ISD HUTA CZĘSTOCHOWA

PRODUCT CATALOGUE

SEAMLESS PIPES & TUBES

PREMIUM COUPLING CONNECTION







PAST, PRESENT and FUTURE

"It has been since the first century,
iron was at the beginning of every household"

Walenty Rożdzieński
Officina ferraria, Kraków 1612

More than 3000 years ago, people learned how to smelt iron.
It was a milestone in the development of our civilization.
Today after centuries of improving production, there are several hundred grades of different steels.
Modern steels are the most innovative materials of new technologies.
Nevertheless, steel has remained the same phenomenon as it was in the moment of its birth
- a brilliant discovery and an irreplaceable material.

Steel is not only an element of our tradition and our presence but also an important part of the centuries ahead. That is why, every year more than one billion tonnes of steel is produced. It accounts for 93 per cent of all metals produced all over the world. Needles and super-tankers; razor blades and tanks; pen nibs and wind power plants; nails, pipes, bridges, drilling platforms, cranes, building machines, turbines...
Steel is able to be turned into each of these. No other material is so diversified and versatile. Steel is resistant and flexible at once. Tough, malleable and resilient. Solid, low-cost and permanent. Not without reason, we say that somebody is as hard as steel or that somebody has nerves of steel.
This simple iron alloy with carbon and other chemical elements is the symbol of strength, determination, energy and confidence.

In Częstochowa we have been dealing with the steel processing for almost 120 years.
At the same time we produced over 50 mln tonnes of steel, which was mainly turned into heavy plates, tubes and pipes or earlier also into rails, wires, nails, rods.

Since 2005 Huta Częstochowa belongs to the Industrial Union of Donbass and it is named as
ISD Huta Częstochowa Sp. z o.o.

ISD HUTA CZĘSTOCHOWA



TOWARDS MODERNITY

There is nothing more stable...than changes.
Our history is the best proof of that.
One thing is certain - we were always implementing new technologies that assure the highest quality of our products.

We have the experience, the knowledge and skills that allow to produce economically high-quality products in environmentally friendly way.
During the modernization we use projects and solutions of leading world companies:

- SCANDINAVIAN LANCERS - ladle furnace
- VOEST-ALPINE INDUSTRIEANLAGENBAU - continuous casting machine
- VITKOVICE HEAVY MACHINERY - system of vacuum degassing and vacuum-oxygen decarburization VD/VOD
- DAVY-CLECIM - modernization of finishing mill stand
- BOC GASES - cryogenic oxygen plant
- DANIELI CENTRO MET - electric arc furnace KONEL®
- BSE, Siemens-VAI, LOI, GIETRAD, NDT, TAMINI - investments and modernizations in Steel Plant and Plate Mill



The high-quality level of our work and manufactured products is supported by the Quality Management System based on following standard ISO 9001:2008 and it is certified by the BUREAU VERITAS CERTIFICATION.
The respective certificates of: ABS, DNV, GL, LR, PRS, BV, RINA, TDT, TÜV, DB, UDT, TRANSSERT provide the quality guarantee of our products - heavy plates, seamless pipes and tubes and steel constructions.
Our laboratories are certified by BUREAU VERITAS in accordance with EN ISO/IEC 17025:2005; they have the 2nd degree certificate granted by UDT.
Moreover the Central Laboratory complies the requirements of the standard PN-EN-ISO 45001, concerning criteria, requirements, activities and laboratories competence and gained the Approval Certificate of the Polish Ship Register.

ISD HUTA CZĘSTOCHOWA



PIPE MILL

Pipe Mill, one of the plants located on the premises of ISD Huta Częstochowa Ltd., is recognized producer of steel pipes for domestic and international markets.

Pipe Mill (ISD Huta Częstochowa) produces seamless hot rolled steel pipes in OD 121 mm - 273 mm for a wide range of applications, e.g., the shipbuilding industry, the oil and gas sector, as well as the mining and energy industry. These include line pipes, structural pipes and tubulars used for shipbuilding, as well as boiler tubes, tubes for hydraulic cylinders for the mining industry, pipes for machine parts and components.

Beginning from 2005 Huta Częstochowa is a property of Ukrainian metallurgical corporation ISD (Industrial Union of Donbass).

The high quality of the tubes we produce is confirmed by an implemented and functioning Integrated Management System conforming to ISO 9001:2008, ISO 14001:2004 and PN-N-18001:2004 certified by BUREAU VERITAS CERTIFICATION with certificates issued by the American Petroleum Institute, GL, Polish Ship Register, DNV, TÜV, Lloyd's Register of Shipping. We offer products made according to international standards and also accordance with projects and concepts based on customers' requirements. We would like to invite you acquaint yourself with our products and offer you our full cooperation.

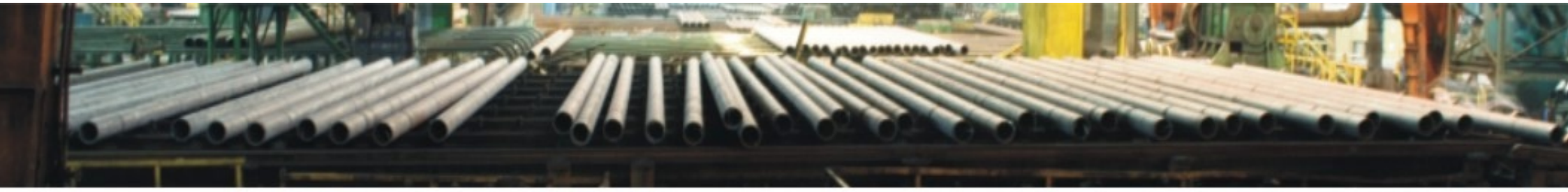
In case of any questions please contact the Sales Departament:

ISD Trade Ltd., 9 Naruszewicza St, 09-627 Warszawa, POLAND
phone: +48 22 483 08 80, fax: +48 22 483 80 90
e-mail: info@isd-trade.com

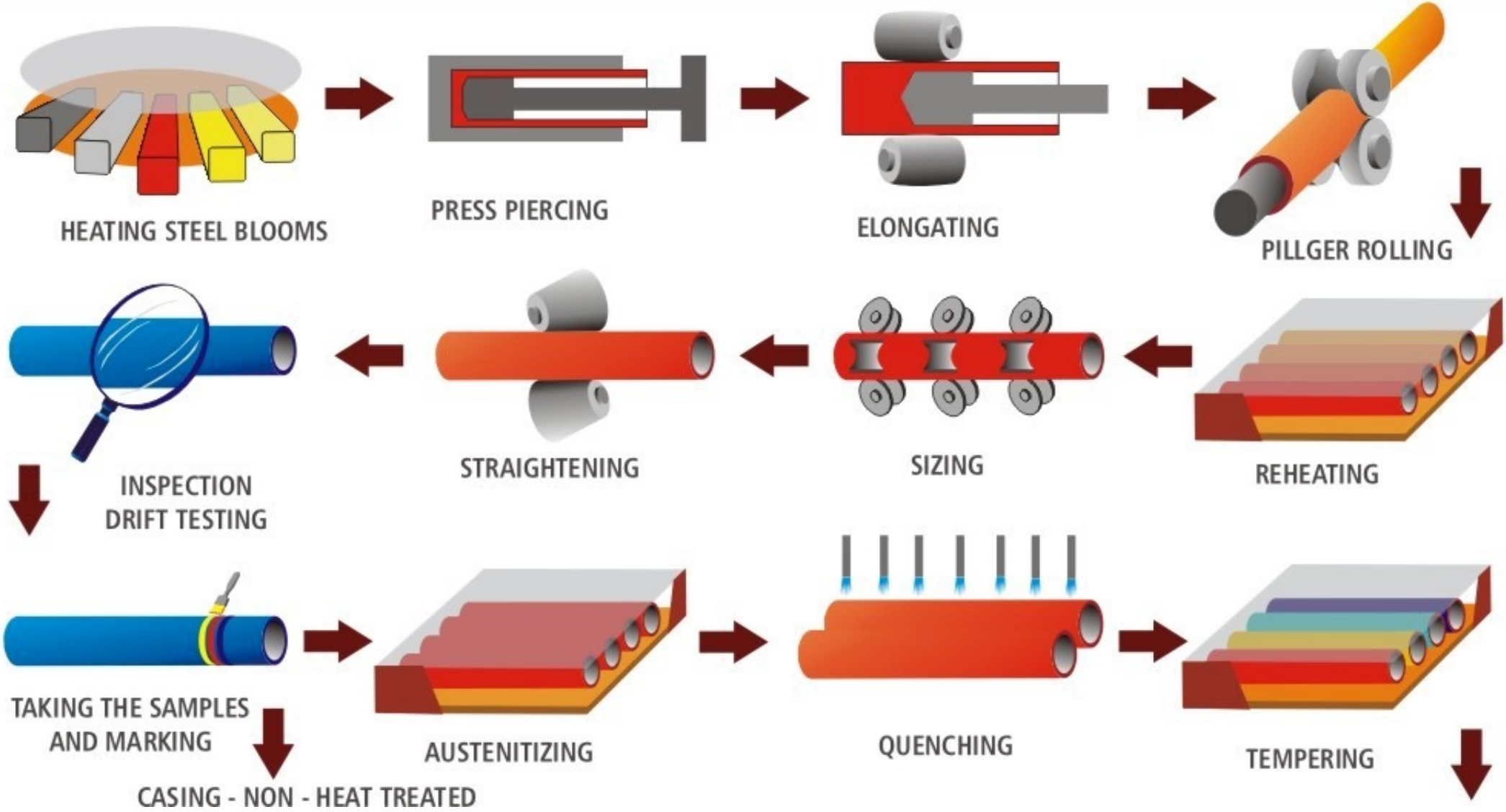


DIMENSIONAL SERIES OF TYPES

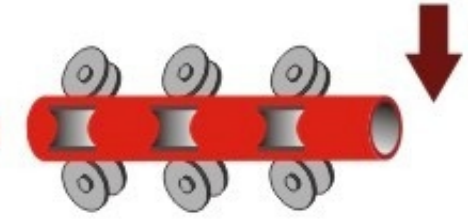
wall gauge mm	full diameter of tubes in mm weight 1 mb																
	121,0	127,0	133,0	139,7	146,0	152,4	159,0	168,3	177,8	193,7	203,0	219,1	229,0	244,5	254,0	267,0	273,0
4,5							17,1										
5,0		15,0	15,8	16,6	17,4		19,0	20,1	21,3								
5,6	15,9	16,8	17,6	18,5	19,4	19,9	21,2	22,5	23,8	26,0							
6,3	17,8	18,8	19,7	20,7	21,7	22,7	23,7	25,2	26,6	29,1	30,5	33,1	34,6				
7,1	19,9	21,0	22,0	23,2	24,3	25,5	26,6	28,2	29,9	32,7	34,3	37,1	38,9	41,6	43,3	45,6	46,6
8,0	22,3	23,5	24,7	26,0	27,2	28,5	29,8	31,6	33,5	36,6	38,5	41,6	43,7	46,7	48,6	51,2	52,3
8,8	24,3	25,7	27,0	28,4	29,8	31,2	32,6	34,6	36,7	40,1	42,2	45,6	47,8	51,2	53,3	56,1	57,3
10,0	27,4	28,9	30,3	32,0	33,5	35,2	36,7	39,0	41,4	45,3	47,6	51,6	54,1	57,8	60,2	63,5	64,9
11,0	29,8	31,5	33,1	34,9	36,6	38,4	40,1	42,7	45,2	49,6	52,1	56,5	59,2	63,3	66,0	69,5	71,1
12,5	33,4	35,3	37,1	39,2	41,2	43,2	45,2	48,0	51,0	55,9	58,8	63,7	66,8	71,5	74,5	78,5	80,3
14,2	37,4	39,5	41,6	43,9	46,2	48,5	50,7	54,0	57,3	62,9	66,2	71,8	75,3	80,6	84,1	88,6	90,6
16,0	41,4	43,8	46,2	48,8	51,3	53,9	56,4	60,1	63,8	70,1	73,8	80,1	84,1	90,2	94,0	99,2	101,0
17,5	44,7	47,5	49,8	52,7	55,5	58,3	61,1	65,1	69,2	76,0	80,1	87,0	91,4	98,0	102,2	107,8	110,0
20,0			55,7	59,0	62,1	65,4	68,6	73,1	77,8	85,7	90,3	98,2	103,2	111,0	115,6	122,0	125,0
22,2					67,8	71,4	74,9	80,0	85,2	93,9	99,1	108,0	113,4	122,0	127,1	134,2	137,0
25,0							82,6	88,3	94,2	104,0	109,8	120,0	125,9	135,0	141,4	149,4	153,0
28,0							90,5	96,9	103,0	114,0	120,9	132,0	139,0	149,0	156,2	165,2	169,0
30,0							95,4	102,0	109,0	121,0	128,1	140,0	147,4	159,0	165,9	175,6	180,0
32,0													155,7		175,4	185,7	
36,0															193,8	205,3	



CASING PIPES PRODUCTION - FLOW CHART







SIZING



STRAIGHTENING



SAMPLING & MARKING



DRIFT TESTING



NDT
(NON-DESTRUCTIVE TESTING)



THREADING



THREAD INSPECTION

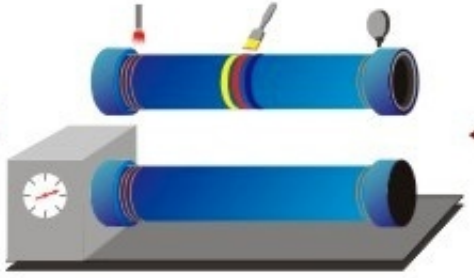


TORQUING THE COUPLINGS



HYDROSTATIC TESTING

RUSTPROOFING AND MARKING



SCREWING THE PROTECTORS,
WEIGHTING AND LENGHT
MEASURMENTS



THIRD PARTY INSPECTION,
IF APPLICABLE



DISPATCHING



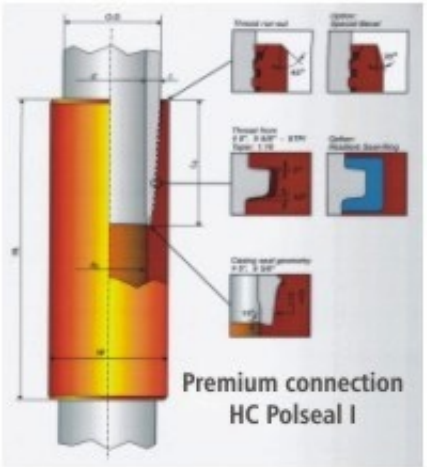
OIL COUNTRY TUBULAR GOODS

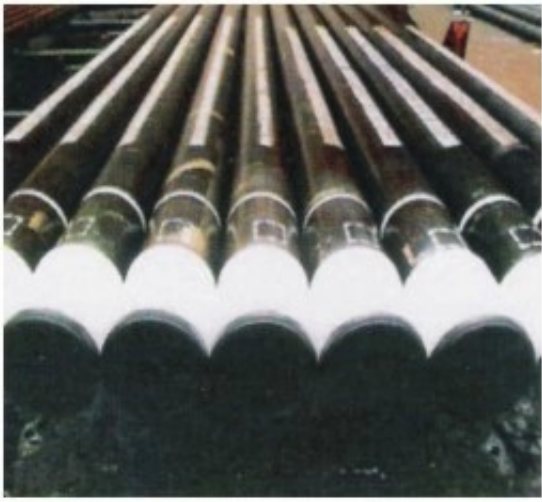
- CASING FOR DEEP-WELL APPLICATIONS ACC. TO API 5CT, WITH GASTIGHT CONNECTIONS
- LINE PIPES FOR OIL AND GAS TRANSPORTATION - ACC. TO API 5L
- PIPES FOR GEOLOGICAL AND HYDROGEOLOGICAL WELL SERVICE
- TUBULAR STEEL PILING
- COUPLINGS ACC. TO API 5CT

CASING PIPES FOR DEEP WELL APPLICATIONS



ACC. TO API 5CT





GASTIGHT CONNECTION

OUTSIDE DIAMETER RANGE:

in.	5"	5 1/2"	6 5/8"	7"	7 5/8"	8 5/8"	9 5/8"
mm	127,0	139,7	168,3	177,8	193,7	219,1	244,5

GRADES :

H 40	J 55	K 55	N 80-I	N 80-Q	L 80 type 1	C 95	P 110

Gastinght connections may also be supplied with teflon seal rings acc. to API 5CT

Pipes are subjected to non-destructive ultrasonic and electromagnetic testing. Pipes and couplings are supplied with the following APIStd 5B threads:

STC - 60° short
LTC - 60° long
BTC - buttress thread
HC Polseal I - Premium connection

LINE PIPES FOR OIL AND GAS TRANSPORTATION

With plain or bevelled ends acc. to API 5L

OUTSIDE DIAMETER RANGE :

in.	6 5/8"	8 5/8"	10 3/4"
mm	168,3	219,1	273,1

GRADES :

A	B	X42	X46	X52	X60

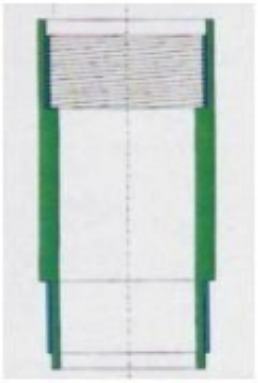
External surfaces may be protected in cooperation with III party by the following coatings:

- Triple-layer insulation (polyethylene, copolymer, epoxy)
- Epoxy resin
- Environment-friendly paint coatings



TUBULAR STEEL PILING

Square thread tube connection



CONNECTION DIAGRAM

We produce pipes according to each customer's individual requirements.

OUTSIDE DIAMETER :

in.	5"	5 1/2"	6 5/8"	7"	7 5/8"	8 5/8"	9 5/8"
mm	127,0	139,7	168,3	177,9	193,7	219,1	244,5

GRADES :

API	H40	J55	K55	N80	L80 type1	C95	P110

Other grades available upon request

COUPLINGS

We produce two types of gastight connections and couplings manufactured in accordance with API 5CT

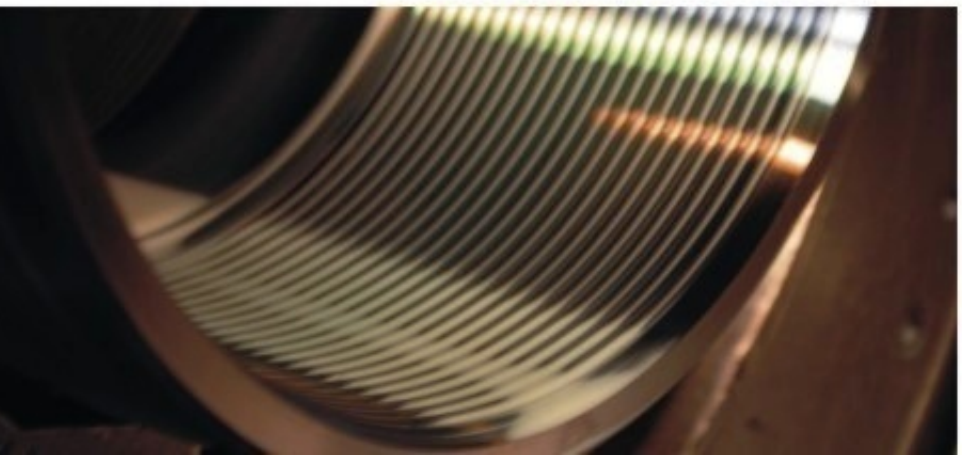
REGULAR - standard OD couplings
SC Special Clearance - standard OD couplings

COUPLING OUTSIDE DIAMETER

	in.	5"	5 1/2"	6 5/8"	7"	7 5/8"	8 5/8"	9 5/8"
Reg. OD	mm	141,30	153,67	187,71	194,46	215,90	244,48	269,88
SCC	mm	136,52	149,22	177,80	187,32	206,38	231,78	257,18
Gastight connection	mm	141,90	154,30	188,30	195,10	216,60	245,10	270,50

GRADES:

H40	J55	K55	N80-I	N80-Q	L80 type1	C95	P110



Paint markings on the outside surface correspond to a specific grade.
Although coupling threads are phosphated, additional protection against corrosion is provided by an apropriate thread compound.

Couplings are supplied with the following API and Std 5B threads:

STC - 60° short
LTC - 60° long
BTC - buttress thread
HC Polseal I - Premium connection



BOILER TUBES

WE PRODUCE:

- Tubes for heat exchangers
- Tubes for operation at high temperatures
- Tubes for chemical plants

Dimension:

- Outside diameter Ø 121 - 273 mm
- Wall thickness 5 - 40 mm

Depending on a operating pressure and tube wall temperature, we offer followings grades accordind to requirements:

Grade	Temperature, °C	Working pressure, MPa
I	Up to 450	Up to 3,1
III	Above 450	Above 3,1



We produce carbon and alloy steel boiler tubes capable to long-term operation at elevated temperatures up to 600°C according to UE + world standards.

Standard	Steel grade	Material number
PN-EN 10216-2+A2:2009 (DIN 17175)	P195GH	1.0348
	P235GH (St 35.8)	1.0345
	P265GH (St 45.8)	1.0425
	16Mo3 (15Mo3)	1.5415
	13CrMo4-5 (13CrMo44)	1.7335
	10CrMo9-10 (10CrMo9 10)	1.7380
	14MoV6-3 (14MoV63)	1.7715

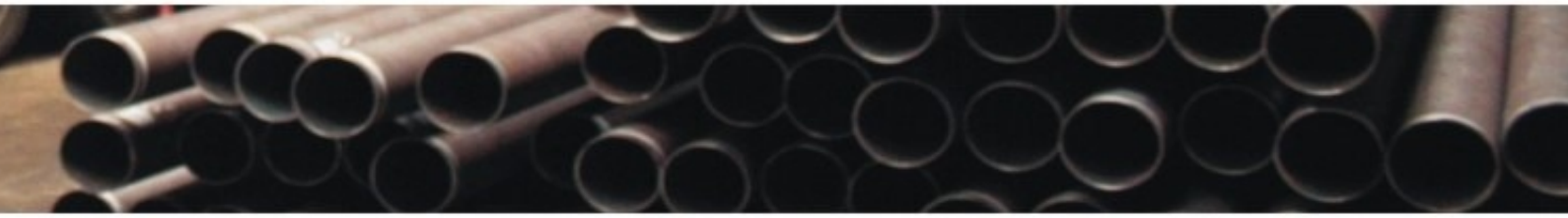
Tubes for heat exchangers and high temperature operation are used for the construction of boilers, pressure vessels and steam/water pipeworks.

WE SUPPLY:

- Tubes with ground outside surfaces
- Tubes with corrosion-protected ouside surfaces
- Tubes with shot-blasted outside surfaces
- Tubes with beavelled ends

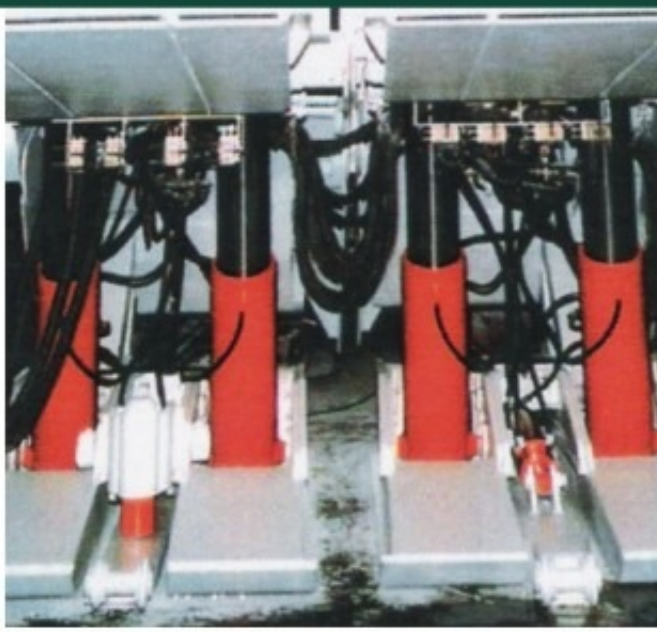
- Tubes in lengths of 3 ÷ 12 m
- Tubes in fixed lengths
- Tubes in multiple lengths





TUBES FOR CYLINDERS

END ENGINEERING PRODUCTS



WE PRODUCE a wide range of heavy wall seamless tubes for mechanical and general engineering applications which include, among others, hydraulic cylinders as well as machine parts and components.

WE MANUFACTURE HEAVY WALL SEAMLESS STEEL TUBES ACCORDING TO THE FOLLOWING STANDARDS:

PN-80-H-74219, BN-85/0648-83
PN-EN 10297 Grades: E275K2, E355K2, E420K2, 34CrMo4, 30CrMo4
PN-H-74248-96 32HA (C 550, C 680, C 730)

DIMENSION :

Outside diameter	Ø 121 - 298 mm
Wall thickness	4,5 - 40 mm
Length	3 - 12 m

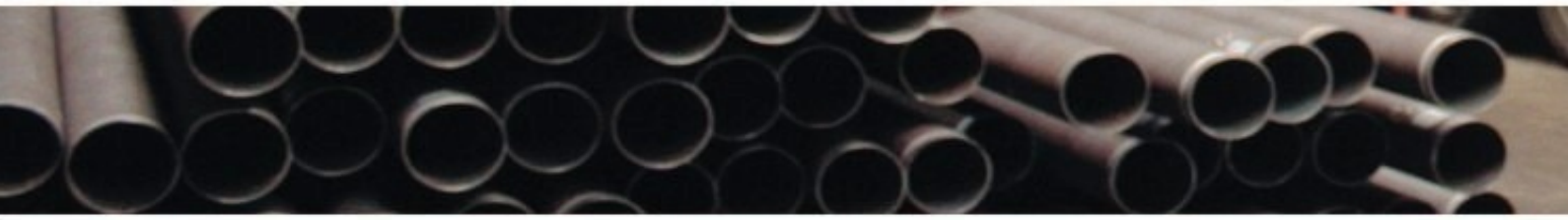
The following dimensions may be ordered from ISD Huta Częstochowa optionally :

Outside diameter up to	Ø 340 mm
Wall thickness up to	60 mm

WE OFFER TUBES FOR PISTONS AND CYLINDERS OF PIT PROPS AS WELL AS FOR BUILDING MACHINES, CRANES, LIFTING GEARS AND RAILWAY BUMPERS.
TUBES FOR CONTINUOUS CASTER ROLLERS, CONVEYOR ROLLERS.
TUBES FOR RINGS AND SLEEVES.
TUBES FOR MACHINE AND DEVICE COMPONENTS.
TUBES FOR HEAVY-DUTY SUPPORTING STRUCTURES.







TUBULAR CONSTRUCTIONS

MODERN TECHNOLOGIES

WE OFFER:

- Seamless pipelines for hydraulic lines
- Ship piping
- Pipelines with flanged joints

BASED ON PROPRIETARY OR ORDERED DESIGN, WE OFFER THE FOLLOWING:

- Supporting structures
- Roof structures
- Tubular supports
  PN-87/M-69008, DIN 18808
- Joint elements
  Diameter range Ø 121 - 298 mm

ALL OFFERED PRODUCTS ARE MANUFACTURED IN ACCORDANCE WITH INTERNATIONAL STANDARDS AS WELL AS OUR CUSTOMERS' REQUIREMENTS

- Lamp posts
- Traffic lights arms
- Lighting structures acc. to our own or ordered designs
- Non-flanged bent arches
- Elbows and pipe fittings
- Pipe crosses, connections

PN-ISO 7005 - 1 KER
PN-EN 253
PN-EN 448
KER 80/2,05
Dimension range Ø 121 - 298 mm

COMPLETE DELIVERIES

TRANSPORTATION SERVICES OFFERED BY ISD HUTA CZĘSTOCHOWA WE OFFER SUPPORT IN EVERY PHASE OF OUR CUSTOMERS' PROJECTS









STRUCTURAL TUBES AND LINE PIPES

WE OFFER:

- TUBES FOR SHIPBUILDING
- TUBES FOR SUPPORT STRUCTURES
- PIPES FOR AIR AND GAS SYSTEM
- PIPES FOR WATER SUPPLY AND CENTRAL HEATING SYSTEM
- CONSTRUCTION PIPES



TECHNICAL DATA:

- Outside diameter range: Ø 121 - 273 mm
- Wall thickness 4,5 - 40 mm
- Length according to standard or to individual requirements

WE OFFER STEEL QUALITIES ACC. TO THE FOLLOWING STANDARDS:

Standard	Grade	Material Number	Description
PN-EN 10210-1:2007 (DIN 1629)	S235JRH (St 37.0)	1.0039	Hot finished structural hollow sections of non-alloy and fine grain structural steels
	S275J0H	1.0149	
	S275J2H	1.0138	
	S355J0H	1.0547	
	S355J2H	1.0576	
	S355NH	1.0539	
	S355NLH	1.0549	
PN-EN 10216-1:2004 (DIN 1629)	P235TR1 (St 37.0)	1.0254	Seamless steel tubes for pressure purposes non-alloy steel tubes with specified room temperature properties
	P235TR2 (St 37.0)	1.0255	
	P265TR1	1.0258	
	P265TR2	1.0259	
PN-EN 10216-3:2005 (DIN 1629)	P275NL1	1.0488	Seamless steel tubes for pressure purposes - alloy fine grain steel tubes
	P275NL2	1.1104	
	P355N (St 52.0)	1.0532	
	P355NH	1.0565	
	P355NL1	1.1106	
	P355NL2	1.0566	



WE HAVE BEEN AUDITED AND CERTIFIED BY API, TÜV, ZETOM AND WE ORGANIZE THIRD PARTY INSPECTIONS PER CUSTOMER REQUEST PERFORMED BY PRS, GL, DNV, LR, ABS, UDT.

IF REQUIRED BY THE CUSTOMER, WE PERFORM:

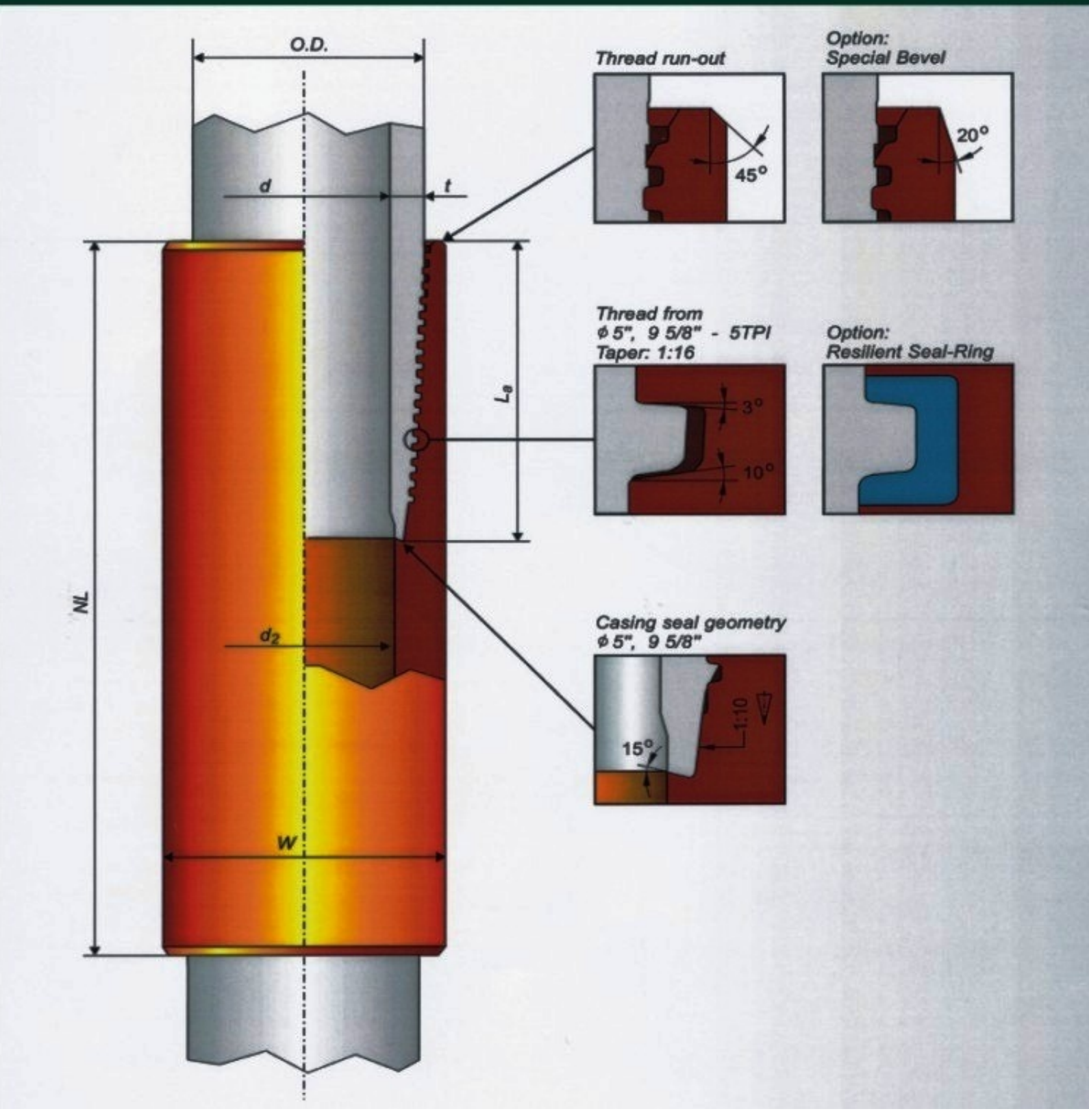
- End bevelling
- Cutting to requested lengths
- Grinding or shot-blasting of external tube surfaces
- Outside surface priming using environment-friendly paints
- Ultrasonic testing
- Impact resistance testing at +20°C to -60°C
- Hydrostatic testing at pressure of up to 130 MPa, depending on customer requirements

ISD HUTA CZĘSTOCHOWA



" HC POLSEAL-1 "

PREMIUM COUPLING CONNECTION



" HC POLSEAL-1 "

The "HC POLSEAL-1" casing joint is a versatile, high-performance non-upset premium coupling connection suitable for use in a combination of environments and well conditions.
For example:
- high pressures,
- high temperatures,
- deviated and horizontal wells,
- deep wells,
- highly corrosive environments.

CHARACTERISTICS :

- metal to metal gas tight seal casing 1:10 taper seal
- improved buttress threads resistant to galling ensure a proper application and distribution of thread compound
- steamlined internal connection profiles allow an excellent fit between pin bore and coupling centre bore, turbulence, pressure losses and corrosion are reduced to a minimum
- long centre fillet in the coupling for good stress distribution in the joint
- the joint effeciency corresponds 100% to the pipe body
- the stress distribution in the pin of the made-up joints greatly reduces the susceptibility of hydrogen embrittlement
- exellent make-up properties due to wide and well-defined torque values

For secial requirements, technical modifications to the standard requirements are available.
Usal options are :
- matched strength; for 100% tensile efficiency of heavy wall casing,
- special clearance for applications requiring such,
- special 20° bevel,
- resilient seal; with an extra teflon seal ring.

"HC POLSEAL-1" 5" (127,0 mm)

PERFORMANCE PROPERTIES / CHARAKTERYSTYKA WYMIAROWA

Nominal Weight Wyróżnik wagowy	PIPE / RURA								COUPLING / ZŁĄCZKA							
	Wall Thickness t Grubość ścianki t		Inside Diameter d Średnica wewnętrzna d		Drift Diameter Śr. trzpienia kontrolnego		Size Wymiar wg		Outside Diameter W Średnica zewnętrzna W		Inside Diameter d, Średnica wewnętrzna d,		Length NL Długość NL		Make-Up Loss La Odległość La	
lb/ft	in	mm	in	mm	in	mm	API	HSC	in	mm	in	mm	in	mm	in	mm
13,00	0,253	6,43	4,494	114,15	4,369	110,97	-	-	5,587	141,90	4,469	113,50	10,512	267,0	4,252	108,00
15,00	0,296	7,52	4,408	111,96	4,283	108,79	-	-	5,587	141,90	4,469	113,50	10,512	267,0	4,252	108,00
18,00	0,362	9,19	4,276	108,61	4,151	105,44	-	-	5,587	141,90	4,429	112,50	10,512	267,0	4,252	108,00
20,30	0,408	10,36	4,184	106,28	4,059	103,11		-	5,587	141,90	4,323	109,80	10,512	267,0	4,252	108,00
20,80	0,422	10,72	4,156	105,56	4,031	102,39		-	5,587	141,90	4,323	109,80	10,512	267,0	4,252	108,00
21,40	0,437	11,10	4,126	104,80	4,001	101,63	-	-	5,587	141,90	4,323	109,80	10,512	267,0	4,252	108,00
23,20	0,478	12,14	4,044	102,72	3,919	99,54	-	-	5,587	141,90	4,323	109,80	10,512	267,0	4,252	108,00
24,10	0,500	12,70	4,000	101,60	3,875	98,43	-	-	5,587	141,90	4,323	109,80	10,512	267,0	4,252	108,00

Nominal Weight Wyróżnik wagowy	CALCULATED WEIGHT CIĘŻAR OBLICZENIOWY						CRITICAL CROSS-SECTION POLE PRZEKROJU POPRZECZNEGO				PIPE BODY YIELD STRENGTH GRANICA PLASTYCZNOŚCI KORPUSU RURY				
	Plain End Wpe Ciężar rury z gładkimi końcami Wpe		Weight Gain ew Przyrost ciężaru ew		Weight Coupling Ciężar złączki		Pipe Rury		Coupling Złączki		J/K 55	N80	L80	C95	P110
lb/ft	lb/ft	kg/m	lb	kg	lb	kg	sq.in.	mm^2	sq.in.	mm^2			x 1000 lb		
13,00	12,84	19,11	9,13	4,14	17,95	8,14	3,773	2434	5,499	3548	208	302	302	358	415
15,00	14,88	22,14	8,07	3,66	17,95	8,14	4,374	2822	5,499	3548	241	350	350	416	481
18,00	17,95	26,71	6,53	2,96	18,01	8,17	5,275	3403	5,499	3548	290	422	422	501	580
20,30	20,01	29,78	5,67	2,57	18,23	8,27	5,886	3797	5,499	3548	302	440	440	522	605
20,80	20,63	30,70	5,35	2,43	18,23	8,27	6,069	3915	5,499	3548	302	440	440	522	605
21,40	21,32	31,73	4,99	2,26	18,23	8,27	6,264	4041	5,499	3548	302	440	440	522	605
23,20	23,11	34,39	4,05	1,84	18,23	8,27	6,791	4381	5,499	3548	302	440	440	522	605
24,10	24,05	35,79	3,56	1,61	18,23	8,27	7,069	4560	5,499	3548	302	440	440	522	605

RECOMMENDED FIELD MAKE-UP TORQUE / ZALECANE MOMENTY NAKRĘCANIA

Nominal Weight Wyróżnik wagowy	J/K 55			N/L80			C95			P110		
	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.
lb/ft	ft-lb			ft-lb			ft-lb			ft-lb		
13,00	3780	4200	4620	4110	4560	5010	4370	4850	5330	4560	5060	5560
15,00	4230	4700	5170	4630	5140	5650	4820	5350	5880	5020	5570	6120
18,00	5140	5710	6280	5540	6150	6760	5800	6440	7080	6060	6730	7400
20,30	6190	6870	7550	6840	7590	8340	7170	7960	8750	7470	8300	9130
20,80	6320	7020	7720	6840	7590	8340	7170	7960	8750	7830	8700	9570
21,40	6450	7160	7870	7170	7960	8750	7470	8300	9130	7830	8700	9570
23,20	6840	7590	8340	7470	8300	9130	7830	8700	9570	8150	9050	9950
24,10	6840	7590	8340	7470	8300	9130	7830	8700	9570	8460	9400	10340

"HC POLSEAL-1" 5 1/2" (139,7 mm)

PERFORMANCE PROPERTIES / CHARAKTERYSTYKA WYMIAROWA

Nominal Weight Wyróżnik wagowy	PIPE / RURA								COUPLING / ZŁĄCZKA							
	Wall Thickness t Grubość ścianki t		Inside Diameter d Średnica wewnętrzna d		Drift Diameter Śr. trzpienia kontrolnego		Size Wymiar wg		Outside Diameter W Średnica zewnętrzna W		Inside Diameter d, Średnica wewnętrzna d,		Length NL Długość NL		Make-Up Loss La Odległość La	
lb/ft	in	mm	in	mm	in	mm	API	HSC	in	mm	in	mm	in	mm	in	mm
15,50	0,275	6,98	4,950	125,73	4,825	122,56	-	-	6,075	154,30	4,961	126,00	10,669	271,0	4,331	110,00
17,00	0,304	7,72	4,892	124,26	4,767	121,08	-	-	6,075	154,30	4,961	126,00	10,669	271,0	4,331	110,00
20,00	0,361	9,17	4,778	121,36	4,653	118,19	-	-	6,075	154,30	4,929	125,20	10,669	271,0	4,331	110,00
23,00	0,415	10,54	4,670	118,62	4,545	115,44	-	-	6,075	154,30	4,843	123,00	10,669	271,0	4,331	110,00
26,00	0,476	12,09	4,548	115,52	4,423	112,34		-	6,075	154,30	4,843	123,00	10,669	271,0	4,331	110,00

Nominal Weight Wyróżnik wagowy	CALCULATED WEIGHT CIĘŻAR OBLICZENIOWY						CRITICAL CROSS-SECTION POLE PRZEKROJU POPRZECZNEGO				PIPE BODY YIELD STRENGTH GRANICA PLASTYCZNOŚCI KORPUSU RURY				
	Plain End Wpe Ciężar rury z gładkimi końcami Wpe		Weight Gain ew Przyrost ciężaru ew		Weight Coupling Ciężar złączki		Pipe Rury		Coupling Złączki		J/K 55	N80	L80	C95	P110
lb/ft	lb/ft	kg/m	lb	kg	lb	kg	sq.in.	mm^2	sq.in.	mm^2			x 1000 lb		
15,50	15,36	22,86	9,05	4,10	19,62	8,90	4,514	2912	5,977	3856	248	361	361	429	496
17,00	16,89	25,14	8,24	3,74	19,62	8,90	4,962	3201	5,977	3856	273	397	397	471	546
20,00	19,83	29,51	6,76	3,07	19,69	8,93	5,828	3760	5,977	3856	321	466	466	554	641
23,00	22,56	33,57	5,48	2,49	19,86	9,01	6,630	4277	5,977	3856	329	478	478	568	657
26,00	25,54	38,01	3,91	1,77	19,86	9,01	7,513	4847	5,977	3856	329	478	478	568	657

RECOMMENDED FIELD MAKE-UP TORQUE / ZALECANE MOMENTY NAKRĘCANIA

Nominal Weight Wyróżnik wagowy	J/K 55			N/L80			C95			P110		
	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.
lb/ft	ft-lb			ft-lb			ft-lb			ft-lb		
15,50	4230	4700	5170	4630	5140	5650	4880	5420	5960	5140	5710	6280
17,00	4560	5060	5560	4950	5500	6050	5220	5790	6360	5480	6080	6680
20,00	5340	5930	6520	5860	6510	7160	6120	6800	7480	6450	7160	7870
23,00	6390	7090	7790	7170	7960	8750	7470	8300	9130	7830	8700	9570
26,00	6840	7590	8340	7470	8300	9130	8150	9050	9950	8460	9400	10340

"HC POLSEAL-1" 6 5/8" (168,3 mm)

PERFORMANCE PROPERTIES / CHARAKTERYSTYKA WYMIAROWA

Nominal Weight Wyróżnik wagowy	PIPE / RURA								COUPLING / ZŁĄCZKA							
	Wall Thickness t Grubość ścianki t		Inside Diameter d Średnica wewnętrzna d		Drift Diameter Śr. trzpienia kontrolnego		Size Wymiar wg		Outside Diameter W Średnica zewnętrzna W		Inside Diameter d_c Średnica wewnętrzna d_c		Length NL Długość NL		Make-Up Loss La Odległość La	
lb/ft	in	mm	in	mm	in	mm	API	HSC	in	mm	in	mm	in	mm	in	mm
20,00	0,288	7,32	6,049	153,64	5,924	150,47	-	-	7,413	188,30	6,079	154,40	11,063	281,0	4,528	115,00
23,20	0,330	8,38	5,966	151,54	5,841	148,34		-	7,413	188,30	6,079	154,40	11,063	281,0	4,528	115,00
24,00	0,352	8,94	5,921	150,39	5,796	147,22	-	-	7,413	188,30	6,039	153,40	11,063	281,0	4,528	115,00
28,00	0,417	10,59	5,791	147,09	5,666	143,92	-	-	7,413	188,30	5,965	151,50	11,063	281,0	4,528	115,00
32,00	0,478	12,06	5,675	144,15	5,550	140,97	-	-	7,413	188,30	5,965	151,50	11,063	281,0	4,528	115,00
35,00	0,525	13,34	5,574	141,59	5,450	138,40		-	7,413	188,30	5,965	151,50	11,063	281,0	4,528	115,00

Nominal Weight Wyróżnik wagowy	CALCULATED WEIGHT CIĘŻAR OBLICZENIOWY						CRITICAL CROSS-SECTION POLE PRZEKROJU POPRZECZNEGO				PIPE BODY YIELD STRENGTH GRANICA PLASTYCZNOŚCI KORPUSU RURY				
	Plain End Wpe Ciężar rury z gładkimi końcami Wpe		Weight Gain ew Przyrost ciężaru ew		Weight Coupling Ciężar złączki		Pipe Rury		Coupling Złączki		J/K 55	N80	L80	C95	P110
lb/ft	lb/ft	kg/m	lb	kg	lb	kg	sq.in.	mm^2	sq.in.	mm^2			x 1000 lb		
20,00	19,51	29,03	18,53	8,41	32,32	14,66	5,732	3699	9,669	6238	315	459	459	545	631
23,20	22,19	33,02	17,07	7,74	32,32	14,66	6,526	4210	9,669	6238	359	522	522	620	718
24,00	23,60	35,12	16,42	7,45	32,43	14,71	6,937	4475	9,669	6238	382	555	555	659	763
28,00	27,67	41,18	14,44	6,55	32,67	14,82	8,133	5247	9,669	6238	447	651	651	773	894
32,00	31,23	46,48	12,50	5,67	32,67	14,82	9,177	5921	9,669	6238	505	734	734	872	1009
35,00	34,20	50,90	10,88	4,94	32,67	14,82	10,061	6491	9,669	6238	532	744	744	919	1064

RECOMMENDED FIELD MAKE-UP TORQUE / ZALECANE MOMENTY NAKRĘCANIA

Nominal Weight Wyróżnik wagowy	J/K 55			N/L80			C95			P110		
	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.
lb/ft	ft-lb			ft-lb			ft-lb			ft-lb		
20,00	5080	5640	6200	5740	6370	7000	6060	6730	7400	6450	7160	7870
23,20	5600	6220	6840	6250	6940	7630	6510	7230	7950	7170	7960	8750
24,00	6250	6940	7630	7140	7960	7850	7470	8300	9130	7830	8700	9570
28,00	7830	8700	9570	8780	9750	10720	9500	10500	11500	10100	11200	12300
32,00	8150	9050	9950	9500	10500	11500	10100	11200	12300	10450	11550	12650
35,00	8780	9750	10720	9850	10850	11850	10450	11550	12650	11100	12300	13500

"HC POLSEAL-1" 7" (177,8 mm)

PERFORMANCE PROPERTIES / CHARAKTERYSTYKA WYMIAROWA

Nominal Weight Wyróżnik wagowy	PIPE / RURA								COUPLING / ZŁĄCZKA							
	Wall Thickness t Grubość ścianki t		Inside Diameter d Średnica wewnętrzna d		Drift Diameter Śr. trzpienia kontrolnego		Size Wymiar wg		Outside Diameter W Średnica zewnętrzna W		Inside Diameter d, Średnica wewnętrzna d,		Length NL Długość NL		Make-Up Loss La Odległość La	
lb/ft	in	mm	in	mm	in	mm	API	HSC	in	mm	in	mm	in	mm	in	mm
23,00	0,317	8,05	6,366	161,70	6,241	158,52	-	-	7,681	195,10	6,437	163,50	11,457	291,0	4,724	120,00
26,00	0,362	9,19	6,276	159,41	6,151	156,24	-	-	7,681	195,10	6,397	162,50	11,457	291,0	4,724	120,00
29,00	0,408	10,36	6,184	157,10	6,059	153,90	-	-	7,681	195,10	6,350	161,30	11,457	291,0	4,724	120,00
32,00	0,453	11,51	6,094	154,78	5,969	151,61	-	-	7,681	195,10	6,350	161,30	11,457	291,0	4,724	120,00
35,00	0,498	12,65	6,004	152,50	5,879	149,33	-	-	7,681	195,10	6,350	161,30	11,457	291,0	4,724	120,00
38,00	0,540	13,72	5,920	150,37	5,795	147,19	-	-	7,681	195,10	6,350	161,30	11,457	291,0	4,724	120,00
41,00	0,590	14,98	5,820	147,83	5,695	144,65		-	7,681	195,10	6,350	161,30	11,457	291,0	4,724	120,00
44,00	0,640	16,25	5,720	145,30	5,595	142,12		-	7,681	195,10	6,350	161,30	11,457	291,0	4,724	120,00
46,00	0,670	17,02	5,660	143,76	5,535	140,58		-	7,681	195,10	6,350	161,30	11,457	291,0	4,724	120,00

Nominal Weight Wyróżnik wagowy	CALCULATED WEIGHT CIĘŻAR OBLICZENIOWY						CRITICAL CROSS-SECTION POLE PRZEKROJU POPRZECZNEGO				PIPE BODY YIELD STRENGTH GRANICA PLASTYCZNOŚCI KORPUSU RURY				
	Plain End Wpe Ciężar rury z gładkimi końcami Wpe		Weight Gain ew Przyrost ciężaru ew		Weight Coupling Ciężar złączki		Pipe Rury		Coupling Złączki		J/K 55	N80	L80	C95	P110
lb/ft	lb/ft	kg/m	lb	kg	lb	kg	sq.in.	mm^2	sq.in.	mm^2			x 1000 lb		
23,00	22,65	33,71	14,66	6,65	31,13	14,12	6,655	4294	9,066	5849	366	532	532	632	732
26,00	25,69	38,23	13,09	5,94	31,26	14,18	7,549	4870	9,066	5849	415	604	604	717	830
29,00	28,75	42,79	11,50	5,22	31,39	14,24	8,449	5451	9,066	5849	465	676	676	803	929
32,00	31,70	47,18	9,85	4,47	31,39	14,24	9,317	6011	9,066	5849	499	725	725	861	997
35,00	34,61	51,51	8,21	3,72	31,39	14,24	10,172	6563	9,066	5849	499	725	725	861	997
38,00	37,29	55,49	6,71	3,04	31,39	14,24	10,959	7070	9,066	5849	499	725	725	861	997
41,00	40,39	60,11	4,97	2,25	31,39	14,24	11,881	7665	9,066	5849	499	725	725	861	997
44,00	43,47	64,69	3,24	1,47	31,39	14,24	12,783	8247	9,066	5849	499	725	725	861	997
46,00	45,29	67,40	2,22	1,01	31,39	14,24	13,325	8597	9,066	5849	499	725	725	861	997

RECOMMENDED FIELD MAKE-UP TORQUE / ZALECANE MOMENTY NAKRĘCANIA

Nominal Weight Wyróżnik wagowy	J/K 55			N/L80			C95			P110		
	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.
lb/ft	ft-lb			ft-lb			ft-lb			ft-lb		
23,00	5600	6220	6840	6320	7020	7720	6840	7590	8340	7170	7960	8570
26,00	6510	7230	7950	7470	8300	9130	7830	8700	9570	8460	9400	10340
29,00	7470	8300	9130	8460	9400	10340	9150	10150	11150	9850	10850	11850
32,00	8150	9050	9950	9150	10150	11150	9850	10850	11850	10450	11550	12650
35,00	8460	9400	10340	9500	10500	11500	10100	11200	12300	10850	11950	13050
38,00	8780	9750	10720	10100	11200	12300	10450	11550	12650	11100	12300	13500
41,00	9500	10500	11500	10450	11550	12650	11100	12300	13500	11700	13000	14300
44,00	11100	12300	13500	12450	13750	15050	13050	14450	15850	13700	15200	16700
46,00	11700	13000	14300	12700	14100	15500	13050	14450	15850	13700	15200	16700

"HC POLSEAL-1" 7 5/8" (193,7 mm)

PERFORMANCE PROPERTIES / CHARAKTERYSTYKA WYMIAROWA

Nominal Weight Wyróżnik wagowy	PIPE / RURA								COUPLING / ZŁĄCZKA							
	Wall Thickness t Grubość ścianki t		Inside Diameter d Średnica wewnętrzna d		Drift Diameter Śr. trzpienia kontrolnego		Size Wymiar wg		Outside Diameter W Średnica zewnętrzna W		Inside Diameter d_c Średnica wewnętrzna d_c		Length NL Długość NL		Make-Up Loss La Odległość La	
lb/ft	in	mm	in	mm	in	mm	API	HSC	in	mm	in	mm	in	mm	in	mm
26,40	0,328	8,33	6,969	177,01	6,844	173,84	-	-	8,528	216,60	7,051	179,10	11,850	301,0	4,921	125,00
29,70	0,375	9,52	6,875	174,63	6,750	171,45	-	-	8,528	216,60	7,012	178,10	11,850	301,0	4,921	125,00
33,70	0,430	10,92	6,765	171,83	6,640	168,66	-	-	8,528	216,60	6,949	176,50	11,850	301,0	4,921	125,00
35,80	0,453	11,81	6,695	170,05	6,570	166,88		-	8,528	216,60	6,949	176,50	11,850	301,0	4,921	125,00
39,00	0,500	12,70	6,625	168,28	6,500	165,10	-	-	8,528	216,60	6,949	176,50	11,850	301,0	4,921	125,00
42,80	0,562	14,27	6,501	165,13	6,376	161,95	-	-	8,528	216,60	6,949	176,50	11,850	301,0	4,921	125,00
45,30	0,595	15,11	6,435	163,45	6,310	160,27	-	-	8,528	216,60	6,949	176,50	11,850	301,0	4,921	125,00
47,10	0,625	15,88	6,375	161,92	6,250	158,75	-	-	8,528	216,60	6,949	176,50	11,850	301,0	4,921	125,00

Nominal Weight Wyróżnik wagowy	CALCULATED WEIGHT CIĘŻAR OBLICZENIOWY						CRITICAL CROSS-SECTION POLE PRZEKROJU POPRZECZNEGO				PIPE BODY YIELD STRENGTH GRANICA PLASTYCZNOŚCI KORPUSU RURY				
	Plain End Wpe Ciężar rury z gładkimi końcami Wpe		Weight Gain ew Przyrost ciężaru ew		Weight Coupling Ciężar złączki		Pipe Rury		Coupling Złączki		J/K 55	N80	L80	C95	P110
lb/ft	lb/ft	kg/m	lb	kg	lb	kg	sq.in.	mm^2	sq.in.	mm^2			x 1000 lb		
26,40	25,59	38,08	25,92	11,76	45,08	20,45	7,519	4851	12,901	8323	414	602	602	714	827
29,70	29,06	43,25	24,15	10,95	45,31	20,55	8,541	5510	12,901	8323	470	683	683	811	939
33,70	33,07	49,21	22,28	10,11	45,75	20,75	9,720	6271	12,901	8323	535	778	778	923	1069
35,80	34,70	51,64	21,33	9,68	45,75	20,75	10,460	6748	12,901	8323	575	837	837	994	1150
39,00	38,08	56,67	19,38	8,79	45,75	20,75	11,192	7221	12,901	8323	616	895	895	1063	1231
42,80	42,43	63,14	16,87	7,65	45,75	20,75	12,470	8045	12,901	8323	686	998	998	1185	1371
45,30	44,71	66,54	15,55	7,05	45,75	20,75	13,141	8478	12,901	8323	723	1051	1051	1248	1445
47,10	46,77	69,60	14,36	6,51	45,75	20,75	13,745	8868	12,901	8323	756	1100	1100	1306	1512

RECOMMENDED FIELD MAKE-UP TORQUE / ZALECANE MOMENTY NAKRĘCANIA

Nominal Weight Wyróżnik wagowy	J/K 55			N/L80			C95			P110		
	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.
lb/ft	ft-lb			ft-lb			ft-lb			ft-lb		
26,40	6450	7160	7870	7170	7960	8750	7830	8700	9570	8150	9050	9950
29,70	7470	8300	9130	8460	9400	10340	9150	10150	11150	9850	10850	11850
33,70	9150	10150	11150	10450	11550	12650	11100	12300	13500	12100	13400	14700
35,80	9500	10500	11500	10850	11950	13050	11700	13000	14300	12450	13750	15050
39,00	9850	10850	11850	11100	12300	13500	12100	13400	14700	12700	14100	15500
42,80	10850	11950	13050	12100	13400	14700	12700	14100	15500	13700	15200	16700
45,30	11100	12300	13500	12450	13750	15050	13050	14450	15850	13700	15200	16700
47,10	11100	12300	13500	12450	13750	15050	13050	14450	15850	13700	15200	16700

"HC POLSEAL-1" 8 5/8" (219,1 mm)

PERFORMANCE PROPERTIES / CHARAKTERYSTYKA WYMIAROWA

Nominal Weight Wyróżnik wagowy	PIPE / RURA								COUPLING / ZŁĄCZKA							
	Wall Thickness t Grubość ścianki t		Inside Diameter d Średnica wewnętrzna d		Drift Diameter Śr. trzpienia kontrolnego		Size Wymiar wg		Outside Diameter W Średnica zewnętrzna W		Inside Diameter d_c Średnica wewnętrzna d_c		Length NL Długość NL		Make-Up Loss La Odległość La	
lb/ft	in	mm	in	mm	in	mm	API	HSC	in	mm	in	mm	in	mm	in	mm
28,00	0,304	7,72	8,017	203,63	7,892	200,46	-	-	9,650	245,10	8,047	204,40	12,087	307,0	5,039	128,00
32,00	0,352	8,94	7,921	201,19	7,796	198,02	-	-	9,650	245,10	8,047	204,40	12,087	307,0	5,039	128,00
36,00	0,400	10,16	7,825	198,75	7,700	195,58	-	-	9,650	245,10	7,992	203,00	12,087	307,0	5,039	128,00
40,00	0,450	11,43	7,725	196,21	7,600	193,04	-	-	9,650	245,10	7,992	203,00	12,087	307,0	5,039	128,00
44,00	0,500	12,70	7,625	193,68	7,500	190,50	-	-	9,650	245,10	7,992	203,00	12,087	307,0	5,039	128,00
49,00	0,557	14,15	7,511	190,78	7,386	187,60	-	-	9,650	245,10	7,992	203,00	12,087	307,0	5,039	128,00
52,00	0,595	15,11	7,435	188,85	7,310	185,67		-	9,650	245,10	7,992	203,00	12,087	307,0	5,039	128,00

Nominal Weight Wyróżnik wagowy	CALCULATED WEIGHT CIĘŻAR OBLICZENIOWY						CRITICAL CROSS-SECTION POLE PRZEKROJU POPRZECZNEGO				PIPE BODY YIELD STRENGTH GRANICA PLASTYCZNOŚCI KORPUSU RURY				
	Plain End Wpe Ciężar rury z gładkimi końcami Wpe		Weight Gain ew Przyrost ciężaru ew		Weight Coupling Ciężar złączki		Pipe Rury		Coupling Złączki		J/K 55	N80	L80	C95	P110
lb/ft	lb/ft	kg/m	lb	kg	lb	kg	sq.in.	mm^2	sq.in.	mm^2			x 1000 lb		
28,00	27,04	40,24	36,72	16,66	57,92	26,27	7,947	5128	16,401	10581	437	636	636	755	874
32,00	31,13	46,33	34,32	15,57	57,92	26,27	9,149	5903	16,401	10581	503	732	732	869	1006
36,00	35,17	52,34	32,14	14,58	58,11	26,36	10,336	6668	16,401	10581	568	827	827	982	1137
40,00	39,33	58,53	29,69	13,47	58,11	26,36	11,557	7456	16,401	10581	636	925	925	1098	1271
44,00	43,43	64,63	27,28	12,37	58,11	26,36	12,763	8234	16,401	10581	702	1021	1021	1212	1404
49,00	48,04	71,49	24,58	11,15	58,11	26,36	14,118	9108	16,401	10581	776	1129	1129	1341	1553
52,00	51,03	75,94	22,82	10,35	58,11	26,36	15,010	9684	16,401	10581	826	1201	1201	1426	1651

RECOMMENDED FIELD MAKE-UP TORQUE / ZALECANE MOMENTY NAKRĘCANIA

Nominal Weight Wyróżnik wagowy	J/K 55			N/L80			C95			P110		
	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.
lb/ft	ft-lb			ft-lb			ft-lb			ft-lb		
28,00	6840	7590	8340	7830	8700	9570	8460	9400	10340	9150	10150	11150
32,00	7470	8300	9130	8460	9400	10340	9150	10150	11150	9850	10850	11850
36,00	9150	10150	11150	10450	11550	12650	11100	12300	13500	12100	13400	14700
40,00	9850	10850	11850	11100	12300	13500	12100	13400	14700	12700	14100	15500
44,00	10450	11550	12650	11700	13000	14300	12700	14100	15500	13700	15200	16700
49,00	11100	12300	13500	12450	13750	15050	13700	15200	16700	14400	15900	17400
52,00	11700	13000	14300	13050	14450	15850	13700	15200	16700	14400	15900	17400

"HC POLSEAL-1" 9 5/8" (244,5 mm)

PERFORMANCE PROPERTIES / CHARAKTERYSTYKA WYMIAROWA

Nominal Weight Wyróżnik wagowy	PIPE / RURA								COUPLING / ZŁĄCZKA							
	Wall Thickness t Grubość ścianki t		Inside Diameter d Średnica wewnętrzna d		Drift Diameter Śr. trzpienia kontrolnego		Size Wymiar wg		Outside Diameter W Średnica zewnętrzna W		Inside Diameter d, Średnica wewnętrzna d,		Length NL Długość NL		Make-Up Loss La Odległość La	
lb/ft	in	mm	in	mm	in	mm	API	HSC	in	mm	in	mm	in	mm	in	mm
36,00	0,352	8,94	8,921	226,60	8,765	222,63	-	-	10,650	270,50	9,047	229,80	12,087	307,0	5,039	128,00
40,00	0,395	10,03	8,825	224,41	8,679	220,45	-	-	10,650	270,50	9,000	228,60	12,087	307,0	5,039	128,00
43,50	0,435	11,05	8,755	222,38	8,599	218,41	-	-	10,650	270,50	8,956	227,50	12,087	307,0	5,039	128,00
47,00	0,472	11,99	8,681	220,50	8,525	216,54	-	-	10,650	270,50	8,956	227,50	12,087	307,0	5,039	128,00
53,50	0,545	13,84	8,535	216,79	8,379	212,83	-	-	10,650	270,50	8,956	227,50	12,087	307,0	5,039	128,00
58,40	0,595	15,11	8,435	214,25	8,279	210,29	-	-	10,650	270,50	8,956	227,50	12,087	307,0	5,039	128,00
59,40	0,609	15,47	8,407	213,54	8,251	209,58	-	-	10,650	270,50	8,956	227,50	12,087	307,0	5,039	128,00
61,10	0,625	14,88	8,375	212,73	8,219	208,76		-	10,650	270,50	8,956	227,50	12,087	307,0	5,039	128,00

Nominal Weight Wyróżnik wagowy	CALCULATED WEIGHT CIĘŻAR OBLICZENIOWY						CRITICAL CROSS-SECTION POLE PRZEKROJU POPRZECZNEGO				PIPE BODY YIELD STRENGTH GRANICA PLASTYCZNOŚCI KORPUSU RURY				
	Plain End Wpe Ciężar rury z gładkimi końcami Wpe		Weight Gain ew Przyrost ciężaru ew		Weight Coupling Ciężar złączki		Pipe Rury		Coupling Złączki		J/K 55	N80	L80	C95	P110
lb/ft	lb/ft	kg/m	lb	kg	lb	kg	sq.in.	mm²	sq.in.	mm²			x 1000 lb		
36,00	34,89	51,92	36,65	16,62	63,98	29,02	10,254	6615	18,208	11747	564	820	820	974	1128
40,00	38,97	58,00	34,65	15,72	64,38	29,20	11,454	7390	18,208	11747	630	916	916	1088	1260
43,50	42,73	63,59	32,75	14,86	64,68	29,34	12,559	8103	18,208	11747	691	1005	1005	1193	1381
47,00	46,18	58,73	30,72	13,93	64,68	29,34	11,557	8756	18,208	11747	746	1086	1086	1289	1493
53,50	52,90	78,73	26,77	12,14	64,68	29,34	15,546	10030	18,208	11747	855	1244	1244	1477	1710
58,40	57,44	85,48	24,11	10,94	64,68	29,34	16,879	10890	18,208	11747	928	1350	1350	1604	1857
59,40	58,70	87,36	23,56	10,69	64,68	29,34	17,255	11132	18,208	11747	949	1380	1380	1639	1897
61,10	60,08	89,41	22,56	10,23	64,68	29,34	17,675	11403	18,208	11747	972	1414	1414	1679	1944

RECOMMENDED FIELD MAKE-UP TORQUE / ZALECANE MOMENTY NAKRĘCANIA

Nominal Weight Wyróżnik wagowy	J/K 55			N/L80			C95			P110		
	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.	min.	opt.	max.
lb/ft	ft-lb			ft-lb			ft-lb			ft-lb		
36,00	7830	8700	9750	9150	10150	11150	10100	11200	12300	10850	11950	13050
40,00	9500	10500	11500	11100	12300	13500	12100	13400	14700	13050	14450	15850
43,50	10850	11950	13050	12700	14100	15500	13700	15200	16400	14400	15900	17400
47,00	11100	12300	13500	13050	14450	15850	14400	15900	17400	14400	15900	17400
53,50	12100	13400	14700	14400	15900	17400	14400	15900	17400	14400	15900	17400
58,40	12100	13400	14700	14400	15900	17400	14400	15900	17400	14400	15900	17400
59,40	12100	13400	14700	14400	15900	17400	14400	15900	17400	14400	15900	17400
61,10	12100	13400	14700	14400	15900	17400	14400	15900	17400	14400	15900	17400

SPECIAL DRIFT DIMENSIONS

DRIFT DIAMETER FOR MOST COMMON BIT SIZES
THESE DRIFT DIAMETERS SHALL BE SPECIFIED IN THE PURCHASE ORDER

DESIGNATION		PIPE				DRIFT MANDREL DIMENSIONS			
Size	Weight	Outside diameter		Wall thickness		Length minimum		Diameter minimum	
in	lb/ft	in	mm	in	mm	in	mm	in	mm
7"	23,00	7,000	177,80	0,317	8,05	6	152	6,250	158,75
7"	32,00	7,000	177,80	0,453	11,51	6	152	6,000	152,40
8 5/8"	32,00	8,625	219,08	0,352	8,94	6	152	7,875	200,02
8 5/8"	40,00	8,625	219,08	0,450	11,43	6	152	7,625	193,68
9 5/8"	40,00	9,625	244,48	0,395	10,03	12	305	8,750	222,25
9 5/8"	53,50	9,625	244,48	0,545	13,84	12	305	8,500	215,90
9 5/8"	58,40	9,625	244,48	0,595	15,11	12	305	8,375	212,72

API SPECIAL DRIFT ACCORDING TO API Spec 5CT, EIGHTH EDITION, JULY 1, 2005, ISO 11960:2004 - TABLE C32, E32

ŚREDNICA TRZPIENIA KONTROLNEGO DLA NAJCZĘŚCIEJ STOSOWANEGO WYMIARU ŚWIDRA
WYMIAR TEGO TRZPIENIA NALEŻY PODAĆ W ZAMÓWIENIU ODBIORCY

OZNACZENIE		RURA				WYMIAR TRZPIENIA KONTROLNEGO			
Wymiar	Wyróżnik wagowy	Średnica zewnętrzna		Grubość ścianki		Długość minimum		Średnica minimum	
in	lb/ft	in	mm	in	mm	in	mm	in	mm
7"	23,00	7,000	177,80	0,317	8,05	6	152	6,250	158,75
7"	32,00	7,000	177,80	0,453	11,51	6	152	6,000	152,40
8 5/8"	32,00	8,625	219,08	0,352	8,94	6	152	7,875	200,02
8 5/8"	40,00	8,625	219,08	0,450	11,43	6	152	7,625	193,68
9 5/8"	40,00	9,625	244,48	0,395	10,03	12	305	8,750	222,25
9 5/8"	53,50	9,625	244,48	0,545	13,84	12	305	8,500	215,90
9 5/8"	58,40	9,625	244,48	0,595	15,11	12	305	8,375	212,72

WYMIARY TRZPIENI KONTROLNYCH ZGODNE Z API Spec 5CT, WYDANIE ÓSME, 1 LIPCA 2005, ISO 11960:2004 - TABLICA C32, E32



CERTIFICATES



BUREAU VERITAS
Certification

Certificate
Awarded to

ISD HUTA CZĘSTOCHOWA Sp. z o.o.
ul. Kucelińska 22, 42-207 CZĘSTOCHOWA
POLAND

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

STANDARDS

ISO 9001:2000

SCOPE OF SUPPLY

Design and production of
- steel ingots, which are designed for plates, rolling stock, pressure equipment and seamless pipes,
- plates and heavy plates in the as-rolled and a heat-treated condition: structural plates of normal, increased and high strength steel, weather resistant plates, abrasion resistant plates, ship plates, boiler plates, plates for pressure vessels, plates for welded line pipes, plates for rolling stock,
- pipes in the as-rolled and a heat-treated condition: oil country tubular goods (threaded & coupled casing, socketed casing, couplings for casing), structural pipes of normal, increased and high strength steel, ship pipes, boiler pipes, line pipes for oil and gas transportation, anticorrosive coated pipes, abrasion resistant pipes, and pipes for general purposes.

Original Approval Date: **24 May 1996**
Approval Date: **9 February 2009**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: **8 February 2012**

To check this certificate validity please call: +48 58 666 30 20
Further clarification regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

Issue Date: 9 February 2009

Certificate Number: PL9000024

Naumowicz Marta



BUREAU VERITAS
Certification

Certificate
Awarded to

ISD HUTA CZĘSTOCHOWA Sp. z o.o.
ul. Kucelińska 22, 42-207 CZĘSTOCHOWA
POLAND

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

STANDARDS

ISO 14001:2004

SCOPE OF SUPPLY

Design and production of
- steel ingots, which are designed for plates, rolling stock, pressure equipment and seamless pipes,
- plates and heavy plates in the as-rolled and a heat-treated condition: structural plates of normal, increased and high strength steel, weather resistant plates, abrasion resistant plates, ship plates, boiler plates, plates for pressure vessels, plates for welded line pipes, plates for rolling stock,
- pipes in the as-rolled and a heat-treated condition: oil country tubular goods (threaded & coupled casing, socketed casing, couplings for casing), structural pipes of normal, increased and high strength steel, ship pipes, boiler pipes, line pipes for oil and gas transportation, anticorrosive coated pipes, abrasion resistant pipes, and pipes for general purposes.

Original Approval Date: **14 December 2006**
Approval Date: **9 February 2009**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: **8 February 2012**

To check this certificate validity please call: +48 58 666 30 20
Further clarification regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

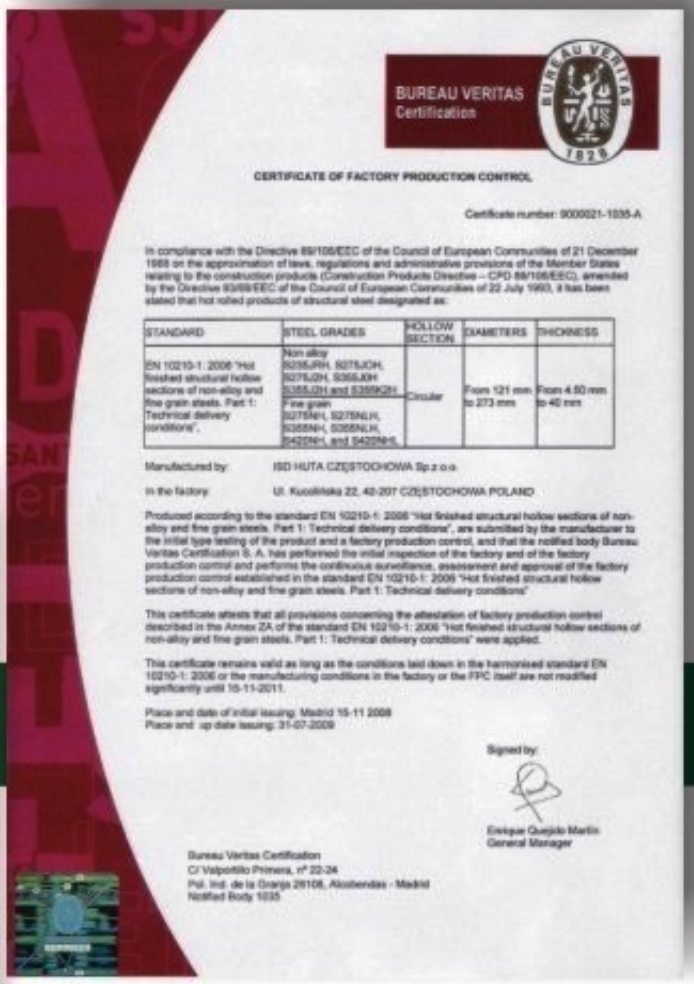
Issue Date: 9 February 2009

Certificate Number: PL9000025

Naumowicz Marta



CERTIFICATES



BUREAU VERITAS
Certification

CERTIFICATE OF FACTORY PRODUCTION CONTROL

Certificate number: 9000021-1035-A

In compliance with the Directive 89/106/EEC of the Council of European Communities of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to the construction products (Construction Products Directive – CPD 89/106/EEC), amended by the Directive 93/68/EEC of the Council of European Communities of 22 July 1993, it has been stated that hot rolled products of structural steel designated as:

STANDARD	STEEL GRADES	HOLLOW SECTION	DIAMETERS	THICKNESS
EN 10210-1: 2006 "Hot finished structural hollow sections of non-alloy and fine grain steels. Part 1: Technical delivery conditions",	Non alloy S235JRH, S275J0H, S275J2H, S355J0H S355J2H and S355K2H	Circular	From 121 mm to 273 mm	From 4.50 mm to 40 mm
	Fine grain S275NH, S275NLH, S355NH, S355NLH, S420NH, and S420NHS			

Manufactured by: ISD HUTA CZĘSTOCHOWA Sp.z o.o.

In the factory: Ul. Kucelińska 22, 42-207 CZĘSTOCHOWA POLAND

Produced according to the standard EN 10210-1: 2006 "Hot finished structural hollow sections of non-alloy and fine grain steels. Part 1: Technical delivery conditions", are submitted by the manufacturer to the initial type testing of the product and a factory production control, and that the notified body Bureau Veritas Certification S. A. has performed the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control established in the standard EN 10210-1: 2006 "Hot finished structural hollow sections of non-alloy and fine grain steels. Part 1: Technical delivery conditions"

This certificate attests that all provisions concerning the attestation of factory production control described in the Annex ZA of the standard EN 10210-1: 2006 "Hot finished structural hollow sections of non-alloy and fine grain steels. Part 1: Technical delivery conditions" were applied.

This certificate remains valid as long as the conditions laid down in the harmonised standard EN 10210-1: 2006 or the manufacturing conditions in the factory or the FPC itself are not modified significantly until 15-11-2011.

Place and date of initial issuing: Madrid 15-11 2008
Place and up date issuing: 31-07-2009

Signed by:

Enrique Quejido Martín
General Manager

Bureau Veritas Certification
C/ Valportillo Primera, nº 22-24
Pol. Ind. de la Granja 28108, Alcobendas - Madrid
Notified Body 1035



BUREAU VERITAS
Certification

Certificate
Awarded to

ISD HUTA CZĘSTOCHOWA Sp. z o.o.
ul. Kucelińska 22, 42-207 CZĘSTOCHOWA
POLAND

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

STANDARDS

PN-N 18001:2004

SCOPE OF SUPPLY

Design and production of:
- steel ingots, which are designed for plates, rolling stock, pressure equipment and seamless pipes,
- plates and heavy plates in the as-rolled and a heat-treated condition: structural plates of normal, increased and high strength steel, weather resistant plates, abrasion resistant plates, ship plates, boiler plates, plates for pressure vessels, plates for welded line pipes, plates for rolling stock,
- pipes in the as-rolled and a heat-treated condition: oil country tubular goods (threaded & coupled casing, socketed casing, couplings for casing), structural pipes of normal, increased and high strength steel, ship pipes, boiler pipes, line pipes for oil and gas transportation, anticorrosive coated pipes, abrasion resistant pipes, and pipes for general purposes.

Original Approval Date: **14 December 2006**
Approval Date: **9 February 2009**

Subject to the continued satisfactory operation of the organization's Management System, this certificate is valid until: **8 February 2012**

To check this certificate validity please call: +48 58 668 30 20
Further clarification regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization.

Issue Date: 9 February 2009

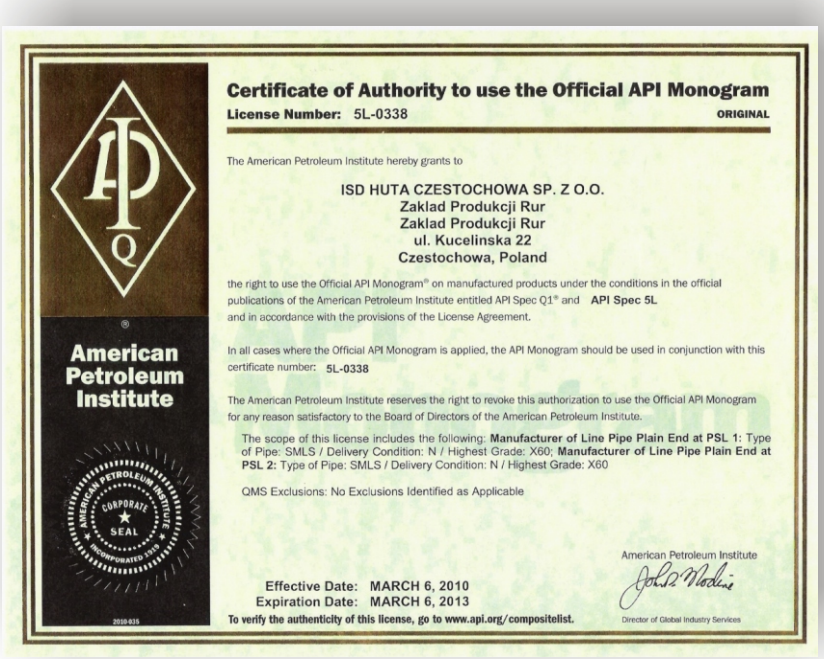
Certificate Number: **PL8000023**

Naumowicz Marta

PCA
AC 081
BHP



CERTIFICATES



Certificate of Authority to use the Official API Monogram

License Number: 5L-0338 **ORIGINAL**

The American Petroleum Institute hereby grants to

ISD HUTA CZESTOCHOWA SP. Z O.O.
Zaklad Produkcji Rur
Zaklad Produkcji Rur
ul. Kucelinska 22
Czestochowa, Poland

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API Spec 5L** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram should be used in conjunction with this certificate number: **5L-0338**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: **Manufacturer of Line Pipe Plain End at PSL 1:** Type of Pipe: SMLS / Delivery Condition: N / Highest Grade: X60; **Manufacturer of Line Pipe Plain End at PSL 2:** Type of Pipe: SMLS / Delivery Condition: N / Highest Grade: X60

QMS Exclusions: No Exclusions Identified as Applicable

American Petroleum Institute

Effective Date: MARCH 6, 2010
Expiration Date: MARCH 6, 2013

To verify the authenticity of this license, go to www.api.org/compositelist.

Director of Global Industry Services

American Petroleum Institute

CORPORATE SEAL

2010-035



Certificate of Authority to use the Official API Monogram

License Number: 5CT-0389 **ORIGINAL**

The American Petroleum Institute hereby grants to

ISD HUTA CZESTOCHOWA SP. Z O.O.
Zaklad Produkcji Rur
Zaklad Produkcji Rur
ul. Kucelinska 22
Czestochowa, Poland

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API Spec 5CT** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram should be used in conjunction with this certificate number: **5CT-0389**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: **Manufacturer of Casing or Tubing Plain End** at Groups 1, 2 and 3, H/PSL 1, J55/PSL 1, K55/PSL 1, N80(I)/PSL 1, N80(Q)/PSL 1, L80/PSL 1, C95/PSL 1, P110/PSL 1; **Manufacturer of Casing or Tubing Threaded and Coupled** at Groups 1, 2 and 3, H/PSL 1, J55/PSL 1, K55/PSL 1, N80(I)/PSL 1, N80(Q)/PSL 1, L80/PSL 1, C95/PSL 1, P110/PSL 1; **Manufacturer of Coupling Stock** at Groups 1, 2 and 3, H/PSL 1, J55/PSL 1, K55/PSL 1, N80(I)/PSL 1, N80(Q)/PSL 1, L80/PSL 1, C95/PSL 1, P110/PSL 1; **Manufacturer of Casing or Tubing Couplings** at Groups 1, 2 and 3, H/PSL 1, J55/PSL 1, K55/PSL 1, N80(I)/PSL 1, N80(Q)/PSL 1, L80/PSL 1, C95/PSL 1, P110/PSL 1; **Processor of Casing or Tubing Plain End** at Groups 1, 2 and 3, H/PSL 1, J55/PSL 1, K55/PSL 1, N80(I)/PSL 1, N80(Q)/PSL 1, L80/PSL 1, C95/PSL 1, P110/PSL 1; **Processor of Casing or Tubing Threaded and Coupled** at Groups 1, 2 and 3, H/PSL 1, J55/PSL 1, K55/PSL 1, N80(I)/PSL 1, N80(Q)/PSL 1, L80/PSL 1, C95/PSL 1, P110/PSL 1; **Threader**

QMS Exclusions: No Exclusions Identified as Applicable

American Petroleum Institute

Effective Date: MARCH 6, 2010
Expiration Date: MARCH 6, 2013

To verify the authenticity of this license, go to www.api.org/compositelist.

Director of Global Industry Services

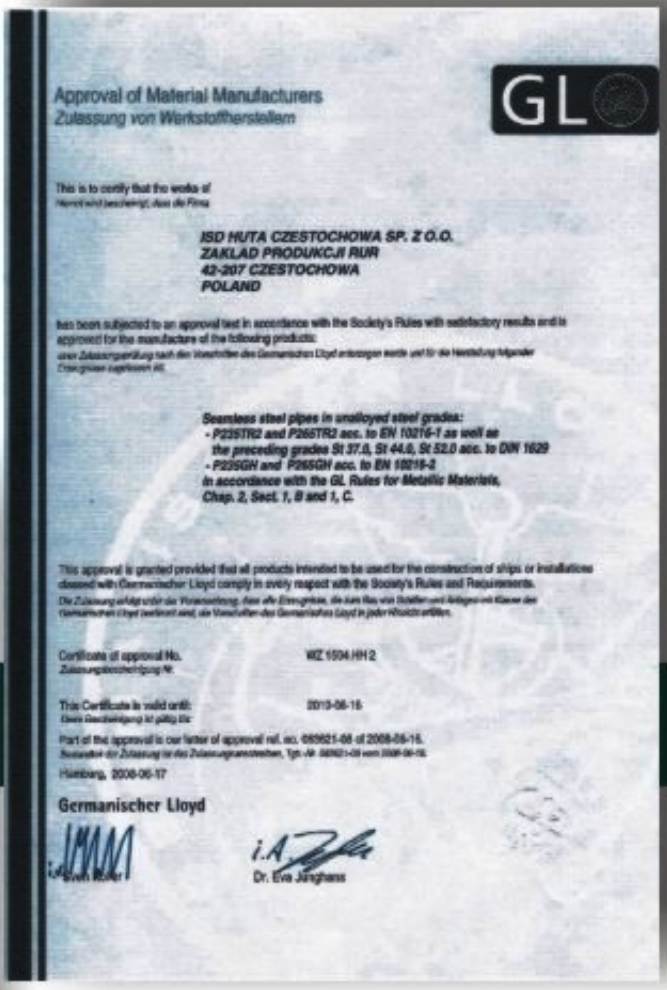
American Petroleum Institute

CORPORATE SEAL

2010-035



CERTIFICATES



Approval of Material Manufacturers
Zulassung von Werkstoffherstellern

GL

This is to certify that the works of

ISD HUTA CZESTOCHOWA SP. Z O.O.
ZAKLAD PRODUKCJI RUR
42-207 CZESTOCHOWA
POLAND

has been subjected to an approval test in accordance with the Society's Rules with satisfactory results and is approved for the manufacture of the following products:

Seamless steel pipes in unalloyed steel grades:
- P235TR2 and P265TR2 acc. to EN 10216-1 as well as the preceding grades St 37.0, St 44.0, St 52.0 acc. to DIN 1629
- P235GH and P265GH acc. to EN 10216-2
in accordance with the GL Rules for Metallic Materials, Chap. 2, Sect. 1, B and 1, C.

This approval is granted provided that all products intended to be used for the construction of ships or installations classed with Germanischer Lloyd comply in every respect with the Society's Rules and Requirements.

Certificate of approval No. WZ 1504.HH 2

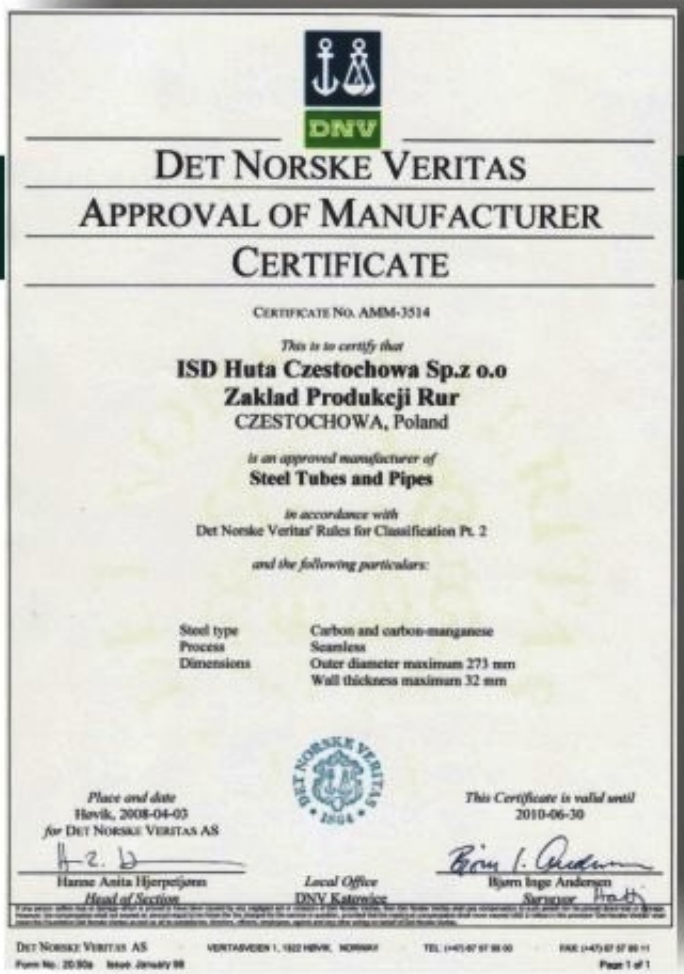
This Certificate is valid until: 2013-06-16

Part of the approval is our letter of approval ref. ex. 089621-08 of 2008-06-16.

Hamburg, 2008-06-17

Germanischer Lloyd

i.A. Dr. Eva Jünghans



DNV

DET NORSKE VERITAS

APPROVAL OF MANUFACTURER

CERTIFICATE

CERTIFICATE NO. AMM-3514

This is to certify that

ISD Huta Czestochowa Sp.z o.o
Zaklad Produkcji Rur
CZESTOCHOWA, Poland

is an approved manufacturer of

Steel Tubes and Pipes

in accordance with
Det Norske Veritas' Rules for Classification Pt. 2

and the following particulars:

Steel type	Carbon and carbon-manganese
Process	Seamless
Dimensions	Outer diameter maximum 273 mm Wall thickness maximum 32 mm

Place and date
Hovik, 2008-04-03
for DET NORSKE VERITAS AS

Harne Anita Hjerpetjønn
Head of Section

Local Office
DNV Katowice

This Certificate is valid until
2010-06-30

Bjørn Inge Andersen
Surveyor

DET NORSKE VERITAS AS VERITASVEIEN 1, 1322 HØVIK, NORWAY TEL: (+47) 67 57 99 00 FAX: (+47) 67 57 99 11

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CERTIFICATES

Certificate No : MD00/276200BS/4

ISD HUTA CZESTOCHOWA Sp. z o.o.
ul. Kucelinska 22
42-207 Czestochowa
Poland

has been approved as a manufacturer in accordance with the requirements of Lloyd's Register for :-

Seamless pipes and tubes in carbon and carbon-manganese steel
(maximum 275 mm diameter, 25 mm wall thickness)

This approval is subject to compliance with the Rules for the Manufacture, Testing and Certification of Materials.

Lloyd's Register is to be notified of any change that may affect the validity of this Certificate.

This Certificate is issued to the above manufacturer and is valid until the date given below.

Valid Until : 08 April 2012
Date of Issue : 17 September 2009

R Marsh
Metallurgical Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register Group

Lloyd's Register

TÜV CERT

TÜVRheinland®
Genau. Richtig.

CERTIFICATE

Quality-Assurance System
for Material Manufacturer
acc. to European Directive 97/23/EC

Certificate No.: 01 202 PL/Q-02 0005

Name and address of manufacturer:	**ISD HUTA CZĘSTOCHOWA Sp.z o.o.** **Zakład Produkcji Rur** **Ul. Kucelińska 22** **PL 42-200 Częstochowa** **Poland**

The material manufacturer has established and applies a Quality Management System. The system was audited according to the European Directive 97/23/EC, Annex I, Par. 4.3, with regard to the materials as listed in the scope of approval.

Approved acc. to Directive 97/23/EC:	QM-System according to EN 764-5, section 4.2, and AD 2000-Merkblatt W 0
Audit Report No.:	PL/Q-02 0005
Scope:	Manufacturing of steel seamless pipes and tubes, see annex
Plant:	**ISD HUTA CZĘSTOCHOWA Sp.z o.o.** **Zakład Produkcji Rur** **Ul. Kucelińska 22** **PL 42-200 Częstochowa**
Valid until:	July 2011

Cologne, July 31, 2008

TÜV CERT-Certification Body
for Pressure Equipment

Dr.-Ing. Wiesert

CEOC



NOTES

WELCOME TO PARTNERSHIP

CONTACT

ISD Huta Częstochowa Sp. z o.o.
PIPE MILL
22 Kucelińska St ; 42-207 Częstochowa
POLAND
phone: + 48 34 323 81 61
+ 48 34 323 82 51
fax: + 48 34 323 00 91
e-mail: biuro_handlu@isd-hcz.com.pl

Products of the PIPE MILL are sold by:

ISD Trade Sp. z o.o., S.k.
9 Naruszewicza St ; 02-627 Warszawa
phone: + 48 22 483 08 88
fax: + 48 22 483 08 90
e-mail: info@isd-trade.com
pjastrzemski@isd-trade.com
verteletskyy@isd-trade.com