800	Good strength and resistance to oxidation and carburization in high temperature atmosphere	Process piping, heat exchangers
UNS N08810	Similar to UNS N8800 with higher creep-rupture strength	Heater tubing in power plants, industrial and heat-treatment equipment, chemical and petrochemical processing
UNS N08811	Similar to UNS N8810 with even higher creep-rupture strength	Same as for UNS N08810 but for higher temperatures
UNS N08020	Good resistance to general corrosion in a variety of acids	Piping, heat exchangers and other process equipment
UNS N08825	Good resistance to acids (specifically sulphuric and phosphoric) and corrosion cracking	Chemical processing, acid production, pickling equipment, process piping, heat exchanger tubing
UNS N08028	High resistance to corrosive conditions, e.g. oxidizing acids and salts. Resistant to pitting corrosion, and to stress corrosion cracking	Acid (sulphuric, phosphoric or nitric) production and processing, pickling plants, Oil production for wells within a corrosive environment or, Gas production in sour gas wells

APPLICABLE ASTM SPECIFICATIONS		
SPECIFICATION	DESCRIPTION	ASTM
ASTM B677-99	Specification for UNS N08904, UNS N08925, and UNS N08926 Seamless Pipe and Tube	UNS N08904
ASTM B163-98a ASTM B407-96	Specification for Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes Specification for Nickel-Iron-Chromium Alloy Seamless Pipe and Tube	UNS N08800
ASTM B163-98a ASTM B407-96	Specification for Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes Specification for Nickel-Iron-Chromium Alloy Seamless Pipe and Tube	UNS N08810
ASTM B163-98a ASTM B407-96	Specification for Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes Specification for Nickel-Iron-Chromium Alloy Seamless Pipe and Tube	UNS N08811
ASTM B729-00 ASTM B829-99	Specification for Seamless UNS N08020, UNS N08026, and UNS N08024 Nickel Alloy Pipe and Tube Specification for General Requirements for Nickel and Nickel Alloys Seamless Pipe and Tube	UNS N08020
ASTM B163-98a ASTM B423-99	Specification for Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes Specification for Nickel-Iron-Chromium-Molybdenum-Copper Alloys (UNS N08825 and N08221) Seamless Pipe and Tube	UNS N08825
ASTM B829-99	Specification for General Requirements for Nickel and Nickel Alloys Seamless Pipe and Tube	
ASTM B668	Standard Specification for UNS N08028 Seamless Pipe and Tube	UNS N08028
ASTM B829	Specification for General Requirements for Nickel and Nickel Alloys Seamless Pipe and Tube	

In addition to the most widely used high nickel alloys mentioned above, the Tubacex group is constantly adding new grades to its product portfolio. 600 series, although still not produced in our steel melting shop Acería de Álava, are commonly used by Salem Tube and are starting to be introduced in Tubacex Tubos Inoxidables and Schoeller Bleckmann Edelstahlrohr portfolio - particularly UNS N06025 which is growing strongly in the oil & gas industry.



The Tubacex Group offers a wide range of pipes & tubes according to European and American standards.



Strong stock availability is provided by COTUBES and the other Tubacex Group's stocks through the world.



Billets used in the manufacturing process of pipes & tubes are mainly produced in house, in the Group's own steelworks, through a totally integrated process.



Precision tubing (instrumentation & hydraulic) with outside diameters from 6 mm O.D. is manufactured in Schoeller Bleckmann Edelstahlrohr, while Salem Tube manufacturing portfolio starts from 3 mm O.D.



Tubacex is the world leader in the manufacturing of tubes for furnaces, heaters and Reheaters for the petrochemical industry, along with a wide range of piping for downstream applications.



Offshore (mainly ferritic austenitic grades) is the fastest growing area in Tubacex product portfolio.



Heat exchanger, reactor and condenser tubes are supplied by Tubacex to the petrochemical, chemical and fertilizer industries.

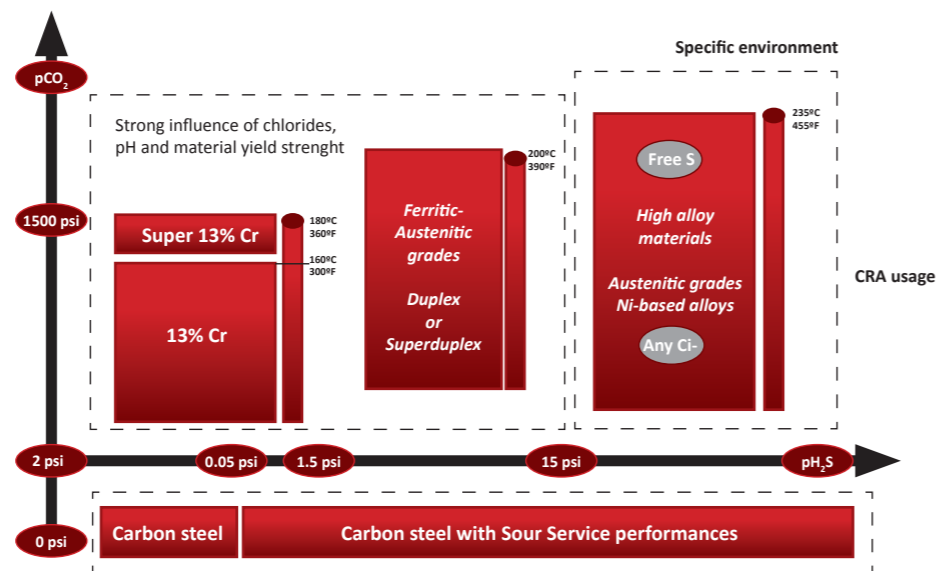


Tubacex's manufacturing range covers the main stainless steel heat resistant grades used in boiler equipment, in both critical and ultra super critical equipment, including shotpeening.

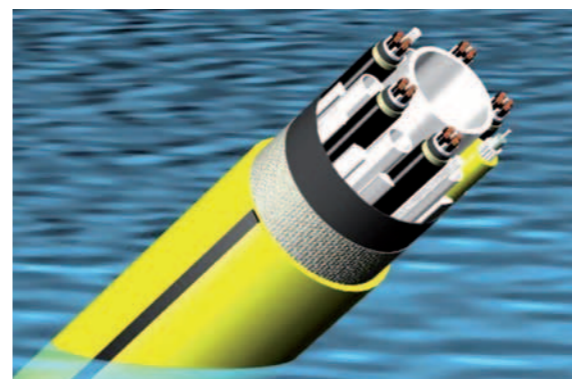
Tubacex Tubos Inoxidables - TTI has been designated to develop and lead the production of this high quality product in the facilities located in the north of Spain. A key point in our OCTG strategy was the signing of an agreement with Vallourec&Mannesmann for common marketing and development of this product. This partnership with a world leader contributes to consolidate our world presence and to satisfy the future growing Customer expectations.

CRA tubings are used in designs with long life, high yield strength requirements and in wells with the most severe corrosive environments

- High temperature
- High pressure of CO₂ and/or H₂S
- High chlorides content, low pH, presence of free S...



Umbilicals are manufactured in Schoeller Bleckmann Edelstahlrohr in a State of the art new mill to assure the high quality of the product. In addition, big outside diameter umbilical tubes are manufactured in Tubacex Tubos Inoxidables.



Subsea umbilicals are control lines used in offshore wells where Christmas trees (an assembly of control valves, gauges and chokes that control oil and gas flow in a completed well) are installed on the ocean floor. Umbilicals make up part of Tubacex SURF (Subsea Umbilicals, Risers jumpers, manifolds, loops and Flowlines) package of tubular products for offshore resistant to sea water environments and fluids transmitted through the tubes and with high corrosion resistance to sea water.

For the past years almost any Subsea oil production system in the world utilized Super duplex steel within their umbilical tubes, due to high corrosion resistance in sea water, excellent mechanical properties and resistance and durability. Two superduplex grades are available.



SUBSEA UMBILICALS: TUBACEX MANUFACTURING RANGE

SUPERDUPLEX STAINLESS STEEL - ID FROM 1/2 TO 3 1/2 INCH

Production Unit	Tubacex, Spain	SBER, Austria
Steel grade	UNS S32750, UNS S32760	UNS S32750, UNS S32760
Tubes finish	Straight	Straight or Coiled

Note: Parameters may vary over time. Please verify your specific requirements

OCTG: TUBACEX MANUFACTURING RANGE							
STEEL	GRADE	2 3/8"-2 7/8"	3 1/2"-4 1/2"	5"-5 1/2"	6 5/8"-7"	7 5/8"-7 3/4"	8 5/8"-9 5/8"
22Cr	65	R3	R3	R3	R3	R2	UNDER RESEARCH & DEVELOPMENT
	110	R3	R3	R3	R3	R2	
	125	R3	R3	R3	R3	R2	
25Cr	80	R3	R3	R3	R3	R2	
	110	UNDER RESEARCH & DEVELOPMENT					
125	R3	R3	R3	R3	R2		
28Cr	110	R3	R3	R3	R3	R2	
	125	R3	R3	R3	R3	R2	
825	110	R3	R3	UNDER RESEARCH & DEVELOPMENT			
G3	110	R3	R3	UNDER RESEARCH & DEVELOPMENT			
	125	R3		UNDER RESEARCH & DEVELOPMENT			

Traceability

Traceability is important to us. Each product that leaves our tube factory in Ternitz is provided with a works certificate (company certificate), which is presented to the customer upon delivery. This ensures that the quality-controlled production at SBER is traceable for each customer.

Quality

Schoeller Bleckmann Edelstahlrohr manufacturing processes are designed to ensure maximum quality within the production of its seamless grades of umbilical tubes, with particular focus in the heat treatment process. Non Destructive Testing is used along the total length of all produced tubes. The company holds several approvals as a manufacturer of seamless tube and pipe, and can deliver tubular products in accordance with most international standards. Below are some examples.



Downhole casing and production tubing in CRA such as duplex stainless steels and nickel alloys are ideal to cope with the aggressive corrosion found in sour wells due to hydrogen sulphide, carbon dioxide and other chemicals. Predominantly, Tubacex's downhole casing and production tubing is supplied in cold-worked condition to ensure high strength despite its low weight.

Tubacex tubes cover a wide range of applications:

- HP/HT
- Sour or wet gas
- Enhanced Oil Recovery
- Chlorides, Hydrogen sulphide, free sulphur ...
- Sandscreens
- High corrosion resistance

Umbilicals make up part of Tubacex SURF (Subsea Umbilicals, Risers jumpers, manifolds, loops and Flowlines) package of tubular products for offshore resistant to sea water environments and fluids transmitted through the tubes and with high corrosion resistance to sea water. Tubacex group manufactures Umbilicals in a state of the art new mill. This new production unit integrates the best available technologies and know-how for the production of the best quality product. Highly automatic facilities and a fully integrated traceability system contributes to a very costly efficient product.





Tubacex range includes the design and manufacturing of butt welding fittings, tube bends, elbows, tees, reducers and caps (both seamless and welded), complementing the wide offer of tubular solutions, by IBF and TTA companies. In addition IBF offers a wide range of special parts (manifolds, laterals, special reducers...)

- TTA size range goes from 1/2" to 14" NPS, in short and long radius as well as special radii. Located in Artziniega, Spain, Tubacex Taylor Accesorios (TTA) manufactures fittings (elbows and return bends) mainly for the petrochemical industry, perfectly complementing the portfolio of the rest of the Group and particularly the seamless tubes for furnace applications, heaters and re-heaters.
- Located in San Niccolo, Italy, IBF fittings and special parts division manufactures fittings, elbows, and special components in a manufacturing range that goes from 1/2" to 72" NPS for a wide range of end users (Oil & gas, Power Gen, Nuclear...). Specialized in special and big size pieces, cold drawn dimensions are mainly sourced from its participated company CFF.

Tubacex Group's fitting and special components extensive production program is suitable for all kind of Projects. The range offered is one of the widest in the industry:

MANUFACTURING RANGE - FITTINGS AND SPECIAL PARTS

Seamless	1/2" ton 44"
Welded	1/2" ton 72"

Hot drawing, bending and cold drawing processes
Any thickness
Lengths from 0,5 to 20 meter



Materials covered include a wide range of grades, from carbon steel to titanium, with focus in stainless steel and high nickel alloys – same as described regarding trepanned pipes. The Tubacex Group maintains a very high stock level in finished and semifinished products, as well as base materials, to provide full flexibility an extremely competitive lead time.



Flexible production processes allow Tubacex Group's products to be manufactured by a variety of production methods, to reach a wide range in a specialized market, where particularized designs are growingly demanded – designs defined and calculated by our engineering departments.

Product portfolio - some examples

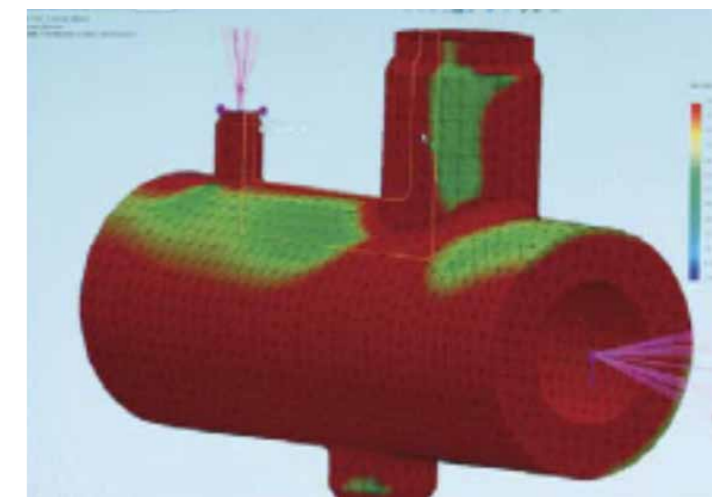
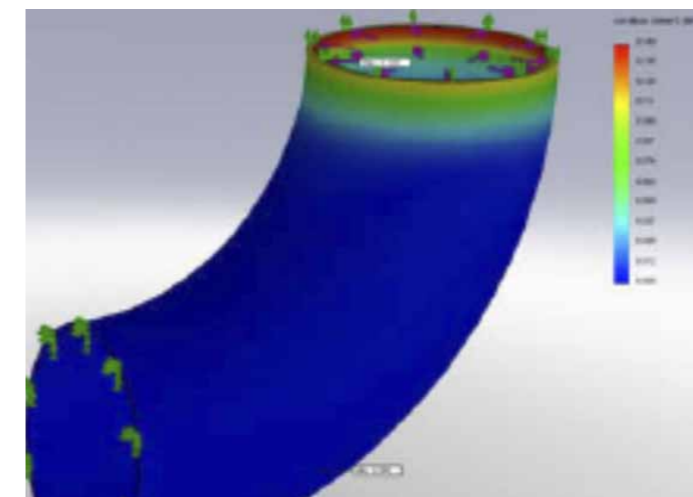
FITTINGS		SPECIAL COMPONENTS	
			
Elbows	Tees	Special Components	Manifold
			
Reducers	Caps	Lateral	Special Reducer

- The Tubacex group Fittings programme covers all kind of fittings (Butt welding fittings & elbows, tees, reducers, caps) from standard to special products, manufactured by hot drawing, bending or cold drawing.

- Additionally to fittings, special components as laterals, manifolds, tees, Stress joints, weldolets are manufactured at IBF fittings and special parts division, with a clear trend to more particularized design.

FITTINGS	SPECIAL PARTS
Butt Welding fittings & elbows	Special comp
Tees	Manifolds
Reducers	Laterals
Caps	Special Redu

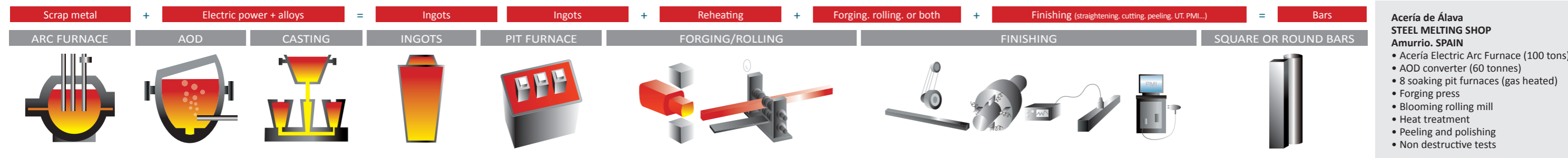
- IBF has a technical department equipped with CAD systems for design and calculation. This department designs fittings and special items in compliance with all applicable standards and specifications and in conjunction with the client's specific requirements. In addition, the department offers support to the development of all necessary production equipment, machinery and technical process.



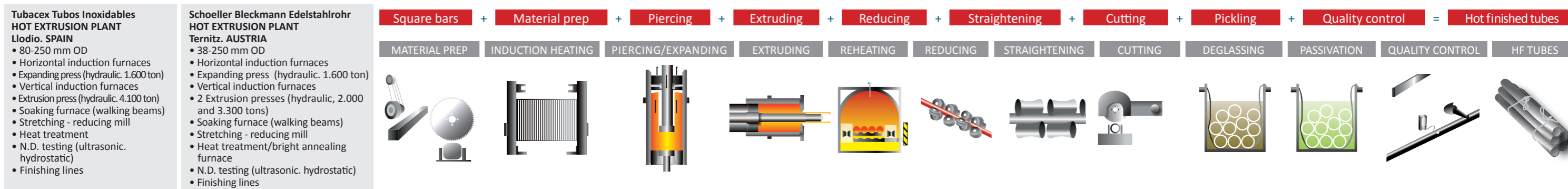
Integrated process

Tubacex is a fully integrated company with one melting shop (in Spain), two extrusion facilities (in Spain and Austria) and three cold finishing facilities (in Spain, Austria and the USA). The Group is capable of producing seamless steel tubes in hot and cold finishing.

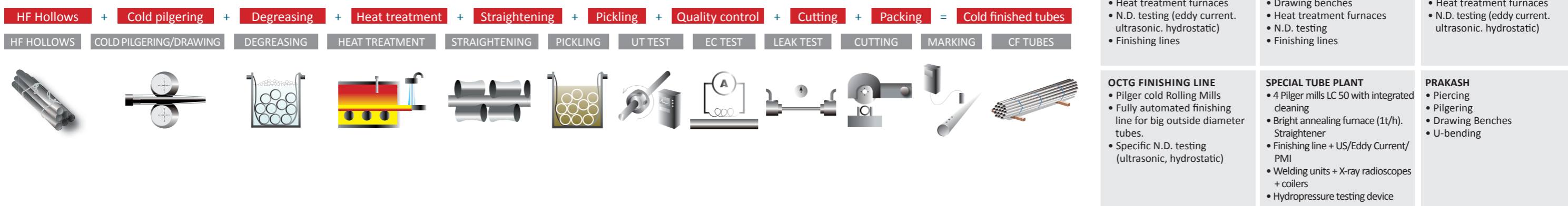
STEEL PRODUCTION



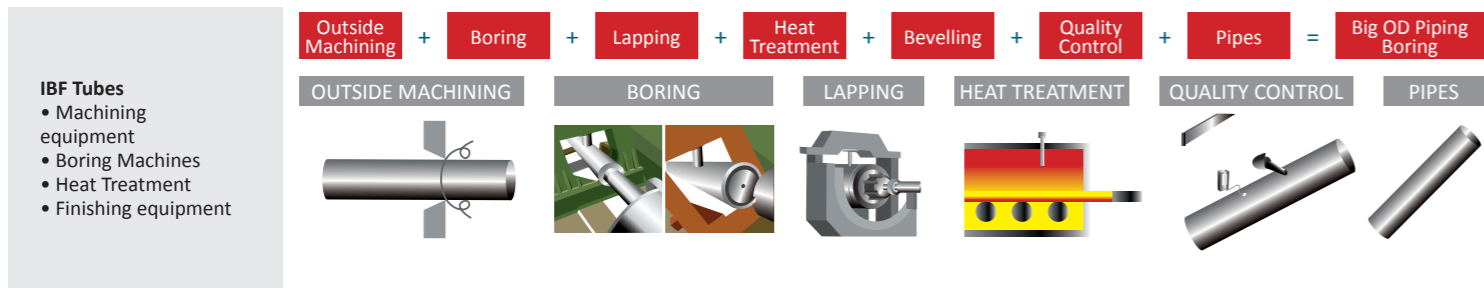
HOT FINISHED PRODUCTION



COLD FINISHED PRODUCTION



BIG OD PIPING BORING



FITTINGS HOT & COLD FORMING



Tubacex Vision remarks the aspiration of becoming a global supplier, benchmark in the development of innovative tubular solutions in advanced materials. Creativity and Innovation, along with Customer Satisfaction, are the values behind this vision.

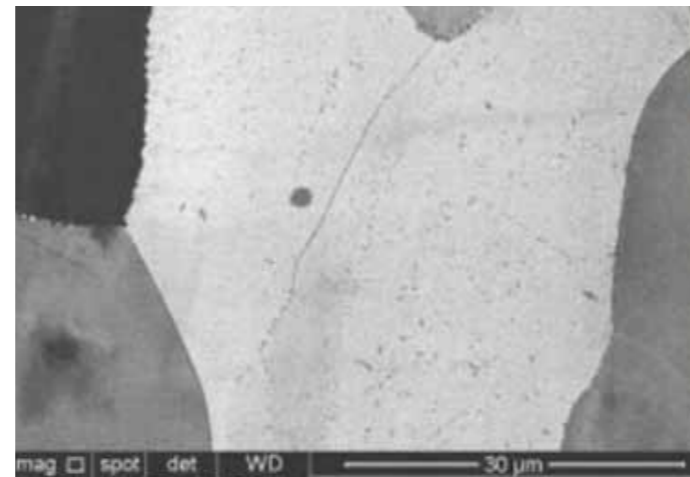
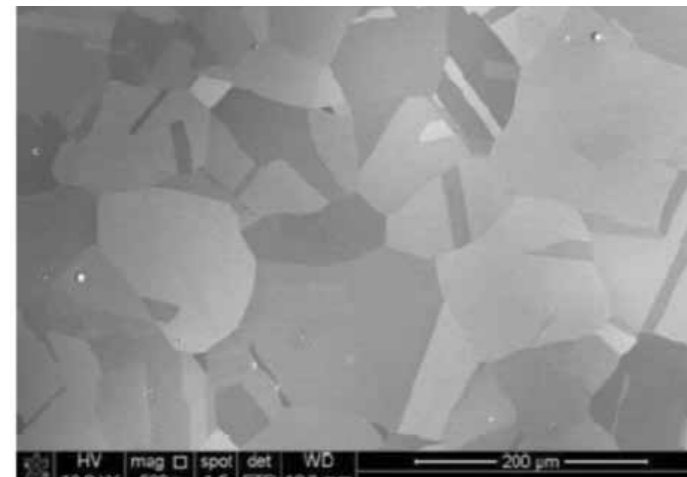


The Tubacex Group has made a significant effort in innovation in recent years, which is constantly being reflected in the results and in the sales figure.

The Group has a corporate innovation unit called Tubacex Innovación, with human and technical resources devoted exclusively to Innovation activities, consisting of product R&D projects and development projects for the different industrial plans of Group companies, in which technological development is required.

Tubacex Innovation

- Steel Portfolio Management
- R&D Projects Management
- New Products Development
- Known grades. Performance Improvement. New requirements
- Participation in Industrialization Projects
- Participation in Continuous Improvement Projects
- Investigation and analysis of Metallurgical claims
- Heat treatments design
- Group Laboratories Standardization
- Technical support to Sales and Engineering
- Customers Assistance



Important approvals with potential customers have also been obtained, which will enable sales of high value-added products to increase in the future. Since 2008, and more notably in the past two years, we have entered all of the strategic sectors that were defined as targets, namely: OCTG, umbilical offshore tubes, ultra supercritical boilers and recently, fertilizers. This has been possible thanks not only to R&D activities, but also to significant investment in recent years, in excess of €150M, and the improved processes in all of the Group's plants.

A milestone in 2014 was the opening of a new laboratory specifically devoted to R&D, which is located on the Zamudio Scientific and Technology Park (Bizkaia). This new laboratory will accelerate the development of the R&D unit, in skills such as metallurgical and metallographic knowledge, which is key for the development of new materials and processes. The creation of the new laboratory will act as a base for the future growth of the R&D capacities of the Tubacex Group, enabling closer collaboration with customers in the development of new solutions for the energy sector

Service is the other main driver of Tubacex vision. This means excellent service in the existing portfolio, along with the development of new value added services that complement and enrich Tubacex Group's product portfolio.



Excellent service in the existing portfolio - Tubacex Production System

TxPS, the acronym of Tubacex Production System, is the standard Management System for the entire Tubacex Group focused on:

- Implementing an continuous improvement system in all areas
- Involving all personnel from all areas
- Ensuring that the improvements are sustained over time

TxPS is based on action on three levels: yearly management plan, daily management and specific action for radical improvement.

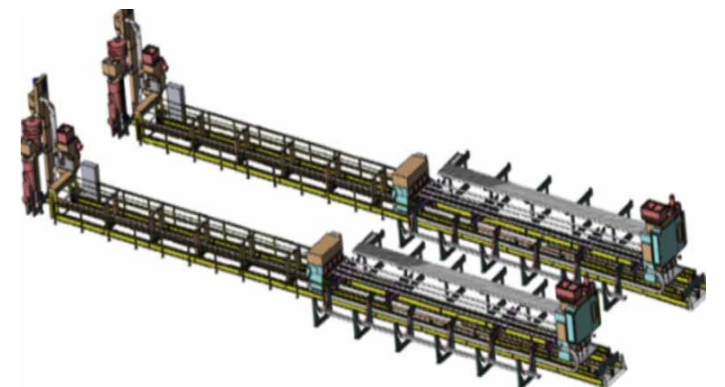


New Services to develop and complete our offer - Tubacex Services

To further increase our service capabilities we are developing final added value operations for small niches:

- Final treatments
- Special packages
- Others

The Group has developed a new unit called Tubacex Services, with resources devoted exclusively to the development of those added value operations to the Groups portfolio. This unit is already developing specialized process as Shot peening in a new mil in Santander (north of Spain).



Global Service Center Network - Tubacex Service Solutions

In addition, the group network of service centers in Europe, America and Asia offers availability and proximity service to our customers through companies as Cotubes, Tubos Mecánicos, MIS, SSB or Tubacex America.



Tubacex Group holds several approvals as a manufacturer of seamless tube and pipe, and can deliver tubular products in accordance with most international standards.

MANUFACTURING STANDARDS

Apart from standards mentioned in the catalogue we also manufacture according to UNE, BS, SIS, GOST, JIS and other international standards and Steel grades.

MANAGEMENT SYSTEM CERTIFICATES

ISO 9001.

ENVIRONMENTAL RESPONSABILITY

Tubacex Group is highly engaged with the environment and it is ISO 14001 certified.

SAFETY

Occupational health and Safety is also a key element of our culture. The company is OHSAS 18.001 certified.

APPROVALS

Tubacex is approved to manufacture according to TÜV, Lloyd's register, DNV, Germanischer Lloyd's, BV, Norsok etc. Complete list of approvals is available on request.

OTHER CERTIFICATIONS

Tüv Süddeutschland (Ad - Merkblatt Wo / Trd 100)

Lloyd's Register of Shipping (rules for the manufacture, testing and certification of materials)

Qualification as Manufacturer of Special Materials to Norsok M-650

ASME Quality System Certificate as Material Organization for Ferrous and Nonferrous Material

Tüv Süddeutschland (Pressure Equipment Directive 97/23Ec)

Det Norske Veritas (Dnv's Rules for Classification Pt.2)

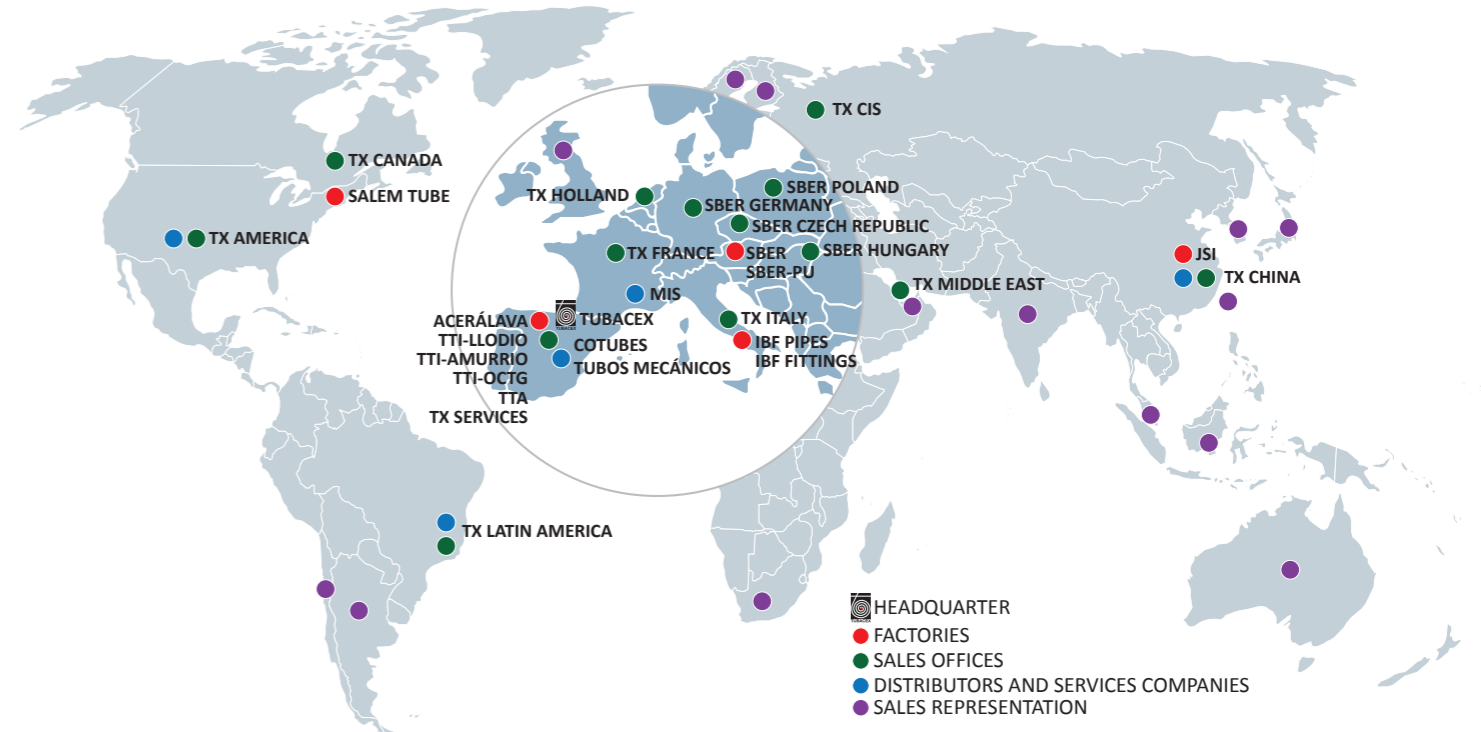
Germanischer Lloyd (Austenitic Stainless Steel Pipes and Tubes According to En 10216-5 or Equivalent Standards)

PED 97/23/EC.

AD2000, werkblatt W0.

JIS Mark scheme

Complete list of approvals and certifications is available on request.



Nowadays the Tubacex Group is exporting into more than 100 countries worldwide from its manufacturing sites and warehouses. The company has 15 commercial offices and a wide network of agents in several countries that allow a global presence.

MANUFACTURING COMPANIES

Acería de Álava, S.A.
STEEL MELTING SHOP
Amurrio. SPAIN

Tubacex Tubos Inoxidables, S.A.
HOT EXTRUSION PLANT
Llodio. SPAIN
COLD FINISHING PLANT
OCTG FINISHING PLANT
Amurrio. SPAIN

Schoeller Bleckmann Edelstahlrohr, GmbH
COLD FINISHING PLANT
HOT EXTRUSION PLANT
SPECIAL TUBE PLANT
Ternitz. AUSTRIA

Salem Tube, Inc.
COLD FINISHING PLANT
Greenville. PA. USA

Tubacex Taylor Accesorios, S.A.
BUTT WELDING FITTINGS
Arzeniega. SPAIN

Tubacex Services, S.L.
TUBE FINISHING SERVICES
Santander. SPAIN

SERVICE & DISTRIBUTION COMPANIES

Comercial de Tubos y Accesorios, S.A.
STAINLESS STEEL LONG PRODUCTS
DISTRIBUTION
Amurrio. SPAIN

Metaux Inox Services, S.A.S.
STAINLESS STEEL LONG PRODUCTS
DISTRIBUTION
Satolas & Bonce. FRANCE

Tubacex America, Inc.
STAINLESS STEEL LONG PRODUCTS
DISTRIBUTION
Houston. UNITED STATES

Tubos Mecánicos, S.A.
CARBON & ALLOYED MECHANICAL
TUBING DISTRIBUTION
Barcelona. SPAIN

Special Steels do Brazil
STAINLESS STEEL TRADING &
DISTRIBUTION
Sao Paulo. BRAZIL

MANAGEMENT SYSTEM CERTIFICATES

UNE - EN - ISO 9001:2000
ER-0006/1991



OHSAS 18001:1999



UNE - EN - ISO 14001:1996
GA-2001/0127





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