# XISC Wide And Heavy Plates

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### **XISC**

### 企业文化 Company culture

企业使命: 富裕员工 回报社会 精品强国

企业愿景: 成为世界一流的宽厚板和线、棒材生产企业

企业精神:善于学习不断创新争创一流

企业战略: 做精做强 成本领先

营销理念: 用诚信打造品牌 为顾客创造价值

质量意识: 质量零缺陷 满意百分百成本意识: 自我挖潜 系统降耗环境意识: 碧水蓝天 绿色湘钢

感恩意识: 忠诚企业 爱岗乐业

危机意识: 永远如履 冰 永远如临深渊

Mission: let worker rich, return to society and vitalize nation with excellent product

Vision: become a world-class wide-thick plate, wire and rod manufacturers

Spirit: Be good at learning, continuously innovate and strive for the first rank

Strategy: To be stronger, better with the lowest cost  $% \left( 1\right) =\left( 1\right) \left( 1\right)$ 

Marketing concept: to built a brand with integrity and create values for customers

Quality awareness: zero-defect quality with full satisfaction

Cost awareness: self-tapping and lowering system consumption

Environmental awareness: Green XISC with blue sky

Sense of gratitude: loyalty to company and Love and happy for jobs

Sense of crisis: as walking on thin ice or facing abyss forever



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HUNAN VALIN XIANGTAN IRON AND STEEL CO.,LTD

### XISC 公司概况 Company profile

湖南华菱湘潭钢铁有限公司(简称湘钢)位于人杰地灵的湘江之畔,是国内大型钢铁联合企业和中厚板、线材、棒材、金属制品重要生产企业。五十多年来,特别是"十五"、"十一五"以来,湘钢加快技术改造,大力调整产品结构,目前已形成年产钢1000万吨的综合生产能力。

湘钢拥有当今世界先进水平的炼铁、炼钢、轧钢等完整的钢铁生产工艺流程和装备技术,产品涵盖了中厚板、线材和棒材三大类400多个品种,形成了以船体及海洋平台用钢板、管线用钢板、压力容器用钢板、建筑结构用钢板、桥梁用钢板、工程机械用高强度钢板为主的中厚板系列,以冷镦钢、高碳钢、焊条钢、低碳钢、弹簧钢为主的线材系列,以碳结钢、合结钢、齿轮钢、轴承钢等为主的棒材系列。产品主要销往华东、两广、西南、中南等市场,并出口韩国、日本、美国以及欧洲、东南亚、中东等地区。

十二五期间,湘钢将深入贯彻国家产业政策和循环经济政策发展要求,以"成为世界一流的线棒材和宽厚板专业生产企业"为远景目标,坚持以钢铁主业为核心、适度多元化发展的指导思想,抓住国家新兴战略产业的发展机遇,推进新湘钢建设,打造"一个千万吨级精品制造企业、一个反应快捷的综合服务企业、一个管理精细的高效运营企业、一个产业互补的多元发展企业、一个节能生态的两型示范企业",全面提升核心竞争力。







Hunan Valin Xiangtan Iron and Steel Co., Ltd. (referred to as XISC) locates by the Xiangjiang River, an inspiring place producing outstanding people. It is the domestic large-scale integrated iron and steel enterprise and important manufacturer of middle heavy plates, wire rods, bars and metal products. In the past 50 years, especially since 10th and 11th Five-Year, XISC has become the world's largest steel plate production company with a annual comprehensive capacity of 10 million tons of steels through the acceleration of technological innovation and adjustment of product mix.

With the advanced iron making, steel making, rolling and other process and equipment in the world, XISC is a large domestic manufacturer with more than 400 kinds of products including heavy and thick plates, wires, rods and metal products. Now XISC can provide middle heavy steel plates (for hulls and offshore platform, pipelines, pressure vessels, building structures and bridges, Engineering machinery), wires and rods ( such as cold heading steel, high carbon steel, welding steel, low carbon steel and spring steel) and bars and rods ( such as carbon structural steel, Alloy structural steel, gear steel and bearing steel). These products are not only sold to domestic market such as East China, Guangdong, Hunan, Southwest China, and also exported to Korea, Japan, United States and European, Southeast Asia and Middle East.

In 12th Five-Year, further implementing the development requirements of the national industrial policy and the recycling economy policy, targeting at "the world first-class manufacturer of wires, rods and heavy plates, sticking to guiding ideology of the basic iron and steel business with appropriate diversification development, seizing the emerging opportunities of strategic industrial development in china, we will promote the construction of New XISC to create a manufacturer of ten million tons of high-quality products, a comprehensive service enterprise with quick response, an efficient operation enterprise with fine management, a pluralistic development enterprise with complementary industries and an energy saving ecological two type demonstration enterprise to enhance the core competitiveness.

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# XISC 宽厚板优势 Strengths









#### 装备技术优势

Equipment and Technology advantages

湘钢是国内大型宽厚板生产企业,拥有一条5000mm宽厚板和两条3800mm宽厚板生产线,年生产能力500万吨。生产线分别引进了达涅利、奥钢联、西马克、瑞典ABB与西门子联合研发的全线高精度自动控制系统等先进装备,运用系统工程原理,解决宽厚板生产中的工艺、质量及技术难点,是目前世界上最先进的宽厚板生产线。

主体设备有:铁水预处理、120t顶底复吹转炉、LF精炼炉、双工位VD真空脱气装置、RH真空循环脱气装置、直弧型板坯连铸机、步进式加热炉、高压水除磷装置、四辊可逆粗轧机、四辊可逆高刚度精轧机、测厚仪、MULPIC加速冷却装置、全液压式矫直机、翻板机、双边剪、定尺剪、剖分剪、辊底式常化炉、回火炉、在线标识机、在线电磁超深波探伤装置等。

湘钢 国际前沿冶金技术发展,以高纯净度、超细晶粒组织、高精度表面、无缺陷产品为目标,加强工艺技术研究、开发和应用,逐步形成了洁净钢生产技术、微合金化技术、控制轧制和控制冷却技术、热处理技术、高精度板型控制技术、DQ超快冷控制技术、大压下技术等七大生产技术。拥有国家实验室认可的理化检测中心和全国首届技能大师和全国劳模、材料工程博士组成的焊接试验室,为产品研发和客户服务提供了可靠支撑。





XISC is provided with a 5m wide & heavy plate production line, two 3.8m wide & heavy plate product lines. The annual capacity is 5 million tons of steel plates. The wide & heavy plate product lines are the most advanced in the world because it is equipped with the high precision automatic control system and other advanced facilities that are developed jointly by Danieli, VAI, SMS, Swedish ABB and Siemens, which employ the principle of system engineering to solve the problems of technology, quality, and process in wide & heavy plate production. Main equipment includes: hot metal pretreatment, 120t top and bottom complex blown converter, LF refining furnace, double work level vacuum degasser, RH vacuum circulation degasser, straight curved slab caster, Walking beam heating furnace, high pressure water descaling device, four high reversing roughing mill, four high reversing high stiffness finishing mill, thickness meter, MULPIC accelerated cooling device, full hydraulic leveling machine, plate turnover machine, Bilateral scissors, dividing shear, slitting scissors, roller hearth normalizing furnace, tempering furnace, online marking machine, online electromagnetic ultrasonic detection device, etc.

Following the international forefront of the metallurgical technology, aiming at the products with high purity, ultra-fine grain, high precision surface and no defect, XISC strengthen the research, development and application of technology to gradually develop such seven technologies as clean steel production, micro-alloying, controlled rolling and controlled cooling, heat treatment, high-precision flatness control, DQ ultrafast cooling control and large reduction. Due to the physical and chemical testing center approved as a national laboratory and the welding laboratory with the national first group of skills guru, national model workers and Dr. of materials engineering, XISC provides reliable support for product development and customer service.

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HUNAN VALIN XIANGTAN IRON AND STEEL CO.,LTD

# XISC 宽厚板优势 Strengths

### 质量优势 Quality advantages

湘钢宽厚板以自产连铸坯和钢锭为原料,连铸坯最大厚度300mm,钢锭最大重量54吨。采用国家标准和国际 通用标准组织生产供货,同时满足用户个性化需求,产品实物质量达到国内一流水平。产品规格:厚度6~ 400mm, 宽度900~4850mm, 长度3000~25000mm。

The billets and ingots for the heavy plates are produced by XISC, the maximum thickness of the billet is 300mm and the maximum weight of ingot is 54 tons. The products meet the requirements of the national standards and common international standards as well as the needs of individual users, so the products have the first-class quality in china. Product specification: 6~400mm (thickness) × 900~4850mm (width) ×3000~25000mm (length).

#### 产品荣誉 Products, Certificate































#### 产品认证 Product certification

船体结构用钢板目前已获得美国、德国、韩国等9国船级社工厂认可证书,法国船级社颁发一类工厂认可 证书;深海平台用钢板获得英国EN10225A工厂认可证书和美国石油协会API体系认证;压力容器用钢板、建 筑结构钢板等获得英国劳氏PED认可证书和德国TUV(AD2000)认可证书。

Steel plates for Hull have been approved by the nine classification societies, such as GL,DNV and LR,among which, BV gives XISC level 1 mill approval certification. The steel plates for deep-sea platform obtained the UK EN10225A factory certificate and the American Petroleum Institute (API) system certification. Pressure-vessel steel plates and Bulidings structural steel plates achieved production certificate of England Lloyd's register of PED certificate and Germany TUV(AD-2000).

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# XISC 宽厚板优势 Strengths

#### 船级社证书 Classification society certificate



















API系列证书 API series of certification









锅炉及压力容器评审证书 Review certificate of boiler furnace and pressure vessel













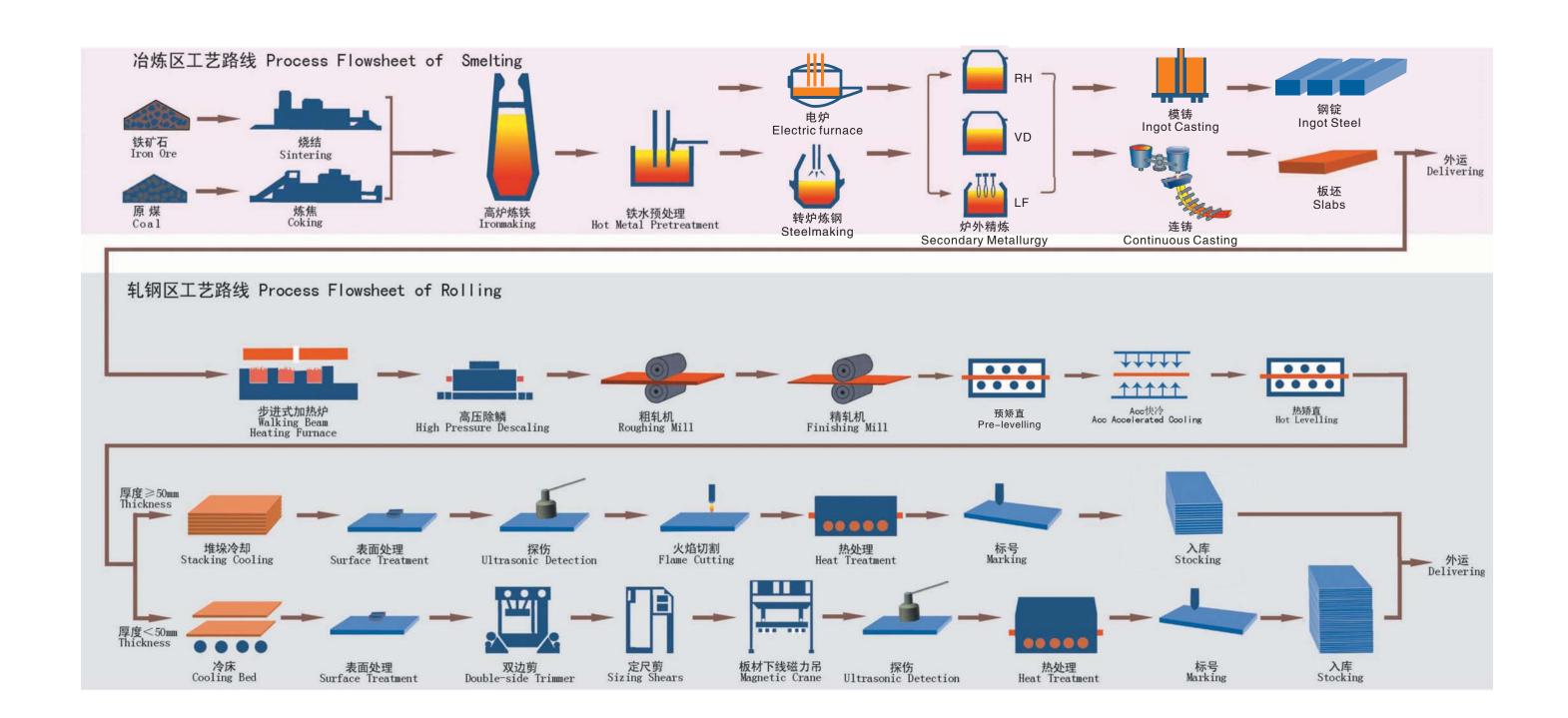






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# XISC 宽厚板生产工艺 Process Flowsheet



HUNAN VALIN XIANGTAN IRON AND STEEL CO.,LTD

# XISC 可供产品 Available Products

序号 No.	品种 Steel type	产品规格 mm Dimension	代表钢号 Grade	标准 Standard
1	碳素结构钢 Carbon structural steels	H: 6∽400 w: 900∽4850 L: 3000∽25000	Q235、Q255、Q275	GB/T700-2006 技术协议
2	优质碳素结构钢 Quality carbon structural steels	H: 6∽400 w: 900∽4850 L: 3000∽25000	20、45、50 S45C、S50C、S55C	GB/T711-2008 JIS G4051:2009 技术协议
3	低合金高强度结构钢 High strength low–alloy structural steels	H: 6∽350 W: 900∽4850 L: 3000∽25000	Q345、Q390 Q420、Q460	GB1591-2008 技术协议
4	船体及海洋平台用结构钢 Structural steels for hull and offshore platform	H: 6∽350 W: 900∽4850 L: 3000∽25000	A、B、D、E、A32、D32、E32、 A36、D36、E36、F32、F36、 A40、D40、E40、F40、DH55、 EH55、FH55、DH69、EH69、 FH69、Z15、Z25、Z35	GB712-2011 船级社规范 API Gb5313 技术协议
5	锅炉和压力容器用钢 Steels for boilers and pressure vessels	H: 6∽250 W: 900∽4850 L: 3000∽25000	Q245R、Q345R、 Q370R、18MnMoNbR、 13MnNiMoR、15CrMoR、 14Cr1MoR、12Cr2Mo1R、 12Cr1MoVR	GB713-2008 (第1号修改单) 技术协议
6	压力容器用调质高强度钢 Quenched and tempered high strength steels for pressure vessels	H: 10∽200 W: 1500∽3600 L: 3000∽18000	12MnNiVR、07MnMoVR、 07MnNiVDR、 07MnNiMoDR SPV450、SPV490	GB19189-2011 JIS G3115-2010 技术协议
7	低温压力容器用低合金钢 Low alloy steels for low temperature pressure vessels	H: 6∽200 W: 900∽4850 L: 3000∽25000	16MnDR、15MnNiDR、 09MnNiDR	GB3531-2008 (第1号修改单) 技术协议



序号	品种	产品规格(mm)	代表钢号	标准
NO.	Steel type	Dimension	Grade	Standard
8	管线钢 Pipeline steels	H: 9 ~ 65 W:1500 ~ 4850 L:3000 ~ 25000	GrB、X42、X46、X52、X56、 X60、X65、X70、X80、X90、 X100、WFHY415、WFHY450、 WFHY485、WFHY555、 X70HD、X80HD、X52~X80 抗酸管线	API spec-5L 2007 4 版 技术协议
9	高强度结构用调质钢 High strength structural steels in the quenched and tempered condition	H:6 ~ 200 W:900 ~ 4850 L:4000 ~ 18000	Q500、Q550、Q620、Q690、 Q800、Q890、Q960	GB/T16270-2009 技术协议
10	建筑结构用钢 Steels for building structure	H: 6 ~ 200 W:900 ~ 4800 L:6000 ~ 25000	Q235GJ(Z)、Q345GJ(Z)、 Q390GJ(Z)、Q420GJ(Z)、 Q460GJ(Z)	GB/T19879-2005 技术协议
11	桥梁结构用钢 Structural steels for bridge	H: 9 ~ 300 W:900 ~ 4800 L:6000 ~ 25000	Q235q、Q345q、Q370q、 Q420q、Q500q	GB/T714-2008 技术协议
12	抗湿硫化氢腐蚀用钢 Steels for wed H2S corrosion–resistance	H:6 ~ 200 W:900 ~ 4850 L:3000 ~ 25000	Q245R(R-HIC), Q345R(R-HIC), Q370R(R-HIC), Q245R(HIC), Q345R(HIC), Q370R(HIC), SA516Gr70(HIC), SA516Gr65(HIC), SA516Gr60(HIC),	技术协议
13	临氢钢 Hydrogen steels	H: 6 ~ 200 W:900 ~ 4850 L:3000 ~ 25000	15CrMoR(H)、14Cr1MoR(H)、 12Cr2Mo1R(H)、(S)A387 系列等	技术协议
14	水电压力钢管用钢 Steels for hydroelectric penstocks	H: 10 ~ 80 W:1500 ~ 3600 L:6000 ~ 18000	XDB620、X610、X780、 07MnMoVR 、07MnNiVDR	技术协议
14		H: 6 ~ 100 W:900 ~ 48500 L:3000 ~ 25000	Q345R、Q345C、Q345D、 Q370R、Q390C 等	技术协议
15	核电用钢 Steels for nuclear power station	H:6 ~ 350 W:900 ~ 4850 L:3000 ~ 25000	Q245R、Q345R、S235JR、 S235J0、S235J2G3、S275J0、 S355J2G3、P265GH、 P355GH、A36 等	技术协议
16	塑料模具用钢 Steels for plastic mould	H: 10 ~ 200 W:900 ~ 4850 L:3000 ~ 18000	1.2311 、P20、718 、P40、 P20M 、1.2738、	技术协议
17	耐磨钢 Wear-resistant steels	H: 6 ~ 100 W: 900 ~ 4850 L:4000 ~ 18000	20M nTiB 、NM320 、NM360 、 NM400 、 NM450 、 NM500 、 NM550 、 NM600 、 1E1839	GB/T24186-2009 技术协议

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### XISC "+值链" 服务体系 "+Value chain" service system

遵循由"生产制造商"向"综合服务商"转变的发展理念,湘钢率先在行业中建立"+值链服务体系",将营 销服务从传统的市场、销售行为前延到协同研发、快速交货、信息共享、物流配送、技术指导、网络服务等方面, 在企业内部建立快速反应的联动机制,满足市场与客户的需求。

Based on the development concept of transformation from manufacturer to integrated service provider, XISC firstly builds a service system of value chain, which extends the services form the traditional marketing, sale to cooperated development, quick delivery, information sharing, logics distribution and delivery, technical guidance, network service and so on, achieving linked mechanism with quick response inside the internal enterprise to satisfy the requirement of market and customers.

#### 定制服务

Tailor-made service

湘钢在冶金质量规范体系的基础上,研究开发了过程管理系统(PCS),将客户的要求或标准,转化为企业生 产控制的"冶金规范",冶金规范贯穿于产销环节中,实现生产与销售、生产与技术质量的有机衔接,从而满足客 户的定制化要求。

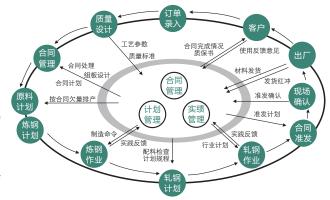
Based on its quality standards, XISC developed a process control system (PCS) to transform customer requirements or criteria into the metallurgical standard for enterprises production control. The standard goes throughout the process from production to distribution. In this way, seamless integration between production and distribution and between production and technical quality was realized and specific customer requirements and needs met.

#### 快速交货

Quick delivery

湘钢是全国信息化建设50强先进企业,拥有完善 的内部ERP系统、产销资讯系统、MES系统,实现了 从订单录入、排产、生产、检验、发货到结算的全程 踪管理,为快速交货提供了高效支撑,创造了线棒 材订单30天内按期交付率100%,板材合同兑现率 98%以上的同行先进水平。

XISC is one of 50 advanced enterprises informatization in China, owns an entire internal ERP system, information system of production and marketing, and MES system, which achieves tracking within the whole process of order, plan of manufactory, manufactory, inspection, delivery and the settlement, effectively supports the quick delivery, achieves 100% on-time delivery rate of order of bar and wire within 30 days, and achieves a demand rate of steel plates contract more than 98% in same industry.



#### 电子商务

Electronic commerce

湘钢自行开发了面向客户的电子商务系统、在途 物流信息系统和战略客户供应链协同信息系统等,实 现了客户从订单签订、生产、发货到产品验收和查询 的信息管理。

XISC itself has developed customer-oriented e-commerce systems, information systems for cooperation with logistic information system and supply chain of strategic customers, and so on, which achieves the management of information from order, manufacture, delivery, acceptance and inquiring.



#### 大客户经理制

Manager for VIP Customer

湘钢建立了大客户经理制,对大批量、多品种的 战略客户、标杆客户实行"一站式"和"一对一"服 务模式,有效减少了客户体力、精力、财务和时间成

XISC has established a VIP customer manager system performing one-stop and one-to-one services for strategic customers with large batch and many categories of products, thus reducing effectively the costs of the physical strength, energy, financial and



### 物流配送

Logistics service

湘钢不断深化与战略客户的合作, 形成了以船板 分段配送为主导的订单、生产、仓储、物流、信息化 五大管控模式,实现了由"提供产品"向"提供服 务"转变。

XISC keeps on deepening cooperation with the strategic customer, the company forms five-control pattern-order, manufacture, dock warehousing, logistics and the information technology, based on the sectionalized distribution with shipbuilding steel plates archives the transformation from providing the products







13 湘钢宽厚板 湘钢宽厚板 14 XISC WIDE AND HEAVY PLATES XISC WIDE AND HEAVY PLATES

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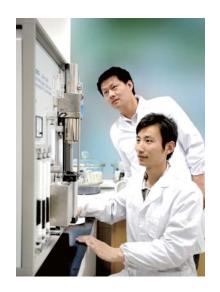
XISC "+值链"服务体系 "+Value Chain" Service System

#### 选材咨询

Consulting for Selection of Products

湘钢深入了解客户需求特点,根据产品用途和下游工艺要求,合理引导,协助客户选择产品。

With thorough understanding of the customer's demand, and based on the application of the products, as well as the downstream process requirement, XISC gives a reasonable guide, and assists the customers to choose suitable products.



### 协同研发

Coordinated Development

湘钢可为战略、标杆客户提供个性化产品研发服务,根据客户特殊要 求和使用特点,与客户共同研发产品。

XISC can provide individualized products development service for strategic and symbolic customers, based on the specific requirement of customers and also the function features, in order to develop the products together with the customers.

**Technical Service** 

湘钢重视售后产品使用情况,针对使用中的各类问题,及时与客户沟通或派人到现场,并提供焊接技术服务, 确保客户售后无忧。

XISC keeps an emphasizing on the after sales products. To solve the various problems in use, we timely communicate with the customer or send someone to the job field, providing welding technology services and assuring customer with no worries.

#### 分析检测

Analysis and Inspection

湘钢建立了独立的理化检测机构和焊接实验室,拥有 先进的理化检测设备, 理化检测中心获得国家实验室认 可,可为客户提供各种钢铁产品的物理、化学、力学等方 面的分析检测,以及腐蚀、焊接、成型、热处理等方面的 技术服务。

The separate physical-chemical testing mechanism and welding laboratory are built, in which XISC has the advanced physical-chemical testing device. The physical-chemical testing center has been approved by our State Laboratory. It can provide customers with different kinds of technical service, such as physical, chemical and mechanical analysis for various steel products, as well as corrosion, welding, mould and heat treatment.



#### 主要分析项目

Main Analysis

物理 Physical	化学 Chemical	力学 Mechanical	客户使用技术 Customer Use Technique
断口分析 Fracture Analysis	材料成分分析 Material Composition Analysis	机械性能 Mechanical Performance	腐蚀性能测试 Corrosion Behavior Test
组织分析 Textural Analysis	材料鉴定分析 Material Authentication Analysis	断裂韧性 Fracture Toughness Characteristic	焊接工艺评定 Welding Process Assessment



Service Promise

客户投诉经确认,受理登记后两个工作日内向客户答 复处理时间,正常情况下,三天(省内)~七天(省外) 派人到客户现场,异议结案周期15天(异常情况除外)。

Once the complaint by customer is confirmed, we will reply the customer and tell the time for the settlement within two working days after acceptance. Normally, we will send some people to customer's field in 3 days (inside Hunan province) ~ 7 days (outside Hunan province). The case conclusion period of opposition is 15 days. (except abnormal situations)

15 湘钢宽厚板

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### XISC 应用案例 Applications

湘钢始终以领先的技术,精细的管理和优质的产品,推动着行业的发展,不断满足世界范围内的客户对产品的 需求。

XISC is consistently promoting the development of our industry with our advanced technology, fine management and high quality products, so as to continuously meet the customers' requirements to products all over the world.

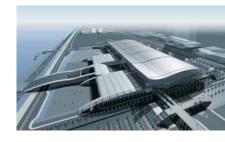


















- 1、上海中心大厦 Shanghai Central Building
- 2、港珠澳大桥 Hong Kong-Zhuhai-Macau Bridge
- 3、南京大胜关长江大桥 Nanjing Dashengguan Changjiang River Bridge
- 4、东方之门 The Gate of Orient
- 5、广州白云国际会议中心 Guangzhou Baiyun International Conference Center
- 6、广州新电视台 Canton Tower
- 7、上海世博中心 Shanghai World Expo Center
- 8、央视新台址 New CCTV Headquarters







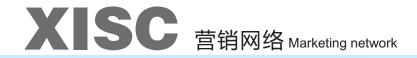






- 1、14.7万立方米大型液化天然气(LNG)运输船 147 000 cubic meters Large Liquefied gas carrier
- 2、"新埔洋号"30.8万载重吨VLCC "Xin pu yang"308 000 tons VLCC
- 3、 "海洋石油981" 深水半潜式钻井平台 "Offshore oil 981" deepwater semi-submersible drilling platform
- 4、兰州石油储备基地项目 Lanzhou petroleum reserve base project
- 5、安庆石化丙烯球罐 Anqin propylene spherical tank
- 6、 "海洋石油201" 3000米铺管起重船 "Offshore oil 201" 3000 metres pipe crane ship

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#### 联系方式 Contact Methods

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