



不锈钢宽厚冷轧板

Wide & Thick Cold Rolled Stainless Steel Plate

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Taiyuan Iron & Steel(Group)Co.,Ltd.

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企业使命

用不锈钢智慧创造卓越品质

Enterprise Mission

To pursue outstanding quality with innovative and stainless wisdom

战略目标

建设全球最具竞争力的不锈钢企业

Strategic Target

Building TISCO into the Most Competitive stainless steel
Producer in the World

核心价值观

以人为本 用户至上 质量兴企 全面开放 不断创新

Core Values

Relying the People, Putting Customers' Needs First, Rejuvenating
Enterprise through Quality, Fully Opening, Keeping Innovative

营销理念

为用户提供更全、更好、更快的解决方案
在长期合作中实现共赢

Management Concept

Providing Customer with Better and Faster Solution Package
to Realize Long-Term Win-Win Cooperation

太原钢铁(集团)有限公司
Taiyuan Iron & Steel(Group)Co.,Ltd.



太原钢铁(集团)有限公司(简称太钢)是中国特大型钢铁联合企业和全球产销量最大、工艺技术装备水平最高、品种规格最全的不锈钢企业。经过70余年发展,已具备1000万吨以上钢、铁、材的生产能力,其中不锈钢产能达300万吨。2012年生产不锈钢310万吨,产星世界第一!



太钢是中国第一炉不锈钢、第一炉硅钢、第一张硅钢片的诞生地。拥有铁矿石等钢铁冶炼原料的采掘与加工、钢铁冶炼、钢铁材料压力加工、冶金设备及备品备件制造等方面先进技术和装备,主要产品有不锈钢、冷轧硅钢片(卷)、热连轧卷板、车轴钢、合金模具钢、军工钢等。产品广泛应用于石油化工、交通运输、建筑装饰、家用电器、医疗食品等行业及神舟系列飞船、嫦娥一号、“东风”系列火箭及核电站等高端领域,进入三峡水利、西气东输、奥运场馆及世博场馆等国家重点工程。2011年在国家认定的729所企业技术中心中,太钢技术中心排名第二,位钢铁行业首位。太钢拥有以不锈钢为核心的745项具有自主知识产权的核心技术,其中100多项达到国际先进水平。

太钢坚持绿色发展理念,不断推进工艺装备绿色化、制造过程绿色化、产品应用绿色化,积极为新能源产业发展提供最佳产品和最优解决方案。太钢将进一步做强主业,坚持多元发展、延伸发展,到“十二五”末,营业收入达到2000亿元,成为国内一流、世界著名的大型企业集团。

为适应市场需求,太钢新增加的不锈钢宽幅冷轧板生产线,产品宽度达到2100mm,厚度达到8mm,其中1500mm宽冷板最薄为0.4mm,成为国内唯一宽幅不锈钢冷轧生产厂及国际上最宽的不锈钢冷轧生产企业。

Taiyuan Iron and Steel (Group) Co. Ltd. (TISCO) is one of the steel giants in China and, the largest stainless producer in the world in term of output and sales equipped with the most advanced facilities covering pretty wide product range. After over 70 years development TISCO has the capacity of 10 million tons of steel, which includes 3 million tons of stainless. The year of 2012 saw TISCO become No.1 stainless producer in the world with production of 2.72 million tons of stainless.

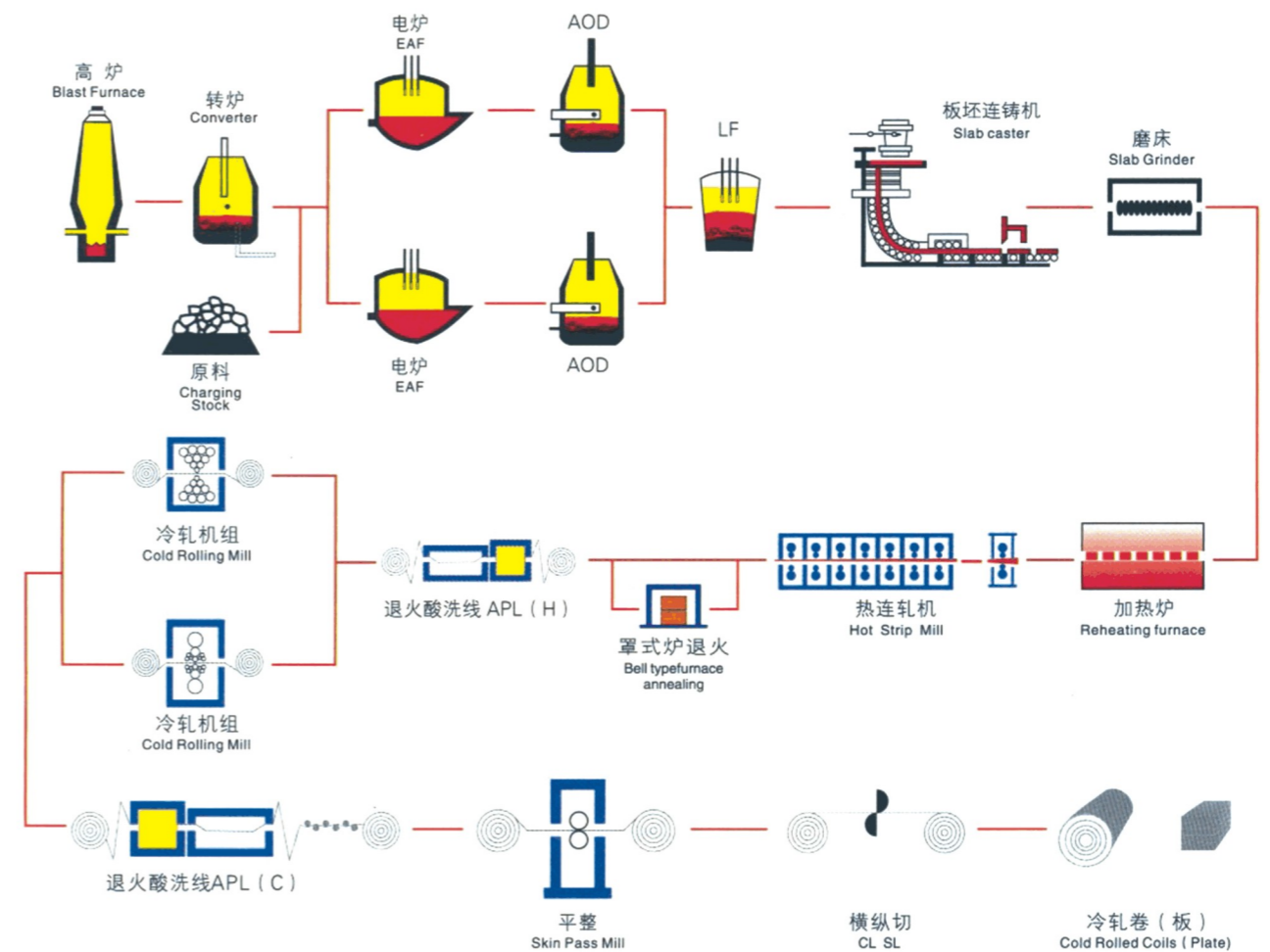
In TISCO came out the first heat of stainless steel and first heat of silicon steel as well as the first sheet of silicon in the history of China steel industry. TISCO is well equipped for mining and iron ore refining, iron and steel making, rolling and forging, metallurgical equipment and spare parts manufacturing. TISCO.s products cover stainless steel of cold and hot rolling.cold rolled silicon, hot rolled coil, axle steel, die steel and steel for military purpose etc. TISCO.s products are widely used in petrochemical industry, transportation, construction decoration, home appliance, medical and food industry. TISCO's products can be also found in the national key projects such as Shenzhou spaceship, Chang'e-1 Moon Detector, Dongfeng rocket series and nuclear power. Three Gorges ,West-East natural gas transmission, and Olympic game facility as well as Shanghai world expos. In 2011 TISCO technology centre ranked No.2 among the 729 state acknowledged enterprise technology institutions, and No.1 among the steel industry. TISCO owns 745 core patents in the field of stainless and over 100 patents are taken as the world class.

TISCO adheres to green development concept, and constantly advancing technology and equipment environment-friendly, green manufacturing process, green product application, and actively provides the best products and best solutions to the development of new energy industries. TISCO will further strengthen its mainstay industry, adhere to diversified development, extension development, and by the end of "twelfth-five-year", the business income shall reach 200 billion yuan, and convert itself into a domestic first-class, world famous conglomerates.

In order to meet the demand of the market, TISCO newly builds the stainless steel extra wide cold-rolled plate production line. The product width is 2100mm, thickness is 8mm, and the thickness of 1500mm width plate is 0.4mm. It is the plant which-can produce the stainless steel plate with the widest size

工艺流程 >>>

Process Flow



装备优势 >>>

Advanced Equipment

新建150万吨不锈钢生产线是国际上产量和规模最大、技术最先进、装备水平最高、流程最短、环保最佳的全流程生产系统，使不锈钢冷轧产品具有始终如一的质量。

The new stainless steel engineering which has the capacity of 1.5 mil tons, has the largest volume of production and scale, most advanced technology, highest level of equipment, shortest process and best environmental protection in the world, and is a full process production system. It makes the quality of cold rolled product permanent.



180吨顶底复吹脱磷转炉 180t Top and Bottom Blowing De-Phosphorus Converter

采用顶底复吹模式，脱C、脱P、脱S能力强，可为不锈钢生产提供超低P、S钢水；
冶炼采用副枪自动取样，更有利于粗炼钢水的质量稳定；
采用了VAI一、二级自动控制系统，过程控制及终点成份控制更加准确。

Adopting top and bottom blowing pattern, has the strong capacity of decarbon, de-Phosphorus and de-sulfur, and provide extra-low P, S liquid steel for the production of stainless steel.



2250mm热连轧机组 2250mm Hot Strip mill

2250mm生产线装备和控制系统水平代表了当今世界热连轧机组的最高水平；
板形控制系统采用了最新的CVC技术，压下系统采用液压AGC控制技术，保证各种规格产品的良好板形和优良尺寸精度；
采用热卷箱，确保不锈钢整卷性能均一。

The equipment and control system of 2250mm HSM represents the current highest technological level of the HSM in the world.
Profile and flatness control system adopts the newest CVC technology, the screw-down system adopts hydraulic AGC control system, ensures the good profile and flatness and size accuracy of all products.
Hot coil box are used, ensures the uniform properties of the stainless steel coil.

装备优势 >>>

Advanced Equipment

2100mm宽幅热线 2100mm wide hot line

◆ 热轧卷退火酸洗线APL (H) Hot-rolling Annealing and Pickling Line

是世界上最先进的、国内最大的热轧卷退火酸洗线，产能80万吨；
喷丸酸洗前设有拉伸弯曲破磷装置，酸洗前预处理能力得到强化；后部增设有在线平整机。

It is the most advanced & largest hot-rolling annealing and pickling line with 0.8 million tons of annual production capacity. Equipped with the scale breaker in front of shot blaster and pickling section, the pre-treatment capacity is strengthened before pickling, and on-line skin pass mill comes after pickling section.



◆ 独一无二的强力拉矫机 Unique power straightening machine

超大功率拉伸矫直机，最大达200吨；最大延伸效果，延伸率可达7%；自动延伸率控制模式，可实现准确控制；通过延伸强化，屈服强度可提高20%；
独有的工艺张力装置；
首创超大范围张力理念。

Super-power tension leveler, up to 200t. maximum elongation up to 7%. Automatic elongation control mode makes control accurate. Yield strength can be improved by 20% through elongating hardening.
The unique process tension unit.
The creative philosophy of wide-range tension control.



S6宽幅冷轧机 S6 wide cold rolling mill

轧制能力强，压下率大，厚度精度高，表面光洁度高。

Heavy rolling force, large reduction, high thickness accuracy and good surface finish.



森吉米尔轧机 Sendzimir mill

世界上最先进的冷轧机，具有先进的厚度、板形自动控制装置，产品精度高、板形优良、同板差小。配置有先进的AGC、AFC控制系统。

The most advanced cold rolling mill with advanced automatic thickness, profile and flatness control system, the products are of high accuracy, good profile and flatness and less thickness deviation. Equipped with advanced AGC, AFC control systems.



装备优势 >>>

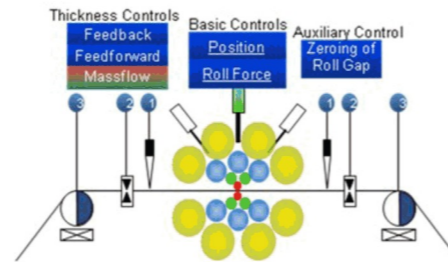
Advanced Equipment

◆ AGC (厚度自动控制) 系统

AGC (automatic gauge control) system

采用最先进的AGC控制系统，配置基本系统及大量补偿功能，以及AGC与AFC的相互补偿功能，使宽带钢的厚度精度有可靠的保证。

The most updated AGC control system, in standard configuration, empowered with a great number of compensatory functions and AGC/AFC supplementary features.

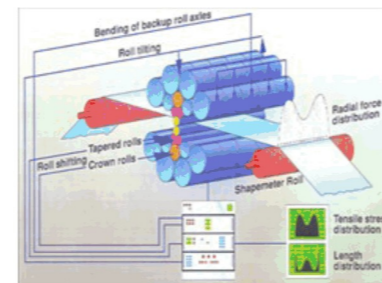


◆ AFC (板型自动控制) 功能

AFC (automatic flatness control) function

板型辊内嵌感应器提高了测量准确性；凸度、倾斜、轴向三种调节丰富了调节手段；小于8i单位的控制精度改善了成品板型效果；板型目标曲线可根据需要调整；全自动控制方式确保为用户提供最稳定板型。

Sensors built in the shapemeter roll improves measurement accuracy. Available with bending, tilting and shifting control, for easy and effective adjustment. Better than 8 i-unit control accuracy guarantees better shape of the product. Flatness target curve is adjustable where required. Fully automatic control mode means a guarantee to provide customers with guaranteed flatness.



2100mm宽幅冷线 2100mm wide cold line

◆ 冷轧卷退火酸洗线 APL (C)

Cold-rolling Annealing and Pickling Line

具有脱脂清洗功能，可确保良好表面质量、性能稳定、均一的产品。

It has the functions of degreasing and cleaning, which ensures good surface quality, uniform and stable properties of the products.



◆ 在线平整、拉矫机 Formation on line, straightening machine

配置在线平整机，可得到优良的表面质量，改善板型，满足2B、2D表面要求；
配置在线拉矫机，可得到更佳的板型，产品不平度<2mm/m；
有效提高成材率，有利于降低生产成本，最终体现价格低。

If integrated in inline SPM, it helps produce good surface quality and improve flatness, to the satisfaction of 2B and 2D requirement.
If integrated in inline tension leveler, much better flatness can be made, less than 2mm/m.
Increased yield rate and reduced cost, so the lower and competitive price to the end.

装备优势 >>>

Advanced Equipment

◆ 独有的工艺段张力与速度控制系统

The unique process section tension/speed control system

冷轧板厚度 (mm) : 0.4~8.0
带钢宽度 (mm) : 1500~2100
最大卷重 (吨) : 40

Cold rolled product thickness (mm):0.4 ~ 8.0
Strip width (mm):1500 ~ 2100
Max. coil weight (ton):40

◆ 首创超大范围张力控制理念

The creative philosophy of wide-range tension control

传动系统采用双电机模式，满足0.4~8.0mm大范围规格变化时的张力稳定控制，作用力控制精度1%以内；
工艺段采用两端张力控制模式，并解决了张力与速度基准问题，使工艺段张力更加稳定。

Drive system, designed with two motors, ensures a steady tension control over a wide thickness range of 0.4 ~ 8.0mm, with applied force controlled within a tolerance of 1 %.
The process section is controlled of tension at both ends, eliminating a dilemma of tension-based or speed-based control selection and allowing a constant tension in process section.



宽幅冷板横切生产线

设计年产量: 28万吨
宽度:1219~2100mm
厚度: 0.4~8.0mm
六重式矫直机
拥有世界上先进的飞剪机
自动剥板机

Designed annual capacity: 280,000t
Width: 1219 ~ 2100mm
Thickness: 0.4 ~ 8.0mm
6 cage-roll leveler
Advanced flying shear
Automatic stacker



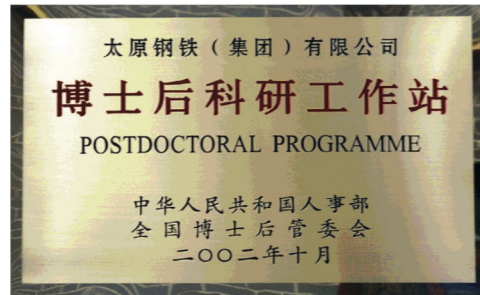
宽幅冷板纵切生产线 Slitting line for wide cold strip

设计年产量: 26万吨
宽度: 1219~2100mm
厚度: 0.4~8mm
双纠偏设计
自由更换的切边剪

Designed annual capacity: 260,000t
Width: 1219 ~2100mm
Thickness: 0.4 ~8mm
Twin-steering unit
Changeable rotary shear

研发能力 >>>

Advanced Equipment

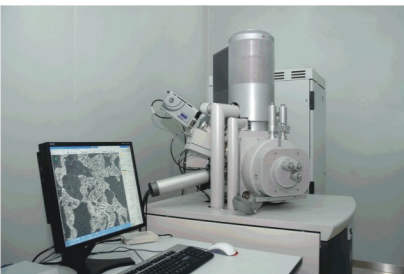


国家级实验室 National level laboratory



在国家认定的729家企业技术中心中，太钢技术中心排名第2位。

Tisco technology center ranks 2 th place among enterprise-based 729 technology centers accredited by the state



扫描电镜
Scanning Electron Microscope



透射电镜
Transition Electron Microscope



热模拟试验机
Thermal Simulating Tester



全自动电子拉伸试验机
Automatic electronic tensile tester

企业荣誉 >>>

Honor & Awards



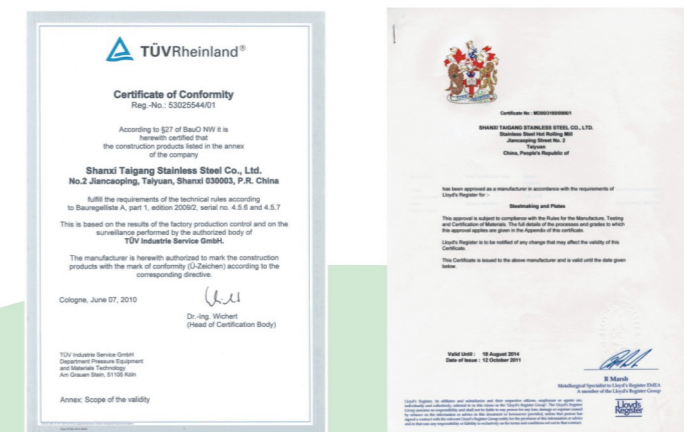
自主知识产权 >>> Proprietary Intellectual Rights

- ◆《高质量不锈钢板材技术开发》获国家科技进步二等奖
- ◆太钢含氮不锈钢生产工艺及品种开发，国家科学技术进步二等奖
- ◆以铁水为原料生产不锈钢新技术开发与创新，国家科学技术进步二等奖
- ◆400系不锈钢制造工艺技术及品种开发，冶金科学技术进步一等奖
- ◆双相钢酸洗工艺研究，冶金科学技术进步二等奖
- ◆高等级不锈钢磨砂板生产工艺技术及产品开发冶金科学技术进步三等奖
- ◆太钢获得46项省部级以上科技奖，17项省级以上新产品奖及80余项发明专利
- ◆《AOD炉龄、工艺技术开发》等三项成果获山西省科技进步一、二等奖
- ◆00Cr17Mo超纯铁素体不锈钢、双相不锈钢复合板等六种产品分别获得国家重点新产品奖、山西省优秀新产品奖
- ◆不锈钢2B板被科技部认定为国家高新技术产品
- ◆不锈钢中板通过了TUV认证，并获得了冶金实物质量金杯奖
- ◆双相不锈钢通过了中国船级社CCS认证

- ◆ "Technical development of high quality stainless steel flat product" won second prize of state technical progresses.
- ◆ "Production technology and new grade development of Nitrogen-containing stainless steel by TISCO" won second prize of state technical progresses.
- ◆ "Development and innovations on hot-metal based production of stainless steel" won second prize of state technical progresses.
- ◆ "Producing technology and new grade development for 400 series stainless steel" won first prize of technical progresses in metallurgical industry.
- ◆ "Research on duplex steel pickling" won second prize of technical progresses in metallurgical industry.
- ◆ "Producing technology and product development for high-grade stainless steel dull finish grade" won third prize of technical progresses in metallurgical industry.
- ◆ TISCO has won 46 scientific and technical prizes at or above provincial or ministerial level; 17 new product rewards at or above provincial level and held over 80 patents.
- ◆ "AOD campaign, production technology development" and other two won the first and second prizes of Shanxi technical progresses.
- ◆ 00Cr17Mo super-pure ferritic stainless steel, duplex stainless steel clad plate and so on six products were honored as among statewide new products and Shanxi great new products, respectively.
- ◆ Stainless steel 2B grade was approved by the Ministry of Science & Technology as the state hi-tech products.
- ◆ Stainless steel plate passed TUV examination and was rewarded Golden Cup of physical quality of metallurgical product.
- ◆ Duplex stainless steel passed CCS, China Classification Society, examination.



质量保证体系 >>> Quality System



主要品种 >>> Main Production

◆可生产不同表面的产品。不仅可生产常规2B表面产品，还可生产适用于喷涂、冲压制造行业的2D表面产品

can produce differ face production, can produce normal 2B face and can produce 2D face apply in spraying and smearing, punch manufacturing.

	表面组别 The Superficial Group Leaves	表面描述 Face Description	适用范围 Apply Range
热板 Hot plate	No.1	热轧退火酸洗卷 Hot rolled, annealed and pickled coil	—
	2E	热轧卷直接轧制后退火酸洗	—
	THS	热轧卷直接轧制后退火酸洗较高强度卷 Direct-rolled, annealed and pickled coil under high-tension elongation	—
	TSHS	热轧卷直接轧制后退火酸洗高强度卷 Direct-rolled, annealed and pickled coil under super high-tension elongation	—
冷板 Cold sheet	2B	冷轧后进行热处理，酸洗或类似处理，最后经平整获得适当的光洁度 heat treatment, acid wash or similar treatment after cold-rolled, achieve appropriate roughness level using flating	可以用于各行业、五金 Apply to every vocation, hardware
	2D	冷轧后进行热处理，酸洗或类似处理，最后经毛面辊平整获得一定的粗糙度 heat treatment, acid wash or similar treatment after cold-rolled, achieve appropriate roughness level using roller flatting	用于表面需喷涂的场合、深冲加工 Apply to spary and smear occasion, deep punch
	No.3	用GB2477所规定的粒度为100-120#研磨材料进行抛光精整 According to GB2477, polish and flat using 100-120# granularity material	装饰 Decorate
	No.4	用GB2477所规定的粒度为150-180#研磨材料进行抛光精整 According to GB2477, polish and flat using 150-180# granularity material	装饰 Decorate
	HL	用适当粒度的研磨材料抛光，使表面呈连续磨纹 Polish using appropriate material, achieve continuous vines face	装饰 Decorate

注：2B、2D产品可稳定供货，No.3、No.4、HL产品将来可提供。
Remark :2B、2D Production can be covered with velum, No.3、No.4、HL can be covered in future.

主要品种 >>> Main Production

系列 Series	国标 GB		日标 JIS	欧标 EN	美标 AISI	用途 Applicacion
	新牌号New brands	旧牌号Old brands				
奥氏体 Austenitic	06Cr19Ni10	0Cr18Ni9	SUS304	1.4301	304	厨房用具、五金制品、汽车零件、化工器械、装饰 kitchen appliance, hardware, auto accessory, chemical cachine decorate
	022Cr19Ni10	00Cr19Ni10	SUS304L	1.4307	304L	
	06Cr17Ni12Mo2	0Cr17Ni12Mo2	SUS316	1.4401	316	
	022Cr17Ni12Mo2	00Cr17Ni14Mo2	SUS316L	1.4404	316L	化工器械、热交换器 chemical machine, heat exchanger
	06Cr17Ni12Mo2Ti	0Cr18Ni12Mo2Ti	SUS316Ti	1.4571	316Ti	
	06Cr19Ni13Mo3	0Cr19Ni13Mo3	SUS317	—	317	
	022Cr19Ni13Mo3	00Cr19Ni13Mo3	SUS317L	1.4434	317L	
	06Cr18Ni11Ti	0Cr18Ni10Ti	SUS321	1.4541	321	
	10Cr18Ni12	1Cr18Ni12	SUS305	1.4303	305	
	12Cr17Ni7	1Cr17Ni7	SUS301	1.4319	301	
	022Cr17Ni7	00Cr17Ni7	SUS301L	1.4318	301L	
	06Cr23Ni13	0Cr23Ni13	SUS309S	1.4950	309S	家电、燃烧器、餐具、厨房用品、装饰 Electrical appliances, burner, tableware, kitchen thing, deaxation
	06Cr25Ni20	0Cr25Ni20	SUS310S	1.4951	310S	
	06Cr18Ni11Nb	0Cr18Ni11Nb	SUS347	1.4550	347	
10Cr17	1Cr17	SUS430	1.4016	430		
铁素体 Ferritic	022Cr11Ti	00Cr12Ti	SUS409L	1.4512	409	汽车排气管、热交换机、集装箱 exhaust pipe, heat exchanger, container
	022Cr12	00Cr12	SUS410L	—	410L	集装箱 Container
	06Cr13	0Cr13	SUS410S	1.4000	410S	容器 Vessel
	12Cr13	1Cr13	SUS410	1.4006	410	机械零件 Machine accessory
	06Cr13Al	0Cr13Al	SUS405	1.4002	405	
	022Cr12Ni	00Cr12Ni	—	1.4003	—	
	—	00Cr17Mo	SUS436L	—	436L	
	019Cr19Mo2NbTi	00Cr18Mo2	SUS444	1.4521	444	
	—	TTS443	—	—	443	
	马氏体 Martensitic	20Cr13	2Cr13	SUS420J1	1.4021	420J1
30Cr13		3Cr13	SUS420J2	1.4028	420J2	刀具、阀门、星具 blade tool, value, tableware
双相钢 Duplex	022Cr22Ni5Mo3N	00Cr22Ni5Mo3N	SUS329J3L	1.4462	2205	水利、石化 Water conservation, petrification
	022Cr23Ni4MoCuN	00Cr23Ni4MoCuN	—	1.4362	2304	

主要品种 >>> Main Production

牌号 Grade	化学成分% Chemical composition %									其它 Other
	C	Ni	Cr	P	S	Si	Mn	Mo	N	
304	≤0.08	8.0-11.0	18.0-20.0	≤0.045	≤0.030	≤1.0	≤2.0	—	—	—
304L	≤0.03	8.0-12.0	18.0-20.0	≤0.045	≤0.030	≤1.0	≤2.0	—	—	—
316	≤0.08	10.0-14.0	16.0-18.0	≤0.045	≤0.030	≤0.75	≤2.0	2.0-3.0	≤0.10	—
316L	≤0.03	10.-14.0	16.0-18.0	≤0.045	≤0.030	≤1.0	≤2.0	2.0-3.0	—	—
316Ti	≤0.08	10.0-14.0	16.0-18.0	≤0.045	≤0.030	≤1.0	≤2.0	2.0-3.0	—	Ti:多5C
317	≤0.08	11.0-15.0	18.0-20.0	≤0.045	≤0.030	≤1.0	≤2.0	3.0-4.0	—	—
317L	≤0.03	11.0-15.0	18.0-20.0	≤0.045	≤0.030	≤1.0	≤2.0	3.0-4.0	—	—
321	≤0.15	8.0-11.0	18.0-20.0	≤0.045	≤0.030	≤0.75	≤2.0	—	—	Ti:多5C
305	≤0.12	11.0-13.5	16.5-19.0	≤0.045	≤0.030	≤1.0	≤2.0	—	—	—
301	≤0.15	6.0-8.0	16.0-18.0	≤0.045	≤0.030	≤1.0	≤2.0	—	—	—
301L	≤0.03	6.0-8.0	16.0-18.0	≤0.045	≤0.030	≤1.0	≤2.0	—	—	—
309S	≤0.08	12.0-15.0	22.0-24.0	≤0.045	≤0.030	≤0.75	≤2.0	—	—	—
310S	≤0.08	19.0-22.0	24.0-26.0	≤0.045	≤0.030	≤1.5	≤2.0	—	—	—
347	≤0.08	9.0-13.0	17.0-19.0	≤0.045	≤0.030	≤0.75	≤2.0	—	—	Nb:10C-1.0
430	≤0.12	—	16.0-18.0	≤0.04	≤0.02	≤1.0	≤1.0	—	—	—
409L	≤0.03	—	10.5-11.7	≤0.04	≤0.03	≤1.0	≤1.0	—	—	—
410L	≤0.03	—	11.0-13.5	≤0.04	≤0.03	≤1.0	≤1.0	—	—	—
410S	≤0.08	—	11.5-13.5	≤0.04	≤0.03	≤1.0	≤1.0	—	—	—
410	≤0.15	—	11.5-13.5	≤0.04	≤0.03	≤1.0	≤1.0	—	—	—
0Cr13Al	≤0.08	—	11.5-14.5	≤0.04	≤0.03	≤1.0	≤1.0	—	≤0.03	Al:0.1-0.3
T4003	≤0.03	0.3-1.0	10.5-12.5	≤0.04	≤0.015	≤1.0	≤1.5	—	—	—
436	≤0.025	—	16.0-18.0	≤0.04	≤0.03	≤1.0	≤1.0	—	—	—
444	≤0.025	1	17.5-19.5	≤0.04	≤0.03	≤1.0	≤1.0	1.75-2.5	≤0.035	—
TTS443	≤0.025	—	19.5-22.0	≤0.035	≤0.015	≤1.0	≤1.0	≤0.025	—	Ti+Nb:0.2+4 x (C+N)~0.75
420J1	0.16-0.25	—	—	≤0.04	≤0.03	≤1.0	≤1.0	—	—	—
420J2	0.26-0.35	—	—	≤0.04	≤0.03	≤1.0	≤1.0	—	—	—
2205	≤0.03	4.5-6.5	21.0-23.0	≤0.03	≤0.02	≤1.0	≤2.0	2.0-3.5	0.08-0.2	—
2304	≤0.03	3.0-5.5	21.5-24.5	≤0.04	≤0.03	≤1.0	≤2.5	0.05-0.6	0.05-0.2	Cu:0.05-0.6

主要品种 >>> Main Production

产品规格范围 Product specifications

宽度 (切边或毛边) Width (cut & rough)	厚度 Thickness	长度 Length
1219~1600mm	0.4-8.0mm	3.0-13.0m或成卷 3.0-13.0m & coils
1500~2100mm	0.8-8.0mm	3.0-13.0m或成卷 3.0-13.0m & coils

宽度偏差 Width deviation

厚度 Thickness	宽度偏差范围 Width deviation
0.4-3.0mm (含3.0mm)	0~+2mm
3.0-8.0mm (含8.0mm)	0~+4mm
8.0-14.0mm	0~+5mm

宽度偏差 Width deviation

项目 Item	宽度偏差范围 Width deviation
长度 Length	0~+0.5mm/m
对角线差 Diagonal deviation	长度在6m范围≤4mm;长度在6m范围≤6mm Length≤6m Range ≤4mm; length≤6m Range≤6mm

主要品种 >>> Main Production

厚度规格及允许偏差 Thickness specifications and deviations

公称厚度 Thickness	厚度偏差范围 Thickness deviation		
	正公差 Positive tolerance	小负公差 Tiny negative tolerance	大负公差 Bigger negative tolerance
≥0.40-0.60	-0, +0.050	+0, -0.050	-0.030, -0.080
≥0.60-0.80	-0, +0.050	+0, -0.050	-0.040, -0.090
≥0.80-1.00	-0, +0.060	+0, -0.060	-0.040, -0.100
≥1.00-1.25	-0, +0.070	+0, -0.070	-0.050, -0.120
≥1.25-1.60	-0, +0.080	+0, -0.080	-0.070, -0.150
≥1.60-2.00	-0, +0.090	+0, -0.090	-0.080, -0.170
≥2.00-2.50	-0, +0.110	+0, -0.110	-0.090, -0.200
≥2.50-3.15	-0, +0.120	+0, -0.120	-0.130, -0.250
≥3.15-4.00	-0, +0.150	+0, -0.150	-0.150, -0.300
≥4.00-5.00	-0, +0.150	+0, -0.150	-0.250, -0.400
≥5.00-6.00	-0, +0.160	+0, -0.160	-0.290, -0.450
≥6.00-8.00	-0, +0.170	+0, -0.170	-0.330, -0.500

说明：1、以上厚度规格及允许偏差主要参照JIS.G4305-2005标准制订；
2、上表适用于不锈钢冷轧厂宽幅系统生产的宽度为1300mm-2100mm的宽幅冷轧板。

Notes: 1. The above mentioned thickness and allowable tolerance are subject to JIS.G4305-2005
2. The table above is applicable only to 1300mm-2100mm wide cold strip produced by the wide strip producing sector in Cold Rolling Plant, Taigang Stainless Steel Co., Ltd.

产品优势 >>> Advance of Production

◆ 产品质量更好、更稳定

太钢采用铁水冶炼，材料的基体纯净，性能优良、耐蚀性好、使用寿命长。
采用先进轧机生产的宽幅冷轧板，无论是板形还是厚度精度均与常规产品一致。

◆ 宽幅板的特点

宽幅冷轧板宽度超过目前国内所有的冷轧板，是常规产品无法替代的产品。
宽幅冷轧板产品对于装饰及结构用途可以在使用过程中减少拼接焊缝，降低加工成本。
太钢宽幅冷轧板填补了国内宽幅板的空白。为用户的设计和应用提供了广阔的选择空间。

◆ 厚规格冷板特点

厚规格不锈钢冷轧板产品具有表面光洁度高，尺寸精度高，加工性能优越、耐腐蚀性能良好等特点，结束了国内大于4.5mm冷轧板产品不能生产的历史。

厚规格产品特别适用于表面要求高，但厚度又必须达到一定要求的大型罐体、结构件及高档餐具制造，减少加工制造成本，满足用户更高的使用要求。

◆ The product quality is better and more stability.

Stainless steel is smelt with hot iron in TISCO, which has good purify, good performance, good corrosion-resistant and long service life

Stainless steel is produced with the high precision multi-roll mill, which have good shape and high precision.

◆ The merit of broad plate.

The broad cold-rolling plate is the widest in our country, which is not replaced by general product.

The broad cold-rolling reduces the times of welding and cost of production when it is used in decorating and construction field.

The TISCO's broad cold-rolling plate supplies a gap in our country and offers a wide choice for design and appliance of consumers.

◆ Features of the thick specification of cold rolled plate

The product of thick specification of cold rolled plate has the features of higher smooth finish, more accuracy size, superior deformability, better corrosion resistance and so on, and fills up the blank of the inability of production of GT (greater than) 4.5mm cold rolled plate in mainland.

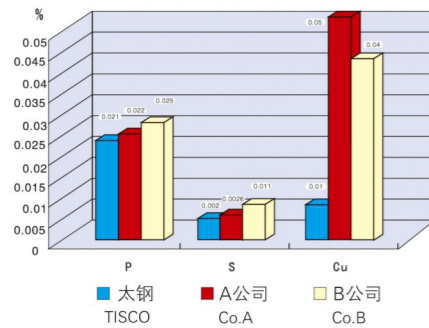
The product of thick specification is better used in the large containers, structural unit, and top grade table ware that are made up with a certain thicker plate together with good surface, which is better suit to requirement of consumer in a lower cost.

产品优势 >>>

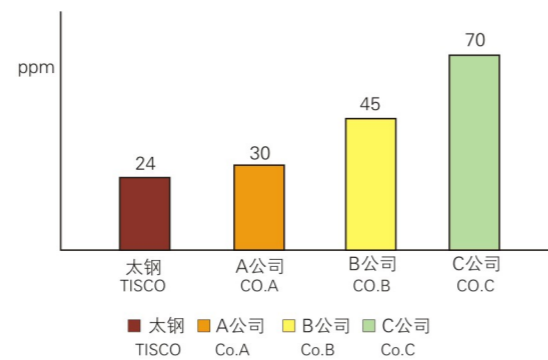
Advance of Production

钢质纯净度 Steel Purity

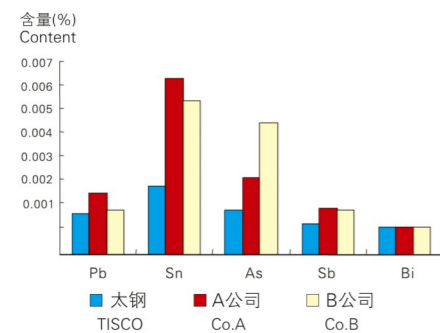
A、成品P、S、Cu含量的对比
P.S comparison in finished products



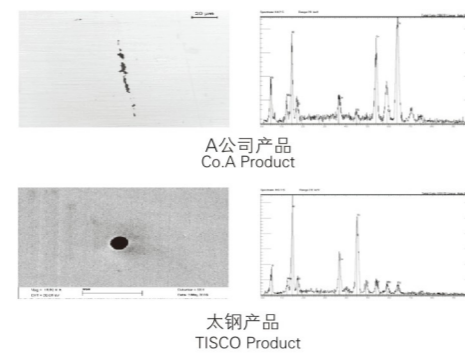
B、[O]含量对比
(O) comparison



C、五害元素含量对比
Comparison of 5 harmful elements Content

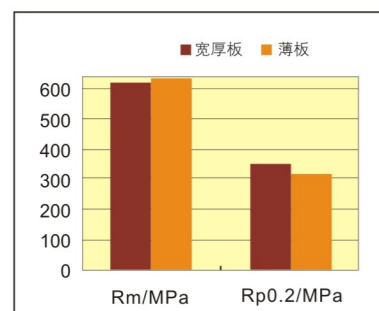


D、夹杂物数量、形态和尺寸对比
Impurities comparison of quantity, shape and size

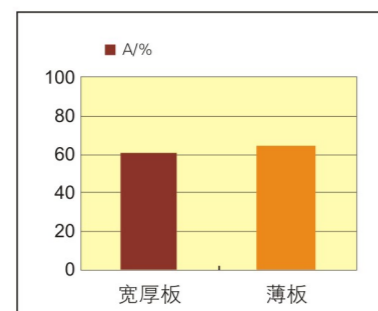


产品机械性能
Production Machinery Performance

Production Machinery Performance



强度(MPa)
Tension (Mpa)



延伸率(%)
Elongation (%)

盐雾试验 (72小时)
Spring salt solution tested (72h)

Spring salt solution tested (72h)



常规冷板
General cold rolled plate

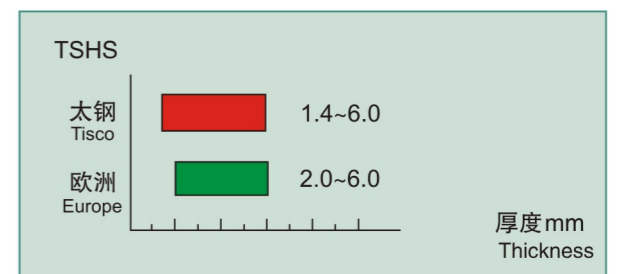
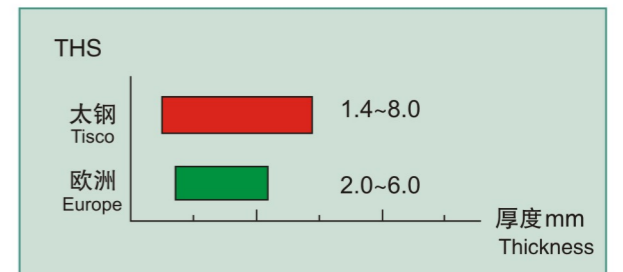
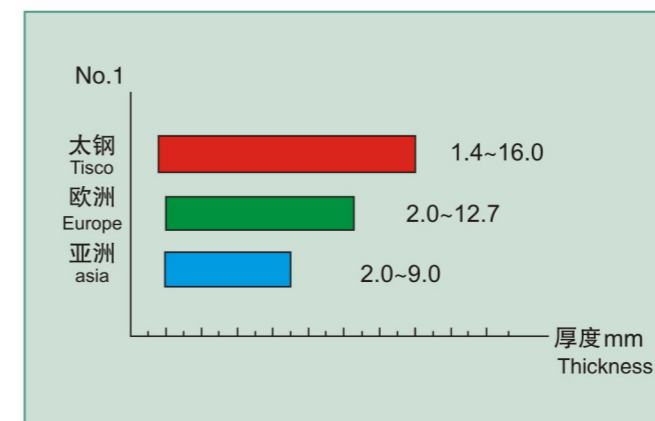
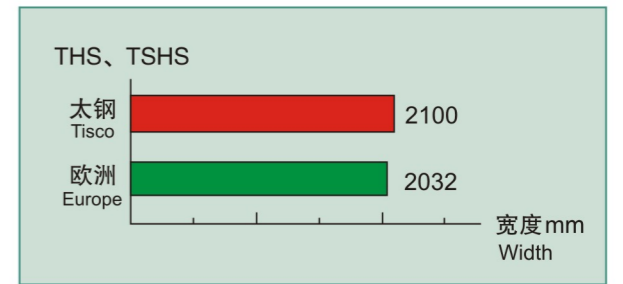
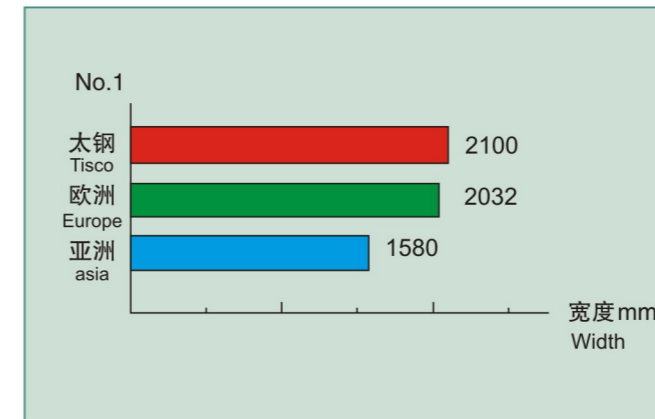


宽厚冷板
Extra wide & thick cold rolled plate

主要规格 >>>

Main Specification

极限规格 Extreme Specifications



◆ 超宽规格产品可大大提高材料利用率，特别适合于大型容器等设备制造，减少焊缝，降低制造和维修费用，提高安全可靠。

◆ 超厚规格产品与常规工艺生产的单张中板相比，表面质量、尺寸精度及材料利用率大幅度提高，可满足用户的柔性化需求，为用户的设计和和应用提供了更广泛的选择空间。

◆ 超薄规格产品在工业用管等诸多领域可替代常规的冷轧产品，降低制造成本。

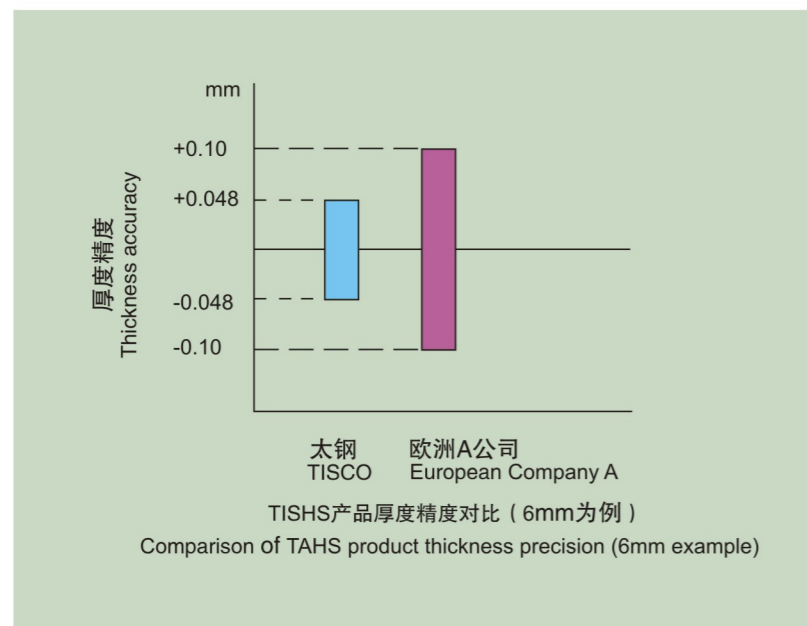
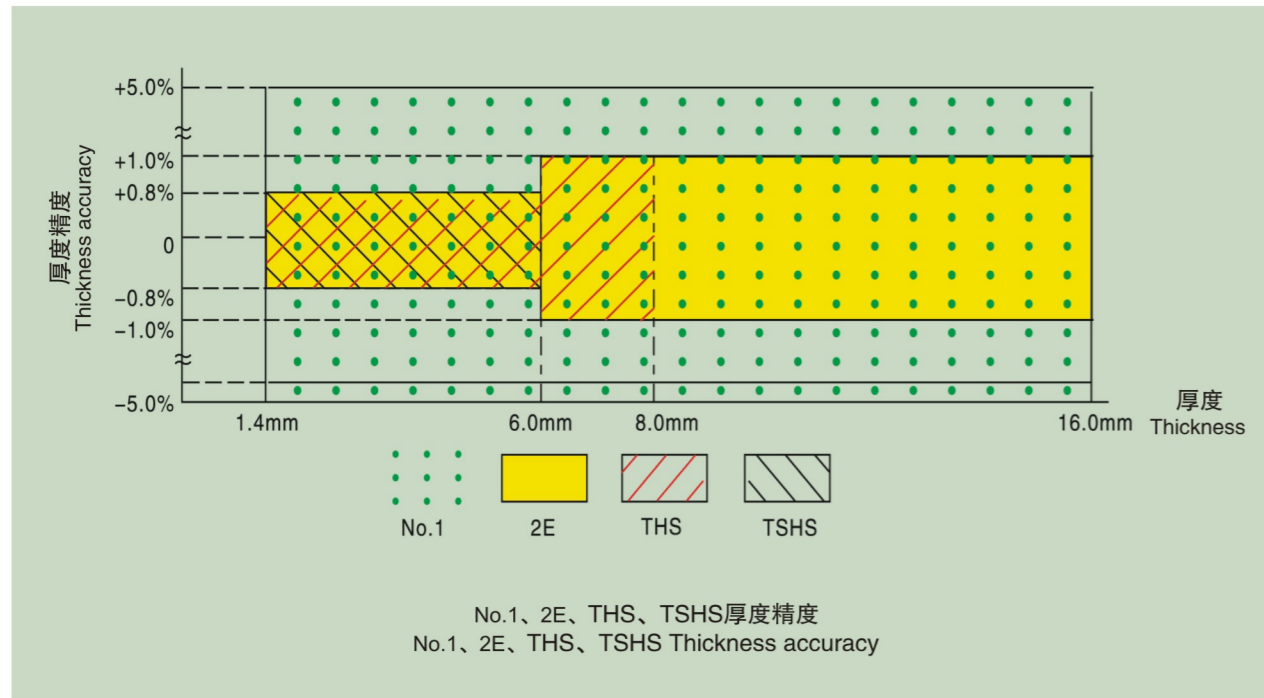
◆ Ultra-wide product widens the possibility of material being used, particularly when it is used for huge tanks and containers, for the fact that less welding seams are needed and therefore manufacturing and servicing costs reduced while safety improved.

◆ In comparison with single plate produced in conventional technology, the ultra-wide product is greatly improved in terms of surface finish, dimensional precision and material utilization, which is ready to meet various needs and offers a wider choice of design and application to customers.

◆ Ultra-wide product can be an easy substitute for conventionally produced cold product in application to industrial tube and other fields, so as to reduce costs.

主要规格 >>> Main Specification

尺寸精度 Dimensional Precision



产品性能 >>> Performance of Production

机械性能-奥氏体 Mechanical properties-Austenitic

牌号 Grade	强度 R _{m2} /MPa Strength	抗拉强度 R _{m0.2} /MPa Tensile strength	断后伸长率 A/% Elongation	硬度值 Hardness		
				HBW	HRB	HV
不小于 ≥				不大于 ≤		
304	205	515	40	201	92	210
	280-330	600-700	50-65	—	78-88	150-190
304L	170	485	40	201	92	210
	260-380	590-690	50-63	—	78-90	—
316	205	515	40	217	95	220
	265-350	580-680	52-65	—	77-92	—
316L	170	485	40	217	95	220
	260-340	580-655	50-60	—	78-90	—
316Ti	205	515	40	217	95	220
	—	550-600	42-54	—	75-90	—
317	205	515	35	217	95	220
	—	580-620	43-55	—	77-91	—
317L	205	515	40	217	95	220
	295-442	590-650	41-55	—	77-90	—
321	205	515	40	217	95	220
	260-300	540-590	52-62	—	78-86	—
305	170	484	40	183	83	200
	—	515-625	46.5-60	—	—	128-163
301	205	515	40	217	95	218
	280-320	680-830	41-48	—	82-90	—
301L	220	550	45	241	100	—
	270-330	690-840	43-51	—	78-92	—
309S	205	515	40	217	95	220
	300-360	600-650	45-55	—	80-90	—
310S	205	515	40	217	95	220
	570-640	570-640	42-54	—	75-90	—
347	205	515	40	201	92	210
	290-370	600-670	46.5-52.5	—	79.5-86.5	—

产品性能 >>>

Performance of Production

- 机械性能—铁素体、马氏体、双相钢 Mechanical properties-Ferritic Martensitic Duplex

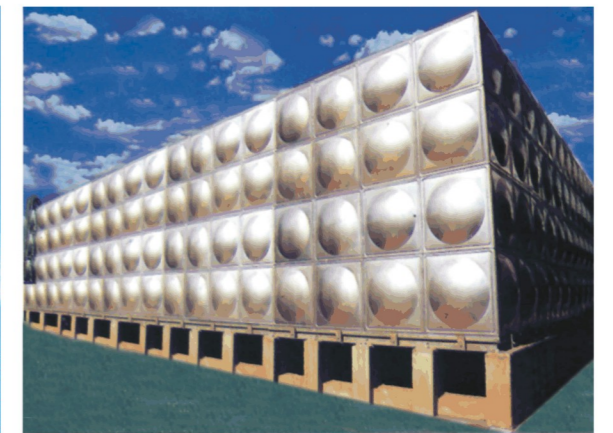
牌号 Grade	屈服强度 R _{0.2} /MPa Yield Strength	抗拉强度 R _m /MPa Tensile strength	断后伸长率 A/% Elongation	冷弯180° Cold bending	硬度值 Hardness		
					HBW	HRB	HV
					不小于 ≥		
430	170	415	20	D=2a	179	88	200
	—	460-510	22.5-33.5	—	—	73-85	—
409L	280	450	18	—	180	88	—
	—	466-645	21.5-38	—	126-184	—	—
410L	175	360	22	d=a	179	88	200
	220-320	380-450	40-60	—	—	60-80	—
410S	195	360	22	d=2a	183	88	200
	350-450	500-650	22-28	—	—	78-88	—
410	205	450	22	d=2a	183	89	200
	280-330	450-500	28-35	—	—	72-88	—
OCM3AI	250	450	25	d=2a	—	96	230
	270-460	460-680	26-55	—	—	—	140-197
T4003	240	410	20	—	217	96	230
	—	440-570	28-53.5	—	—	—	137-175
436	275	415	20	d=2a	217	96	230
	295-520	465-690	21-52	—	—	71.5-90	155-191
444	205	415	20	d=2a	183	89	200
	267-398	427-750	26.5-47.5	—	—	65.5-83	130-193
TTS443	205	450	20	d=2a	217	96	210
	—	515-735	23-48	—	—	69-97	161-201
420J1	225	520	18	—	223	97	234
	—	535-955	19-42	—	—	71.96.5	87-160
420J2	225	540	18	—	235	99	247
	—	550-700	18.5-47	—	—	76.5-98.5	153-210

产品性能 >>>

Performance of Production

- 机械性能—铁素体、马氏体、双相钢 Mechanical properties-Ferritic Martensitic Duplex

牌号 Grade	抗拉强度, ≥ Tensile strength		屈服强度, ≥ Yield Strength		伸长率, ≥, % Elongation	硬度, ≥% Hardness		冷弯 Cold bending
	Kis	Mpa	Kis	Mpa		布氏硬度 Brinell hardness	洛氏硬度 Rockwell hardness	
	不小于 ≥						不大于 ≤	
2205	95	655	65	450	25	293	31	不要求 Not require
	—	830-860	—	640-660	26-32	—	82-90	—
2304	87	600	58	400	25	290	32	不要求 Not require
	—	615-785	—	410-590	30-67.5	—	78-97	—



产品性能 >>>

Performance of Production

● 物理性能—奥氏体钢 Physical properties-Austenitic

牌号 Grade	密度 g/cm ³ Density	弹性模量 Gpa Elastic modulus	线膨胀系数 $\alpha, 10^{-6}/K$ Linear expansion coefficient			导热系数W/m·K Thermal conductivity		比热 J/kg·K (20°C) Heat capacity	电阻 nΩ·m Resistance	导磁率 Permeability
			0-100°C	0-315°C	0-538°C	100°C	500°C			
304	7.85	199	16.0	17.0	18.0	18	26	500	730	1.008
304L	7.9	199	16.8	17.5	18.3	16	21	500	720	—
316	8.0	198	15.7	16.3	17.5	15.5	18.8	444	670	1.008
316L	8.0	200	16.5	17.5	18.0	16.0	21.0	470	710	—
316Ti	7.9	199	15.7	16.7	17.6	19.7	24.3	—	750	—
317	8.0	193	15.9	16.2	17.5	16.2	21.5	500	740	—
317L	8.0	200	16.5	—	18.1	14.4	—	500	790	—
321	8.0	204	16.0	16.6	17.5	16.1	22.2	469	730	1.008
305	8.0	193	17.2	17.8	18.4	16.2	21.5	500	720	1.008
301	8.0	193	17.0	17.2	18.2	16.2	21.5	500	720	1.02
310S	8.0	200	15.9	16.2	17.0	14.2	18.7	500	—	1.008
347	8.0	204	16.5	17.0	18.0	16	27	431	730	1.008

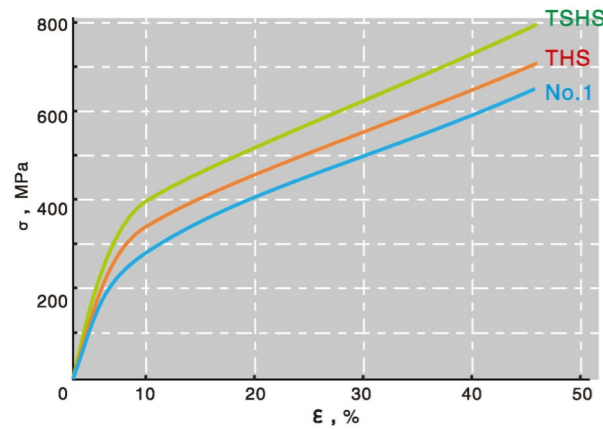
产品性能 >>>

Performance of Production

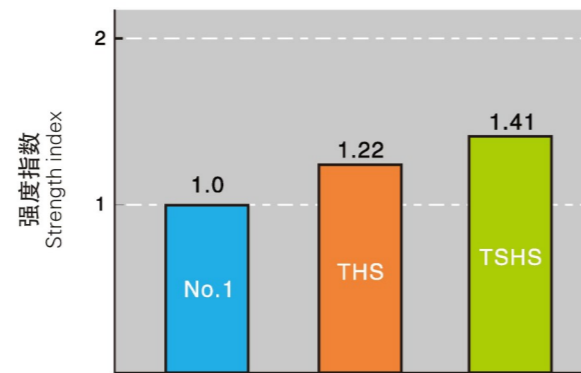
● 机械性能—铁素体、马氏体、双相钢 Mechanical properties-Ferritic Martensitic Duplex

牌号 Grade	密度 g/cm ³ Density	弹性模量 Gpa Elastic modulus	线膨胀系数 $\alpha, 10^{-6}/K$ Linear expansion coefficient			导热系数W/m·K Thermal conductivity		比热 J/kg·K (20°C) Heat capacity	电阻 nΩ·m Resistance	导磁率 Permeability
			0-100°C	0-315°C	0-538°C	100°C	500°C			
430	7.72	—	10.0	10.5	11.0	25	—	460	600	600-1100
409L	7.75	—	10.8	—	11.9	24.9	28.5	461	600	—
41 OS	7.76	224	10.5	11.5	12.0	25	—	480	—	—
410	7.77	216	11.3	11.8	12.2	25.5	30.6	435	—	700-1000
405	8.03	—	10.8	11.5	12.1	27	—	502	600	—
444	7.7	—	9.7	10.6	11.3	27	—	460	600	—
420S1	7.75	223	10.8	11.4	12.0	26.8	27.6	536	697	—
420S2	7.74	222	10.2	11.1	11.67	24.6	28.2	473	—	—
2205	7.8	200	13.7	14.7	—	19.0	—	470	—	—
2304	7.8	200	13.0	14.4	14.5	17.0	—	500	—	—

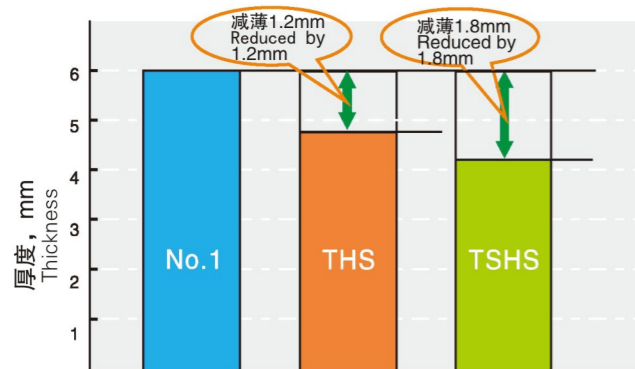
材料强度及节约率 Material Strength and Material Saved



304不锈钢No.1、THS、TSHS应力-应变曲线
304 stress-strain curve by No.1、THS、TSHS

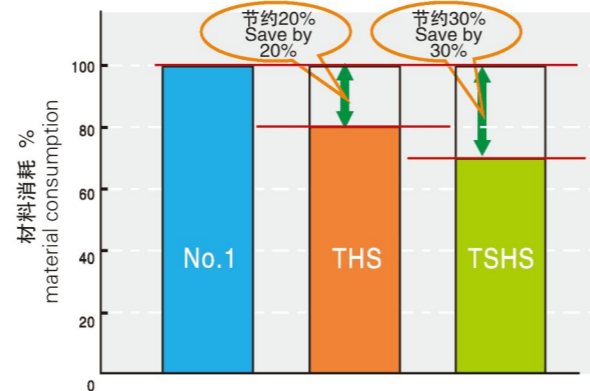


304不锈钢No.1、THS、TSHS强度比较
304 strength comparison by No.1、THS、TSHS



等强度设计材料厚度减薄量比较
(以6mm304钢板为例)

Thickness reduction comparison for material of identical strength (taking 6mm304 plate for an example)



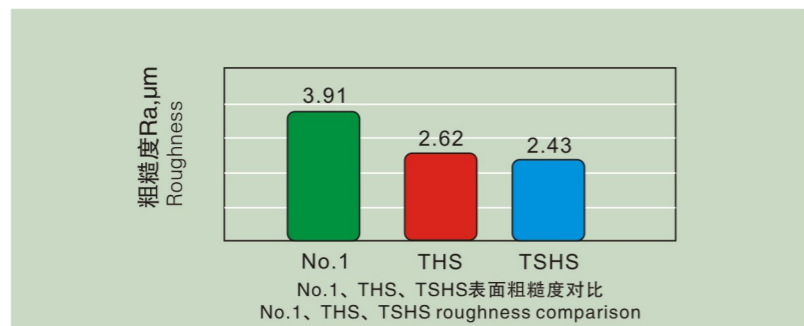
等强度设计材料消耗比较

Consumption comparison for material of identical strength

TSHS和TSHS产品由于经特殊冷加工工艺处理，材料强度大幅度提高，且与常规热轧材相比，在等强度条件下可减薄厚度20%~30%，成为制作结构件的理想选材。

TSHS and TSHS product will have the increased material strength significantly as a result of special cold working process applied thereon, and can be reduced in thickness by 20-30% at an identical strength level as that for conventionally hot-rolled product. As such they are the ideal material for steel structure parts.

表面光洁度 Surface Finish



No.1、THS、TSHS表面粗糙度对比
No.1、THS、TSHS roughness comparison

主要应用 >>>
Main Application



自动扶梯
Escalator



和谐号动车组
EMU Harmony



汽车排气系统
Automotive Exhaust System



建筑装饰
Building Decoration



海水淡化
Desalination



冷藏式集装箱
Refrigerating container

主要应用 >>>
Main Application



污水处理
Sewage treatment



除尘设备
Dust collecting equipment



厨房用具
Kitchen wares



医疗设备
Medical Equipment



粮食加工设备
Food processing equipment



酿酒加工罐
Brewery tank

主要应用 >>>
Main Application



硬币
Coin



罐体
Tank



反应釜
Reactor Jar



海上石油平台
Offshore oil drilling platform



飞机
Aircraft



太阳能热水器
Solar water heater



洗衣机
Washing machine

主要应用 >>> Main Application



不锈钢钟表系列
Stainless steel watches



电梯门
Lift door



厨具
Kitchenware



建筑装饰
Building Decoration



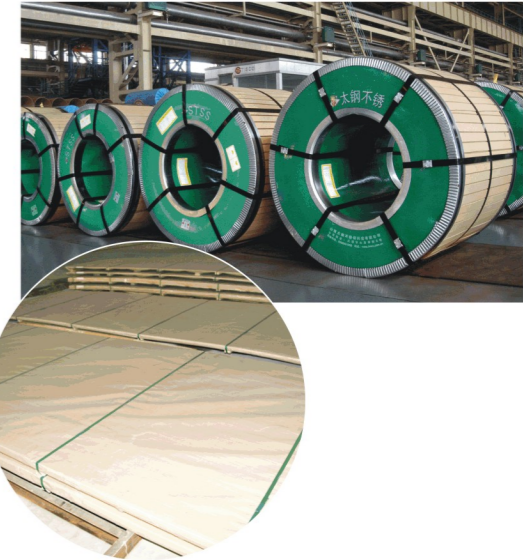
城市雕塑
Urban sculpture



广州琶洲展览馆
Guangzhou Bazhou Exhibition Hall

包装 >>> Package

- 采用防水、防潮材料。
Employment of waterproof and damp-proof materials.
- 采用护板、垫片，防止磕碰。
Damage avoided with protecting plank and shim .
- 横、纵打捆，防止钢卷松卷及层间擦伤。
Coil loosening and scratching prevented as a result of vertical and horizontal tying up between coil layers .



服务承诺 >>> The Service Promise

我们能够依据EN 10204提供3.1、3.2证书
We can provide 3.1 and 3.2 certificates according to EN 10204 .

- 为客户提供特定的成份、性能、规格设计。
- 为客户在选材和加工工艺方面提供技术支持。
- 交货准确及时。
- 对客户异议，在24小时内答复。
- To provide customerized products.
- Technical support to customers in material selection and fabrication.
- Accurate and prompt delivery.
- Response to customer's claim within 24 hours.

太钢产品及贸易全球分布图

TISCO products distribution and Marketing network in the world



主要业务部门联系方式 >>>

Contacting Manners of the Main Business Sections

主要业务部门 Main business department	业务功能 Functions	联系电话 Telephone	E-mail
营销部 Marketing Department	合同管理、订货、异议、 投诉受理及出口贸易 Contract and order management Complaint and claim handing Exports business	0351-3018888-8119 0351-3018888-8121 400-653-1998 800-806-1998	magq@tisco.com.cn chenwh@tisco.com.cn tghwb@tisco.com.cn
技术中心 生产技术部 Technology Center	技术咨询服 Technical consultation service	0351-3012213	Ligp@tisco.com.cn

国际分公司联系方式 Contacting manners of international trading Co.,Ltd.

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太钢进出口(香港)有限公司 TISCO STAINLESS STEEL (H.K.) LTD.	香港 Hongkong	电话 (Tel) +0852-28681819	传真 (Fax) +0852-28271300
太钢欧洲有限公司 Taigang Europe Co.,Ltd.	德国 Germany	电话 (Tel) +49(0)2154-81690	传真 (Fax) +49-2154-816911

国内分公司联系方式 Contacting manners of deomestic trading Co.,Ltd.

公司名称 Branch Name	地址 Address	通讯方式 Telephone & Fax
山西区销售公司 TISCO sales company in Shanxi	太原现货销售有限公司 Spot sales company Ltd.of TISCO 山西太钢定襄销售有限公司 Shanxi Dingxiang TISCO sales Co.,Ltd	太原 Taiyuan 电话 (Tel) 0351-3096390 传真 (Fax) 0351-3090556 定襄 Dingxiang 电话 (Tel) 0350-6086523 传真 (Fax) 0350-6086527
太钢华北区销售公司 TISCO sales company in North China	天津太钢销售有限公司 Tianjin TISCO sales Co.,Ltd 北京太钢销售有限公司 Beijing TISCO sales Co.,Ltd	天津 Tianjin 电话 (Tel) 022-23408105 传真 (Fax) 022-23408103 北京 Beijing 电话 (Tel) 010-64441368 传真 (Fax) 010-64441369
太钢东北区销售公司 TISCO sales company in Northeast of China	辽宁太钢销售有限公司 Liaoning TISCO sales Co.,Ltd 沈阳沈水太钢不锈钢销售有限公司 Shenyang shenshui TISCO stainless steel Sales Co.,Ltd 哈尔滨太钢销售有限公司 Haerbin TISCO sales Co.,Ltd	沈阳 Shenyang 电话 (Tel) 024-24232050 传真 (Fax) 024-24231216 沈阳 Shenyang 电话 (Tel) 024-24232051 传真 (Fax) 024-24231216 哈尔滨 Haerbin 电话 (Tel) 0471-87905777 传真 (Fax) 0471-55185321
太钢华东区销售公司 TISCO sales company in East China	无锡太钢销售有限公司 Wuxi TISCO sales Co.,Ltd 上海太钢销售有限公司 Shanghai TISCO sales Co.,Ltd 杭州太钢销售有限公司 Hangzhou TISCO sales Co.,Ltd	无锡 Wuxi 电话 (Tel) 0510-82407713 传真 (Fax) 0510-82441187 上海 Shanghai 电话 (Tel) 021-61808397 传真 (Fax) 021-61808397 杭州 Hangzhou 电话 (Tel) 0571-85067265 传真 (Fax) 0571-85061958
太钢山东区销售公司 TISCO sales company in Shandong	青岛太钢销售有限公司 Qingdao TISCO sales Co.,Ltd 济南太钢销售有限公司 Jinan TISCO sales Co.,Ltd	青岛 Qingdao 电话 (Tel) 0532-81101847 传真 (Fax) 0532-87734798 济南 Jinan 电话 (Tel) 0531-82638400 传真 (Fax) 0531-82638411
太钢华中区销售公司 TISCO sales company in Central China	武汉太钢销售有限公司 Wuhan TISCO sales Co.,Ltd 长沙太钢销售有限公司 Changsha TISCO sales Co.,Ltd	武汉 Wuhan 电话 (Tel) 027-85615300 传真 (Fax) 027-85615311 长沙 Changsha 电话 (Tel) 0371-85592703 传真 (Fax) 0731-85598305
太钢华南区销售公司 TISCO sales company in South China	佛山市太钢不锈钢销售有限公司 Foshan TISCO Stainless Steel Sales Co.,Ltd 揭阳太钢销售有限公司 Jieyang TISCO sales Co.,Ltd	佛山 Foshan 电话 (Tel) 0757-83315711 传真 (Fax) 0757-83315718 揭阳 Jieyang 电话 (Tel) 0663-8766018 传真 (Fax) 0663-8766048
太钢西南区销售公司 TISCO sales company in Southwest of China	重庆太钢销售有限公司 Chongqing TISCO sales Co.,Ltd 成都太钢销售有限公司 Chengdu TISCO sales Co.,Ltd	重庆 Chongqing 电话 (Tel) 023-68154181 传真 (Fax) 023-68400789 成都 Chengdu 电话 (Tel) 028-8760342 传真 (Fax) 028-87612940
太钢西北区销售公司 TISCO sales company in Northwest of China	西安太钢销售有限公司 Xi'an TISCO sales Co.,Ltd 郑州太钢销售有限公司 Zhengzhou TISCO Sales Co.,Ltd	西安 Xi'an 电话 (Tel) 029-86231507 传真 (Fax) 029-86231506 郑州 Zhengzhou 电话 (Tel) 0371-60805079 传真 (Fax) 0371-60805085