CISDI GROUP CO., LTD.

CISDI HEADQUARTERS
Add.: 1 Shuanggang Road, Yuzhong District, Chongqing 400013, China
Tel.: +86 23 6354 5622
Email: OB@cisdi.com.cn
Website: www.cisdigroup.com.cn

CISDI UK
Add.: CISDI HOUSE, 8 Furnival Rd, Sheffield, S4 7YA, UK
Tel.: +44 1142291067
Email: info@cisdi.co.uk
Website: www.cisdi.co.uk

CISDI Turkey
Add.:122,A3 Blok,Mashattan, MASLAK MAHALLESI, Istanbul, Turkey
Tel.:+90-6340137287
Email:jing.zhang@cisdi.com.cn

CISDI India
Add.: 503-504, 5th Floor, A-Wing, Galleria Building, Hiranandani Gardens, Powai, Mumbai 400076, India
Tel.: +91-9702043402 +91 22-49701004
Email: yong.liu@cisdi.com.cn

CISDI Malaysia
Add.: 5-9-6 Corinthian Condomonium, Jalan Binjai, 50450 Kuala Lumpur, Malaysia
Tel.: +60 165626758 / +86 13508339926
Email: Shihong.Ma@cisdi.com.cn

CISDI USA
Add.: One PPG Place, Suite 3100, Pittsburgh, PA 15222, USA
Tel.: +44 (0)114 229 1067
Email: info@cisdiusa.com
Website: www.cisdiusa.com

CISDI Brazil
Add.: Rua Pernambuco 1002, Sala 902, Bairro Funcionarios, Belo Horizonte, CEP 30.130151, Minas Gerais, Brasil
Tel.: +55 31 34638880
Email: xin.yan@cisdi.com.cn

CISDI Vietnam
Add.: Phòng 2108 tòa nhà Charmvit Tower số 117 đường Trần Duy Hưng, Phường Trung Hòa, Quận Cầu Giấy, Thành phố Hà Nội, Việt Nam
Tel.: +84 0 2432007795 / +84 943482089
Email: xinbin.liu@cisdi.com.cn

CISDI NEWSLETTER

Issue 3: March 2022

CISDI brings colour to Pangang Chengdu's world market

IN THIS ISSUE

- CISDI launches Shanghai Metallurgical Operations
- Automation upgrade for Gerdau Acominas BF2
- Green stockyard transformation at TISCO
- Tempering furnace for most advanced lines in China is up and running

Technology and Solutions Partner for the Global Metals Industry

FULL-PROCESS SERVICES

CISDI provides full-process services from the bulk material handling yard to the final post-processing line of rolling mill.

FULL-FUNCTION SERVICES

CISDI provides standard and customized consulting, execution, and operations management services.

FULL-LIFE-CYCLE SERVICES

CISDI provides the FEED (front-end engineering & design), implementation, and production and operations management services throughout the entire project life cycle and provides continuous after care services and support.

TABLE OF CONTENTS

News

CISDI launches Shanghai Metallurgical Operations 02

Events

Automation upgrade for Gerdau Acominas BF2 03

Taking Sangang Minguang greener 04

Green stockyard transformation at TISCO 05

CISDI brings colour to Pangang Chengdu's world market 06

KISCO is now melting with less energy than it saves 09

Milestone moment for Guangxi Shenglong 10

New galvanizing line will expand NTS 12

CISDI heads back to Baosteel Shanghai 12

CISDI launches Shanghai Metallurgical Operations

Eco system for intelligent, green tech, equipment and services

CISDI launches its Metallurgical Operations Platform at its Shanghai company, with representatives from China's ten suppliers present, the first group of partners to signing co-operation agreements on the platform

CISDI has launched a metallurgical operations platform in Shanghai.

Based at CISDI Shanghai Engineering Co, it expands CISDI's engineering and construction operations and increases its full life-cycle services for the global steel sector.

At the launch event, an agreement for equipment manufacturing, re-manufacturing and functional contracting was signed with ten suppliers who will become the first group of partners.

To implement contracted services, CISDI will lead on the technology and form an industrial chain with supply partners and other resources which may be required.

"'It's a significant step towards innovating our business model and setting up a metallurgical ecosystem in China. We and our partners are combining our strengths to build an ecosystem featuring tech, equipment and service-integrated metallurgical operations," said Zhichun Hu, the chairman of CISDI Shanghai.

Core tech, equipment and operations are vital to Chinese steel enterprises needing to increase their competitiveness.

The platform brings together intelligent, green and super-efficient metallurgical services. It features multiple levels, full processes and life-cycle integrations.

"We will provide comprehensive, targeted solutions to help steel enterprises achieve greater energy conservation and environmental protection and enhance quality and efficiency.

The platform will elevate China's steel sector to more efficient and greener levels and generate new export opportunities for our tech and equipment," said Zhichun Hu.

'We value this opportunity to partner with CISDI, a pacesetter in China's metallurgical engineering and services sector. CISDI has vast expertise and abundant experience overseas."

Zhangjiagang Changli Machinery Co. in China's Jiangsu Province, is one of the ten initial suppliers. Its chairman, Jingxian Gu, commented: "The platform enables us to join hands and take innovation, stronger growth and optimised services to new heights."

Automation upgrade for Gerdau Acominas BF2

Loyal 15-yr-old CISDI design is going greener

Brazilian steel giant Gerdau Acominas has called on CISDI to carry out an automaton upgrade of the plant's blast furnace 2.

The 1,750 cubic metre furnace, blown in during 2007, was designed by CISDI and was its first large overseas package supply project.

After running stably and efficiently for 15 years, the furnace now needs upgrades to its systems and equipment.

CISDI's Level 1 automation system hardware and software solutions enhance the ironmaking plant's operational efficiency and reduce energy consumption.

Its team is working hard to ensure a smooth and on-schedule delivery.

GA's blast furnace 2 has been running smoothly since 2007

Taking Sangang Minguang greener

CISDI wins contract for two more smart blast furnaces for the plant

Artist's view of Sangang Minguang's two new smart blast furnaces, which will be built with CISDI's engineering, procurement and construction services

CISDI is to build two more blast furnaces for Fujian Sangang's Minguang Plant.

After completing twin 1,200 cubic metre furnaces for the site in November, two 1,950 cubic metre furnaces will be built to big data-based smart levels.

They will play an important role in Sangang's green and intelligent development and will take over from two older models at Sangang's Sanming Plant, saving the site from closure.

The challenge of a narrow site layout has been met through numerous design optimisations of CISDI's general layout scheme and production will not be interrupted during construction.

The new furnaces will feature a host of advanced technologies and will achieve:

- One-touch operation for taphole drilling and automated drill rod change
- Intelligent measurement of hot metal
- Intelligent blast furnace production
- Unmanned grab crane operation for intelligent collection of granulated slag and transportation onto the outbound belt conveyor or truck
- Plant-wide 3D safety analysis
- Smart HV supply system

Green stockyard transformation at TISCO

TISCO's stockyard is now a green producer, thanks to CISDI's EPC-based services

Chinese steel giant TISCO now has a green stockyard at its site in Taiyuan City in China's Shanxi Province.

Part of a primary stockyard for the downstream ironmaking plant, it has been covered and enclosed by CISDI and its emissions have been greatly reduced.

The transformation was carried out in 2021 against multiple challenges during the pandemic - limited construction space, a complicated surrounding area, extreme weather conditions and the need to avoid interference with online production.

CISDI's team planned meticulously and pooled all available manpower and resources to achieve every target in a safe, efficient and timely manner.

The project was a champion of safe production plant at TISCO in 2021 thanks to the site regulated, well-balanced construction and management.

"CISDI's hard work successfully transformed part of our stockyard into a safe, eco-friendly environment. They overcame many difficulties and construction was very well managed," said a TISCO spokesperson.

CISDI brings colour to Pangang Chengdu's world market

High-end colour coating line will create home appliances for top brands

The automated coil loading system at the line's entry section

Pangang Chengdu now has a state-of-the-art colour coating line, thanks to CISDI's EPC-based services.

The line transforms Pangang's cold-rolled, galvaluminium sheets into colour-coated products for top Chinese and international household appliance brands.

'We are very grateful to CISDI for creating this value-adding service to Pangang Group's brand production section. It expands our product mix and enhances the market status of our composite sheet," said a spokesperson from Pangang.

Features of the advanced coating line:

The intelligent unloading, bundling and labelling system at the line's exit section

- A dual payoff reel at the entry to the line works alongside a remote, centralised control centre, achieving unmanned operation and automated coil loading
- Triplex coating and baking process and imported coating, thermal film coating and coating solution thermostatic equipment
- The thermostatic equipment ensures all-weather fluidity and uniformity of the coating solution, preventing colour deviations, reducing solution consumption and implementing precise control on optimal coatings

The finish-coating machine is performing with world-class indicators

The remote, centralised control centre for integrated monitoring and operation control

- Thermal film coating equipment can create a variety of patterns on sheet surfaces, resulted in products of higher value and a wider range of applications
- Imported robot at the line's exit handles drum manipulation and labelling
- Automatic bundler and quick-response code printer at the line's exit enables spray-printing of encrypted QR code, coil code and production date on the reverse of coated sheets during the colour coating process
- The security traceability system records analysis of each scanned QR code. The end-user can identify the product's authenticity via a mobile phone APP.
- Industrial TVs and an intercom system monitor equipment status and facilitate onsite liaison
- A centralised control centre, based at the operation room, features a huge screen wall, displaying all operation activities, functioning in switch-over and amplification
- Duly-installed cameras for all-line omnibearing monitoring work in conjunction with the centralised control centre, achieving unmanned operation throughout the coating line
- An advanced ventilation system ensured the line's off-gas meets environmental protection requirements
- Zeolite reels and RTO-based waste gas treatment system ensure volatile organic compounds are cleaned by at least 99.9 per cent.

KISCO is now melting with less energy than it save

CISDI's BOF dry dedusting system achieving outstanding results

Baowu KISCO recovers more energy than its melting process consumes; now its BOF2 dedusting system is functioning

CISDI has built a dry dedusting system for basic oxygen furnace 2 at KISCO in Kunming City in China's Yunnan Province.

It has been successfully hot commissioned and is now able to recover gas.

KISCO is transforming to greener production and dry dust collection was required at its two 120-tonne BOFs.

BOF1's dry dedusting system is already in operation.

CISDI applied the following patented products and proprietary technologies to ensure dust concentration in cleaned fume meets ultra-low emissions standards of no more than (≤) 10mg/Nm^3:

- A gas cooler put in the upstream of the dedusting system
- An evaporative cooler, featuring constant-pressure and variable-flow spraying control
- An electrostatic precipitator, featuring explosion-free control
- A highly-efficient dehydrator

Both BOFs effectively recover gas, enabling KISCO to achieve negative-energy-consumption melting production.

"Our administration, design, construction and logistics members raced against time to meet challenges caused by the pandemic and the weather," said a CISDI spokesperson.

Milestone moment for Guangxi Shenglong

Tempering furnace for most advanced lines in China is up and running

Tempering furnace 3 is up and running at Guangxi Shenglong, thanks to CISDI expertise

A major milestone in achieving state-of-the-art, high-strength steel production has been reached at the Shenglong Metallurgical Co in China's Guangxi Province.

A tempering furnace crucial for continuous heating of high-strength, wear-resistant steels has been successfully hot tested.

It is one of four furnaces which will operate at two heat treatment lines destined to become the most advanced in China.

The lines at the plant in Fangchenggang City will produce 280,000 tonnes of the highest strength and thinnest specification tempered and quenched steel sheets in China.

Products will be used by manufacturers creating wear-resistant, high-strength machinery and bullet-proof equipment for the military.

The other tempering furnace and two quenching furnaces are scheduled to operate in April.

The lines, which will each achieve 1,500MPa of maximum yield strength, were contracted to CISDI last June.

Its design, procurement and on-site teams faced complex problems with supplies, soaring prices of raw materials for manufacturing and pandemic restrictions on top of a tight schedule.

They pulled together, created an efficient, flexible methodology and utilised knowledge gained in past experience of creating similar lines.

Their achievements:

- Actively coordinating with the client and the workshop designing company to optimise the lines' general layout and define detailed arrangement laid a solid foundation for smoothing implementation
- Swift completion of all construction drawings and documentation and speedy decisions on equipment tenders
- Mobilising all available resources to accelerate construction, while ensuring quality and safety
- Working around the clock and leaving no stone unturned during commissioning to achieve success at the first ignition

CISDI's on-site team at tempering furnace 3

New galvanizing line will expand NTS

CISDI is to supply a continuous galvanising line to an annealing line at NTS in Tianjin.

New galvanising units will be installed downstream from existing annealing facilities, which were imported.

They will expand the line's high-strength and mild steels production range, improving its market competitiveness.

The annealing line produces cold-rolled continuously-annealed sheets. It will be able to switch over to the new galvanising line to produce galvaluminium sheets.

In addition to the steel grades currently produced at NTS, the new galvanising line will be able to meet market needs for Zn-Al-Mg and Al-Zn-Si plated products.

CISDI heads back to Baosteel Shanghai

New order for reheating furnace rebuild

Having won Baosteel's trust on important projects, CISDI has now been contracted to rebuild reheating furnace 3 at the company's 2,050mm hot rolling line in Shanghai.

CISDI previously built and also rebuilt the reheating furnace at Baosteel's 1,880mm hot rolling line, which is operating smoothly and efficiently.

The reheating furnace 3's rebuild will feature the following CISDI technologies:

- Green combustion for ultra-low NOx emissions
- Digital pulse combustion control
- Self-optimising control for air to fuel ratio

The rebuild will increase temperature control precision and more maintain uniform temperatures. The furnace's unit consumption and emission indicators will meet higher green standards.

CISDI-built reheating furnace is crucial to Baosteel's 1,880mm hot rolling production

World's first IGBT-based green EAF is up and running

CISDI's innovative AutoARC™ is a major breakthrough for Mini-mills

The groundbreaking green energy CISDI-AutoARC™ is operating successfully at Pangang Changcheng Special Steel in Sichuan Province.

This super-efficient and green electric arc furnace is the world's first for applying an IGBT-based flexible DC power supply. Its melting operation at Changcheng Special Steel is stable and hitting smooth tapping targets.

The IGBT flexible DC power supply expertise has solved the following problems experienced with existing EAF systems:

- Large impact on the grid
- Output voltage and poor current regulation and weak resistance against impact
- Failure to recover busbar's capacitance
- Inadequate protection for power supply over-voltage and over-current.

The conventional 40-tonne AC EAF has been transformed to a cost-effective, green production unit, with the benefits:

- Reducing tap-to-tap cycle time by 15 minutes per heat
- Reducing electricity consumption by around 50kWH per tonne of liquid steel
- Decreasing electrode consumption by 1.7 kilograms per tonne of liquid steel
- Reducing carbon dioxide emissions by over 40 kilograms per tonne of liquid steel.

CISDI-AutoARC™, operating stably at the plant

The air-cooled, feeler-pin bottom anode, to be installed at an EAF