工程机械行业用钢

ENGINEERING MACHINE INDUSTRY STEEL

太钢产品分行业系列册 Products Serial Catalogs Of Tisco For Different Industries

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800-806-1998

股票代码 (Stock code)：000825

Printed on recycled paper

2012年8月印刷

太原钢铁（集团）有限公司

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

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太钢简介
BRIEF ONTISCO

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。2009年生产不锈钢248万吨，产量世界第一！

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、工程机械、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。2009年在国家认定的575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。

太钢的发展战略是，加快建设全球最具竞争力的不锈钢企业，实现以不锈钢为主的品种、质量、成本、研发、节能、环保、效率、服务等各项指标达到国际一流水平，进而建设具有国际竞争力的大企业集团。

Taiyuan Iron and Steel (Group) Co. Ltd. (TISCO) is one of the steel giants in China and, the largest stainless producerin 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 2009 saw TISCO become No.1 stainless producer in the world with production of 2.48 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 coH' axle steel, die steel and steel for military purpose etc. TISCO's products are widely used in petrochemical industry, transportation, construction decoration, Engineering Machinery, 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 2009TISCO technology centre ranked No.2 among the 575 state acknowleged 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 ciass.

TISCO is aiming to become the most competitive stainless producer in the world, and achieve the first class stainless product in te'rms of product range, quality, cost, R&D, energy saving, environment protection, efficiency and service. For this goal TISCO is trying the first world class level and build itself into the world competitive large group company.

◆ 工程机械行业用钢概况

自2006年新热连轧生产线（2250机组）投产以来，不断依靠先进的生产装备和技术水平，致力于高强度工程机械用钢的产品开发，取得了丰硕的成果，目前已形成了低碳贝氏体钢、高强度焊接结构钢等系列产品，屈服强度覆盖345MPa-960MPa，并可以按照欧标、美标等国外标准进行检验交货。

我公司已经与三一重工、中国一重、大连重工、北方重工、西门子等大型设备制造公司形成长期、稳定的合作，用于制造各类重型设备。同时，太钢的双相不锈钢还用于各类建筑机械结构件，并得到各方的一致认可。

◆ 与行业客户的合作关系

目前我公司已和国内外诸多工程机械厂家进行了深入的沟通与合作，高强产品已得到徐工、三一重工、中联重科、普茨迈斯特、山推股份、中国一重等众多知名企业的认可，并与之形成了广泛的合作。

下一步，我公司将紧紧依托先进的装备、完善的工艺，过硬的技术实力加大工程机械行业用钢的开发力度，逐步替代进口，打造民族品牌。同时一如既往地加强同工程机械行业用户的合作，不断满足用户个性化的需求。

◆ Brief on engineering machine industry steel

From the start-up of new hot rolling mill (2250mm production line) in 2006, based on the advanced equipments and technology, we have been dedicated to the development of highstrength engineering machine steel and gained fruitful achievements successful development of series products such as low carbon bainite steel and high strength welding structure steel, wide yield strength ranging from 345MPa t0 960MPa, improved delivery inspection complying with European standard or U.S.A. standard.

The long-term and stable cooperation between TISCO and large equipment manufacturers, including Sany Group China First Heavy Industry, Dalian Heavy Industry, Northern Heavy Industry and Siemens, has been established. At the mean time, TISCO's duplex stainless steel is also used for structural parts of different construction machines and wins wide acceptance and praise.

◆ Cooperative relationship with industrial customers

At present, our company has been in deep communication and good cooperation with a lot of engineering machine manufactures at home and abroad, with our high strength product being accepted and widely applied by well-known enterprises, e.g. XCMG, Sany Group, Zoomlion Heavy Industry , Putzmeister, SHANTUI, China First Heavy.

For the future, based on the state-of-the-art equipments, advanced process technology and professional technique strength, TISCO will put more effort on the development of engineering machine steel, aiming at creating a national brand and replacing the imported product. At the same time, TISCO will continue the cooperation with customers in engineering machine industry and meet customerized demands.

工艺流程

高炉 Blast Furnace
转炉 Coverter
电炉 EAF
AOD
LF
板坯连铸机 Slab caster
原料 Charging Stock
电炉 EAF
AOD
立式连铸机 Vertical Caster
原料 Charging Stock
方板坯兼容连铸机 Billet / Slab Caster
高炉 Blast Furnace
三脱装置 Hot Metal Pretreatment
K-OBM-S
VOD
LF
电炉 EAF
原料 Charging Stock
模注 Ingoting
1000初轧机 1000 Roughing Mill
方坯磨床 Billet Grinder
板坯磨床 Slab Grinder
板坯磨床 Slab Grinder
热连轧机 Hot Strip Rolling Mill
Cr钢
全氢式罩式炉 HICON/H2 Bell Type Annealing Furnace
Ni钢
精整 Finishing
退火酸洗线 APL（H）
热卷（板） Hot Rolled Coils (Plates)
精整 Finishing
No.1卷（板） No.1 Coils (Plates)
光亮线 BAL
平整 Skin Pass Mill
纵切SL
横切CS
BA卷（板） BA Coils (Plates)
退火酸洗线 APL（C）
平整 Skin Pass Mill
纵切SL
横切CS
2B、2D卷（板） 2B、2D Coils (Plates)
冷轧机组 Cold Rolling Mill
不锈精密带钢 Precision stainless steel strip
冷轧机组 Cold Rolling Mill
脱脂 Degreasing
平整 Skin Pass Mill
纵切SL
横切CS
冷硬卷（板） Without Final Annealing Coils (Plates)
退火酸洗线 APL（C）
磨砂 Polishing & Finishing
平整 Skin Pass Mill
纵切SL
横切CS
No.3、No.4、HL卷（板） No.3、No.4、HL Coils (Plates)
基板(碳钢) Base Plate(Carbon Steel)
复板（不锈钢） Clad Plates (steel)
爆炸复合 Explosive Welding
热轧机组 Hot Rolling Mill
冷轧机组 Cold Rolling Mill
固溶酸洗 Solid Solution And Picking
冷轧复合板(卷) Cold Rolled Clad Plates (Coils)
固溶酸洗 Solid Solution And Picking
热轧复合板(卷) Hot Rolling Clad Plates (Coils)
3300mm中厚板轧机 Clad Plate Mill
2300mm中厚板轧机 Clad Plate Mill
常化炉 Normalizing Furnace
连续辊式压力淬火机 Roller hardening machine
连续式喷淋酸洗线 Continous Spray Pickling Line
检验台 Inspection table
中厚板 Plates
成品坯 Billets
650轧机 650 Mill
高速线材轧机 Hi- Speed Wire Rod Mill
吐丝机 Laying Head
退火炉 Annealing
棒材 Bars / Rounds
线材 Wire Rods
穿孔 Piercing
冷轧/冷拔 Cold rolling/ Cold drawing
热处理 Heat treatment
无缝钢管 Seamless Steel Pipes
快锻机 Forging Press
锻材(件) Forgings
中厚板 Plates
冷、热卷(板) Cold/Hot Rolled Coils/Sheets
热挤压 Hot Extrusion
UOE成型机 UOE
焊管 Weld Tubes
精炼炉 Refining Furnace
铸坑 Cast Pit
大型铸件 Over-size Casting Pieces

研发能力 >>>

ResearchandDpment

国家级实验室

National levellaboratory

2009年在国家认定的575家企业技术中心中，太钢技术中心排名第2位。

Tisco technology center ranks 2th among enterprise-based 575 technology centers accredited by the state in 2009.

扫描电镜
ScanningElectronMicroscope

热模拟试验机
ThermalSimulatingTester

透射电镜
TransitionElectronMicroscope

全自动电子拉伸试验机
Automaticelectronictensiletester

认证、荣誉 >>>

Certification&Honors

- ◆《高质量不锈钢板材技术开发》获国家科技进步二等奖；
- ◆《AOD炉炉龄、工艺技术开发》等三项成果获山西省科技进步一、二等奖；
- ◆《太钢含氮不锈钢研制》等九项成果获冶金科学技术进步一、二、三等奖；
- ◆《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；
- ◆《AOD炉用氮气进行氮合金化工艺》《VOD冶炼不锈钢高碳区脱氮方法》等专利80余项；
- ◆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.
- ◆ "AOD campaign, production technology development" and other two won the first and second prizes of Shanxi technical progresses.
- ◆ 'Production technology and new grade development of Nitrogen–containing stainless steel by TISCO" won second prize of state technical progresses.
- ◆ 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 prad ucts.
- ◆ More than 80 patents such as "Nitrogen alloying process by nitrogen gas in AOD" and "Denitrification process in the phase of high carbon of stainless steel smelting in VOD).
- ◆ 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.

常规产品 >>>

Conventional Products

钢种 Steel grade	牌 号 Grade	规格（mm） Specifications	标准 Standard	主要用途 Application
碳结卷板 Coiled carbon constructional steel	Q195-Q275	1.5-80×860-3000	GB/T3274-2007 Q/TB3801-2007	用于建筑结构、桥梁、船舶、齿轮、工程机械与农机等一般结构件。 Used for general structure parts of architecture. bridge. ship.gear.engineering machine and agriculture machine.
	SS400	1.5-25.4×860-2130		
	Q345	1.5-80×860-;3000	GB/T912-1989 GB/T3274-2007	
碳结合结钢锻材 Forged carbon constructional steel and forged structural alloy steel	20-60（Mn） 40Cr 42CrMo 40CrNiMoA等	Φ80-400×1000 -12000	GB/T699-1999 GB/T3077-1999	制作较大截面的轴、齿轮、连杆等。 Shaft. gear and connecting rod with big cross-section
300系 300Series	304、1.4301、309L、347L	厚度:0.3-80mm. 宽度:1000-3000mm. 卷料或开平板、单张轧制均可 Thickness: 0.3-80mm. Width: 1000-3000mm. Coil. planished plate. or single-rolled plate	国标 美标 日标 欧标 State scandards ANSIJIS European Standard	加氢反应器。 Hydrogenation reactor
	304L、1.4307、022Cr19Ni10 00Cr19Ni10、301L			电气设备、制冷设备。 Electric equipment and refrigeration equipment
	316、1.4401			航空配件。 Aviation component.
	316L、1.4404、022Cr17Ni12Mo2、00Cr17Ni12Mo2			
双相不锈钢板 Duplex stainless steel plate	S31803、1.4462、022Cr22Ni6Mo3N S32205、2205			化学品船、桥梁、储罐、造纸机械、工程机械、污水处理设备。 Chemical ship, Bridge. Tank. Paper machinery. Engineering machine and Sewage Treatment Equipment.
	S32304、1.4362 022Cr23Ni4MoCuN 2304			
不锈钢无缝管 Seamless stainlesssteel pipe	13Cr 304 321 316L 双相钢等 13Cr 304 321 316L Duplex and etc.	外近:6-630mm 壁厚:1-30mm Outer diameter: 6-630mm Thickness: 1-30mm	GB3088-1999 GB/T 14975-2002 GB/T14976-2002 GB/T 21833-2008	机械配管，气压缸，不锈钢轴承等。 Mechanic piping, pneumatic cylinder. stainless steel bear, and etc.

◆ 工程机械用钢主要产品及供货标准

Delivery conditions of high strength structural steel product and high toughness steel product

钢种 Steel grade	牌号 Grade	标准 Standard	规格(mm) Specifications 厚度 Thickness	规格(mm) Specifications 宽度 Width	主要用途 Application
工程机械用钢 Engineering maclume steel	TQ460MC-TQ550MC	Q/太新011-2008	4.0-20.0	1250-2130	工程机械、起重机、煤矿液压支架等焊接结构用钢 Welding structure steel used for engineering machine. crane. coal ore hydraulic stand. and etc.
	TQ600MC-TQ960MC		4.0-12.0	1250-1800	
	S355MC-S600MC	EN10149-2	3.0-16.0	870-2130	供出口用焊接结构钢 Welding structure steel for exporting.
	S700MC	EN10149-2	3.0-5.0	1350-1600	工程机械（起重机、混凝土泵车等） Engineering machine and mobile cranes.
			5.0-16.0	1350-2000	
	T520JJ	Q/TB3081-2010	4.0-6.0	870-2130	混凝土搅拌罐车 Concrete stirring truck.
	T750GJ	Q/太新103-2009	4.0-12.0	1400-1800	
低碳贝氏体钢 Low-carbon bainite steel	DB685	Q/太新019-2008	3.0-14.0	1250-2000	工程机械 Engineering machine manufacturing.
	DB785	Q/太新019-2008	3.0-14.0	1250-2000	
钢结构 Steel structure	Q390C-Q690E	GB/T1591-1994 GB/T3274-2007 GB/6270-1996	3.0-60.0	1000-3000	工程机械、建筑等钢结构 Structure steel for plant building. and etc
	SN400B	Q/太新053-2010	9.0-22.0	1000-2130	抗地震管桩用钢 Anti-seismic pipe pile steel.
	SN490B	Q/太新041-2008	8.0-22.0		
高级表面工程机械用钢	SS400-H	Q/TX3450-2010	5.0-24.0	1000-2100(毛边)	挖掘机用钢 Steel for excavator
			4.0-24.0	1000-2130(切边)	
			20.0-50.0	1000-1500(切边)	
耐磨钢 Anti-wear steel	TNM320-TNM400	Q/太新067-2008	2.5-<4	1500-2700	刮板运输机、工程机械 Scrape conveyor and engineering machine.
	TNM450	Q/太新042-2009	20.0-60.0	1500-2700	
	30MnB	Q/太新005-2009	8.0-75.0	1200-2000	推土机刀板、刮板机等耐磨部位 Wear-resistant parts of Scraper of bulldozer, Scraperetc.
	30Si2B	Q/TB3047-2007 Q/TB3059-2007	8.0-40.0	1500-2000	
	Mn13	Q/太新046-2009	6.0-40.0	1300-2000	

技术标准 >>>

TechnicalSpecification

◆ 企标供货高强度工程机械用钢牌号及化学成份
Steel grade and chemical composition of high strength engineering machine steel

牌号 Grade	化学成份(%) Chemical composition												
	最大含量 Maximum content												最小含量 Minimum content
	C	Si	Mn	P	S	Nb	V	Ti	Cr	Ni	Mo	B	Al
TQ460MC (C/D/E)	0.10	0.30	1.60	0.020	0.010	0.07	0.09	0.12	0.09	1.0	0.6	0.005	0.015
TQ500MC (C/D/E)	0.10	0.30	1.70	0.020	0.010	0.07	0.09	0.12	0.09	1.0	0.6	0.005	0.015
TQ550MC (C/D/E)	0.10	0.30	1.80	0.020	0.010	0.07	0.09	0.12					0.015
TQ600MC (C/D/E)	0.10	0.30	1.80	0.020	0.010	0.07	0.09	0.12					0.015
TQ650MC (C/D/E)	0.12	0.30	1.80	0.020	0.010	0.07	0.09	0.12					0.015
TQ700MC (C/D/E)	0.12	0.30	1.90	0.020	0.010	0.07	0.09	0.12					0.015
TQ900MC (C/D/E)	0.17	0.50	2.00	0.020	0.010	0.07	0.09	0.12					0.015
TQ960MC (C/D/E)	0.17	0.50	2.10	0.020	0.010	0.07	0.09	0.12					0.015

◆ 高强度工程机械用钢产品机械性能
Mechanical properties of high strength engineering machine steel products

牌号 Grade	质量等级 Quality level	机械性能 Mechanical property			其它性能 Other properties				
		屈服强度 Yield strength	抗拉强度 Tensile strength	延伸率 Elongation ≥%	180℃弯曲试验 Bending test		冲击功 Impacting power AKV, J		布氏硬度 Brinell hardness HB
					A≤6mm	A>6mm			
TQ460MC	C	≥460	590~750	18	d=1.5a	d=2a	0℃	≥40	
	D						-20℃	≥40	
	E						-40℃	≥27	
TQ500MC	C	≥500	610~770	17	d=1.5a	d=2a	0℃	≥40	
	D						-20℃	≥40	
	E						-40℃	≥27	
TQ550MC	C	≥550	670~830	16	d=1.5a	d=2a	0℃	≥40	
	D						-20℃	≥40	
	E						-40℃	≥27	
TQ600MC	C	≥600	690~850	17	d=1.5a	d=2a	0℃	≥40	
	D						-20℃	≥40	
	E						-40℃	≥27	
TQ650MC	C	≥650	700~880	15	d=1.5a	d=2a	0℃	≥40	250
	D						-20℃	≥40	
	E						-40℃	≥27	
TQ700MC	C	≥700	780~930	15	d=1.5a	d=2a	0℃	≥40	260
	D						-20℃	≥40	
	E						-40℃	≥27	
TQ900MC	C	≥900	940~1100	12	d=3a	d=4a	0℃	≥40	310
	D						-20℃	≥40	
	E						-40℃	≥27	
TQ960MC	C	≥960	980~1150	12	d=3a	d=4a	0℃	≥40	320
	D						-20℃	≥40	
	E						-40℃	≥27	

注：抗拉、冷弯取横向，冲击取纵向

◆ 采用欧标供货的牌号及化学成份
Steel grade and chemical composition of high strength steel for export

牌号 Grade	化学成份（%） Chemical composition										
	C	Si	Mn	P	S	Nb	V	Ti	Mo	Al	B
S355MC	≤0.12	≤0.50	≤1.50	≤0.025	≤0.020	≤0.09	≤0.20	≤0.15	-	≥0.015	-
S420MC	≤0.12	≤0.50	≤1.60	≤0.025	≤0.015	≤0.09	≤0.20	≤0.15	-	≥0.015	-
S460MC	≤0.12	≤0.50	≤1.60	≤0.025	≤0.015	≤0.09	≤0.20	≤0.15	-	≥0.009	-
S500MC	≤0.12	≤0.50	≤1.70	≤0.025	≤0.015	≤0.09	≤0.20	≤0.15	-	≥0.015	-
S550MC	≤0.12	≤0.50	≤1.80	≤0.025	≤0.015	≤0.09	≤0.20	≤0.15	-	≥0.015	-
S600MC	≤0.12	≤0.50	≤1.90	≤0.025	≤0.015	≤0.09	≤0.20	≤0.22	≤0.50	≥0.015	≤0.005
S700MC	≤0.12	≤0.50	≤2.10	≤0.020	≤0.015	≤0.09	≤0.20	≤0.22	≤0.50	≥0.015	≤0.005

◆ 采用欧标供货的产品机械性能
Mechanical property of high strength steel for export

牌号 Grade	屈服强度 Yield strength	抗拉强度 Tensile strength	延伸率 ≥% Elongation		180℃弯曲试验 Bending test
			Lo=80mm	Lo=5.65	A≤6mm
S355MC	≥355	430～550	23	23	d-0.5a
S420MC	≥420	480～620	16	19	d-0.5a
S460MC	≥460	520～670	14	17	d-1a
S500MC	≥500	550～700	12	14	d-1a
S550MC	≥550	600～760	12	14	d-1.5a
S600MC	≥600	650～820	11	13	d-1.5a
S700MC	≥700	750～950	10	12	d-2a

注：抗拉、冲击取纵向样，冷弯取横向样。

◆ 混凝土搅拌罐用钢牌号及化学成份
Steel grade and chemical composition of concrete stirring tank car steel

牌号 Grade	化学成份（%） Chemical composition					
	C	Si	Mn	P	S	Cu
T520JJ	≤0.20	≤0.55	≤1.60	≤0.030	≤0.020	0.20～0.45

◆ 混凝土搅拌罐用钢机械性能
Mechanical property of concrete strring tank steel

牌号 Grade	规格（mm） Specifications	力学性能 Mechanicalproperty			180° 横向冷弯实验 transversal coldbending test
		ReI,MPa	Rm,MPa	A,%	
T520JJ	4.0~6.0	≥365	≥520	≥20	d=2a

◆ 混凝土搅拌罐用钢T750GJ化学成份
Chemical composition of concrete strring tank steeT750GJI

牌号 Grade	化学成分（%） Chemicalcomposition									
	C	Si	Mn	P	S	Cr	Mo	Ni	V	AL
T750GJ	≤0.2	0.1~0.5	1.0-1.8	≤0.02	≤0.01	≤0.5	≤0.5	≤0.5	0.02-0.12	≥0.015

◆ 混凝土搅拌罐用钢T750GJ机械性能
Mechanical property ofsteel for concrete stirring tank.

牌号 Grade	厚度 thickness	力学性能 Mechanical property			180° 弯曲 bending	硬度，Hv10
		ReI,Mpa	Rm,Mpa	A,%		
T750GJ	4≤t<6	≥620	≥750	≥16	d=3a	230-280
	6≤t<12	≥600	≥625			220-280

产品特点：具有高的耐磨性能和高的强度，抗拉强度达到750MPa以上，钢基体硬度达到260HB。

应用领域：适用于制造经受轻微冲击、一般磨损的结构件，如混凝土、水泥、沙石等搅拌机械、运输车辆箱体、耐磨衬板等。

◆低碳贝氏体钢牌号及化学成份
Steel grade and chemical composition of low carbon bainite stee

牌号 Grade	化学成分（%） Chemicalcomposition									
	C	Si	Mn	P	S	Cu	Nb	Ni	Mo	B
DB685	≤0.08	≤0.50	1.2-1.6	≤0.020	≤0.01	≤0.35	≤0.10	≤0.3	≤0.35	≤0.0030
Db785	≤0.10	≤0.50	1.2-1.6	≤0.020	≤0.01	≤0.50	0.025~0.06	≤1.0	≤0.60	≤0.0030

◆低碳贝氏体钢机械性能
Steel g rade and mechanical p roperty(Typical value)of low carbon bainite stee

牌号 Grade	规格(mm) Specifications	Rel,Mpa	Rm,Mpa	A,%	冷弯180° D=2a b=35mm cold bending	冲击功AKV Impacting power		
						试验温度 Test temperature 0℃	冲击值不小于J Impact value is not less than J	
							纵向 Longitudinal	横向 Transversal
DB685	≤6	≥570	670～860	≥15	完好 well	–	–	–
	6.0~16.0					-40	47	–
Db785	3.0-6.0	≥700	750～950	≥12	完好 well	不进行冲击试验No impacting test		
	≥6.0~14.0	≥680	750～950	≥12		-40	27	20

◆高级表面工程机械用钢SS400—H化学成分
Chemical composition of advanced su rface enginee ring machine ry steel SS400—H

牌号 Grade	化学成份%(熔炼分析) Chemical composition							
	C	Sl	Mn	P	S	Cu	Ni	Cr
SS400-H	≤0.2	≤0.3	0.35~1	≤0.02	≤0.015	≤0.2	≤0.2	≤0.2

◆高级表面工程机械用钢SS400-H力学性能
Mechanical properties of advanced su rface enginee ring machine ry steel SS400-H

牌号 Grade	屈服强度 TS Rel (MPa)		抗拉强度YS Rm (Mpa)		断后伸长率(%) Elongation			冷弯 Cold Bend
	厚度 Thickness ≤16	厚度 Thickness >16	厚度 Thickness <3.5	厚度 Thickness ≥3.5	厚度 Thickness ≤5	厚度 Thickness >5~16	厚度 Thickness >16	
					L0=50mm B=25mm	L0=200mm B=40mm	L0=200mm B=40mm	180° 弯曲 bending b=35mm 弯心半径 Apex radius d=3a
SS400-H	≥245	≥235	400~550	400~510	≥21	≥21	≥21	

◆太钢耐磨钢主要产品供货标准
Delive ry conditions of anti-wear stee

品种 Steel grade	牌号 Grade	标准 Setandard	规格（mm） Specifications		主要用途 Application
			厚度 Thickness	宽度 Width	
耐磨钢 Anu-wear Steel	30MnB	Q/太新005-2009	8.0~75.0	1200~2000	推上机刀板等耐磨部位 The anti—wear part of bulldozer scraper
	30Si2B	Q/TB3047-2007 Q/TB3059-2007	8.0~40.0	1500~2000	
	M13	Q/太新046-2009	6.0~40.0	1300~2000	抛丸机衬板等耐磨部位 The anti—wearing part on ling plate etc of blaster
	TNM320	Q/太新067-2008	20.0~50.0	1500~2700	刮板输送机、工程机械 scrape conveyer and engineering machine
	TNM360				
	TNM400				
	TNM450	Q/太新042-2009	20.0~60.0	1500~2700	

◆太钢耐磨钢主要·陛能指标
Main p rope rty indexes of anti—wea r stee

牌号 Grade	力学性能 Mechanical property				
	抗拉强度 Tensile strength Rm,Mpa	布氏硬度 Brinell hardness HB	延伸率 Elongafion A,%	-20℃横向AKV(J) Transversa	冷弯,90° Cold bending
30MnB	成品提供屈服强度Rel、抗拉j虽度Rm及延伸率A的检测值，不作为判定依据				
30Si2B	热轧状态交货				
M13	提供抗拉强度Rm、延伸率A及冷弯(90°，B=2a，d=2a)实测值，不作为判定依据				
TNM320	≥900	300～360	≥12	27	完好 well
TNM360	≥1050	340～4000	≥10		
TNM400	≥1150	380～440	≥10		
TNM450	≥1300	420～500	≥7		

我公司生产的耐磨板钢质纯净，成分稳定，具有高的强度、硬度，优良的耐磨性、加工性、焊接性及板型平直度。广泛应用于煤矿刮板输送机、掘进机、采煤机、破碎机、推土机、挖掘机、装载机、球磨机、抛丸机等大型设备。

The anti-wear steel of Tisco are pure ,with Stable component, featured with high Strength hardness,excellent anti-wear property, formability, Weldability and flatness. The products are widely used in scrape conveyer,boring machine,excavator,coal mine machinery etc.large equipment.

◆ 太钢耐磨钢牌号及化学成分
Steel grade and chemical composition of anti-wear steel

牌号 Grade	化学成份（%） Chemical composition								
	C	Si	Mn	P	S	Cr	Mo	B	Al
30MnB	0.27～0.34	0.15～0.35	1.00～1.30	≤0.025	≤0.025			0.0005～0.006	
30Si2B	0.28～0.34	1.20～1.80	0.30～0.70	≤0.030	≤0.030	0.40～0.70	0.05～0.20	0.0005～0.005	
M13	0.90～1.20	0.30～0.80	11.50～14.00	≤0.035	≤0.030				
TNM320	0.16～0.22	≤0.70	1.00-1.60	≤0.018	≤0.010	0.50-0.80	0.20-0.35	0.001-0.004	0.02-0.06
TNM360									
TNM400									
TNM450	0.18～0.24	≤0.55	1.00-1.60	≤0.015	≤0.007	0.50-0.80	0.15-0.25	0.001-0.004	0.02-0.06

◆ 不锈钢板材牌号及化学成份
Steel grade and chemical composition (Typical value) of stainless steel plate

牌号 Grade	化学成份（%） Chemical composition								
	C	Si	Mn	P	S	Cr	Ni	Mo	N
304	0.08	0.75	2.00	0.045	0.03	18.0–20.0	8.00–10.50	–	0.10
304 1	0.03	0.75	2.00	0.045	0.03	18.0–20.0	8.00–12.00	–	0.10
316 1	0.03	0.75	2.00	0.045	0.03	16.0–18.5	10.0–14.00	2.0–3.0	0.10
S31803	0.03	1.00	2.00	0.03	0.02	21.0–23.0	4.50–6.50	2.5–3.5	0.08–0.20
S32205	0.03	1.00	2.00	0.03	0.02	22.0–23.0	4.50–6.50	3.0–3.5	0.14–0.20
S32304	0.03	1.00	2.50	0.04	0.03	21.5–24.5	3.00–5.50	0.05–0.6	0.05–0.20

注：除表明是范围外，所有数据均为最大值
Note: all the data is maximum limit, unless specified

◆ 不锈钢板材牌号及力学性能
Steel grade and physical property of stainless steel plate

牌号 Grade	0.2% 验证应力 (N/mm2)最小 Tested stress M inimum	1% 验证应力 (N/mm2)最小 Tested stress M inimum	抗拉强度最小 (N/mm2) Tensile strength M inimum	伸长率% 最小 Elongation rate minimum	夏比V型缺口冲击试验 CharpyV —notch impact test		
					试验温度 Test temperature	纵向 Longitudinal	横向 Transverse
304	205	245	515	40	–196	41	27
304 1	170	210	485	40	–196	41	27
316 1	170	210	485	40	–196	41	27
S31803	450	–	620	25	–20	41	27
S32205	450	–	620	25	–20	41	27
S32304	400	–	600	25	–20	41	27

注：309L、347L目前正在开发过程中。
Note: the steel grade of 309L and 347L is under development now.

◆ 不锈钢无缝管化学成份
Chemical composition of seamless stainless steel pipe

牌号 Grsde	C	Si	Mn	P	S	Ni	Cr	Mo
1Cr18Ni9	≤0.15	≤1.00	≤2.00	≤0.035	≤0.030	8.00～10.00	17.00～19.00	
0Cr18Ni9	≤0.07	≤1.00	≤2.00	≤0.035	≤0.030	8.00～11.00	17.00～19.00	
00Cr19Ni10	≤0.03	≤1.00	≤2.00	≤0.035	≤0.030	8.00～12.00	18.00～20.00	
0Cr17Ni12Mo2	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	10.00～14.00	16.00～18.00	2.00～3.00
00Cr17Ni14Mo2	≤0.03	≤1.00	≤2.00	≤0.035	≤0.030	12.00～15.00	16.00～18.00	2.00～3.00
0Cr18Ni10Ti	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	9.00～12.00	17.00～19.00	
1Cr18Ni9Ti	≤0.12	≤1.00	≤2.00	≤0.035	≤0.030	8.00～11.00	17.00～19.00	
0Cr18Ni11Nb	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	9.00～13.00	17.00～19.00	
0Cr13	≤0.08	≤1.00	≤1.00	≤0.035	≤0.030		11.50～13.50	
1Cr13	≤0.15	≤1.00	≤1.00	≤0.035	≤0.030		11.50～13.50	

◆ 不锈钢无缝管力学性能
Mechanical property of seamless stainless steel pipe

牌号 Grsde	Rm/MPa	$R_{p0.2}$/MPa	伸长率A/% Elongation
	≥		
0Cr18Ni9	520	205	35
1Cr18Ni9	520	205	35
00Cr19Ni10	480	175	35
0Cr18Ni10Ti	520	205	35
0Cr18Ni11Nb	520	205	35
0Cr17Ni12Mo2	520	205	35
00Cr17Ni14Mo2	480	175	35
1Cr18Ni9Ti	520	205	35
0Cr13	370	180	22
1Cr13	410	205	20

产品优势 >>>

Product Advantage

◆ 热卷规格和尺寸精度
Specification and dimension tolerance of hot rolled coil

厚度精度 Thicknesstolerance	±30μm 实际 ±30μm Actualfigure
宽度精度 Widthtolerance	0～6.5mm 设计能力 0～6.5mm Designedcapacity
平直度 Flatness	<5mm/m
凸度精度 Convexitytolerance	±20μm
开平板不平度 Unevenness of planished steel plate	≤5mm/m

◆ 耐磨钢TNM450不平度
Unevenness of anti-wear steel TNM450

厚度范围（mm） Thickness range(mm)	20.0～60.0
不平度要求（mm/2m） Unevenness requirement (mm/2m)	≤7

太钢高强度、高韧性结构用钢突出宽、厚、特的产品优势，通过采用控轧控冷手段，将产品的晶粒尺寸降低到几个μm的水平，在强度提高数十到数百兆帕(MPa)的同时，具有良好的塑、韧性；通过降低钢的碳当量提高焊接性能。采用炉外精炼技术，大幅降低钢中的杂质元素含量，特别是S含量达到小于0.003%的水平，提高钢的低温冲击韧性。

太钢700MPa级高强钢从开发生产以来，年产5万吨以上，产品广泛应用于工程机械、煤矿机械、矿用车制造等行业。

TISCO's high strength and high toughness structural steel is featured with big width, big thickness and special grade. By controlling the rolling process and regulating cooling method, the grain size of our product can reach U m level; with the strength being increased by dozens or hundreds MPa, the plasticity and toughness is maintain good; the welding property is also improved by decreasing the carbon equivalent of steel. Impurity contents are dramatically decreased,especially the S content Is lower than 0.003%, and the low temperature Impact toughness of steel is increased.

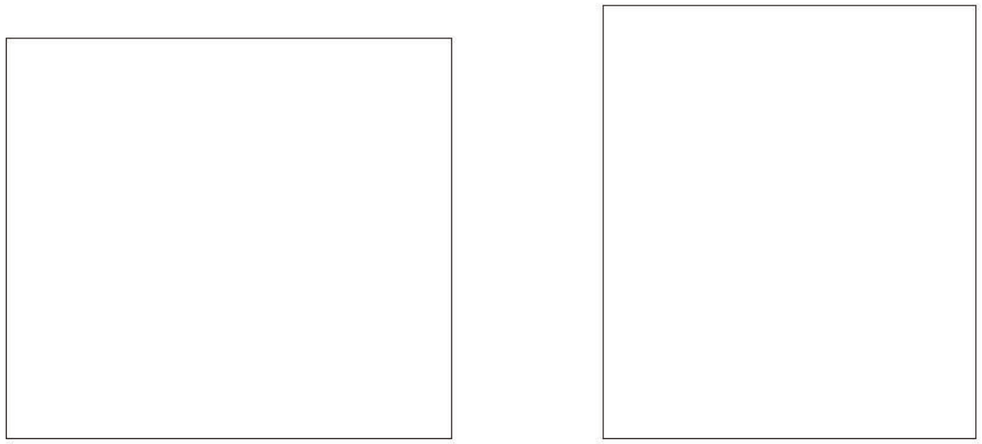
Since 2007 when TISCO 700MPa level high strength steel was developed, the output has been tens of thousands tons. This kind of steel is widely applied in ATM, automobile refitting, engineering machine manufacture, and etc.

产品介绍 >>>

ProductIntroduction

1、太钢生产的8 mm700MPa带钢的铁素体晶粒组织。

1、Ferro grain size stru'ctural 8 mm 700MPa strip of TISCO and 3 mm S700MC.



从上图中，可以看出，太钢700MPa产品的晶粒细小，而且更均匀。

From above ficiure, it can be found that, the grain size of 700MPa produced by TISCO is finer and evener.

2、成份设计的优势

2. Advantage in composition design

屈服强度700 MPa级热轧高强度带钢的化学成份（典型值）
Chemical composition(typical) of the hot rolled high strength strip with yield strength of 700 M Pa level

牌号 Grade	C Max	Si Max	Mn Max	P Max	S Max	Nb Max	V Max	Ti Max	B Max	Al Max
太钢 700MPa	0.09	0.15	1.80	0.020	0.010		≤0.22			0.015

屈服强度700 MPa 级热轧高强度带钢的产品性能（典型值）
Product property (typical) of the hot rolled high strength strip with yield strength of 700 MPa level

牌号 Grade	规格（mm） Specifications	力学性能 Mechanical properties			
		ReI,MPa	Rm,MPa	A,%	冷弯 Cole benging
700MPa	3.0	740	790	18	合格 Qualified

从化学分析，力学性能试验，和显微组织及析出物的观察分析结果证明，太钢生产的700MPa热轧带钢达到用户技术要求，和国外同类钢种比较，在显微组织和性能方面表现出一定的优势。试验钢的强度一塑性有较好的配比，伸长率A5达到21.0–21.5%，同时均匀伸长率Ag为9.0–9.5%，有利于成形性的提高。

By chemical analysis, physical property test, as well as the observation of micro-structure and precipitation, it is proved that TISCO's 700MPa hot rolled strip meets customer's demands in terms of technique, and compared with equivalent overseas products, it even has shown some predominance in terms of microstructure and properties. The strength and plasticity of tested steel have a good balance, with elongation A5 0f 21.0–21.5%, uniform elongation Ag of 9.0–9.5%, which is good for the improvement of formability.

用户使用指南 >>>

User Instruction

太钢热连轧厂钢卷编号规则
Serial Rules Of Tisco Hot-rolled Coils

生产线 Produce line	举例 For Example	第1位 No.1	第2位 No.2	其他位数 Other
2250线 2250 line	R01022080100	代表2250线 mean 2250 line （固定不变） （ changeless）	年份最后一位数字 The last number of the year	第3-4位：本年度的具体第几周 第5-8位：批号（流水号） 第9-10位：卷号（流水号） 第11-12位：字母A、B、C代表平整分卷，数字代表横切的具体包号 No.3-4: The week number of the year No.5-8: Batch(ordinal number) No.9-10: Coils number(ordinal number) No.11-12: A, B, Cmeans skin pass and split coils, figures means across cutting plate
	举例： 1、R01022080100:卷状态交货 2、R01022208010A:平整分卷状态交货，最后一位流水号A、B、C等 3、R01022080101:横切板状态交货，最后一位流水号1、2、3等			For Example: 1.Delivery for coils 2.Delivery for skin pass and split coils, and last number isA, B, c etc. 3.Delivery for across cutting plate, and last number isl, 2, 3 etc.
1549线 1549 line	901649502	代表1549线 mean 1-549 line （固定不变） （ changeless）	年份最后一位数字 The last number of the year	第3位：月份（A：10月，B：11月，C：12月） 第4-7位：批号（流水号） 第8-9位：卷号（流水号） No.3：Month (A:Oct. B:Nov. C:Dec.) No.4-7：Batch(ordinal number l No.8-9：Coils number(ordinal number)

不锈钢板材焊接参考
Welding Reference Of Stainless Steel Plates

牌号 Grade	焊材型号 Type Of Welding Material			使用说明 User Manul
	中国GB焊丝 Chinese GB Welding Wire	中国GB焊条 Chinese Gb Welding Rod	美国材料AWS American Material AWS	
304L	H00Cr21Ni10	E308L	308L	焊材的C、S、P、Si、Nb应尽可能低。 The contents ofC, S, P, Si, and Nb in welding material should be as low as possible.
316L	H00Cr19Ni12M02	H00Cr19Ni12M02	316	焊缝金属为316L的焊后状态，有时耐腐蚀性欠佳，可通过1050-1100℃固溶处理来改善。 In case that welding seam metal is post-welded 316L, the anti-corrosion performance, which would be bad, can be improved through solution treatment under 1050-1100℃.

牌号 Grade	焊材型号 Type Of Welding Material	热输入KJ/mm Heat Input	层间温度 Weld Inter-pass Temperature	使用说明 User Manul
S31803	Cr22-Ni9-Mo3型 超低碳 Cr22-Ni9-Mo3 Type Super Low Carbon	0.5-2.5	<250℃	双相钢的焊接比较复杂，无论是对于焊缝还是焊接热影响区，都希望焊后在高温区的冷却速度不要过快，以便于铁素体向奥氏体转变，而同时又希望焊后在低温阶段冷却速度尽可能快，防止有害的金属间化合物析出。 The welding of duplex is relatively complicated.Both for welding seam and welding heataffected zone, the cooling of hightemperaturezones after welding should not be too fast inconsideration of the transformation of ferrite to austenite, at the same time, the cooling of low-temperature stage after welding is expected to be as quick as possible to avoid the adverse precipitation of intermetallic compound.

太钢高强度工程机械热轧卷板焊接参考

太钢所推广的屈服强度460~700MPa的高强度热轧钢板，属于低碳、微合金析出强化的高纯净度细晶粒钢，碳当量≤0.42%，焊接冷裂纹敏感性指数Pcm≤0.20%。所以适于采用多种焊接方法（焊条电弧焊、气体保护焊、埋弧焊等），且焊前无需预热，焊后无需保温。

太钢与机械科学院哈尔滨焊接研究所合作，对太钢高强钢的焊接性进行了研究，采用等强实心焊丝富氩气体保护焊，其热输入在0.5－1.5KJ/mm，焊接接头的力学性能满足母材性能指标。用户在实际应用中，应根据钢板的厚度、焊接结构的特点，在推荐的热输入范围内，作相应的工艺评定，选用最佳的焊接参数。

The high strength hot rolled steel plate of yield strength is 460 – 700MPa promoted by Tisco, which is a high purity fine grain steel with low-carbon and micro-alloy -precipitation hardened, carbon equivalent is≤ 0.42%, welding cold cracking sensitivity index Pcm s 0.20% .So for using a variety of welding methods (arc welding, gas welding, submerged arc welding,etc.), and no preheating before welding, after welding without heat.

Tisco cooperated with Harbin Welding Machinery Institute, which studied for the welding of high strength steel from Tisco, used other strong solid wire argon-rich gas welding, the heat input is in the 0.5— 1.5KJ/mm, the mechanical properties of welded joints can meet the base metal performance indicators. In the practical application, user should base on the thickness of steel plate, welding structure characteristics, make corresponding process evaluation in the recommended range of heat Input for selection of optimum welding parameters.

例：TQ600MC、S700MC对接单面焊双面成型工艺

Example: TQ600MC, S700MC butt side welding molding process

钢号 Grade	钢板厚度 Thickness (mm)	焊丝型号 wire model	焊丝直径 wire diameter	保护气体 Protection gas	焊接层次 Welding level	焊接电流 Welding current (A)	电弧电压 Arc voltage (v)	焊接速度 Welding speed (mm/s)
TQ600MC	10	GB/TER69-G AWS ER100S-G	1.2	80%Ar+20%CO_2	1	80~200	12~19	2.6~7
					2	220~280	20~30	4.0~7
S700MC	10	GB/TER76-G AWS ER110S-G	1.2	80%Ar+20%CO_2	1	80~200	12~19	2.6~7
					2	220~280	20~23	4.0~7

焊接接头力学性能

Mechanical properties of welding joints

钢号 Grade	抗拉强度 TS（MPa）	断裂位置 Fracture Location	热影响区冲击功 Impact Energy Of The Heat Affected Zone -20℃，akv,j; 7.5x10x55	熔合区冲击功 Impact Energy Of The Heat Affected Zone -20℃，akv,j; 7.5x10x55
TQ600MC	735	母材Base metal	45	40
S700MC	810	母材Base metal	54	42

如焊接结构需进行去应力处理，去应力退火温度应≤530°C，高于此范围的热处理，将导致接头低温冲击韧性下降，应予以避免。焊接结构可进行消氢处理。

If in need of welding structure to deal with stress, stress relief annealing temperature should be≤ 530℃, higher than this range of heat treatment, which result in the decreasing of the low temperature impact toughness of the joint and should be avoid. Welding structure can be welded with hydrogen consuming treatment.

主要特点 >>>

Main Features

太钢工程机械用钢产品具有高强度、高韧性和优良的焊接性能，广泛应用于制造各类工程机械，可在很大程度上满足产品的高强化、轻量化和经济化得要求。同时满足银行柜员机、汽车改装、通讯塔架、煤矿机械等行业的应用，如各类起重机、煤矿机械、载重汽车、混凝土设备、推土机等，产品实物达到国际先进水平。

太钢新开发的400系列产品，品种齐全，可以在一定的条件下有效地替代部分300系材料，由于400系不含Ni，可以大大降低原材料的成本，尤其443材料，在一定的条件下，只要使用正确，完全可以替代304材料。

TISCO's engineering machine steel, featured with high strength, high toughness and good welding performance, is widely used in manufacturing different engineering machine and meets the demands of products in aspects of high-strength, light-weight and economization. At the mean time, the steel is also qualified for making ATM, automobile refitting, communication tower, and coal ore machine, e.g. various crane, coal machine, truck, concrete equipment and bulldozer, with manufactured products reaching international advanced level.

The 400 series products newly developed by TISCO, with complete variety, can effectively replace 300 series under certain conditions. As there is no Ni content in 400 series, the raw material cost is dramatically decreased. 443, for example, can be a substitute for 304 under certain conditions, as long as it is correctly used.

牌号 Grade	Cr	Ni	Ti	Nb	Cu
443	21	–	0.3	0.2	0.4
304	18.2	8.2	–		–

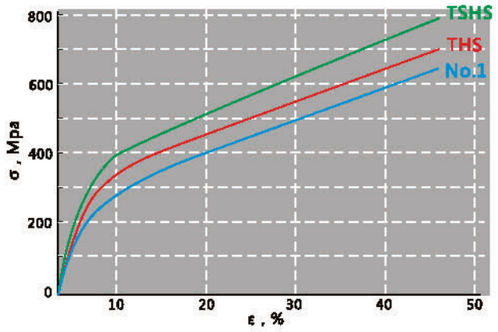
牌号 Grade	屈服强度(MPa) Yield Strength	抗拉强度(MPa) Tensile Strength	延伸率（%） Elongation	r值 r value	硬度(HV) Hardness	圆锥杯突(mm) Conical Cup
443	305	483	31	1.3	161	38.6
304	260	645	60	1.0	185	37.7

牌号 Grade	密度 Density (g/cm)	电阻 Resistance (10-6Ω·cm)	磁性 Magnetic	比热25℃ Specific Heat (J/kg·℃)	热传导100℃ Heat Conductivity (W/m·℃)	热膨胀系数 Heat expansion rate 20-100℃(10^{-6}/℃)	杨氏模具 Young's modulus (GPa)
443	7.74	58	有 Have	440	22.5	10.5	204
304	7.93	70	无 Non	500	16.2	17.3	193

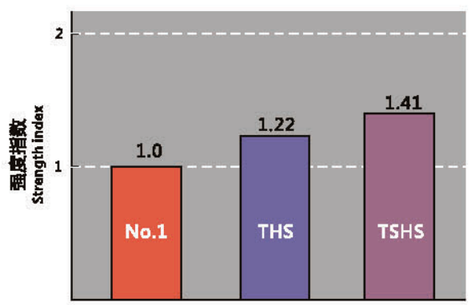
太钢拥有全球最先进的不锈钢生产设备，有着丰富的不锈钢生产经验，可以利用设备优势生产各种高强度材料，太钢的THS、TSHS材料具有高强度的特性，可以有效地替代部分热轧材料，减薄厚度，节约成本。

TISCO, with globally most advanced stainless steel facilities and experienced stainless steel production practices, is able to produce various high-strength material, e.g. THS and TSHS, which can effectively replace some hot rolled material with thinner thickness and lower cost.

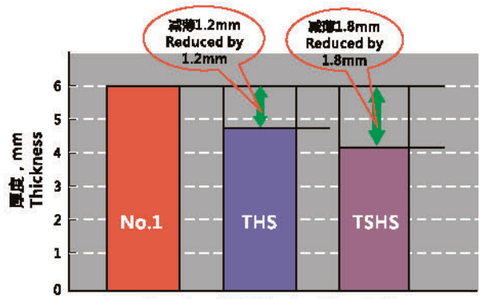
◆ 材料强度及节约率 Material Strength and Material Saved



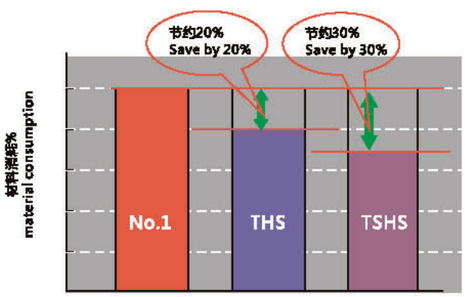
304不锈钢No.1、THS、TSHS应力-应变曲线
304 stress-strain curve by No.1、THS、TSHS



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60mm304钢板为例）
Thickness reduction comparison for material of identical strength (taking 6mm304 plate for an example)

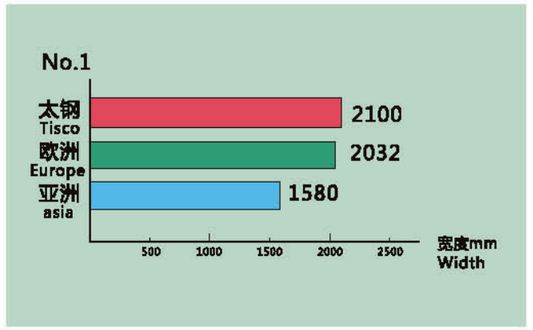


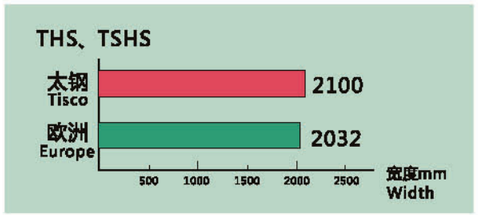
等强度设计材料消耗比较
Consumption comparison for material of identical strength

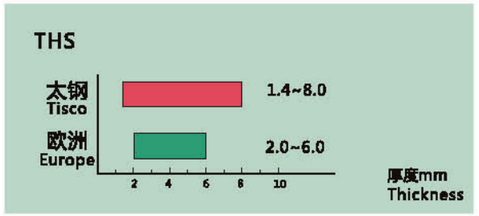
THS和TSHS产品由于经特殊冷加工工艺处理，材料强度大幅度提高，且与常规热轧材相比，在等强度条件下可减薄厚度20%~30%，成为制作结构件的理想选材。

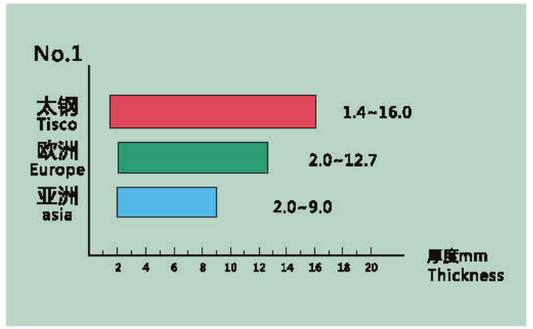
THS and TSHS product will have the increased material strength significantly as a result of special cold working process applied thereon, and can be reduced in thickness by 20–30% at an identical strength level as that for conventionally hot–rolled product. As such they are the ideal material for steel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

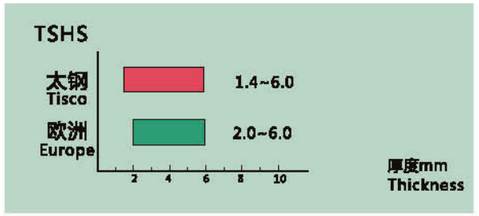
◆ 极限规格 Extreme Specifications











◆ 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，提高安全可靠性。

◆ 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。

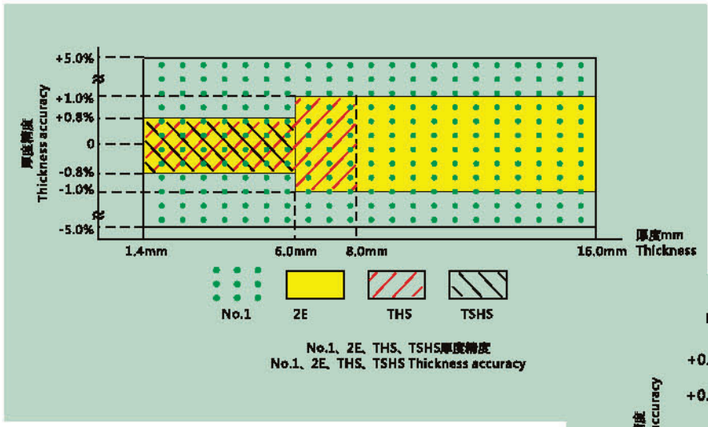
◆ 超薄规格产品在工业用管等诸多领域可替代常规的冷轧产品，降低制造成本。

◆ 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.

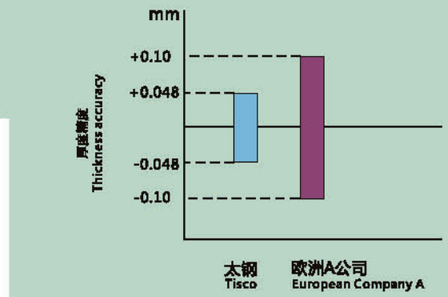
◆ In comparison with single plate produced in conventional technology, the ultra-thick product is greatly improved in terms of surface finish, dimensional precision and material utilization, which is ready to meet various needs and offers a wider choice of design and application to customers.

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

◆ 尺寸精度 Dimensional Precision



No.1、2E、THS、TSHS厚度精度
No.1、2E、THS、TSHS Thickness accuracy



TSHS产品厚度精度对比（6mm为例）
Comparison of TSHS product thickness precision(6mm example)

服务承诺 >>>

Service Promise

- 为客户提供个性化成份、性能、包装、卷重、质保书的设计。
- 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。

- Provide consumers with the personalized designs on composition, properties, package coil weig ht and the quality certificate.
- Technical support to customers in material selection and fabrication.
- Accurate and prompt delivery.
- Response to customer's claim within 24 hours.

产品应用 >>>

Product applications

装载机
Loader

混凝土泵车
Concrete pump truck

煤矿机械
Coal mine machinery

挖掘机
Excavator

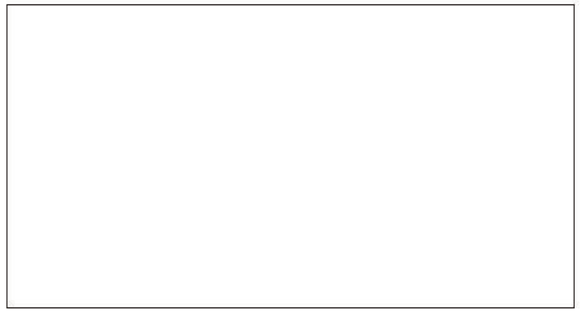
混凝土搅拌罐车
Concrete stirring truck

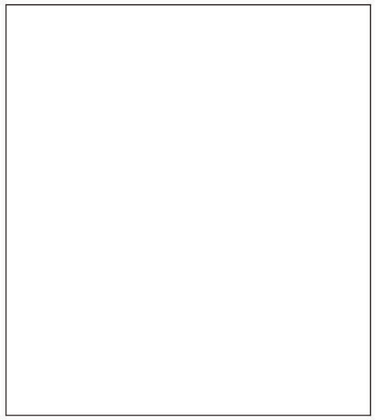
刮板输送机
Scrape conveyer

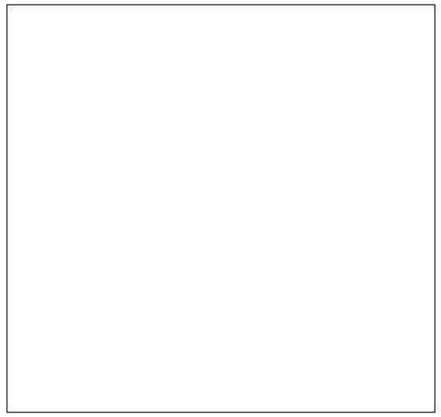
汽车起重机
Truck Crane

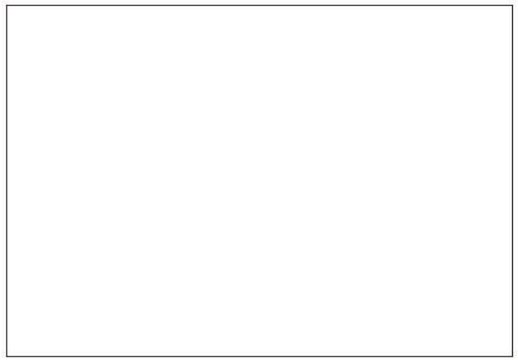
产品应用 >>>

Product applications



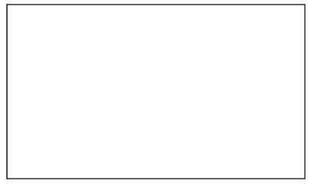


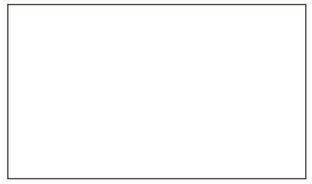


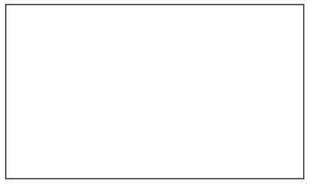


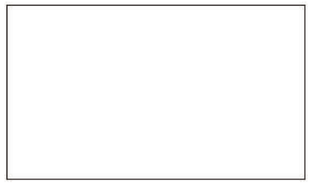
产品应用 >>>

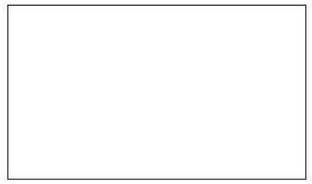
Product applications

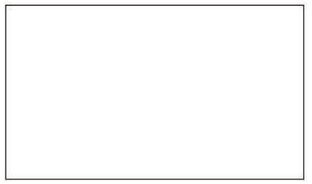


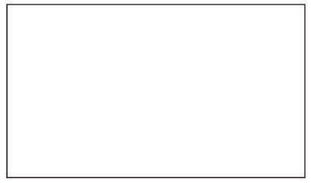


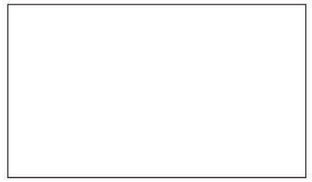


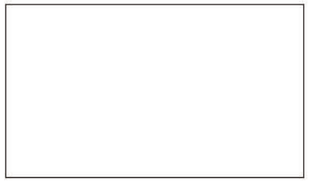


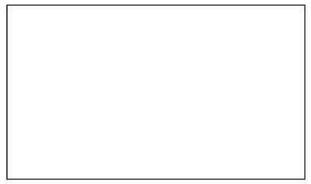


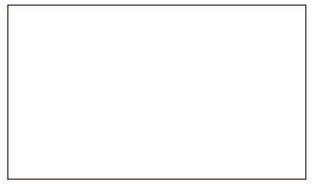


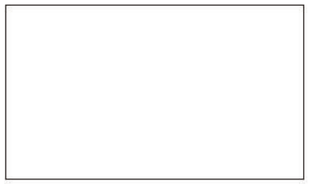












太钢加工配送营销网络布局图

Marketing network of TISCO service centers

- 太钢本部加工配送中心　TISCO home-based service center
- 已建成的加工配送中心　Service center in operation
- 在建中的加工配送中心　Service center under construction
- 规划建立的加工配送中心　Service center under planning

主要业务部门联系方式 >>>

Contacting Manners of the Main Business Sections

股份公司主要业务部门 Main business department of Co.,Ltd.	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	0351-3010670 400-653-1998 800-806-1998	tgxsc@tisco.com.cn Tgyhfwk@tisco.com.cn
技术中心 Technology Center	技术咨询服务 Technical consultation service	0351-3012213	Tgjszxbxg@tisco.com.cn

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

太钢国贸（美国）有限公司 Taigang International Trading (USA) Co.,Ltd.	美国 USA	电话（Tel）001-4124340607	传真（Fax）001-4124340608
太钢国贸（香港）有限公司 Taigang International Trading (Hongkong) Co.,Ltd.	香港 Hongkong	电话（Tel）+0852-28271686	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	
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	天津 Tianjin	电话（Tel）022-23408105	传真（Fax）022-23408103
	北京太钢销售有限公司 Beijing TISCO sales Co.,Ltd	北京 Beijing	电话（Tel）010-64441368	传真（Fax）010-64441369
	太钢现货销售有限公司 Spot sales company Ltd.of TISCO	太原 Taiyuan	电话（Tel）0351-3096390	传真（Fax）0351-3090556
	郑州太钢销售有限公司 Zhengzhou TISCO sales Co.,Ltd	郑州 Zhengzhou	电话（Tel）0571-60805079	传真（Fax）0571-60805085
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 Shenyang	电话（Tel）024-24232050	传真（Fax）024-24231216
	哈尔滨太钢销售有限公司 Haerbin TISCO sales Co.,Ltd	哈尔滨 Haerbin	电话（Tel）0471-87905777	传真（Fax）0471-55185321
	沈阳沈水太钢不锈钢销售有限公司 Shenyang shenshui TISCO stainless steel Sales Co.,Ltd	沈阳 Shenyang	电话（Tel）024-24232051	传真（Fax）024-24231216
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	无锡 Wuxi	电话（Tel）0510-82407713	传真（Fax）0510-82441187
	上海太钢销售有限公司 Shanghai TISCO sales Co.,Ltd	上海 Shanghai	电话（Tel）021-61808397	传真（Fax）021-61808397
	杭州太钢销售有限公司 Hangzhou TISCO sales Co.,Ltd	杭州 Hangzhou	电话（Tel）0571-85087265	传真（Fax）0571-85081958
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	青岛 Qingdao	电话（Tel）0532-81101847	传真（Fax）0532-87734798
	济南太钢销售有限公司 Jinan TISCO sales Co.,Ltd	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	武汉 Wuhan	电话（Tel）027-85815300	传真（Fax）027-85815311
	长沙太钢销售有限公司 Changsha TISCO sales Co.,Ltd	长沙 Changsha	电话（Tel）0371-85582703	传真（Fax）0731-85588305
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