

双相及 超级双相不锈钢 Duplex and Super Duplex Stainless Steel Tube

双相钢和超级双相钢因其兼有铁素体和奥氏体不锈钢的优点，被广泛用于石化，海水处理等含氯离子腐蚀的环境。飞鹤管业生产高质量的双相不锈钢和超级双相不锈钢换热管及流体公称管。

As the duplex and super duplex stainless steel has both the advantages of ferritic stainless steel and the austenitic stainless steel, they are widely used to produce heat transferring tubing for petrochemical industry, sea water treatment... in aggressive acidic, chloride containing environments. FH Tube supply customer duplex/super duplex tubes with high quality.

用途 Applications:

换热器, 冷凝器, 仪表, 流体输送等。

Heater, Heat Exchanger, Condenser, Instrumentation, Pipe lines...

标准 Available Specifications:

- ASTM/ASME A/SA789

通用无缝和焊接铁素体/奥氏体双相不锈钢管

Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service

- ASTM/ASME A/SA790

无缝和焊接铁素体/奥氏体双相不锈钢公称管

Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe

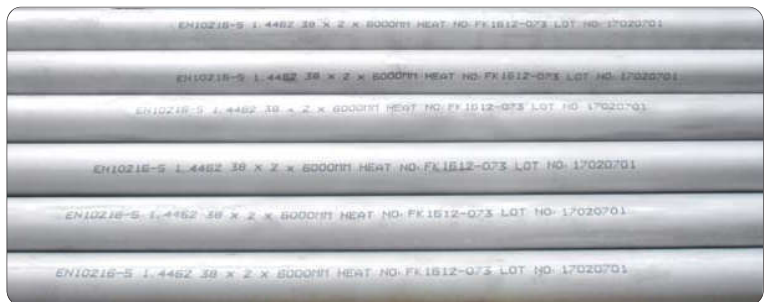


可生产管材尺寸范围

Available Sizes

产品 Products	外径 OD		壁厚 WT		长度 Length	
	Inch	MM	Inch	MM	Ft max.	Mt max.
Tube	1/2"-3"	12.0-76.2	0.02"-0.5"	0.5-12.0	105'	32.00
Pipe	NPS1/2"-10"	21.34-273.05	Sch10-Sch80	2.11-12.7	98'	30.00

可生产超长管 Super Length Tube/Pipe is our advantages.



飞鹤管业可供双相不锈钢无缝管材质一览表 Available Grades of Duplex Stainless Steel Seamless Tube/Pipe

	特征应用举例						
	NEW GB Grade	国标统一代码	美标牌号	美国UNS代码	欧标代码	国外公司商业牌号	Characteristics/Examples of Applications
双相钢 Duplex Stainless Steel	022Cr23Ni4MoCuN	S23043	S32304	S32304	1.4362	SAF2304 (Sandvik)	比304, 316更耐应力腐蚀, 点腐蚀, 缝隙腐蚀及磨蚀等。高强度, 屈服强度约为304, 316的2倍。Better SOC, pitting and crevice corrosive, and Erosion corrosive resistance. High strength. Yield strength is about 2 times higher of 304 or 316.
	022Cr22Ni5Mo3N	S22253	S31803	S31803	1.4462	-	耐应力腐蚀, 点腐蚀, 缝隙腐蚀及磨蚀等。铬镍比S32205略低。Better SOC, pitting and crevice corrosive, and Erosion corrosive resistance. High strength. Lower Cr and Ni content than S32205
	022Cr23Ni5Mo3N	S22053	S32205	S32205	1.4462	SAF2205 (Sandvik)	耐应力腐蚀, 点腐蚀, 缝隙腐蚀及磨蚀等。Better SOC, pitting and crevice corrosive, and Erosion corrosive resistance.
	022Cr25Ni7Mo4N	S25073	S32750	S32750	1.4410	SAF2507 (Sandvik)	比普通双相不锈钢更耐应力腐蚀, 点腐蚀, 缝隙腐蚀及磨蚀等, 强度更高。
	03Cr25Ni6Mo3Cu2N	S25583	S31260	S31260	-	-	Better SOC, pitting and crevice corrosive, and Erosion corrosive resistance than ordinary duplex stainless steel.
超级双相钢 Super Duplex	022Cr25Ni7Mo4WCuN	S27603	S32760	S32760	1.4507 1.4501	UR52+ Zeron 100	Higher strength.
	00Cr27Ni7Mo5N	-	S32707	S32707	-	SAF2707 (Sandvik)	特超级双相不锈钢, 比其他双相不锈钢更耐应力腐蚀, 点腐蚀, 缝隙腐蚀及磨蚀等, 强度更高。Hyper duplex stainless steel, better SOC, pitting and crevice corrosive, and Erosion corrosive resistance than other duplex or super duplex stainless steel. higher strength.

主要双相不锈钢化学成分表 Chemical Content of Typical Duplex Stainless Steel

ASTM/ASME A789/SA789

牌号/元素	C	Mn	P	S	Si	Ni	Cr	Mo	N	Cu	W	Co
S31200	0.03	2.0	0.045	0.03	1	5.5-6.5	24.0-26.0	1.2-2.0	0.14-0.20	-	-	-
S31260	0.03	1.0	0.03	0.03	0.75	5.5-7.5	24.0-26.0	2.5-3.5	0.1-0.3	0.2-0.8	0.1-0.5	-
S31500	0.03	1.2-2.0	0.03	0.03	1.4-2.0	4.3-5.2	18.0-19.0	2.5-3.0	0.05-0.1	-	-	-
S31803	0.03	2.0	0.03	0.02	1	4.5-6.5	21.0-23.0	2.5-3.5	0.08-0.2	-	-	-
S32001	0.03	4.0-6.0	0.04	0.03	1	1.0-3.0	19.05-21.5	0.6	0.05-0.17	1	-	-
S32003	0.03	2.0	0.03	0.02	1	3.0-4.0	19.05-22.5	1.5-2.0	0.14-0.20	-	-	-
S32101	0.04	4.0-6.0	0.04	0.03	1	1.35-1.7	21.0-22.0	0.1-0.8	0.20-0.25	0.10-0.8	-	-
S32202	0.03	2.0	0.04	0.01	1	1.0-2.8	21.5-24.0	0.45	0.18-0.26	-	-	-
S32205	0.03	2.0	0.03	0.02	1	4.5-6.5	22.0-23.0	3.0-3.5	0.14-0.20	-	-	-
S32304	0.03	2.5	0.04	0.04	1	3.0-5.5	21.5-24.5	0.05-0.60	0.05-0.20	0.05-0.60	-	-
S32506	0.03	1.0	0.04	0.015	0.9	5.5-7.2	24.0-26.0	3.0-3.5	0.08-0.2	-	0.05-0.30	-
S32520	0.03	1.5	0.035	0.02	0.8	5.5-8.0	23.0-25.0	3.0-5.0	0.20-0.35	0.50-3.0	-	-
S32550	0.04	1.5	0.04	0.03	1	4.5-6.5	24.0-27.0	2.9-3.9	0.10-0.25	1.5-2.5	-	-
S32707	0.03	1.5	0.035	0.01	0.5	5.5-9.5	26.0-29.0	4.0-5.0	0.3-0.5	1	-	0.5-2.0
S32750	0.03	1.2-2.0	0.035	0.02	0.8	6.0-8.0	24.0-26.0	3.0-5.0	0.24-0.32	0.5	-	-
S32760	0.03	1.0	0.03	0.01	1	6.0-8.0	24.0-26.0	3.0-4.0	0.20-0.30	0.5-1.0	0.05-1.0	-
S32906	0.03	0.8-1.5	0.03	0.03	0.8	5.8-7.5	28.0-30.0	1.50-2.60	0.30-0.40	0.8	-	-

高钢级合金钢管 High Grade Alloy Steel Tube/Pipe

飞鹤管业专业生产合金无缝管，因合金管化学成分中含Cr比较多，耐高温、耐低温、耐腐蚀的性能。主要用于电厂锅炉管和炼油厂炉管。主要生产材质有P9/T9, P5/T5, P91/T91, P92/T92, P24/T24, P122/T122, P911/T911等。

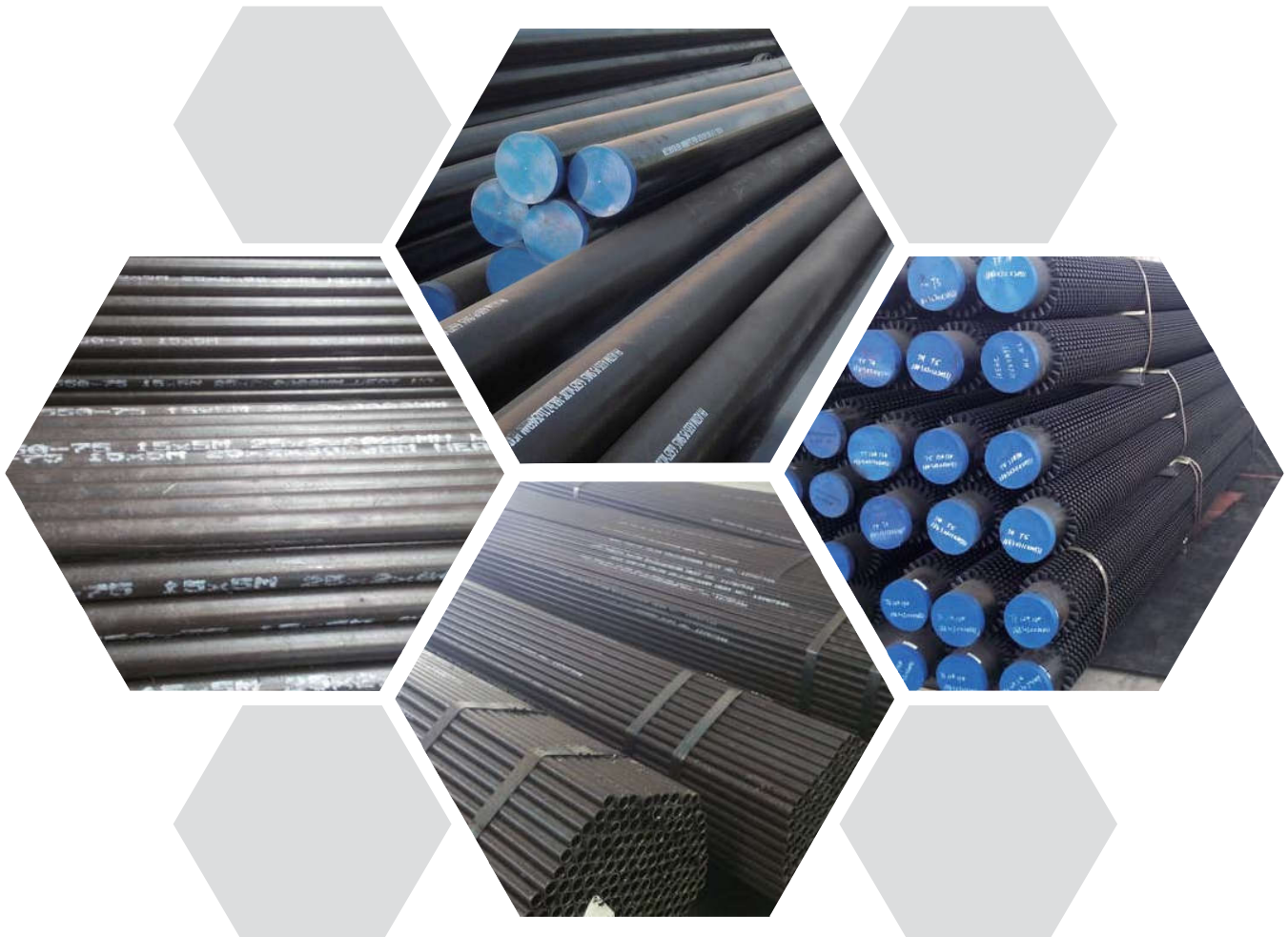
Because the chemical composition of the alloy tube contains more Cr, high temperature resistance, low temperature resistance and corrosion resistance. It is mainly used in power plant boiler tubes and refinery furnace tubes. Typical Grade: P9/T9, P5/T5, P91/T91, P92/T92, P24/T24, P122/T122, P911/T911...

用途 Applications:

电厂锅炉管/炼油厂炉管
Boiler tube of power plant / Refinery furnace tube.

标准 Available Specifications:

- **ASTM/ASME A/SA213/213M**
锅炉、过热器和热交换器用无缝铁素体和奥氏体合金钢管标准规范
Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
- **ASTM/ASME A/SA335/335M**
高温下使用的无缝铁素体合金钢管的标准规格
Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
- **EN10216-2**
压力无缝钢管. 交货技术条件. 规定高温特性的非合金和合金钢管
Seamless steel tubes for pressure purposes-
Technical delivery conditions-
Part 2: Non alloy and alloy steel tubes with specified elevated temperature properties



高钢级合金钢管化学成分表 Chemical Content of Typical High Grade Alloy Steel

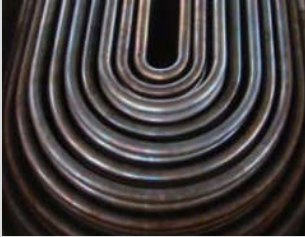
标准 Standard	钢种 Grade	碳 C	锰 Mn	磷 P	硫 S	硅 Si	铬 Cr	镍 Ni	钼 Mo
ASTM A213/ASTM A335	T5/P5	0.15	0.3-0.6	0.025	0.025	0.5	4.0-6.0	-	0.45-0.65
EN10216-2	1.7362	0.08-0.15	0.3-0.6	0.025	0.02	0.15-0.5	4.0-6.0	-	0.45-0.65
ASTM A213/ASTM A335	T9/P9	0.15	0.3-0.6	0.025	0.025	0.25-1.0	8.0-10.0	-	0.9-1.1
EN10216-2	1.7386	0.08-0.15	0.3-0.6	0.025	0.02	0.25-1.0	8.0-10.0	-	0.9-1.1
ASTM A213/ASTM A335	T91/P91	0.07-0.14	0.3-0.6	0.02	0.01	0.2-0.5	8.0-9.5	0.4	0.85-1.05
EN10216-2	1.4903	0.08-0.12	0.3-0.6	0.02	0.01	0.2-0.5	8.0-9.5	0.4	0.85-1.05
ASTM A213/ASTM A335	T92/P92	0.07-0.13	0.3-0.6	0.02	0.01	0.5	8.5-9.5	0.4	0.3-0.6
EN10216-2	1.4901	0.07-0.13	0.3-0.6	0.02	0.01	0.5	8.5-9.5	0.4	0.3-0.6
ASTM A213/ASTM A335	T24/P24	0.05-0.10	0.3-0.7	0.02	0.01	0.15-0.45	2.2-2.6	-	0.9-1.1
EN10216-2	1.7378	0.05-0.10	0.3-0.7	0.02	0.01	0.15-0.45	2.2-2.6	-	0.9-1.1
ASTM A213/ASTM A335	T122/P122	0.07-0.14	0.7	0.02	0.01	0.5	10.0-11.5	0.5	0.25-0.6
ASTM A213/ASTM A335	T911/P911	0.09-0.13	0.3-0.6	0.02	0.01	0.1-0.5	8.5-9.5	0.4	0.9-1.1
EN10216-2	1.4922/X20CrMoV11-1	0.17-0.23	1.0	0.025	0.02	0.15-0.5	10.0-12.5	0.3-0.8	0.8-1.2

标准 Standard	钢种 Grade	N	Nb	Ti	铝 Al	铜 Cu	V	B	T	Zr
ASTM A213/ASTM A335	T5/P5	-	-	-	-	-	-	-	-	-
EN10216-2	1.7362	-	-	-	0.04	0.3	-	-	-	-
ASTM A213/ASTM A335	T9/P9	-	-	-	-	-	-	-	-	-
EN10216-2	1.7386	-	-	-	0.04	0.3	-	-	-	-
ASTM A213/ASTM A335	T91/P91	0.03-0.07	0.06-0.1	0.01	0.02	-	0.18-0.25	-	-	0.01
EN10216-2	1.4903	0.03-0.07	0.06-0.1	-	0.04	0.3	0.18-0.25	-	-	-
ASTM A213/ASTM A335	T92/P92	0.03-0.07	0.04-0.09	0.01	0.02	-	0.15-0.25	0.001-0.006	1.5-2.0	0.01
EN10216-2	1.4901	0.03-0.07	0.04-0.09	-	0.04	-	0.15-0.25	0.001-0.006	1.5-2.0	-
ASTM A213/ASTM A335	T24/P24	0.012	-	0.06-0.1	0.02	-	0.2-0.3	0.0015-0.007	-	-
EN10216-2	1.7378	0.01	-	0.05-0.1	0.02	-	0.2-0.3	0.0015-0.007	-	-
ASTM A213/ASTM A335	T122/P122	0.04-0.1	0.04-0.10	0.01	0.02	0.3-1.7	0.15-0.3	0.0005-0.005	1.5-2.5	0.01
ASTM A213/ASTM A335	T911/P911	0.04-0.09	0.06-0.1	0.01	0.02	-	0.18-0.25	0.0003-0.006	0.9-1.1	0.01
EN10216-2	1.4922/X20CrMoV11-1	-	-	-	0.04	0.3	0.25-0.35	-	-	-

U型管 U-bent Tube

飞鹤管业以熟练和专业的弯管团队，齐备的弯管工具和设备，生产各种材质的换热器用U型管，包括镍合金，不锈钢。从产品生产到包装，完全符合标准要求。以客户需求为导向，为客户提供增值服务。

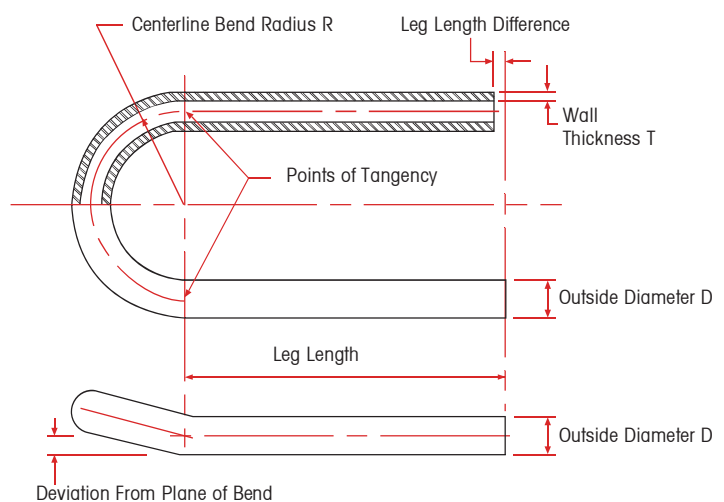
Our experienced and professional team of bending, and full tools and equipments make us provide customers almost all kinds of metal U-bent tubes with high quality. With our unique manufacturing capabilities, FH Tube also supply customer with value-added service.



U型管优势和特长:

Advanced capabilities for U-bent tubes:

- 可靠的弯管机器
Reliable bending machines
- 精密的弯管模具
Precision bending dies
- 弯管前探伤
Eddy current test before bending
- 最长直管长度可达32米
Bending up to 105'(32m) developed length
- 弯管后U型部分电加热去应力退火
Electric resistance stress relief annealing after bending
- 弯管后100%水压探伤
Hydrostatic test after bending
- 弯管部分减径减壁检测
OD and WT reduction Testing
- 弯管半径及腿长公差检测
Full bending radius and tube legs tolerance check
- 专业U型管木箱包装
Stack-rack boxing
- 详细的产品标识
Detailed labeling

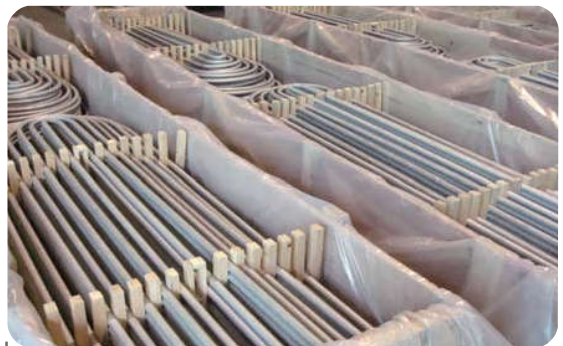


可生产的U型管 Available Metal U-bent Tubes

产品 Products	尺寸 Dimensions (mm)			标准 Standards	材质 Materials	备注 Remarks
	外径 O.D.	壁厚 W.T.	长度 Length			
换热器用U型管 U-bent Tubes for Heat Exchanger	12.7-76.2mm (1/2"-3")	0.5-5.16mm (0.02"-0.203")	Leg Length: 15.24m (50') Total length: 32.00m(105')	ASTM/ASME A/SA213	T5, T11,T12, T22, T9, T91, TP304/304L, TP304H, TP316/316L, TP347/347H, TP316Ti, TP321/321H, TP310S	无缝铁素体和奥氏体不锈钢U型管 Seamless Ferritic and Austenitic Stainless Steel U-bent Tubes
				ASTM/ASME A/SA249	TP304, TP304L, TP316, TP316L...	焊接不锈钢U型管 Welded Stainless Steel U-bent Tubes
				ASTM/ASME A/SA789	UNS S31803/32205, UNS S32750...	双相不锈钢U型管 Duplex Stainless Steel U-bent Tubes
				ASTM/ASME A/SA163	Monel400, UNS N06600, 625, Incoloy800/800H, 825...	无缝镍合金U型管 Seamless Nickel Alloy U-bent Tubes
				ASTM/ASME A/SA268	TP405, TP409, TP410, TP430,TP439...	无缝马氏体和铁素体不锈钢U型管 Ferritic and Martensitic Stainless Steel Seamless U-bent Tubes
无缝不锈钢给水加热器用U型管 Seamless and (Welded)Re-drawn Stainless Steel Feed Water Heater U-bent Tubes	12.7-25.4mm (1/2"-1")	0.7-3.05mm (0.028"-0.12")	Leg Length: 15.24m (50') Total length: 32.00m(105')	ASTM/ASME A/SA668/213 ASTM/ASME A/SA803	TP304, TP304L, TP304LN, TP316, TP316L, TP316LN, TP439	电站用低压给水加热器用U型管 Low Pressure Feed Water Heater of Thermal Power Station



无缝不锈钢给水加热器用U型管
Stainless steel U-bent Tube



镍合金U形管
Nickel alloy U-bent Tube



电气应力退火管
Electric stress relief annealed tubes



弯曲后的管
Tubes after bending

奥氏体不锈钢 Austenitic Stainless Steel Tube

奥氏体不锈钢无缝管以其广泛的耐腐蚀性，优异的焊接性能，被大量用于锅炉换热器制造，已及流体输送。除一般的奥氏体不锈钢无缝管外，飞鹤管业还生产一些材质特殊或超级奥氏体无缝管。满足客户的特殊用途，为客户提供增值服务。

Austenitic stainless steel's resistance to general corrosion, good weldability... help the designer to use them to produce boiler and heat exchanger. It is the most widely used for heat transferring tubing. FH Tube supply the most grades of tubes with perfect quality, and value-added service.

用途 Applications:

换热器、锅炉、冷凝器、给水加热器、仪表、流体输送等。

Boiler, Heater, Heat Exchanger, Condenser, Feedwater Heater, Instrumentation, Pipe lines...

标准 Available Specifications:

- ASTM/ASME A/SA213

无缝(铁素体)和奥氏体合金锅炉、过热器、及换热器管

Seamless (Ferritic) and Austenitic Alloy-Steel Boiler, Superheater, and Heat-exchanger Tubes

- ASTM/ASME A/SA269

通用无缝和焊接奥氏体不锈钢管

Seamless and Welded Austenitic Stainless Steel Tubing for General Service

- ASTM/ASME A/SA312

无缝奥氏体不锈钢公称管

Seamless Austenitic Stainless Steel Pipes



可生产管材尺寸范围 Available Sizes

产品 Products	外径 OD		壁厚 WT		长度 Length	
	Inch	MM	Inch	MM	Ft max.	Mt max.
Tube	1/2"-3"	12.0-76.2	0.02"-0.5"	0.5-12.0	105'	32.00
Pipe	NPS1/2"-6"	21.34-168.3	Sch10-Sch80	2.11-12.7	98'	30.00

可生产超长管 Super Length Tube/Pipe is our advantages.



飞鹤管业可供奥氏体不锈钢无缝管材质一览表
Available Grades of Austenitic Stainless Steel Seamless Tube/Pipe

	国标新牌号	国标统一代码	美标牌号	美国UNS代码	欧标代码	国外公司商业牌号	特征/应用举例
	NEW GB Grade	GB Grade	ASTM/ASTM Grade	UNS Grade	EN Grade	Foreign Commercial Grade	Characteristics/Examples of Applications
奥氏体 Austenitic Stainless Steel	06Cr19Ni10	S30408	304	S30400	1.4301	-	最基础奥氏体不锈钢, 耐水空气腐蚀。换热器, 流体输送用。 The basic austenitic stainless steel. For heat exchanger and piping
	07Cr19Ni10	S30409	304H	S30409	1.4948	-	高碳, 强度, 耐温度比304高。 Higher carbon content, and strength, better heat resistance than 304
	022Cr19Ni10	S30403	304L	S30403	1.4307	-	低碳, 比304耐晶腐, 提高焊接性 Lower carbon content, better resistance to intergranular corrosion, better weldability.
	022Cr19Ni10N	S30453	304LN	S30453	1.4311	-	低碳加氮, 强度高。给水加热器管。 Lower carbon content with adding of Nitrogen, higher strength. For feed water heat tubes.
	-	-	super304	S30432	-	Super304H(NSSMC)	超级304, 锅炉管 Super 304, boiler tubes
	06Cr18Ni11Ti	S32168	321	S32100	1.4541	-	含钛, 比304耐腐蚀 With content of Titanium, better corrosive resistance than 304
	07Cr18Ni11Ti	S32169	321H	S32109	1.4940	-	高碳, 强度, 耐温度比321高。 Higher carbon content, and strength, better heat resistance than 321.
	06Cr17Ni12Mo2	S31608	316	S31600	1.4401	-	耐氯离子腐蚀 Low Cl-corrosive resistance.
	022Cr17Ni12Mo2	S31603	316L	S31603	1.4404	-	低碳, 比316耐晶腐, 提高焊接性 Lower carbon content, better resistance to intergranular corrosion, better weldability
	022Cr17Ni12Mo2N	S31653	316LN	S31653	1.4406	-	低碳加氮, 强度高。给水加热器管。 Lower carbon content with adding of Nitrogen, higher strength. For feed water heat tubes.
	06Cr17Ni12Mo3Ti	S31668	316Ti	S31635	1.4571	-	含钛, 比316耐腐蚀 With content of Titanium, better corrosive resistance than 316
	00Cr17Ni14Mo2	-	316LMoD/316LUG	S31603	1.4435	-	尿素级316 Urea Grade 316
	022Cr19Ni13Mo3	S31703	317L	S31703	1.4438	-	比316更耐还原性酸及局部腐蚀 Better Pitting corrosive resistance than 316
	022Cr19Ni16Mo5N	S31723	317LMN	S31725	1.4439	-	加氮, 增加强度和组织稳定性 With content of Nitrogen, higher strength and structure stability
	06Cr25Ni20	S31008	310S	S31008	1.4845	-	耐高温, 耐腐蚀 High temperature and corrosive resistance
	00Cr19Ni11	-	304L	S30403	1.4307	3RE12(Sandvik)	极纯硝酸级不锈钢, 硝酸浓度65%以下 High purity of HNO ₃ grade stainless steel. Utilized 65% HNO ₃ and lower
	-	-	310L	S31002	1.4335	2RE10(Sandvik)	极纯硝酸级不锈钢, 硝酸浓度85%以下 High purity of HNO ₃ grade stainless steel. Utilized 85% HNO ₃ and lower
	20Cr25Ni20	S31020	310H	S31009	1.4821	-	高碳, 耐温度比310S高 Higher carbon content, and strength, better heat resistance than 310S
	16Cr25Ni20Si2	S38340	314	-	1.4841	-	高硅, 抗高温氧化性和抗蠕变性能好 High silicon content, high temperature oxidation resistance and creep-rupture strength
	022Cr25Ni22Mo2N	S31053	310MoLN	S31050	1.4466	2RE69(Sandvik)	尿素级310 Urea Grade 310
-	-	310HcbN	S31042	-	HR3C(NSSMC)	高强度, 耐高温, 锅炉管 High strength, high temperature resistance. Boiler tubes	
07Cr18Ni11Nb	S34749	347H	S34709	1.4942	-	耐氧化, 耐高温锅炉管 Oxidation resistant and high temperature resistant boiler tubes	
-	-	347HFG	S34710	-	-	高晶粒度347H, 锅炉管 High grain size 347H, boiler tube	
015Cr21Ni26M5Cu2	S31782	904L	N08904	1.4539	2RK65(Sandvik)	高钼, 有更高的耐各种腐蚀性能 High molybdenum has higher corrosion resistance.	
超级 奥氏体 Super Austenitic Stainless Steel	015Cr20Ni18Mo6CuN	S31252	S31254	S31254	1.4547	254SMO(Sandvik)	6钼, 高耐点蚀, 耐缝隙腐蚀 6% Mo content, high Pitting and crevice corrosion resistance.
	00Cr20Ni24Mo6N	-	N08367	N08367	-	AL6XN, AL6XN plus(ATI)	
	00Cr21Ni25Mo6CuN	-	N08926	N08926	1.4529	-	
	015Cr24Ni22Mo8Mn3CuN	S32652	S32654	S32654	1.4652	654SMO(Outokumpu)	7钼, 更高的耐点蚀, 耐缝隙腐蚀性 7% Mo content, better Pitting and crevice corrosion resistance.
	00Cr22Ni27Mo7CuN	-	S31277	S31277	-	-	

主要奥氏体不锈钢化学成分表 Chemical Content of Typical Austenitic Stainless Steel

牌号/元素	C	Mn	P	S	Si	Cr	Ni	Mo	Ti	Nb	Ta	N	V	Cu	Ce	B	Al
TP304	0.08	2.0	0.045	0.03	1.0	18.0-20.0	8.0-11.0	-	-	-	-	-	-	-	-	-	-
TP304L	0.035	2.0	0.045	0.03	1.0	18.0-20.0	8.0-13.0	-	-	-	-	-	-	-	-	-	-
TP304H	0.04-0.1	2.0	0.045	0.03	1.0	18.0-20.0	8.0-11.0	-	-	-	-	-	-	-	-	-	-
TP304N	0.08	2.0	0.045	0.03	1.0	18.0-20.0	8.0-11.0	-	-	-	-	0.1-0.16	-	-	-	-	-
TP304LN	0.035	2.0	0.045	0.03	1.0	18.0-20.0	8.0-12.0	-	-	-	-	0.1-0.16	-	-	-	-	-
Super 304	0.07-0.13	1.0	0.04	0.01	0.3	17.0-19.0	7.5-10.5	-	-	0.3-0.6	-	0.05-0.12	-	2.5-3.5	-	0.001-0.01	0.003-0.03
TP309S	0.08	2.0	0.045	0.03	1.0	22.0-24.0	12.0-15.0	0.75	-	-	-	-	-	-	-	-	-
TP309H	0.04-0.1	2.0	0.045	0.03	1.0	22.0-24.0	12.0-15.0	-	-	-	-	-	-	-	-	-	-
TP310S	0.08	2.0	0.045	0.03	1.0	24.0-26.0	19.0-22.0	0.75	-	-	-	-	-	-	-	-	-
TP310H	0.04-0.10	2.0	0.045	0.03	1.0	24.0-26.0	19.0-22.0	-	-	-	-	-	-	-	-	-	-
TP310L	0.015	2.0	0.02	0.015	0.15	24.0-26.0	19.0-22.0	0.1	-	-	-	0.1	-	-	-	-	-
TP310MoLN	0.025	2.0	0.02	0.015	0.4	24.0-26.0	20.5-23.5	1.6-2.6	-	-	-	0.09-0.15	-	-	-	-	-
TP310HC9N	0.04-0.10	2.0	0.045	0.03	1.0	24.0-26.0	19.0-22.0	1.6-2.6	-	-	0.2-0.6	0.15-0.35	-	-	-	-	-
1.4841/TP314	0.2	2.0	0.045	0.015	1.5-2.5	24.0-26.0	19.0-22.0	-	-	-	-	0.11	-	-	-	-	-
TP316	0.08	2.0	0.045	0.03	1.0	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	-	-	-	-	-	-
TP316L	0.035	2.0	0.045	0.03	1.0	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	-	-	-	-	-	-
TP316N	0.08	2.0	0.045	0.03	1.0	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	0.10-0.16	-	-	-	-	-
TP316H	0.04-0.1	2.0	0.045	0.03	1.0	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	-	-	-	-	-	-
TP316Ti	0.08	2.0	0.045	0.03	0.75	16.0-18.0	10.0-14.0	2.0-3.0	5X(C+N)	-	-	0.1	-	-	-	-	-
TP316LN	0.035	2.0	0.045	0.03	1.0	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	0.10-0.16	-	-	-	-	-
TP316MoD/316LUG	0.035	2.0	0.045	0.03	1.0	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	-	-	-	-	-	-
TP317	0.08	2.0	0.045	0.03	1.0	18.0-20.0	11.0-15.0	3.0-4.0	-	-	-	-	-	-	-	-	-
TP317L	0.035	2.0	0.045	0.03	1.0	18.0-20.0	11.0-15.0	3.0-4.0	-	-	-	-	-	-	-	-	-
TP317LM	0.03	2.0	0.045	0.03	1.0	18.0-20.0	13.5-17.5	4.0-5.0	-	-	-	0.2	-	0.75	-	-	-
TP317LMN	0.03	2.0	0.045	0.03	1.0	17.0-20.0	13.5-17.5	4.0-5.0	-	-	-	0.10-0.20	-	0.75	-	-	-
TP321	0.08	2.0	0.045	0.03	1.0	17.0-19.0	9.0-12.0	-	-	-	-	0.1	-	-	-	-	-
TP321H	0.04-0.10	2.0	0.045	0.03	1.0	17.0-19.0	9.0-12.0	-	4(C+N) - 0.70	-	-	-	-	-	-	-	-
TP347	0.08	2.0	0.045	0.03	1.0	17.0-19.0	9.0-13.0	-	-	10°C - 0.01	-	-	-	-	-	-	-
TP347H	0.04-0.1	2.0	0.045	0.03	1.0	17.0-19.0	9.0-13.0	-	-	8°C - 0.01	-	-	-	-	-	-	-
347HF6	0.06-0.10	2.0	0.045	0.03	1.0	17.0-19.0	9.0-13.0	-	-	8°C - 0.01	-	-	-	-	-	-	-
S30815	0.05-0.10	0.8	0.04	0.03	1.4-2.0	20.0-22.0	10.0-12.0	-	-	-	-	0.14-0.20	-	-	0.03-0.08	-	-
S31254	0.02	1.0	0.03	0.01	0.8	19.05-20.5	17.5-18.5	6.0-6.5	-	-	-	0.18-0.25	-	0.5-1.0	-	-	-
N08367	0.03	2	0.04	0.03	1.0	20.0-22.0	23.5-25.5	6.0-7.0	-	-	-	0.18-0.25	-	0.75	-	-	-
N08926	0.02	2	0.03	0.01	0.5	19.0-21.0	24.0-26.0	6.0-7.0	-	-	-	0.15-0.25	-	0.5-1.5	-	-	-
S32654																	
S31277																	

镍合金 Nickel Alloy Tube/Pipe

飞鹤管业以成熟的工艺技术和生产经验，优质的原材料，为客户生产耐高温耐腐蚀的镍基合金无缝管。

FH Tube's technical and production advantages assure us to supply customers with high quality nickel alloy tubes and pipes for serious corrosion and high temperature environments. The raw material is from famous domestic melting mill or from top class plants of the world.

用途 Applications:

换热器, 冷凝器, 仪表, 流体输送等。
Boiler, Heater, Heat Exchanger, Condenser, Instrumentation, Pipe lines...



标准 Available Specifications:

- ASTM/ASME B/SB163

无缝镍及镍合金冷凝器和热交换器管
Seamless Nickel and Nickel Alloy Condenser and Heat Exchanger Tubes

- ASTM/ASME B/SB165

镍铜合金(UNS N04400)无缝管
Nickel-Copper Alloy (UNS N04400) Seamless Tube and Pipe

- ASTM/ASME B/SB167

镍铬铁合金(UNS N06600, N06601, N06603, N06690, N06693, N06025 and N06045)及镍钴钼合金(UNSN06617)无缝管
Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025 and N06045) and Nickel-Cobalt-Molybdenum Alloy (UNS N06617) Seamless Pipe and Tube

- ASTM/ASME B/SB423

镍铁钼铜合金(UNS N08825 and UNS N08221)无缝管
Nickel-Iron-Molybdenum-Copper Alloy (UNS N08825 and UNS N08221) Seamless Pipe and Tube

- API5CRA / ISO13680

油套管及接箍料用耐蚀合金无缝管
Corrosion Resistant Alloy Seamless Tubes for Use as Casing, Tubing and Coupling Stock

- ASTM/ASME B/SB444

镍铬钼钨(铌)合金(UNS N06625)及镍铬钼硅合金(UNS N06219)管
Nickel-Chromium-Molybdenum-Columbium Alloy (UNS N06625) and Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219) Pipe and Tube

- ASTM/ASME B/SB407

镍铁铬合金无缝管
Nickel-Iron-Chromium Alloy Seamless Pipe and Tube

- ASTM/ASME B/SB668

UNS N08028 无缝管
UNS N08028 Seamless Tubes

- ASTM/ASME B/SB677

UNS N08904, UNS N08925, UNS N08926无缝管
UNS N08904, UNS N08925, UNS N08926 Seamless Pipe and Tube

- ASTM/ASME B/SB690

铁镍铬钼合金(UNS S08366 and UNS S08367)无缝管
Iron-Nickel-Chromium-Molybdenum Alloys (UNS S08366 and UNS S08367) Seamless Pipe and Tube

- ASTM/ASME B/SB622

无缝镍及镍钴合金管
Seamless Nickel and Nickel-Cobalt Alloy Pipe and Tube

可生产管材尺寸范围

Available Sizes

产品 Products	外径 OD		壁厚 WT		长度 Length	
	Inch	MM	Inch	MM	Ft max.	Mt max.
Tube	1/2"-3"	12.0-76.2	0.02"-0.5"	0.5-12.0	105'	32.00
Pipe	NPS1/2"-6"	21.34-168.3	Sch10-Sch80	2.11-12.7	98'	30.00

可生产超长管 Super Length Tube/Pipe is our advantages.

飞鹤管业可供镍合金无缝管材质一览表 Available Grades of Nickel Alloy Seamless Tube/Pipe

国际新牌号		国际统一代码	美标牌号	美国UNS代码	欧标代码	国外公司商业牌号	特征应用举例
NEW GB Grade	GB Grade	ASTM/ASTM Grade	UNS Grade	EN Grade	Foreign Commercial Grade	Characteristics/Examples of Applications	
Ni68Cu28Fe	-	Monel400	N04400	2.4360	Monel 400(SMC)	镍基、铜镍氧化还原性耐腐蚀，耐海水，氢氟酸，碱液腐蚀。化学，石化，海洋开发等用换热管。 Better oxidizing and reducing corrosive resistance. Resistance to seawater, HF and alkalies corrosion. Heat exchanger tube for chemical, petrochemical, ocean development.	
-	-	K500	N05500	2.4375	Monel K500(SMC)	兼有400合金性能，可时效强化，有更高的强度和硬度。 Combining the corrosive resistance of 400 alloy. Precipitation hardened, higher strength and hardness	
1Cr15Ni75Fe	NS3102	600	N06600	2.4816	Inconel 600(SMC)	耐高温氧化介质腐蚀，用于热处理及化学加工工业装置。 Resistance to oxidation corrosion at high temperature, to Chloride-ion SCC. Tubing used for heat treatment and chemical processing.	
1Cr23Ni60Fe13Al	NS3103	601	N06601	2.4851	Inconel 601(SMC)	抗高温氧化，及其它高温腐蚀形式，高温强度高。工业炉管，加热器等。 Good resistance to oxidation and other forms of high temperature corrosion. High strength at high temperature, Industrial furnace and heater tubes, etc.	
20Cr25Ni60Fe10Al	-	602	N06025	2.4633	Nicrofer 6025HT(VDM)	高高温蠕变强度，疲劳腐蚀强度，耐周期性高温氧化和渗碳。加热器和炉管等。 Excellent high temperature creep strength, good fatigue strength in the cycle fatigue mode, resistance to oxidation at high temperature in cycle condition, and to carburization. Heater and furnace tubes.	
-	-	617	N06617	2.4663	Inconel 617(SMC)	高的高温组织稳定性，强度，耐氧化。燃气轮机部件等。 High metallurgical stability, strength, and oxidation resistance at high temperature. Used in gas turbine parts, and prochemical processing.	
0Cr20Ni65Mo10Nb4	NS3306	625	N06625	2.4856	Inconel 625(SMC)	耐氧化-还原复合介质、耐海水腐蚀，热强度高，抗点蚀和缝隙腐蚀。用于化学加工工业中苛刻腐蚀环境或海洋环境。 Resistance to combined oxidizing and reducing corrosion, to seawater corrosion, high strength, resistance to pitting and crevice corrosion. Used in chemical processing and other severe environments and ocean environment.	
0Cr30Ni60Fe10	NS3105	690	N06690	2.4642	Inconel 690(SMC)	抗氯化物及高温高压水应力腐蚀，耐强氧化性介质及HNO ₃ 腐蚀；用于核电站热交换器、蒸发器管等。 Resistance to chloride and high temperature and pressure water corrosion. Resistant to severe oxidizing acid and HNO ₃ corrosion. Tube used in heat exchanger and the steam generator in nuclear power station.	
0Cr20Ni32AlTi	NS1101	800	N08800	1.4558	Incoloy 800(SMC)	抗氧化性介质腐蚀，高温抗渗碳性良好；用于热交换器及蒸汽发生器管、合成纤维的加热管。 Resistant to oxidizing acid, and carburization at high temperature. Tubes used in heat exchanger and steam generator, and heater.	
1Cr20Ni32AlTi	NS1102	800H	N08810	1.4876	Incoloy 800H(SMC)	抗氧化性介质腐蚀，抗高温渗碳，热强度高；用于合成纤维的加热管。 Resistant to oxidizing acid, and carburization at high temperature. Higher creep-rupture strength. Heater, furnace tubes. And super-heater and reheater tubes in power plant.	
-	-	800HT	N08811	1.4958	Incoloy 800HT(SMC)	抗氧化性介质腐蚀，抗高温渗碳，热强度高；比800有更高的蠕变断裂强度。用于合成纤维为程中的加热管炉管等。电站过热器再热器等。 Resistant to oxidizing acid, and carburization at high temperature. Higher Creep-rupture strength. Heater, furnace tubes. And super-heater and reheater tubes in power plant.	
0Cr21Ni42Mo3Cu2Ti	NS1402	825	N08825	2.4858	Incoloy 825(SMC)	耐应力腐蚀，点蚀及缝隙腐蚀及氧化-还原性复合介质腐蚀；用于热交换器及冷凝器、含多种离子的硫酸环境。进气井管。 Resistant to both reducing and oxidizing acids, to SCC, pitting and crevice corrosion. Heat exchanger and condenser tubes, sulfuric and phosphoric acids tubing, API tubing.	