HEAVY WALL WELDED PIPES IN CORROSION RESISTANT ALLOYS

COMPANY PROFILE

INOX TECH

INOX TECH

PIPES

INDUSTRY

TABLES

INOX TECH MANUFACTURES WELDED PIPES FOR THE OIL & GAS INDUSTRY

diameter	thickness	length	materials	tons/year
6"- 110"	3 - 100 mm	6 to 12.5 mtrs.	STAINLESS STEEL, DUPLEX, SUPER DUPLEX, SMO, NICKEL ALLOYS, CARBON STEEL, LOW ALLOY STEEL, CLAD	30.000

Press Machine:
Total power 6000 tons.
Total bending length 12.5 m.

SEAH

In 2014 Inox Tech joins Seah group becoming part of a global network

Our strength for your energy

Inox Tech S.p.A. is the leading manufacturer of large outside diameter welded pipes in the global Oil & Gas market and is acting in this business since 1989.

The reference market is Oil & Gas, with deep focus on LNG's, refineries and subsea applications.
A newly refurbished mill, together with the most up-to-date technology applied to the production flow, are ensuring a very high-standard product, which can be summarized with three words: flexibility, reliability and effectiveness.
The total capacity of the mill is being increased year by year, with current and future investments that are scheduled to improve both the manufacturing range and the efficiency of Inox Tech.
Inox Tech manufactures pipes from plates, with a total capacity of approx 30.000 tons per year and the favorite size range can be described in: "The larger and heavier, the better".
This means that Inox Tech prefers to manufacture pipes with large outside diameter up to 110'' and heavy wall thickness up to 100mm, but at the same time is able to supply complete project bills of material including smaller and thinner sizes, starting from 6" outside diameter and 3mm wall thickness.
The manufacturing range includes pipes in 12.5 mtr length in Stainless Steel, Duplex, Super Duplex, Nickel Alloys, 6Mo, Clad, Carbon Steel and Low Alloy steel.
The strength of the company stands on the ability to manufacture a high-quality product, accomplishing all main Oil & Gas requirements.
Inox Tech holds 3 API monograms, and it is ISO certified since 1995.
Furthermore, the mill has been officially approved by the most important Oil Companies in the global scene, such as ExxonMobil, Shell, Total, Saudi Aramco, PDO, KNPC, Sonatrach and many others.
With a high-qualified staff, Inox Tech can provide accurate project management to its valuable customers, from the very first steps of the offer up to pipes delivery, with a problem solving attitude that gives Inox Tech its most important feature.

INOX TECH: A HYSTORY OF INNOVATION

Stainless steel heavy wall welded pipes with large diameter are Inox Tech core business. The leading manufacturer is located in Italy producing this niche component since 1989, mainly used for LNG plants, oil extraction, desalination and desulphurization plants.

Inox Tech operates in its facilities based in Lendinara (North-East Italy), with a total covered and uncovered area of approx 96.000 square meters and 160 employees, working on three shifts.

The strength of Inox Tech stands in the ability to manufacture a wide size range with small quantities as well as complete project supplies up to several kilometers and thousands tons of pipes. This is called Inox Tech flexibility, and has created the success of the company which is now at the top level in this market.

In 2014 Inox Tech was acquired from SeAH group becoming part of a global network.

Inox Tech is focused on a continuous improvement approach to manufacturing facilities giving the highest importance to the latest technologies applied to its manufacturing process.

The mill has an annual production capacity of approx 30.000 tons.

1989	Inox Tech S.p.A. is founded in North Italy, 80 Km far from VENICE .
1992	The Company begins the manufacture of welded stainless steel (300 series) pipes suitable for cryogenic service
1993	Inox Tech starts producing welded DUPLEX / SUPERDUPLEX steel pipes
1995	The Company begins the manufacture of welded NICKEL ALLOY steel pipes
2000	The Company gets UNI EN ISO 9001:2008 (ISO 9001:2008) certification. Inox Tech makes significant investments in production machinery.
2001	Inox Tech starts production of 12,5mtr long pipes
2003-2007	Inox Tech grows significantly, increasing its total sales threefold between 2003 and 2007 (from approx. 37 € Mln in 2003 to approx. 112 €Mln in 2007)
2003	Inox Tech starts the manufacture of metallurgically bonded CLAD pipes.
2003-2007	Inox Tech grows significantly, increasing its revenues from approx. 37 €Mln in 2003 to approx. 112 €Mln in 2007
2008-2009	Expansion of the production facility in Lendinara, with increase of production capacity up to 30,000 tons of welded pipes
2011	The Company makes its max turnover and production volume: 140Mill. Eu for 30.000 tons of pipes
2011-2012	Inox Tech supplies for the largest LNG Project ever built, the GORGON PROJECT in Australia, for a total volume of 17.000 tons
2014	Inox Tech joins SeAH Group

WELDED PIPES TO DELIVER ENERGY

strength

We put all our strength to manufacture the strongest material

reliability

We do everything in our power to maintain our commitment and fulfill our promises

high quality

We apply the highest standards to achieve the highest quality

STAINLESS STEEL

Inox Tech manufactures stainless steel welded pipes suitable for cryogenic service since 1992. The production range covers outside diameters from 6" to 110" with wall thicknesses from 3mm up to 100mm and unit lengths up to 12.5 meters. Pipes are manufactured in accordance with the requirements of DIN, ASME, ASTM and client's specifications.

Materials

AISI 304/304L/304H
AISI 316/316L/316H/316Ti/316HiMo
AISI 317/317L
AISI 321/321H
AISI 347/347H
AISI 309/309S
AISI 310/310S
AISI S31254/UNS N08926
AISI 904/N08904

Specifications

ASTM A358
ASTM A312
ASTM A778
NORSOK M650 Rev 4
EN 10217-7
CRYOGENIC SERVICE / NACE
CUSTOMER REQUIREMENTS

Range

OUTSIDE DIAMETER: 6" TO 110"

WALL THICKNESS: 3MM TO 100mm

MAX UNIT LENGTH: UP TO 12,5 MTRS

Applications

Note: Out of standard Lengths, OD & WT can be manufactured according to client's requests

DUPLEX SUPERDUPLEX

Inox Tech is specialized in the manufacture of duplex and super duplex pipes. These materials are normally requested for their high resistance to various corrosive agents and are commonly used in offshore environments. Mechanical properties are approximately double those of austenitic steel and resistance to stress corrosion cracking is superior to type 316 stainless steel in chloride solutions. Inox Tech has long experience in the production of challenging sizes, such as small diameters with heavy wall thickness according to major standards: DNV-OS-F101, API, ASTM and customer requirements.

Materials

S31803
S32205/22Cr
S32750/25Cr
S32760/25Cr

Specifications

ASTM A928
ASTM A790
NORSOK M650 Rev 4
DNV OS F-101
API 5LC
EN 10217-7
SHELL MESC
CUSTOMER REQUIREMENTS

Range

OUTSIDE DIAMETER: 6" TO 110"

WALL THICKNESS: 3MM TO 100mm

MAX UNIT LENGTH: UP TO 12,5 MTRS

Applications

Note: Out of standard Lengths, OD & WT can be manufactured according to client's requests

NICKEL ALLOYS

Nickel alloys are characterized by great corrosion resistance and high heat stability. Their nickel content makes them the perfect material to be used in chemical process, in energy and offshore engineering, where they are highly suitable for aggressive environments. Nickel alloys are also high-temperature materials that find a wide range of applications in furnaces and heat treatment plants.

Materials

N04400 (MONEL 400)
N06600 (INCONEL 600)
N06600 (INCONEL 601)
N06625 (INCONEL 625)
N08825 (INCOLOY 825)
N06200 (HASTELLOY C2000)
N010276 (HASTELLOY C276)
N08020 (ALLOY 20)
N08800 (ALLOY 800)
N08810 (ALLOY 800 H)
N08811 (ALLOY 800 HT)

Specifications

ASTM B705
ASTM B775
ASTM B514
ASTM B515
ASTM B516
ASTM B517
ASTM B619
CUSTOMER REQUIREMENTS

Range

OUTSIDE DIAMETER: 6" TO 110"

WALL THICKNESS: 3MM TO 100mm

MAX UNIT LENGTH: UP TO 12,5 MTRS

Applications

Note: Out of standard Lengths, OD & WT can be manufactured according to client's requests

CLAD

Market is increasing the demand for line pipes in corrosion resistant alloys (CRA). Inox Tech takes advantage of a long-lasting experience with production of corrosion resistant alloys along with a deep knowledge of low alloys and carbon steel material to improve clad pipes manufacture.
Clad material combines the corrosive and resistance properties of CRA with the high strength of carbon manganese steels. The result of this combination of CRA material in thinner wall thickness with the strength of heavy wall thickness carbon steel material is a cost efficiency.

CS Materials

API L X42/X52/X60/X65/X65/ X70
API 5L Gr.B
B50/B55/B60/B65/B70
C60/C65/C70
CC60/CC65/CC70
CF65/CF70
1 1/4CR
2 1/4CR
5CR
9CR
91

CRA Materials

316L
N04400 (MONEL 400)
N06600 (INCONEL 600)
N06600 (INCONEL 601)
N06625 (INCONEL 625)
N08825 (INCOLOY 825)
N06200 (HASTELLOY C2000)
N010276 (HASTELLOY C276)
N08020 (ALLOY 20)
N08800 (ALLOY 800)
N08810 (ALLOY 800 H)
N08811 (ALLOY 800 HT)

Specifications

API 5LD
DNV OS F-101
API 5L+CLAD
ASTM A671+ CLAD
ASTM A672+ CLAD
ASTM A691+ CLAD
CUSTOMER REQUIREMENTS

Carbon Steel and Low Alloy
To enlarge its production range Inox Tech developed a dedicated line to manufacture pipes in carbon steel and low alloys according to main standards and customer requirements.

Carbon Steel
API L X42/X52/X60/X65/X65/ X70
API 5L Gr.B
B50/B55/B60/B65/B70
C60/C65/C70
CC60-CC65-CC70
CF65/CF70

Low Alloys
1 1/4CR
2 1/4CR
5CR
9CR
91

Range

OUTSIDE DIAMETER: 6" TO 110"

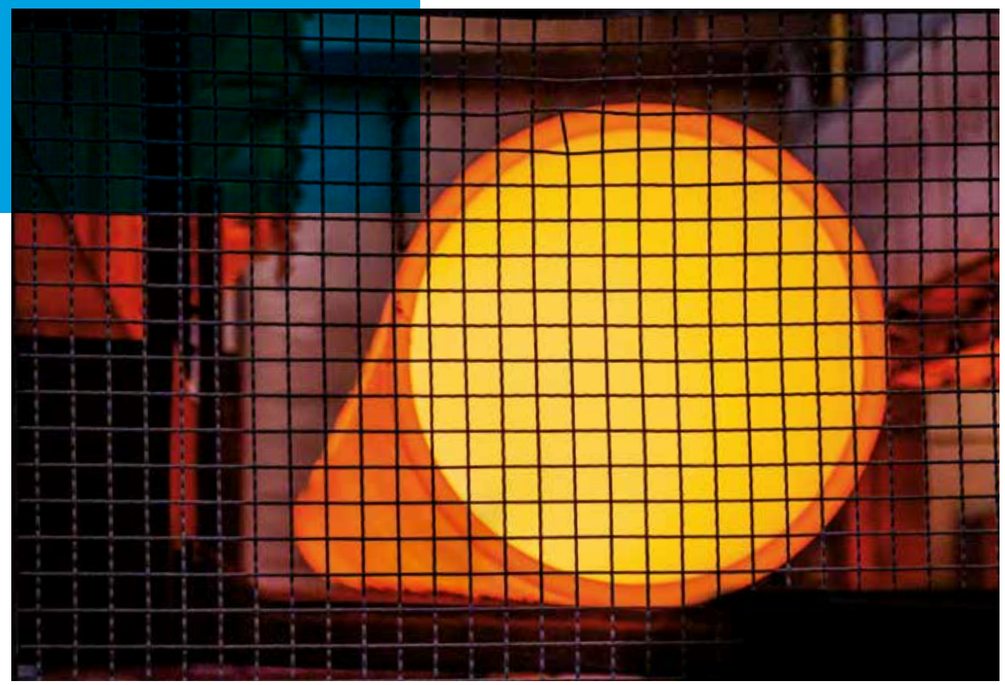
WALL THICKNESS: UP TO 100mm

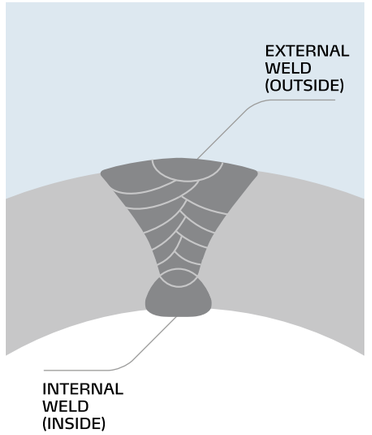
MAX UNIT LENGTH: UP TO 12,5 MTRS

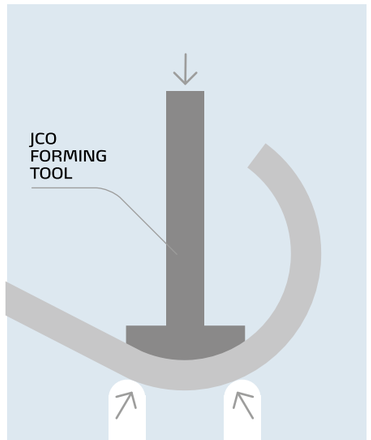
Applications

Note: Out of standard Lengths, OD & WT can be manufactured according to client's requests

PRODUCTION PROCESS

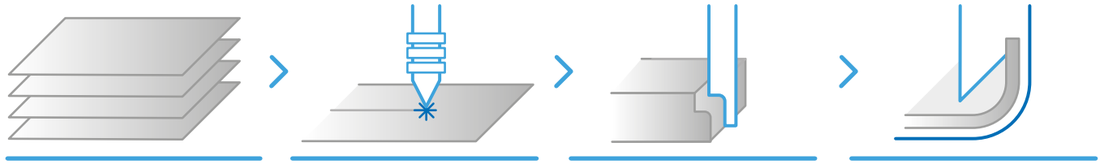






Inox Tech produces longitudinally welded pipes with wall thickness up to 100mm and outside diameter up to 110'' manufactured from quarto plates. Plates are bent by means of forming process and rolling machines. Inox Tech uses JCO bending process. The process is excellent to produce small diameter pipe with heavy wall thickness as well as large outside diameters. To prevent rust corrosion, during transportation at final construction site, pipes are packed in suitable seaworthy packing. The entire production line is controlled by a computer system which monitors every step of the production process, from precision cutting and folding to welding and calibrating. This system also ensures that products are manufactured according to customer specifications and guarantees full traceability of the products.

DETAILED PRODUCTION PROCESS

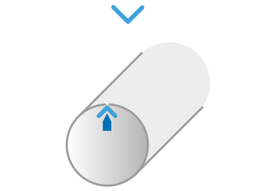


01 RAW MATERIAL AT STOCK / PLATES STORAGE

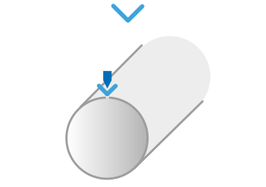
02 PLASMA ARC CUTTING

03 EDGES BEVELLING

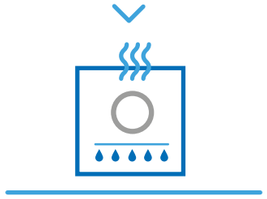
04 FORMING



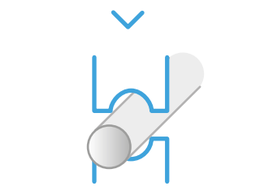
05 INTERNAL WELDING



06 EXTERNAL WELDING



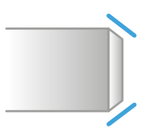
07 POST WELD HEAT TREATMENT



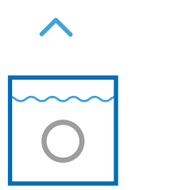
08 SIZING

09 HYDROSTATIC TEST

10 X RAY CONTROL

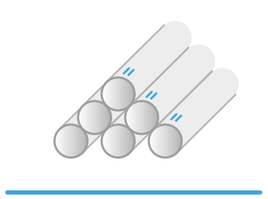


11 ENDS BEVELLINGS

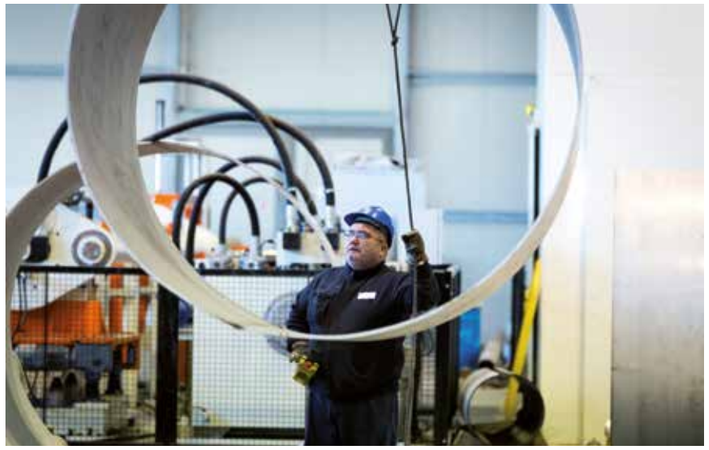


12 PICKLING AND PASSIVATION

13 FINAL INSPECTION



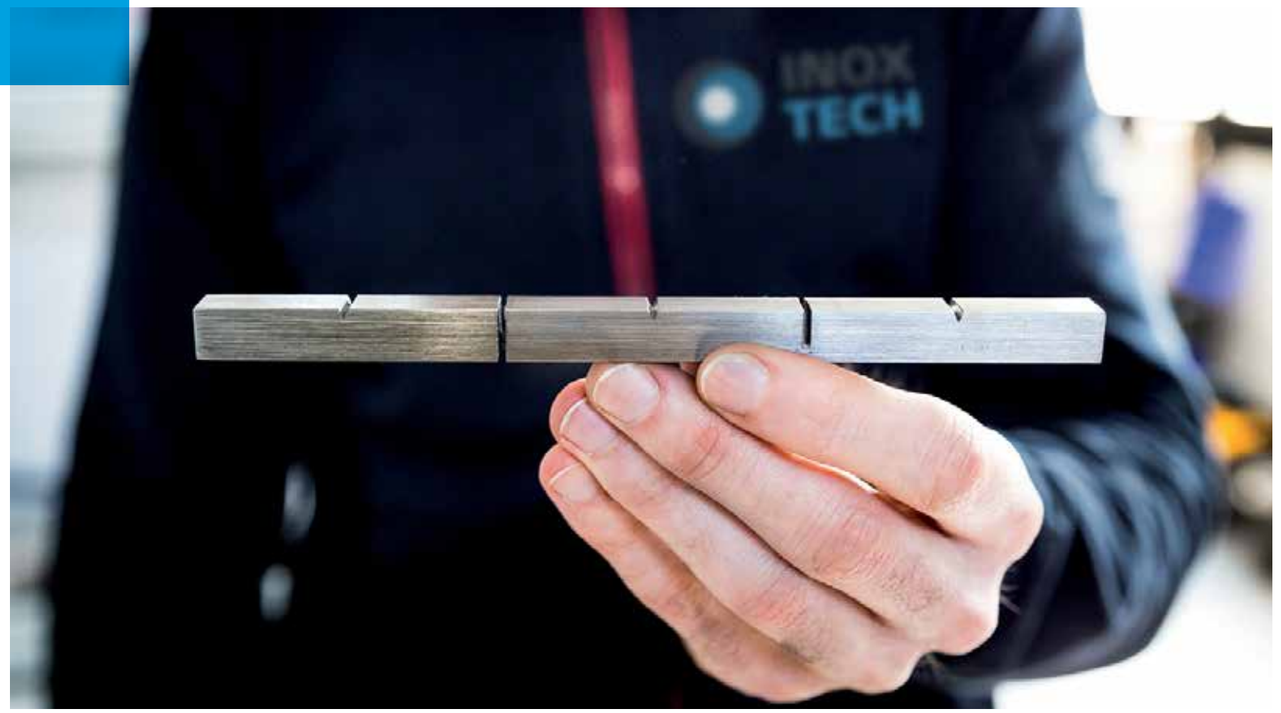
14 MARKING, DP, PMI, COLOR CODING, PACKING



The focus of our business is the manufacturing of high-quality longitudinally welded pipes in a wide range of material and size, with demanding tolerances and restrictive requirements. For the production of our pipes we use plates sourced form major steel mills in the world. We apply the most stringent controls during and after production.

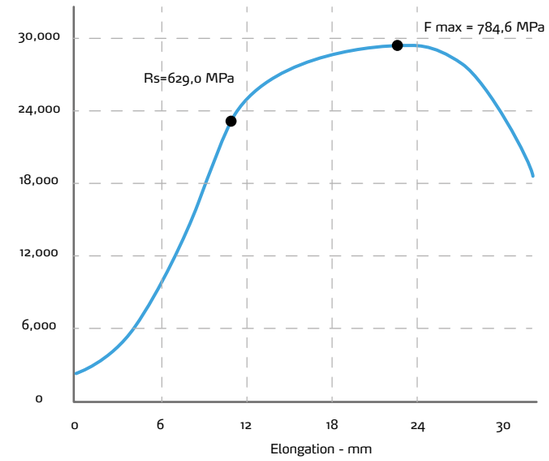
DESTRUCTIVE AND NON DESTRUCTIVE TESTS

Corrosion Test



Macro Analisys

Tensile Test Report



Charpy Impact Test

Inox Tech is highly experienced in dealing with customer requirements and specifications. Its quality assurance system is certified according to ISO 9001:2000 standards.
The project-oriented organization allows to deal with main international standards ASTM, ASME, API, EN, DNV-OS-F101, customer requirements and any project specifications.
The mill is equipped with in house accredited laboratory that allows to verifiy material features, determine chemical and mechanical properties, control quality of welds, ensure compliance with regulations and above all guarantee the highest quality of the products.

Non Destructive Testing

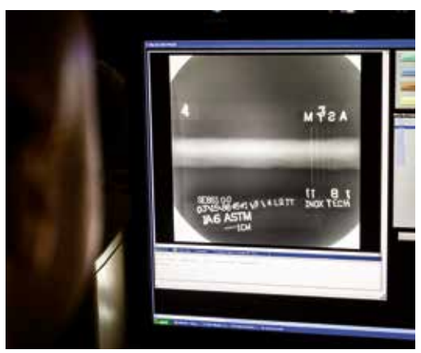
Visual testing
X-Ray Testing (Radiographic & Radioscopic examination & Digital)
Liquid Penetrant Examination
Ultrasonic Examination (and PAUT)
Magnetic Particle Examination
Hydrostatic Test
Positive Material Identification (PMI Testing)

Desctructive Testing:

Product Analysys/Chemical Analysis
Tensile Test at room temperature and hot tensile test
Bend Test
Impact Test up to -196°C
Micrographic Examination up to 500X
Macrographic Examination
Ferrite Counting
Examination acc. to ASTM E562
Corrosion Test (ASTM A262; ASTM A923; ASTM G48; ASTM G28)
Hardness Test (also NACE MR 01-75)
Drop weight tear test (DWTT) Hydrogen-Induced Cracking (HIC)
Sulphide Stress Corrosion Cracking (SSCC)

Hardness Test

Radiographic Examination (Digital / On Film)



Micrographic examination

INDUSTRY

flexibility

Flexibility is the heart of our process in order to meet all customer requirements

innovation

We constantly strive to improve our production process and make it more effective and technological

care

We care about our customers success and do our best to fulfill their needs

LNG

Liquefied natural gas (LNG) represents a flourishing industry. With a growing production natural gas is going to become the second-leading fossil energy after crude oil. Liquefied natural gas has a number of advantages, which are driving its growth: It combines the clean combustion and calorific value of natural gas with the transportation flexibility of liquid hydrocarbons. This means opportunities for both gas-producing and gas-consuming countries. Distance of several kilometers separates the storage tanks of a liquefaction plant from the loading port where LNG carriers take delivery of their cargoes. For this reason Inox Tech with its pipes suitable for cryogenic service represents an important supplier for LNG industries.

OFFSHORE

Due to rising demand for oil and gas in the world, the global offshore oil and gas industry has been growing rapidly. The work on exploration of new oilfields and their extraction has been intensified. Offshore platforms are giant structures used for the purpose of drilling and extracting gas and oil from wells, located deep beneath the ocean floors. These platforms have onsite processing and storage facilities. Offshore platforms are designed to last decades in harsh environments. The high corrosion resistance of Inox Tech duplex and super duplex pipes makes them ideal for offshore environments in oil and gas applications. Inox Tech can meet even the most demanding requirements to supply pipes for offshore services.

PROCESS PLANTS

The use of raw materials with high corrosion resistance makes Inox Tech pipes suitable for a wide variety of applications in process plants within chemical, petrochemical, water, oil and gas industries. Inox Tech provides a full range of welded pipes for process plants, where large diameter pipes and corrosion resistant alloy steel are necessary to withstand extreme temperatures and high-pressure environments.

SUBSEA

The scale and complexity of projects within the offshore subsea market are expanding rapidly to meet the challenge of increasing global energy demands. Most of the new oil fields are located in deep water and are generally referred to as deepwater systems, where floating drilling vessels and floating oil platforms are used. Most deepwater flowlines carry very high pressure and high temperature fluids. Due to their strength and corrosion resistance Inox Tech pipes are requested for applications like flowline pipe, line pipe, risers, manifold piping and hydraulic lines for drilling risers.

MAIN APPROVALS AND QUALITY ASSURANCE

Inox Tech List of Main Approvals

	Since
AKER SOLUTIONS	2013
ADCO (Abu Dhabi Company For Onshore Oil Operations)	2009
ADGAS (Abu Dhabi Gas Liquefaction)	2009
ADMA OPCO (Abu Dhabi Marine Operation Company)	2013
AGIP KCO (Agip Kazakhstan North Caspian Operating Company)	2008
API Monogram API 5L License No.: 5L-0734	2010
API Monogram API 5LC License No.: 5LC-0020	2010
API Monogram API 5LD License No.: 5LD-0018	2010
BP	2011
CHEVRON	2010
EIL	2007
EXXON MOBIL	2008
FMC	2011
GOST R	2012
HYUNDAI ENG. & CONSTR.	2005
KNPC (Kuwait National Petroleum Corporation)	2005
KVAERNER	2013
NAM Approval	2002
NORSOK M-650 Rev.04 (Statoil)	2012
NORSOK M-650 Rev.03 (Statoil)	2008
NORSOK M-650 Rev.02 (Statoil)	2003
ONGC	2007
PDO (Petroleum Development Oman L.L.C.)	2010
SAIPEM	2010
SAUDI ARAMCO	2007
SHELL GLOBAL SOLUTION	2010
TAKREER (Abu Dhabi Oil Refining Company)	2009
TECHNIP NORGE AS	2013
TOTAL	2007
ZADCO (Zakum Development Company)	2013
UNI EN ISO 9001:2008 (DNV-GL)	1995
DIRECTIVE 2014/68/EU ANNEX 1 SECTION 4.3 (PREVIOUSLY PED)	2007
UNI CEN ISO /TS 29001:2011 (DNV-GL)	2015
UNI EN ISO 3834-2 :2006 (DNV-GL)	2014
OHSAS ISO 18001:2007 640864 (BSI)	2016

API MONOGRAM: API 5L, 5LC, 5LD

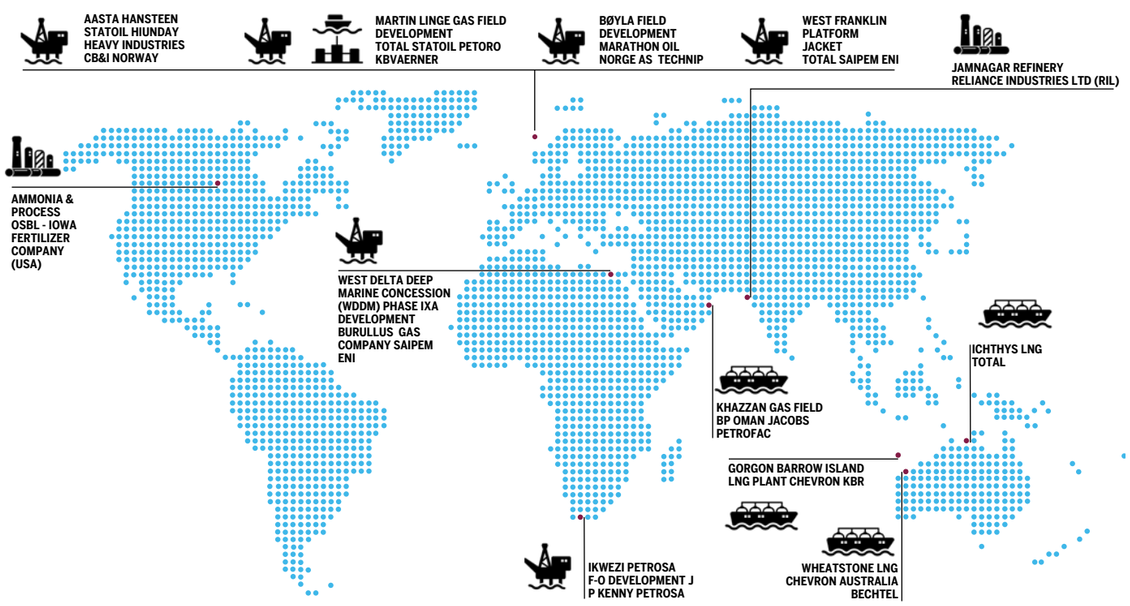
DIRECTIVE 2014/68/EU ANNEX 1 SECTION 4.3 Welded & Seamless

UNI EN ISO 9001:2008 (DNV-GL)
UNI CEN ISO /TS 29001:2011 (DNV-GL)
UNI EN ISO 3834-2 :2006 (DNV-GL)

OHSAS ISO 18001:2007 640864 (BSI)

Inox Tech supports most of major engineering companies in the Oil & Gas industry and supplies pipes for projects worldwide.
The Company is strongly customer-oriented, and focuses its targets to main EPC contractors, who can be served with the most efficient documentation service, as well as with an efficient project management that allows the client to monitor production day by day.
The Quality Management System at Inox Tech is certified UNI EN ISO 9001:2008 (ISO 9001:2008) by DNV. We have a number of other approvals, including Norwegian standards NORSOK M-650 Rev.04 and many other approvals from the most important oil companies in the global scene i.e.: Shell, Aramco, Total, PDO, KNPC, Sonatrach and many others.

EXPERIENCE IN THE MAIN OIL AND GAS PROJECTS



KHAZZAN GAS FIELD
BP OMAN JACOBS / PETROFAC
OMAN
2014-2017
22 Cr - 316/L

JAZAN REFINERY
SAUDI ARAMCO TECNICAS REUNIDAS
SAUDI ARABIA
2013-2015
304/L - 316/L - 321 - N08825

JAMNAGAR REFINERY
RELIANCE INDUSTRIES LTD (RIL)
INDIA
2013-2015
304/L - 316/L - 347 - 321

ICHTHYS LNG
TOTAL INPEX JKC Joint Venture
(JGC Corporation, KBR and Chiyoda Corporation)
AUSTRALIA
2012-2015
316/L - S31803 -S32750 CC65

ÅSGARD SUBSEA GAS COMPRESSION
STATOIL AKER SOLUTIONS TECHNIP
NORWAY
2011-2015
S31803-S31254–316/L

WEST DELTA DEEP MARINE CONCESSION (WDDM) PHASE IXA DEVELOPMENT
BURULLUS GAS COMPANY SAIPEM ENI
EGYPT
2012-2015
25 Cr

AASTA HANSTEEN STATOIL
HIUNDAY HEAVY INDUSTRIES / CB&I
NORWAY
2013-2014
S31803 - S31254

WHEATSTONE LNG
CHEVRON AUSTRALIA BECHTEL
AUSTRALIA
2012-2015
304/L - 316/L - S31803 -S32750

IKWEZI PETROSA F-O DEVELOPMENT J
P KENNY PETROSA
SOUTH AFRICA
2011-2012
SAWL 415+N08825 - 22Cr+S31803

MARTIN LINGE
TOTAL / STATOIL / PETORO KVAERNER
NORWAY
2012-2015
S31803 - S32750 - N06625

BØYLA FIELD DEVELOPMENT
MARATHON OIL NORGE AS TECHNIP
NORWAY
2013
25 Cr

BARZAN ONSHORE PROJECT
QATAR GAS / EXXON MOBIL JGC CORPORATION / RASGAS COMPANY LIMITED
QATAR
2011-2012
304/L - 316/L - S32750 - S31254

WEST FRANKLIN PLATFORM JACKET TOTAL SAIPEM ENI
NORTH SEA
2010-2012
25Cr - X60

GORGON BARROW ISLAND LNG PLANT
CHEVRON KBR
AUSTRALIA
2010-2012
304/L - 316/L - N06625 - N08825 - S32750
S31803 - CC65+N06625 - GR6+N06625

PEOPLE

Willingness to face new challenges, flexibility, customized solution, skills, responsibility and experience are the common values shared from Inox Tech People. People represents one of our most important resource. We believe that our staff allow us to think big and achieve always new goals. Health, safety, respect for people, encouraging talents, and performing fair treatment is Inox Tech's core management ideal. Together like a family we develop new solutions and achieve the best results.

HEALTH, SAFETY AND ENVIRONMENT

Inox Tech believes that preservation of workers' health and environment protection are of fundamental importance. Compliance with regulations is unconditional as Inox Tech is committed to HSE as its first target. Recent certification OHSAS 18001 proves the high commitment of Inox Tech to health, safety and environment.
An evidence of this commitment is demonstrated with the installation of a photovoltaic energy generation system. Thousands of solar panels, have been installed on the roof of Inox Tech manufacturing plant, more than 400.500 KW per year of clean energy have been generated since 2009.

INOX TECH DIMENSION & WEIGHT OF PIPES

Dimension and Weights of Welded Pipes according to ANSI B36.19 AND B36.10

Nominal diameter (inches)	External diameter (mm)	NOMINAL THICKNESS AND WEIGHT/MT.																											
		SCHEDULE NUMBER																											
		5		10S		40S Standard		80S Extra Strong		XXS Double Extra Strong		10		20		30		40		60		80		100		120		140		160	
		mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.	mm	kg./m.
3"	88,90	2,11	4,59	3,05	6,56	5,49	11,47	7,62	15,51	15,24	28,11	3,05	6,56	-	-	4,78	10,07	5,49	11,47	-	-	7,62	15,51	-	-	-	-	-	-	11,13	21,67
3 1/2"	101,60	2,11	5,26	3,05	7,53	5,74	13,78	8,08	18,92		-	3,05	7,53	-	-	4,78	11,59	5,74	13,78	-	-	8,08	18,92	-	-	-	-	-	-	-	-
4"	114,30	2,11	5,93	3,05	8,50	6,02	16,32	8,56	22,66	17,12	41,66	3,05	8,50	-	-	4,78	13,11	6,02	16,32	-	-	8,56	22,66	-	-	11,13	28,75	-	-	13,49	34,05
5"	141,30	2,77	9,61	3,40	11,74	6,55	22,10	9,53	31,44	19,05	58,31	3,40	11,74	-	-	-	-	6,55	22,10	-	-	9,53	31,44	-	-	12,70	40,90	-	-	15,88	49,87
6"	168,30	2,77	11,48	3,40	14,04	7,11	28,70	10,97	43,22	21,95	80,44	3,40	14,04	-	-	-	-	7,11	28,70	-	-	10,97	43,22	-	-	14,27	55,04	-	-	18,26	68,60
8"	219,10	2,77	15,00	3,76	20,27	8,18	43,20	12,70	65,64	22,23	109,59	3,76	20,27	6,35	33,83	7,04	37,38	8,18	43,20	10,31	53,90	12,70	65,64	15,09	77,09	18,26	91,83	20,62	102,48	23,01	112,98
10"	273,10	3,40	22,96	4,19	28,21	9,27	61,24	12,70	82,81	25,40	157,54	4,19	28,21	6,35	42,41	7,80	51,82	9,27	61,24	12,70	82,81	15,09	97,49	18,26	116,52	21,44	135,11	25,40	157,54	28,58	174,99
12"	323,90	3,96	31,72	4,57	36,54	9,53	75,02	12,70	98,96	25,40	189,85	4,57	36,54	6,35	50,49	8,38	66,21	10,31	80,96	14,27	110,64	17,48	134,12	21,44	162,38	25,40	189,85	28,58	211,34	33,32	242,44
14"	355,60	3,96	34,87	4,78	41,99	9,53	82,58	12,70	109,04	-	-	6,35	55,53	7,92	68,95	9,53	82,58	11,13	96,00	15,09	128,66	19,05	160,54	23,83	197,97	27,79	228,11	31,75	257,47	35,71	286,04
16"	406,40	4,19	42,20	4,78	48,07	9,53	94,71	12,70	125,20	-	-	6,35	63,61	7,92	79,03	9,53	94,71	12,70	125,20	16,66	162,59	21,44	206,67	26,19	249,34	30,96	291,06	36,53	338,32	40,49	370,99
18"	457,00	4,19	47,51	4,78	54,13	9,53	106,78	12,70	141,29	-	-	6,35	71,66	7,92	89,06	11,13	124,26	14,27	158,20	19,05	208,91	23,83	258,47	29,36	314,39	34,93	369,16	39,67	414,55	45,24	466,45
20"	508,00	4,78	60,23	5,54	69,70	9,53	118,95	12,70	157,51	-	-	6,35	79,76	9,53	118,95	12,70	157,51	15,09	186,25	20,62	251,65	26,19	315,97	32,54	387,41	38,10	448,30	44,45	515,94	50,01	573,52
22"	559,00	4,78	66,34	5,54	76,78	9,53	131,12	12,70	173,73	-	-	6,35	87,87	9,53	131,12	12,70	173,73	15,88	215,96	22,23	298,79	28,58	379,59	34,93	458,38	41,28	535,14	47,63	609,89	53,98	682,61
24"	610,00	5,54	83,85	6,35	95,98	9,53	143,29	12,70	189,95	-	-	6,35	95,98	9,53	143,29	14,27	212,87	17,48	259,35	24,61	360,74	30,96	448,89	38,89	556,15	46,02	649,90	52,37	731,25	59,54	820,67
26"	660,00	-	-	-	-	9,53	155,22		205,85	-	-	7,92	129,32	12,70	205,85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28"	711,00	-	-	-	-	9,53	167,39		222,06	-	-	7,92	139,43	12,70	222,06	15,88	276,40	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30"	762,00	6,35	120,15	7,92	149,55	9,53	179,56		238,28	-	-	7,92	149,55	12,70	238,28	15,88	296,68	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32"	813,00	-	-	-	-	9,53	191,73		254,50	-	-	7,92	159,66	12,70	254,50	15,88	316,96	17,48	348,20	-	-	-	-	-	-	-	-	-	-	-	-
34"	864,00	-	-	-	-	9,53	203,90		270,72	-	-	7,92	169,78	12,70	270,72	15,88	337,24	17,48	370,52	-	-	-	-	-	-	-	-	-	-	-	-
36"	914,00	-	-	-	-	9,53	215,83		286,62	-	-	7,92	179,69	12,70	286,62	15,88	357,12	19,05	426,90	-	-	-	-	-	-	-	-	-	-	-	-
38"	965,00	-	-	-	-	9,53	228,00		302,84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40"	1.016,00	-	-	-	-	9,53	240,18		319,06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42"	1.067,00	-	-	-	-	9,53	252,35		335,28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44"	1.118,00	-	-	-	-	9,53	264,52		351,49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46"	1.168,00	-	-	-	-	9,53	276,45		367,39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48"	1.219,00	-	-	-	-	9,53	288,62		383,61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52"	1.321,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56"	1.422,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60"	1.524,00	-	-	-	-	HEAVY WALL WELDED PIPES IN CORROSION RESISTANT ALLOYS																									
64"	1.626,00	-	-	-	-	LARGE DIAMETERS UP TO 110'' & 12,5 MTRS LENGTH																						-	-	-	-
68"	1.727,00	-	-	-	-																							-	-	-	-
72"	1.829,00	-	-	-	-																							-	-	-	-
76"	1.930,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80"	2.032,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90"	2.286,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100"	2.540,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110"	2.794,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	INOX TECH MAIN GRADES			TYPICAL CHEMICAL COMPOSITION % ACC. TO STANDARD ASTM (Maximum value, unless a range is indicated)													MECHANICAL SPECIFICATIONS			
	EN	AISI	UNS	C	Mn	P	S	Si	Ni	Cr	Mo	N	Cu	Al	Others	Density	Tensile Stength MPa (min.)	Yeld Stength MPa (min.)	Elongation In 2 in % Mpa (min.)	Hardness max Rockwell
Austenitic	1.4301	304	S30400	0,08	2,00	0,05	0,03	1,00	8,00-11,00	18,00-20,00						8,00	515,00	205,00	40,00	90,00
	1.4307	304L	S30403	0,04	2,00	0,05	0,03	1,00	8,00-13,00	18,00-20,00						8,00	485,00	170,00	40,00	92,00
	1.4948	304H	S30409	0,04-0,10	2,00	0,05	0,03	1,00	8,00-11,00	18,00-20,00						8,00	515,00	205,00	40,00	92,00
	1.4541	321	S32100	0,08	2,00	0,05	0,03	1,00	9,00-12,00	17,00-19,00						8,00	515,00	205,00	40,00	95,00
	1.4941	321H	S3109	0,04-0,10	2,00	0,05	0,03	1,00	9,00-120,0	17,00-19,00					Ti = 4x(C+N)min; 0,70max	8,00	515,00	205,00	40,00	95,00
	1.4550	347	S34700	0,08	2,00	0,05	0,03	1,00	9,00-13,00	17,00-19,00						8,00	550,00	415,00	20,00	20,00
	1.4550	347H	S34709	0,04-0,10	2,00	0,05	0,03	1,00	9,00-13,00	17,00-19,00						8,00	550,00	415,00	20,00	20,00
	1.4401	316	S31600	0,08	2,00	0,05	0,03	1,00	11,00-14,00	16,00-18,00	2,00-3,00					8,00	515,00	205,00	40,00	95,00
	1.4404	316L	S31603	0,04	2,00	0,05	0,03	1,00	16,00-18,00	10,00-14,00	2,00-3,00					8,00	485,00	170,00	40,00	95,00
	1.4919	316H	S31609	0,04-0,10	2,00	0,05	0,03	1,00	11,00-14,00	16,00-18,00	2,00-3,00					8,00	515,00	205,00	40,00	95,00
	1.4571	316TI	S31635	0,08	2,00	0,45	0,03	0,75	10,00-14,00	16,00-180,0	2,00-3,00	0,10			Ti = 5x(C+N)-0,70	8,00	515,00	205,00	40,00	95,00
	1.4449	317	S31700	0,08	2,00	0,05	0,03	1,00	11,00-15,00	18,00-20,00	3,00-4,00					8,00	515,00	205,00	35,00	95,00
	1.4428	317L	S31703	0,04	2,00	0,05	0,03	1,00	11,00-15,00	18,00-20,00	3,00-4,00					8,00	515,00	205,00	40,00	95,00
	1.4833	309S	S30908	0,08	2,00	0,05	0,03	1,00	12,00-15,00	22,00-24,00	0,75					8,00	515,00	205,00	40,00	95,00
	1.4844	310S	S31008	0,08	2,00	0,05	0,03	1,00	19,00-22,00	24,00-26,00	0,75					8,00	515,00	205,00	40,00	95,00
	1.4547	S31254	S31254	0,02	1,00	0,03	0,01	0,80	17,50-18,50	19,50-20,50	6,00-6,50	0,18-0,25	0,50-1,00			8,00	655,00	310,00	35,00	96,00
Super Austenitic	2.4460	ALLOY 20	N08020	0,07	2,00	0,05	0,04	1,00	32,00-38,00	19,00-21,00	2,00-3,00		3,0-4,0			8,00	550,00	240,00	30,00	95,00
	1.4876	ALLOY 800	N08800	0,10	1,50	0,05	0,02	1,00	30,0-35,0	19,00-23,00			0,75	0,15-0,60	Fe 39,5 min	8,00	520,00	205,00	30,00	
	1.4958	ALLOY 800 H	N08810	0,05-0,10	1,50	0,05	0,02	1,00	30,0-35,0	19,00-23,00			0,75	0,15-0,60	Ti 0,15-0,60; Fe 39,5 min	8,00	450,00	170,00	30,00	
	1.4959	ALLOY 800 HT	N08811	0,06-0,10	1,50	0,05	0,02	1,00	30,0-35,0	19,00-23,00			0,75		Ti 0,15-0,60; Fe 39,5 min	8,00	450,00	170,00	30,00	
	1.4539	904	N08904	0,02	2,00	0,05	0,04	1,00	23,0-28,0	19,00-23,00	4,00-5,00	0,10	1,00-2,00			8,00	490,00	220,00	35,00	90,00
Duplex	1.4462	S31803	S31803	0,03	2,00	0,03	0,02	1,00	4,50-6,50	21,00-23,00	2,50-3,50	0,08-0,20				8,00	620,00	450,00	25,00	31,00
	1.4462	S32205	2205	0,03	2,00	0,03	0,02	1,00	4,50-6,50	22,00-23,00	3,00-3,50	0,14-0,20				8,00	655,00	450,00	25,00	31,00
	1.4410	S32750	2507	0,03	1,20	0,04	0,02	0,80	6,00-8,00	24,00-26,00	3,00-5,00	0,24-0,32	0,50			8,00	795,00	550,00	15,00	32,00
	1.4501	S32760	S32760	0,05	1,00	0,03	0,01	1,00	6,00-8,00	24,00-26,00	3,00-4,00	0,20-0,30	0,50-1,00			8,00	750,00	550,00	25,00	28,00
Ni Alloy	2.4360	MONEL 400	N04400	0,30	2,00		0,02	0,50	63,00				28,00-34,00		Fe 2,50	8,80	550,00	240,00	30,00	
	2.4816	ALLOY 600	N06600	0,15	1,00		0,02	0,50	72,00	14,00-17,00			0,50		Fe 6,00-10,00	8,40	550,00	240,00	30,00	
	2.4851	ALLOY 601	N06601	0,10	1,00		0,02	0,50	58,00-63,00	21,00-25,00			1,00	1,00-1,70		8,10	550,00	205,00	30,00	
	2.4856	INCONEL 625	N06625	0,10	0,50	0,02	0,02	0,50	58,00	20,00-23,00	8,00-10,00			0,40	Nb + Ta 3,15min; Fe 5,00; Ti 0,40	8,50	660,00	270,00	50,00	
	2.4858	INCOLOY 825	N08825	0,05	1,00		0,03	0,50	38,0-46,0	19,50-23,50	2,50-3,50		1,50-3,00	0,20	Fe 22, min; Ti 0,60- 12,00	8,10	586,00	241,00	30,00	
	2.4819	ALLOY C276	N10276	0,01	1,00	0,04	0,03	0,08	BALANCE	14,50-16,50	15,00-17,00		2,50		Fe 4,00-7,00; W 3,00-4,50; V 0,35	8,90	690,00	283,00	40,00	

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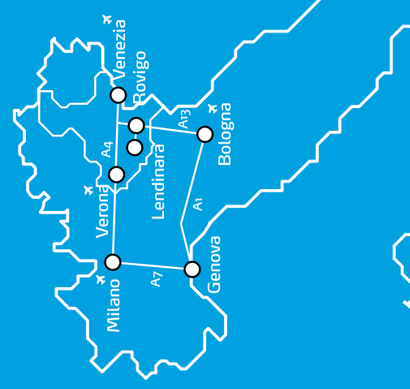

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