



集装箱行业用钢

STEEL FOR CONTAINER INDUSTRY

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

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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 on TISCO

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能最大、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。

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”系列火箭等高端领域，进入三峡水利、西气东输、奥运场馆等国家重点工程。

太钢的发展目标是，加快建设全球最具竞争力的不锈钢企业，到2010年，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，建设具有国际竞争力的大企业集团。

Taiyuan Iron and Steel (Group) Co. Ltd. (TISCO) is a gigantic steel complex in China and a world leading stainless steel producer with largest capacity, full range of products and state of the art facility. With 70 years development, the capacity of pig iron, crude steel and rolled products increased over 10 million ton, including 3 million tons of stainless steel.

TISCO produced the first heat of stainless steel, first heat of silicon steel and first sheet of silicon steel. It is well equipped for mining and beneficiation (such as iron ores), ironmaking, steelmaking, rolling and manufacture of metallurgical equipment and spare parts. Main products include cold rolled stainless and silicon sheet/coil, hot rolled coil, axle steel, die steel and military steel. They are widely used in petrochemical industry, transportation, construction, decoration, home appliance, medical apparatus and food industry, they are also used for high-end application and national key projects as Shenzhou spaceship, Chang'e-1 Moon Detector, Dongfeng rocket series, Three Gorges project, West-East natural gas transmission project and Olympic games facility.

Our goal in development is to expedite building TISCO as the most competitive stainless steel producer in the world, holding the world leading position by 2010 in terms of range, quality, cost, R&D, energy saving, environment protection, efficiency and service. Our target is to create an international enterprises group of strong competitive edges out of Taigang.



◆ 集装箱行业用钢概况

1998年以来，伴随着集装箱行业的成长，太钢一直致力于集装箱用钢的研究与开发，如今太钢碳钢板材及不锈钢板材已全面用于干货集装箱、冷藏箱、罐式集装箱及其它特种箱的制造，已得到国内集装箱行业重点用户的肯定和认可。太钢的集装箱用钢种类最全、规格最全，可全面满足集装箱行业的需求，在干货集装箱、冷藏集装箱、罐式集装箱、冷藏槽车、罐式槽车等产品方面均与客户形成了长期密切的合作。

◆ 与行业客户的合作关系

太钢与集装箱行业重点客户保持了长期的、良好的战略合作关系，太钢集装箱用钢以优良的质量、快捷的服务。广泛应用于长江三角洲、珠江三角洲、环渤海区域的集装箱生产企业。

目前太钢与全球最大的几家集装箱公司均形成了长期稳定的合作，产品质量得到客户的广泛认可，尤其太钢最新研发的罐箱用不锈钢材料，已经达到了国外先进质量水平。

◆ Brief on container industry steel

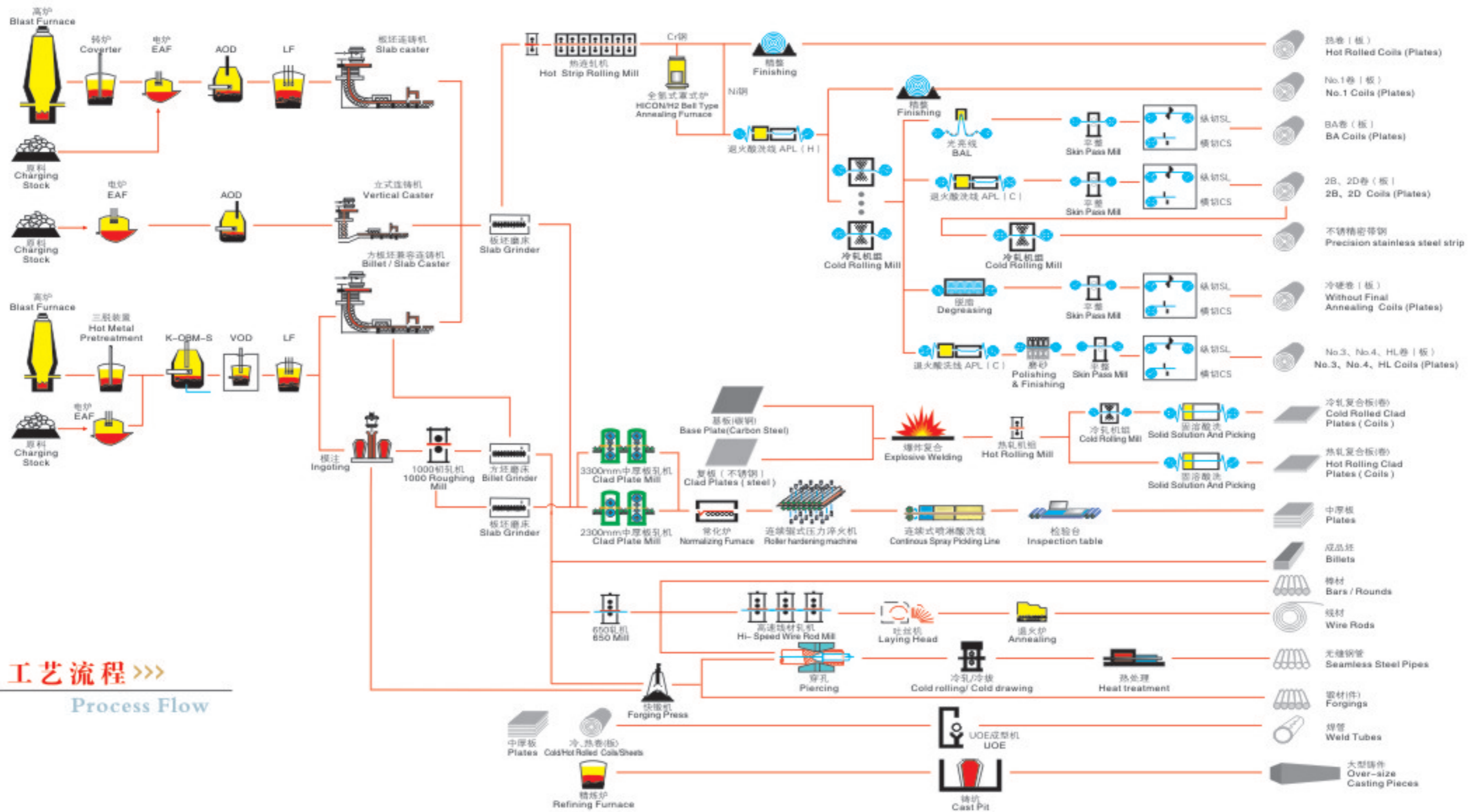
With the development of container industry since 1998 TISCO has been devoted to the research and development of container steel. At present, carbon and stainless steel flat products are widely used for the manufactures of dry cargo container, refrigerated container, tank container, and other special container; and approved by the key customers of domestic container industry. Container steel of TISCO has various kinds of steel grade and size and can meet the needs of this industry. TISCO has built up the permanent cooperation relationship with the customers of the products such as dry cargo container, refrigerated container, tank container and other aspects.

◆ Cooperative relationship with industrial customers

TISCO has been keeping the long term and sound strategic cooperative relationship with the key customers from container industry. Steel for container by TISCO is widely used for the production enterprises of containers at Yangtze River delta, Pearl River delta, around Bohai sea district for its good quality and efficient service.

Now, TISCO has established the long term and stable cooperation with several large container companies in the world, the quality of the products also get approved by customers. The new stainless steel flat product for tank container developed by TISCO recently can achieve the leading role among the overseas products.





工艺流程 >>>
Process Flow



研发能力 >>>

Research and Development

国家级实验室 National level laboratory



2007年在国家认定的438家企业技术中心中，太钢技术中心排名第4位。
Tisco technology center ranks 4th among enterprise-based 438 technology centers accredited by the state in 2007.



扫描电镜
Scanning Electron Microscope



热模拟试验机
Thermal Simulating Tester



透射电镜
Transition Electron Microscope



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

企业荣誉 >>>

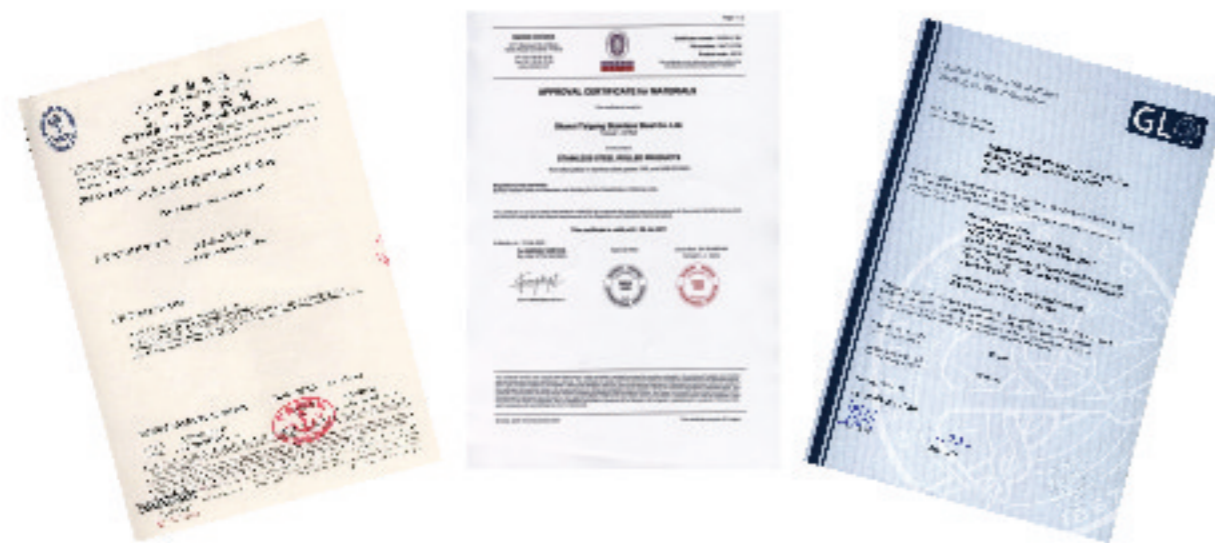
Honors & Awards

- ◆《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。
- ◆“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 products.
- ◆ 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.



质量保证体系 >>>

Quality Assurance System



常规产品 >>>

Conventional Products

◆ 太钢在集装箱行业可生产的常规产品
Conventional products for container industry

钢种 Steel grade	牌号 Grade	规格 (mm) Specifications		单重 Weight t	表面 Surface	标准 Standard	主要用途 Application
		厚度 Thickness	宽度 Width				
碳结构钢卷板 Carbon structure steel coil	SPA-H	1.4-8.0	870-2130	5-40		Q/TB3804-2007	以干货箱为主，也可用于冷藏箱、罐箱及其他特种箱的部分构件。 They can be used for manufactures of both dry cargo container and refrigerating tank, can tank, and part of special tank.
	T550W					Q/太新082-2008	
	T700W					Q/TB3021-2007	
	SM490A					Q/TX3286-2007	
	SM490YA						
不锈钢卷板 Stainless steel coil	SUS410L	0.3-8.0	1000-2000	3-30	2B, 2D	JIS G4305	用于制造冷藏集装箱及其它特种箱。 They can be used for refrigerating container and other special container.
		3.0-14.0	1000-2000	8-30	No.1	JIS G4304	
	SUS304	3.0-14.0	1000-2000	8-30	No.1	JIS G4304	
		0.3-8.0	1000-2000	3-30	2B	JIS4305	
不锈钢平板 Stainless steel sheet	L4402/L4404	3.0-8.0	1300-2000	5-30	2B	SANS5002B-7	罐式集装箱。 Can Container.
	TTG316L	3.0-8.0	1300-2000	5-30	2B	Q/TX3310-2007	罐式集装箱。 Can Container.
	PTG316L	3.0-8.0	1300-2000	5-30	2B	Q/TX3311-2007	罐式集装箱。 Can Container.

产品介绍 >>>

Product Introduction

◆ 产品的性能、特点、应用领域及用途 The performance, feature, application field of the products

1、黑材

太钢集装箱板化学成分和机械性能稳定，具有良好的冷成型、焊接及耐蚀性能；表面质量好、板形平整、尺寸控制精度高，规格齐全，最薄规格1.4mm，可满足国际标准集装箱、特种集装箱等各种集装箱设计制造要求。太钢集装箱板已形成年产50万吨的规模，用其制造的集装箱已出口到欧盟、美国、香港、日本等世界各地。

2、不锈钢

产品性能：采用铁水为原料，真空精炼，有害的夹杂物元素少、气体含量低，钢质纯净度高，焊接性能好；炉容量大，压缩比大，化学成份均匀稳定，延伸性能好，通过拉矫机组使得板形非常优良；

1. Black material

Container plate of TISCO is stable not only in chemical composition but also in mechanical property. It has good cold-forming property, weldability and corrosion resistance, being characterized by good surface quality, flat profile, accurate tolerance control and all necessary specifications with minimum thickness of 1.4mm to meet the requirements of design and manufacture for international standard container, special container and so on. The container plate of TISCO has reached annual production capacity of 500,000 tons, and exported to EU, USA, Hong Kong, Japan and etc. together with containers.

2. Stainless Steel

The product possesses the performances of the harmful inclusion and gas of low content, high purity of steel, good weldability, being imbued with large volume furnace and compression ratio, homogeneous and stable chemical composition as well as good elongation and flatness got by tension leveler due to taking molten iron as raw material and vacuum refining process.

产品特点：冷藏集装箱用钢成分合理，焊接性好、边浪小；冲压性能好、焊道整齐美观、性能优越，成为全球冷藏箱客户的首选；宽幅罐式集装箱冷轧板具备高强度，板形优良、焊接优异以及表面光洁度高等特点。

It has the features of proper composition, good weldability, less edge waves, being provided with better stamping ability, beautiful weld bead, and excellent performance. The product has become the first choice for the global customers of refrigerating tank. 1.4402/1.4404 wide cold rolling plate, used for can tank, is characterized by high strength thin thickness, high surface finish and easy for cleaning.

产品应用 >>>

Application



碳
钢
Carbon steel

不锈钢
Stainless steel



产品成份、性能 >>>

Composition and Property of Product

◆ 化学成份 (典型值) %
Chemical composition (Typical value) %

钢种 Steel grade	牌号 Grade	C	Si	Mn	P	S	Cu	Cr	Ni	Mo
碳素钢 Carbon steel	SPA-H	≤0.12	0.25-0.75	0.20-0.50	0.07-0.150	≤0.04	0.25-0.60	0.30-1.25	≤0.65	
	SM490A	≤0.20	≤0.55	≤1.6	≤0.035	≤0.035				
	SM490YA	≤0.20	≤0.55	≤1.6	≤0.035	≤0.035				
	T550W	≤0.12	≤0.75	≤1.8	≤0.030	≤0.020	0.25-0.55	0.30-1.25	≤0.65	
	T700W	≤0.12	≤0.75	≤2.0	≤0.030	≤0.020	0.25-0.55	0.30-1.25	≤0.65	
不锈钢 Stainless steel	SUS410 L	≤0.030	≤1.00	≤1.00	≤0.040	≤0.030		11.00-13.50		
	SUS304	≤0.08	≤1.00	≤2.00	≤0.045	≤0.030		8.00-10.50	18.00-20.00	
	1.4402/1.4404	≤0.030	≤1.00	≤2.00	≤0.045	≤0.015		16.5-18.5	10.0-13.0	2.0-2.5

1.4402/1.4404: Mo含量为: 2.0-2.5

1.4402/1.4404: Mo content: 2.0-2.5

◆ 力学性能
Mechanical properties

钢种 Steel grade	牌号 Grade	厚度 Thickness mm	屈服强度 Yield strength MPa	抗拉强度 Tensile strength MPa	伸长率 Elongation %	180° 冷弯 Cold bending	V型冲击 V-impact	
							试验温度℃ Test temperature	冲击功Ak _v J Absorbed-in-fracture energy
碳素钢 Carbon steel	SPA-H	≤6	≥345	≥480	≥22	d=a 完好 Perfect	-	-
		>6	≥355	≥490	≥15	d=3a 完好 Perfect	-	-
	SM490A	≤5	≥325	≥490	≥22	d=3a 完好 Perfect	-	-
		>5	≥325	≥490	≥17		-	-
	SM490YA	≤5	≥365	≥490	≥19	d=3a 完好 Perfect	-	-
		>5	≥365	≥490	≥15		-	-
	T550W	≤6	≥550	≥600	≥18	d=1.5a 完好 Perfect		
		>6				d=2a 完好 Perfect	-40℃	≥27
	T700W	≤6	≥700	≥750	≥12	d=1.5a 完好 Perfect		
		>6				d=2a 完好 Perfect	-40℃	≥27

钢种 Steel grade	牌号 Grade	屈服强度 Yield strength MPa	抗拉强度 Tensile strength MPa	伸长率 Elongation %	硬度 Hardness			弯曲 Bend	
					HB	HRB	HV	弯曲角度 Bending angle	弯曲半径 Bending radius
不锈钢 Stainless steel	SUS304	≥205	≥520	≥40	≤187	≤90	≥200		
	SUS410 L	≥195	≥360	≥22	≤183	≤88	≥200	180°	厚度的1.0倍 1.0 times thickness
	1.4402/1.4404	≥290	≥600	≥45					

主要特点 >>>

Main Features

集装箱行业属资源消耗性行业，高强度钢制造的集装箱代表着下一代集装箱的发展趋势。采用高强度集装箱板制造的高强度轻量化干货集装箱，可使每个标准集装箱重量减轻10%以上，经济价值不言而喻。

太钢高强度集装箱板T550W、T700W具有良好的耐大气腐蚀性能、耐海水腐蚀性能、高强度、高塑性以及良好的成型性能和焊接性能，可完全实现集装箱板的薄化和轻量化要求。

太钢的宽幅冷轧机组可以生产1300-2000mm任何宽度的产品，厚度范围0.3-8.0mm，机械性能可以满足罐箱的要求。可以按照客户的要求，按照ASTM、EN、SANS、DIN标准及太标等标准来生产。

Container industry belongs to resource consumption field. Containers made of high strength steel represent the development trend of future containers. High strength steel container plate makes dried food container light, which can reduce more than 10% of each standard container weight, commercial value is self-evident. TISCO wide cold rolling mill can produce the products with width in a range of 1500-2000mm, thickness within 0.3-0.8mm. its mechanical property can fully meet containers' requirements. It is available for TISCO to produce the products according to customers' different requirement, and subjected to a series of standards such as ASTM, EN, SANS etc.

TISCO high strength container plates, such as T550W, T770W, has good weather resisting property, resistance to corrosion seawater, high strength, high ductility, good formability and welding performance, which are in line with the demands of thin thickness and light weight for containers.

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 for consumers with the personalized designs on composition, properties, package 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.



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

合作伙伴 >>>

Cooperative Partner




上海寰宇物流装备有限公司
Shanghai Universal Logistics Equipment Co., Ltd.



新华昌集团有限公司
CXIC GROUP CONTAINERS COMPANY LIMITED



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	0351-3014366 0351-3011432 800-806-1998 +86 (0)351-3017169 +86 (0)351-3017525	Zhangwl@tisco.com.cn Tgyhfwk@tisco.com.cn Tggm@tisco.com.cn
技术中心 Technology center	技术咨询与服务 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
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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) 022-24306105 邮编 (Post code) 300012	传真 (Fax) 022-24308103
	北京太钢销售有限公司 Beijing TISCO Sales Co., Ltd.	北京 Beijing	电话 (Tel) 010-64441368 邮编 (Post code) 500029	传真 (Fax) 010-64441369
	太原太钢销售有限公司 Taiyuan TISCO Sales Co., Ltd.	太原 Taiyuan	电话 (Tel) 0351-3096390 邮编 (Post code) 030003	传真 (Fax) 0351-3096556
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	哈尔滨太钢销售有限公司 Harbin TISCO Sales Co., Ltd.	哈尔滨 Harbin		
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 邮编 (Post code) 214011	传真 (Fax) 0510-83441187
	上海太钢销售有限公司 Shanghai TISCO Sales Co., Ltd.	上海 Shanghai		
	杭州太钢销售有限公司 Hangzhou TISCO Sales Co., Ltd.	杭州 Hangzhou		
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 邮编 (Post code) 266000	传真 (Fax) 0532-87734796
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