

CTC

CLEAN TUBE & COIL

Stainless Steel Seamless
Pipes & Tubes

HPP Co., Ltd.
Honest , Passionate , Professional

CTC
CLEAN TUBE & COIL

HPP Co., Ltd.
Honest , Passionate , Professional

Contents

A	Profile	03
B	Manufacturing Process	04
C	Specifications	06
D	Size Range	08
E	Applications	10
F	Order Standards	12
G	Quality Assurance, Certificates Approved	13
H	Tags & Marking, Packing	14
I	Major Customers	15



A Profile

Introduction

As an introduction based on twenty years of accumulated know-how, HPP is one of leading companies that has succeeded in production of Bright Annealed stainless steel seamless tube for Semi-conductor and Automotive industry especially. HPP seamless long coil tube is also key component for industry of Steam & Heat tracer, Off-shore control lines, Oil refinery stations and petrochemical plants. In order to satisfy the growing demand for high precision tubes with both coiled and stick tubes at an affordable cost, we have made great developments in cost-saving production skills and technology to become a world class manufacturer by giving huge benefits to all customers.

History

1996	Established as Samhan Tube
2002	Developed BA Seamless Stick Tube
2003	Certified ISO 9001
2005	Company name changed as CTC
2009	Produced 22kg Seamless coil tube
2012	Moved to current new factory
2013	Completed to set-up equipments for seamless long coil tube
2014	Produced 100kg+ weigh coil tube
2015	Certified AD2000 W0 & PED 97/23/EC by TUV
2015	Get merged & acquired by Seah Steel Group
2016	Certified Type Approval (PDA+MA) by ABS
2017	Changed company name as HPP Co., Ltd.

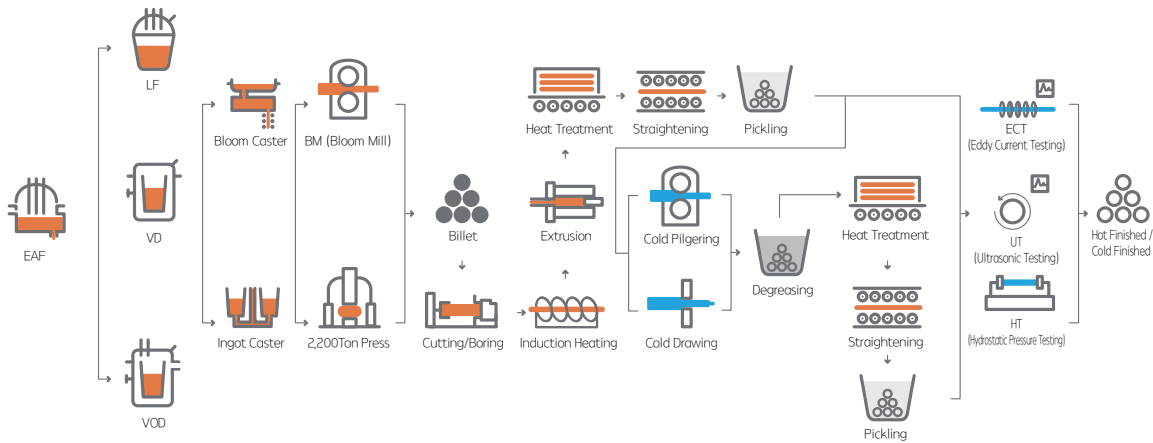
Product Item

- Seamless BA Stick tube for Semiconductor, Automotive, Commercial grade for shipbuilding and petrochemical, Medical, etc.
- Seamless Long Coil tube for steam tracing, pre-insulation, multi core, etc.

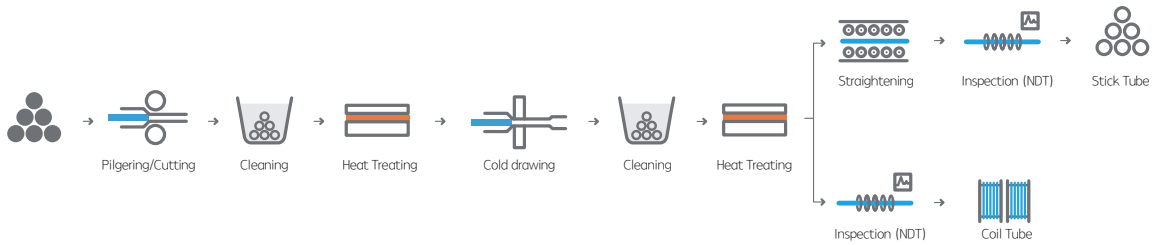
B

Manufacturing Process

[SeAH Changwon Specialty Steel : Hot Finished Mother Hollow]



[HPP : Precision Stick & Coil Tubes]



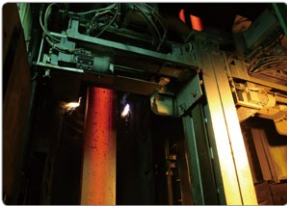
EAF



VOD



Bloom Caster



BM (Bloom Mill)



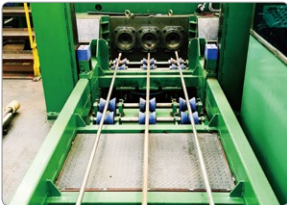
Extrusion



Cold Pilgering



Cold Drawing



NDT



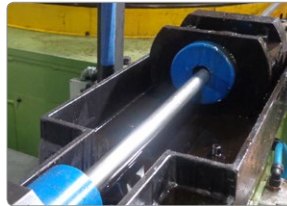
Pilgering



Heat Treating



Cold Drawing



Cleaning



Straightening



Inspection (NDT)



C

Specifications

Austenitic Stainless Steel

UNS Designation	ASTM A213	JIS G3459	EN 10216-5	Chemical Composition (%)				
				C max	Si max	Mn max	P max	S max
S30400	TP304			0.08	1.00	2.00	0.045	0.03
		SUS304TP		0.08	1.00	2.00	0.045	0.03
			1.4301	0.07	1.00	2.00	0.040	0.015
S30403	TP304L			0.035	1.00	2.00	0.045	0.03
		SUS304LTP		0.03	1.00	2.00	0.045	0.03
			1.4306	0.03	1.00	2.00	0.040	0.015
S31600	TP316			0.08	1.00	2.00	0.045	0.03
		SUS316TP		0.08	1.00	2.00	0.045	0.03
			1.4401	0.07	1.00	2.00	0.040	0.015
S31603	TP316L			0.035	1.00	2.00	0.045	0.03
		SUS316LTP		0.03	1.00	2.00	0.045	0.03
			1.4404	0.03	1.00	2.00	0.040	0.015
			1.4435	0.03	1.00	2.00	0.040	0.015
S31703	TP317L			0.035	1.00	2.00	0.045	0.03
		SUS317LTP		0.03	1.00	2.00	0.045	0.03
S32100	TP321			0.08	1.00	2.00	0.045	0.03
		SUS321TP		0.08	1.00	2.00	0.045	0.03
			1.4541	0.08	1.00	2.00	0.040	0.015
S32109	TP321H			0.04-0.10	1.00	2.00	0.045	0.03
		SUS321HTP		0.04-0.10	0.75	2.00	0.030	0.03

Duplex

S32304				0.03	1.00	2.50	0.040	0.040
S31803				0.03	1.00	2.00	0.030	0.020
			1.4462	0.03	1.00	2.00	0.035	0.015
S32205				0.03	1.00	2.00	0.030	0.020
S32750				0.03	0.80	1.20	0.035	0.020

Referenced Document

Specification	Specification No.	Description
ASTM	A213	Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
	A269	Seamless and Welded Austenitic Stainless Steel Tubing for General Service
	A312	Seamless and Welded Austenitic Stainless Steel Pipes
	A790	Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe

Chemical Composition (%)				Mechanical Properties			Remark
Ni	Cr	Mo	Others	T.S (Mpa)	Y.S (Mpa)	EL (%)	
8.0-11.0	18.0-20.0			515	205	35	
8.0-11.0	18.0-20.0			520	205	35	
8.0-10.5	17.0-19.5		N≤0.10	500-700	195	40	
8.0-12.0	18.0-20.0			485	170	35	
9.0-13.0	18.0-20.0			480	175	35	
10.0-12.0	18.0-20.0		N≤0.10	460-680	180	40	
10.0-14.0	16.0-18.0	2.0-3.0		515	205	35	
10.0-14.0	16.0-18.0	2.0-3.0		520	205	35	
10.0-13.0	16.5-18.5	2.0-2.5	N≤0.10	510-710	205	40	
10.0-14.0	16.0-18.0	2.0-3.0		485	170	35	
12.0-16.0	16.0-18.0	2.0-3.0		480	175	35	
10.0-13.0	16.5-18.5	2.0-2.5	N≤0.10	490-690	190	40	
12.5~15.0	17.0-19.0	2.5-3.0	N≤0.10	490-690	190	40	
11.0-15.0	18.0-20.0	3.0-4.0		515	205	35	
11.0-15.0	18.0-20.0	3.0-4.0		480	175	35	
9.0-12.0	17.0-19.0		Ti:5(C+N)-0.7	515	205	35	
9.0-13.0	17.0-19.0		Ti:5xC% min	520	205	35	
9.0-12.0	17.0-19.0		Ti:5xC-0.7	460-680	180	35	
9.0-12.0	17.0-19.0		Ti:4(C+N)-0.7	515	205	35	
9.0-13.0	17.0-20.0		Ti:4xC%-0.6	520	205	35	

8.0-11.0	18.0-20.0	0.05-0.60	N : 0.05-0.20 Cu : 0.05-0.60	600	400	25	A790
8.0-11.0	18.0-20.0	2.5-3.5	N : 0.08-0.20	620	450	25	A790
8.0-10.5	17.0-19.5	2.5-3.5	N : 0.10-0.22	640-880	450	22	
8.0-12.0	18.0-20.0	3.0-3.5	N : 0.14-0.20	655	450	25	A790
9.0-13.0	18.0-20.0	3.0-5.0	N : 0.24-0.32 Cu : max 0.5	800	550	15	A790

Specification	Specification No.	Description
JIS	G3459	Stainless Steel Pipes
	G3463	Stainless Steel Boiler and Heat-Exchanger Tubes
DIN	17459	Seamless Circular High-Temperature Austenitic Steel Tubes
EN	10216-5	Seamless steel tubes for pressure purposed - Technical delivery conditions (part 5)

[illegible]

E

Applications

Automotive

Grade

- SUS 304/304L

Application

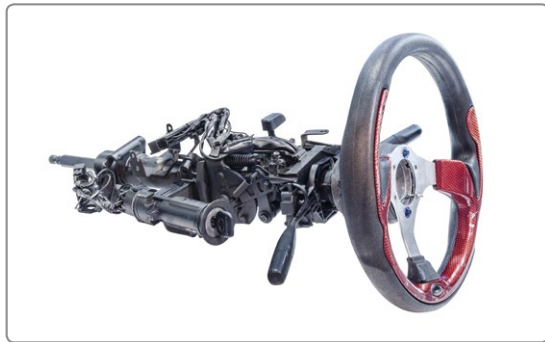
GDI Engine



General Characteristics

- Excellent corrosion and heat resistance
- Outstanding wear resistance
- High strength

Steering System



Semiconductor

Grade

- TP316L , EN 1.4404 / 1.4435

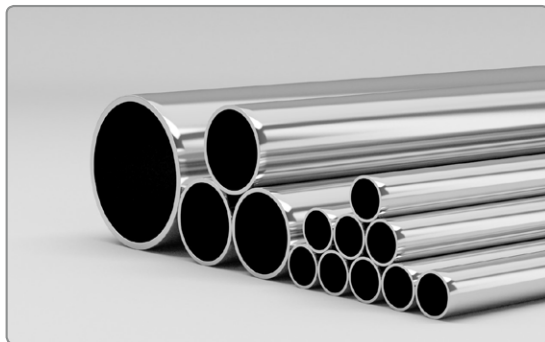
Application

BA + EP(Electro Polishing)



General Characteristics

- Excellent corrosion and heat resistance
- Outstanding pitting resistance
- High creep strength in high temp environment



Oil & Gas / Petrochemical Plant

Grade

- TP316L , EN 1.4404 / 1.4435

Application

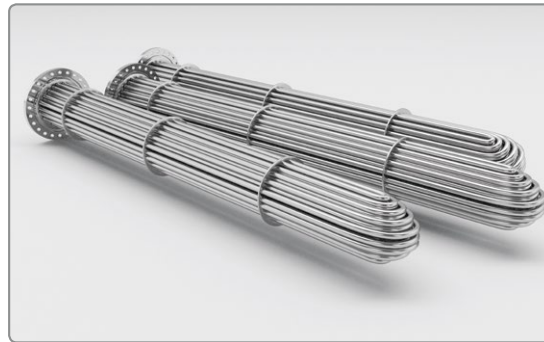
Heat Tracing



General Characteristics

- Excellent corrosion and heat resistance
- Outstanding pitting resistance
- Good corrosion resistance in sea water

Heat Exchanger



Off-Shore / Shipbuilding

Grade

- TP316/316L, 904L, S31803, S32750, etc

Application

Umbilical Tube



General Characteristics

- High strength
- High corrosion resistance in sea water
- Excellent weldability and machinability

PIT(Pre Insulated Tube)



F

Order Standards

Standards size of Coil tube & Stick tube

Outside Diameter			Wall Thickness		Stick tube Length		Coil tube Length		Weight /1Coil(kg)
A size	in.	mm	in.	mm	M ' tr	ft	M ' tr	ft	
	1/8	3.175	0.028	0.71	4 or 6	20	2,310	7,580	100
		6.00		1.00			808	2,650	100
	1/4	6.35	0.035	0.89			829	2,720	100
			0.039	1.00			755	2,480	100
			0.049	1.24			640	2,100	100
			0.065	1.65			521	1,710	101
		8.00		1.00			580	1,900	101
	3/8	9.53	0.035	0.89			524	1,720	101
			0.039	1.00			474	1,555	101
			0.049	1.24			393	1,290	101
			0.065	1.65			311	1,020	101
		10.00		1.00			448	1,470	102
		12.00		1.00			365	1,200	102
	1/2	12.70	0.035	0.89			384	1,260	102
			0.039	1.00			344	1,130	102
			0.049	1.24			283	930	103
			0.065	1.65			222	730	103
	3/4	19.05	0.049	1.24			183	600	104
			0.065	1.65			140	460	104
	1	25.4	0.065	1.65			106	350	104
				2.1			85	280	104
15		21.70		1.65			125	410	104
				2.1			330	100	104
25		34.00		1.65					
				2.8					
40		48.60		1.65					
				2.8					

G

Quality Assurance, Certificates Approved

Quality Assurance Test & Analysis

NDT

- Eddy Current Test
- Hydrostatic Test

Micro Test

- Microstructure Test
- Corrosion Test
- Grain Size

Mechanical Test

- Tensile Test
- Hardness Test
- Flaring Test
- Flattening

Etc

- X-ray fluorescence
- Surface Roughness

Eddy Current Tester



Hydrostatic Tester



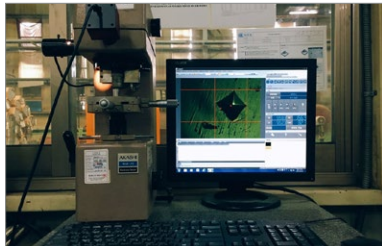
Universal Testing Machine



X-ray fluorescence



Vicker ' s Hardness Tester



Electron microscope



Certificates Approved



ISO 9001:2008

- Quality Management System



- Certificate No : AMMM000006B



- AD 2000-Merkblatt W0,W2
Certificate No : 07/203/9160/WP/2009/17
- PED 2014/68/EU
Certificate No : 07-202-9160 WZ-2009/17



- Certificate of Design Assessment
Certificate No : 16-BK1535285-PDA
- Certificate of Manufacturing Assessment
Certificate No : 17-SE3341527

H Tags & Marking, Packing

Tags & Marking

Packaged Date : 2017/03/03 1.4404/S31603 SML's Tube

Part No : T-SHS-0250-035-BA

Size : 6.35x0.89x6000x50pcs

Lot No : CSEA 17030301 **Heat No :** N10850



CLEAN TUBE & COIL



Packing

Coil Tube

- Polyethylene Film Packing + Wooden Spool



Stick Tube

- Polyethylene Film + Wooden Box Packing



I Major Customers

Coil Tube



Stick Tube



Contact

HPP Co., Ltd.
Honest , Passionate , Professional

Address **Head Office :** 3F Seah Tower, 45 Yanghwaro, Mapo, Seoul, Korea 04036
 Factory : 1531-7 Jeonyeong-ro, Pocheon, Gyeonggi-do, Korea 11126

Tel (+82) 70 4353 5532 Fax (+82) 31 534 0746

Email brianlee@ctckorea.com

Website www.ctckorea.com