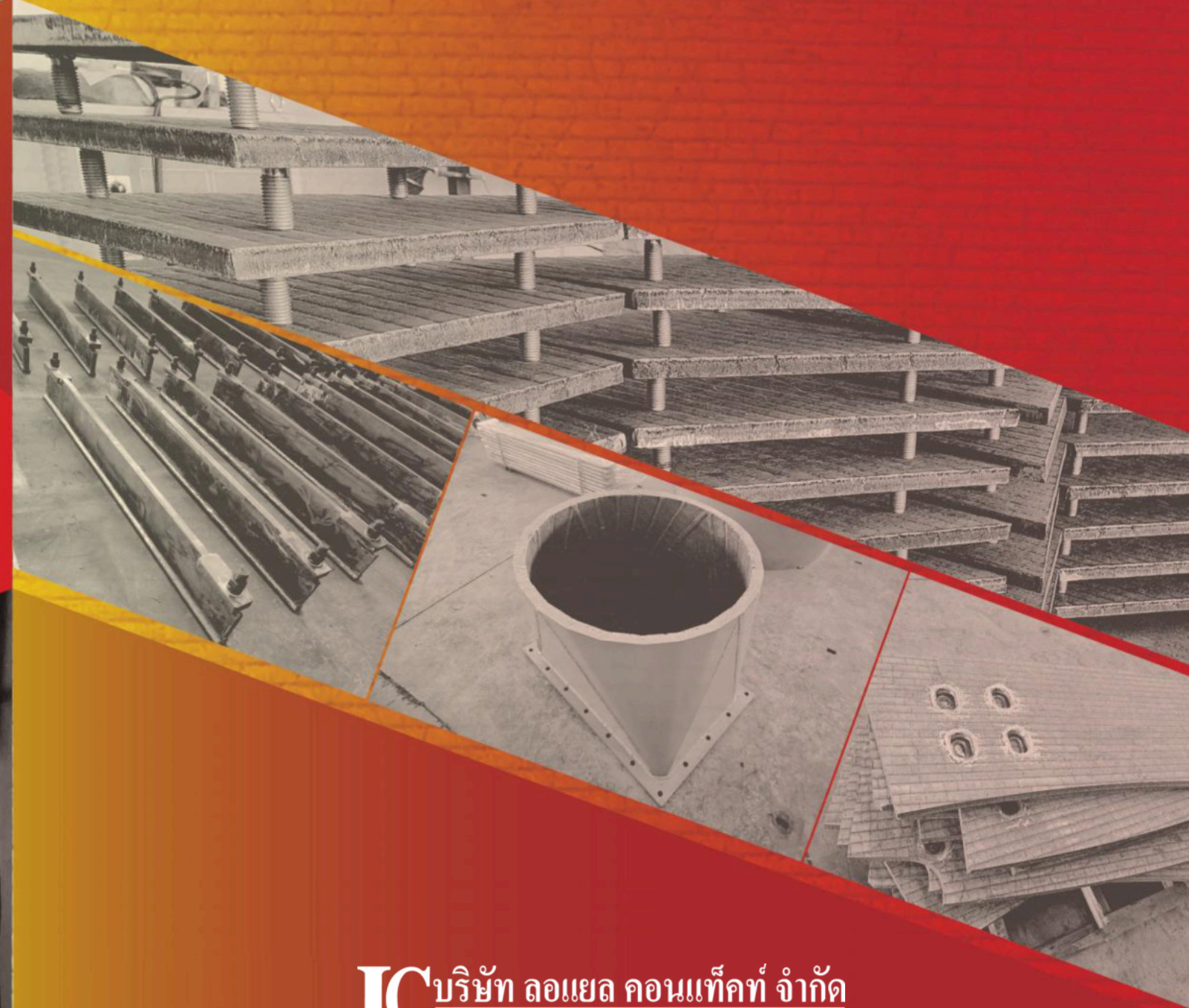




# HISAN

HISAN (TIANJIN) CO., LTD



**LC** บริษัท ลอแอนด์ คอนแทคท์ จำกัด  
**LOYAL CONTACT LIMITED**

OFFICE & FACTORY : 15 Soi Onnut 88 Yak 8 Onnut Road Praves, Bangkok 10250  
สำนักงาน และ โรงงาน : 15 ซอยอ่อนนุช 88 แยก 8 ถนนอ่อนนุช แขวงประเวศ เขตประเวศ กรุงเทพฯ 10250

TEL : 0-2328-8840 (AUTO 16 LINES) FAX : 0-2328-8839  
www.loyalcontact.com E-mail : loyalco@loyalcontact.com  
facebook : @loyalcontact Line : @loyalcontact





# WHO WE ARE?

Hisan (Tianjin) Co., Ltd. is a high-tech company specializing in the production of chromium carbide overlay wear resistant plates, overlay wear pipes and welding wires. Our products are resistant to wear, erosion, high temperature, stress, impact and other factors that cause wear.

Over the years, Hisan has gathered experienced and skilled professionals from mining, cement, material handling, thermal power and other fields. With the leading R & D team, we continuously break through technical barriers, improve products, and develop more professional wear resistant solutions to make products much more durable. Hisan is constantly striving to meet with the wear needs of various working conditions!



**11000 m<sup>2</sup>**

Area



**25+**

Export Country

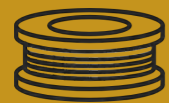


**18+**

Technicians & R&D

# WHAT CAN WE DO?

- Deliver high wear performance,
- Reduce your maintenance cost,
- Bring down your shutdown time.



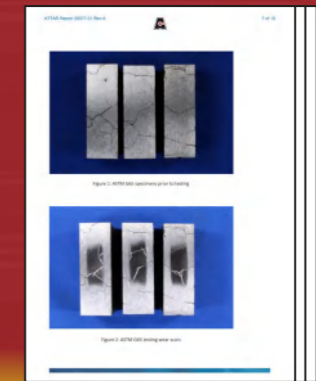
WELDING WIRE



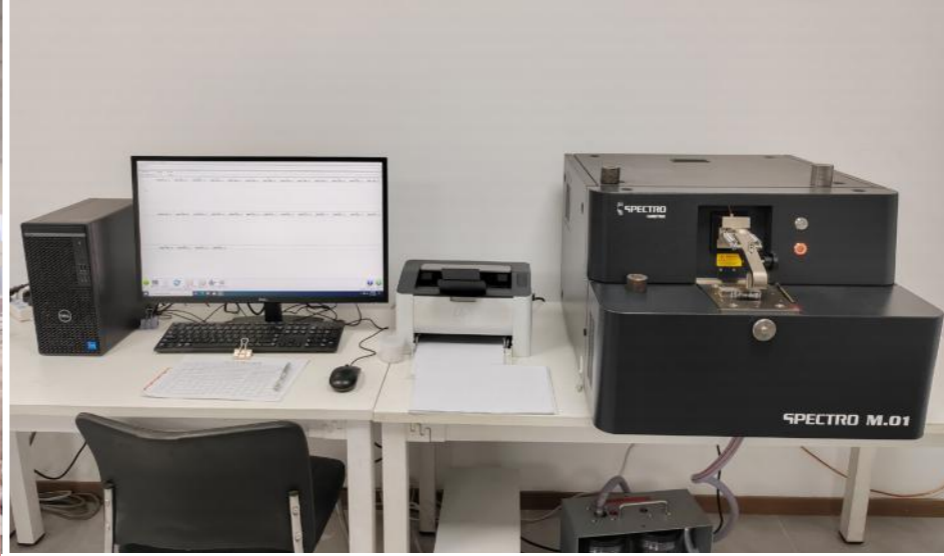
CCO PLATE



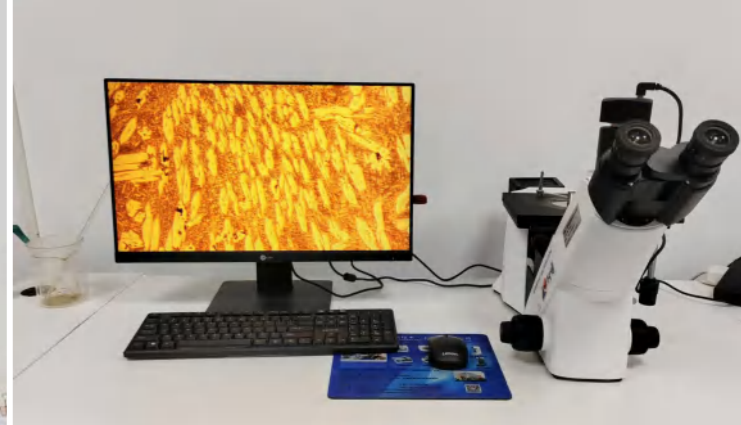
OVERLAY WEAR PIPE



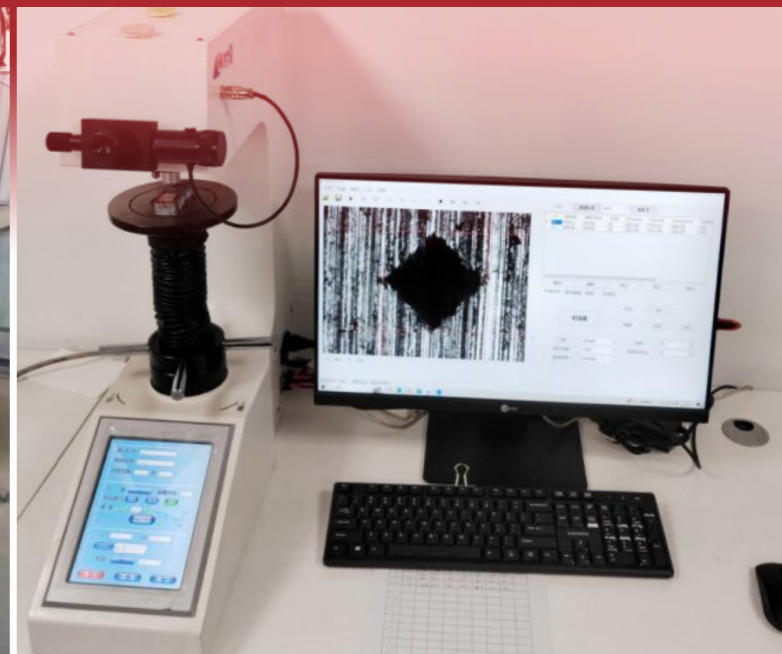




# PRODUCTION CAPACITY



# RESEARCH ABILITY







# CCO PLATE

The overlay plate is manufactured by cladding a wear resistant material to a mild steel base plate. The high volume of rich carbides fuse to base plate and evenly distributed throughout the uniform overlay thickness, creating a bimetallic material with high wear resistance and good processability. The mild steel base plate could be welded or bolted, the overlay provides excellent wear resistance which ensures extended service life and durability of equipment and reduces maintenance costs.

It is widely used in mining, iron&steel, port, cement, concrete, aggregate, asphalt, coal-fired power, metal recycling, glass production, sugar, dredging, foundry, pulp and paper industries. Different overlay grades are available to suit various working conditions.



## HS-F Smooth Surface Chromium Carbide Overlay Wear Plates

Smooth Surface plate is produced by depositing high chromium high carbon overlay on to mild steel base metal, applying improved welding technique, which contribute to uniform chemistry and microstructure with smooth surface without welding beads.

*Smooth Surface plate is suitable for applications where is a lot of hang ups in highly abrasion working environments.*

• **Bulk Hardness: 58-65HRC**



### MAIN BENEFITS

- Smooth surface, no welding beads.
- Minimal surface relief cracks on hardface overlay.
- Low dilution with a uniform fusion line.
- Reducing hang ups.



## SPECIFICATION

Standard plate size(mm)	1000*3000	1380*3500
Coating thickness(mm)	5-30	
Base material thickness(mm)	5-20	
Other sizes and thicknesses available on request.		

## CHEMICAL

Element	C	Si	Mn	Cr	W	Mo+Nb+Ti+V+W	Others
HS-F1	3-6%	0.5-2.5%	0.5-2.5%	23-35%	*	*	Bal
HS-F2	3-6%	0.5-2.5%	0.5-2.5%	20-35%	*	≥ 2.5	Bal
HS-F3	3-6%	0.5-2.5%	0.5-2.5%	20-35%	2-7%	*	Bal

- The bucket liner made from smooth surface wear plate offers significant advantages in oil sands operations, including improved material flow, enhanced durability, reduced maintenance requirements, and improved overall operational efficiency, making them a valuable investment.

SMOOTH SURFACE CCO PLATE

## PRODUCT RANGE



### HS100 Chromium Carbide Overlay Wear Plates

HS100 is a chromium carbide composite cladding fusion bonded to a mild steel backing material.

Very high volume of chromium carbides fuse to base plate and evenly distributed throughout the uniform thickness of the deposit, creating a bimetallic material with high abrasion resistance while still retaining ductility allowing forming and welding.

HS100 performs very well under *severe abrasion and low to moderate impact environments*.

- **Bulk Hardness: HRC 58-65**

- **Abrasion Test result: ≤ 0.20g( testing under ASTM G65, procedure A)**

## APPLICATION







## HS200 Chromium Carbide Overlay Wear Plates

HS200, produced by submerged arc welding technology, is chromium carbide composite cladding fusion bonded to a mild steel backing material.

Very high volume of chromium carbides fuse to base plate and evenly distributed throughout the uniform thickness of the deposit, creating a bimetallic material with excellent abrasion resistance while still retaining ductility allowing forming and welding.

HS200 performs very well under *severe abrasion and low to moderate impact environments*.

- **Bulk Hardness: HRC 58-65**
- **Abrasion Test result:  $\leq 0.18g$  (testing under ASTM G65, procedure A)**



## HS300 Complex Carbide Overlay Wear Plates

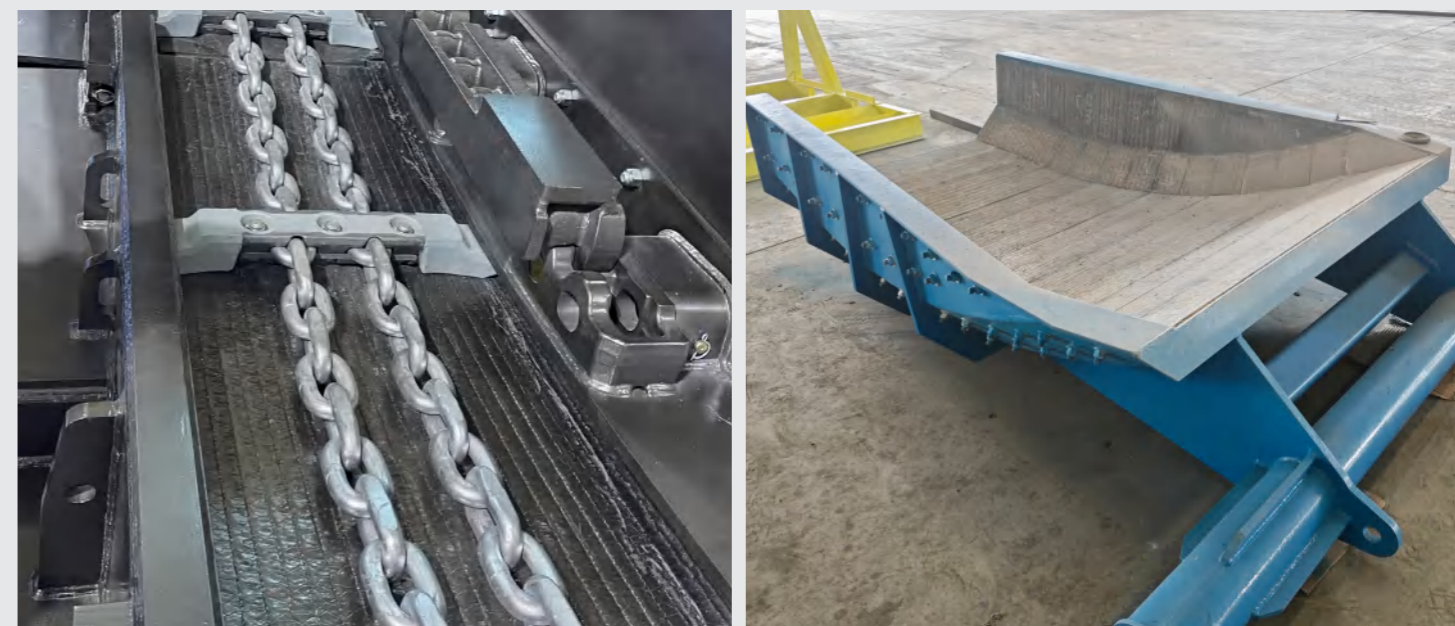
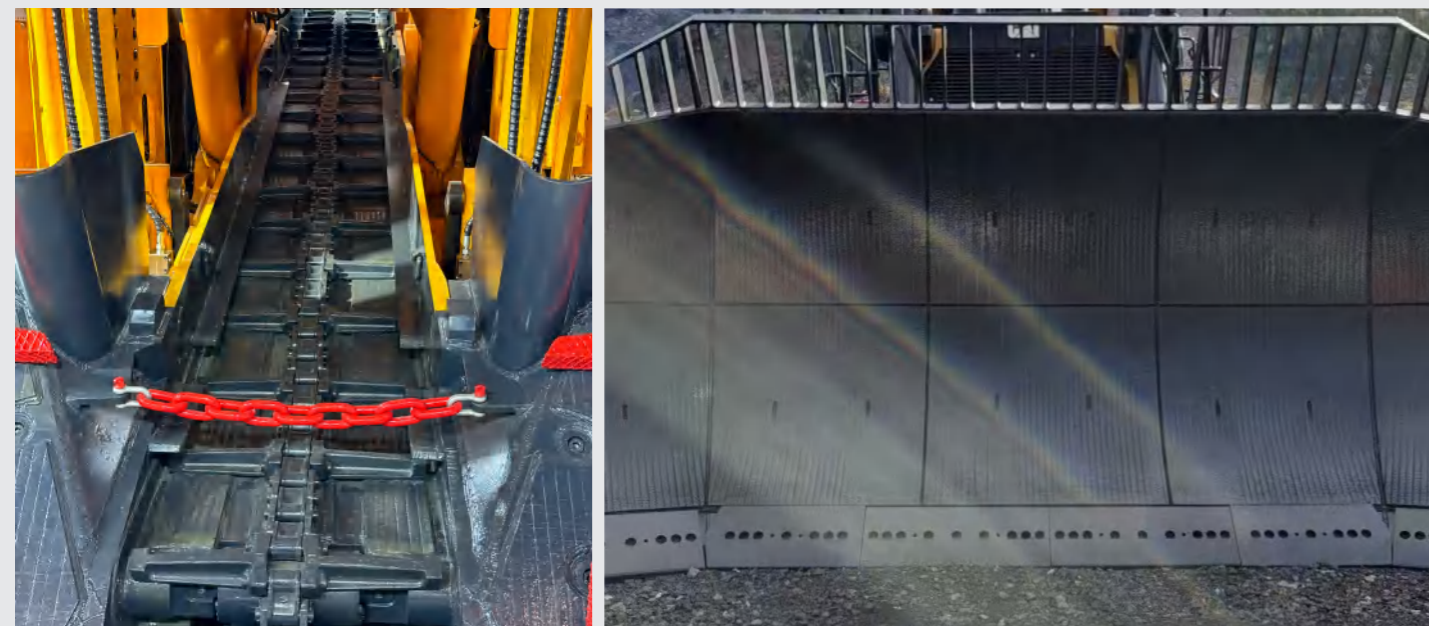
HS300 is chromium carbide, niobium carbide, molybdenum carbide, vanadium carbide and titanium carbide composite cladding fusion bonded to a mild steel backing material.

Very high volume of complex carbides fuse to base plate and evenly distributed throughout the uniform thickness of the deposit, creating a bimetallic material with excellent abrasion resistance while still retaining ductility allowing forming and welding.

HS300 wear plate is suitable for applications involving high abrasion and medium to high impact environment.

- **Bulk Hardness: HRC 58-65**

## APPLICATION







## HS600 Complex Carbide Overlay Wear Plates

HS600 is chromium carbide and tungsten carbide composite cladding fusion bonded to a mild steel backing material.

Very high volume of complex carbides fuse to base plate and evenly distributed throughout the uniform thickness of the deposit, creating a bimetallic material with excellent abrasion resistance while still retaining ductility allowing forming and welding.

HS600 wear plate is suitable for extremely severe abrasion applications.

- **Bulk Hardness: HRC 58-65**



## HS-X Customized Complex Carbide Overlay Wear Plates

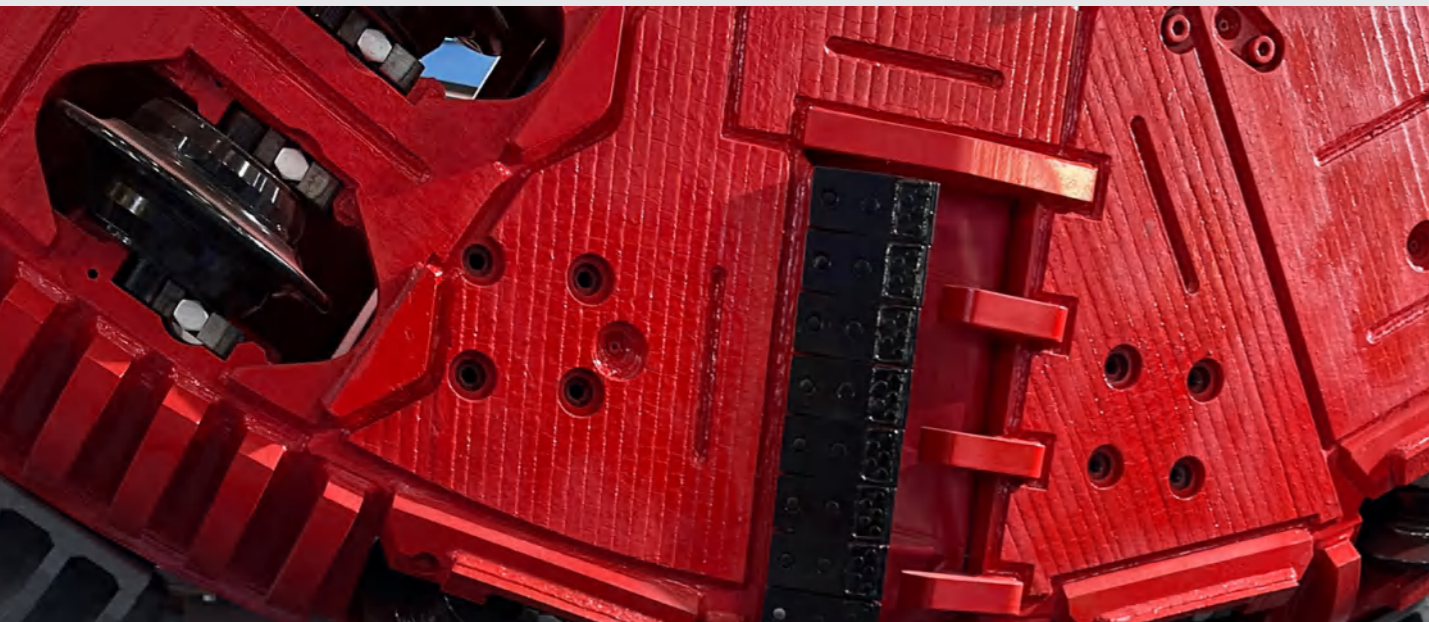
HS-X is customized complex carbides composite cladding fusion bonded to a mild steel backing material.

Very high volume of complex carbides fuse to base plate and evenly distributed throughout the uniform thickness of the deposit, creating a bimetallic material with excellent abrasion resistance while still retaining ductility allowing forming and welding.

HS-X wear plate could be customized upon customer's requirement.

- **Bulk Hardness: HRC 58-63**

## APPLICATION





## FEATURES

- High volume primary chromium carbide evenly distributed.
- Flat surface with excellent plate flatness.
- Macro-hardness:58-65HRC.
- Multiple grades available to suit different applications.
- Excellent wear performance(ASTM G65 procedure A).
- Larger sheet size to extend plate utilising rate.
- Uniform plus tolerance thickness.
- Good formability due to even stress relief in overlay.

## SIZE

Standard plate size(mm)	1400*3000	1500*3000	1400*3700	2000*3000	2100*3500	1400*3500	2100*6000
Coating thickness(mm)	3-80						
Base material thickness(mm)	3-150						
Other sizes and thicknesses available on request.							

## ELEMENT

Element	C	Si	Mn	Cr	Mo, Nb, Ni, Ti, V, W, B, ect.	Others
Content	3-7.5%	0.5-3.0%	0.5-3.0%	20-40%	Upon request	Bal

## APPLICATION

Industry	Application
Mining	Bucket Wheel Excavators, Dozer Blade Liners, Truck Bed Liners, Shovel Bucket Liners, Front End Loaders, Scraper Conveyors, Dragline Bucket Liners, Screw Conveyors, Crusher Liners, Hopper Liners, Chute Liners, Bin Liners, Screen Plates, Pipes, Pumps, ect.
Cement	Cement Mixers, Fan Blades, Guide Vanes, Hoppers and Chutes, Conveyors, Classifiers and Cones, Cyclone Separator Shells, Fan Impellers and Casings, Roller Presses, Sieves and Screens, Tubes, Pipes and Elbows, Vertical Roller Mills, Crusher Body Liners, Mill Body Liners, Feed Chutes, Bell Housing, Dust Collectors, Scrapers, Mill Rollers, Grinding Tables, Mill Casings, ect.
Power Plant	Chute and Hopper Liners, Fan Blades, Crushers, Fuel Transfer Pipe, Classifier Cones, Boiler Tubes, Burner Buckets, Inlet & Discharge Chutes, Transition Points, Screen Plates, Mill Body Liners, Inner Cone, Coal Feed Pipe, Separator Body Liners, Hot Air Duct, Guide Vanes, Ash Discharge Pipes, Tubes, Pipes and Elbows, Grinding Table and Roller Hardfacing, ect.
Port	Hoppers, Chutes, Discharge Pipe, Stacker- Reclaimer, Dredgers Conveying Pipelines, Screw Conveyors, Conveying Pipes, Bucket Wheel Liners, Shovel Liners, Conveyor Liners, Bin Liners, Grab Bucket Unloaders, Continuous Unloaders, Chain Bucket Unloaders, ect.
Steel Mill	Hoppers and Chutes, Sieves and Screens, Sinter Crushers, Coke Distribution Cone, Flue Gas Piping, Screw Feeder, Sinter Discharge Table, Vibratory Conveyors, Sinter Feed Tunnels, Distribution Chutes, Sinter Crushers Components, Skip Cars, Furnace Top Bells, Mill Slide Guides / Aprons, Grizzly Bars, Feeder Bins, Tubes, Pipes and Elbows, ect.
Bulk Material Handling	Hoppers, Transfer Chutes, Grab Bucket Unloaders, Stackers and Reclaimers, Truck Loading Silos, Loading Equipments, Swing Chutes, Suction Pipes, Discharge Pipes, Elbows, Pipes, Dredge Pumps, etc.

## FABRICATION

The backing steel plate provides Hisan plates with structural integrity, which makes our overlay plates fabricated without damage to the welding overlay, regardless of the shape and complexity of the structure. Hisan has the capability to manufacture cut to size wear parts, fabrication includes:



Cutting, Punching



Bolting



Bending



Assembling



# OVERLAY WEAR PIPE



Overlay wear pipe is designed to withstand the toughest, most abrasive materials to extend service life. The hard-face welding forms the wear layer which consists large volume of chromium carbide and provides high hardness. It is an ideal wear solution for extreme applications with maintenance problems. It combines severe abrasive wear resistance with moderate to low impact resistance.



Wide range of base pipe thickness and overlay thickness options are available



*Length can be up to 40 feet.*

*Diameter can be as small as 3 inches.*

## End Attachment Options



Many options are available for end attachments:

Standard Flanges (i.e. 150#, 300#, and 600#)

Weld Rings, Victaulic end, etc.

## APPLICATION

Overlay wear pipe has been widely used in various industries including steel, cement, concrete, mining, metallurgy, power generation, aggregate, glass, pulp, paper, chemical and other industries.

It is the preferred choice in the conveying of materials such as: aggregate, ash, coal, sand, cement, stone, gravel, limestone, magnetite, mill scale, mine tailing, ores, raw kiln feed, slurry, mud, slag, etc.







# WELDING WIRE



Hisan develops a comprehensive range of welding consumables to meet the specific demand of different applications. They are used for hardfacing, overlay welding, maintenance, rebuilding, repair, etc. to protect high wear parts, extend product service life, reduce downtime and production costs.



They are widely used in mining, iron&steel, port, cement, concrete, aggregate, asphalt, coal-fired power, metal recycling, glass production, sugar, dredging, foundry, pulp and paper industries. Different diameters are upon request.



## ELEMENT

<b>Dia</b>	1.2 / 1.6 mm	2.4 / 2.8 / 3.2 mm	2.4 / 2.8 / 3.2 / 4.0 mm
<b>Packing</b>	15kgs / Spool	25 or 50kgs / Coil	150~250 kgs / Drum

## PRODUCT FEATURES



Low Welding Spatter



High Recovery



Versatile Hardfacing



Smooth Wire Feeding



Stable Arc



Various Diameters

## PRODUCT RANGE



## Wear plate welding wire

Our wear plate welding wires are developed based on our many years industrial knowledge in different working environment. This guarantees good performance of *low welding spatter, smooth wire feeding, high deposition rate and high recovery*. The high chromium carbides provide good combination of wear resistance and metallurgical bonding. It can resist to severe abrasion and moderate impact.

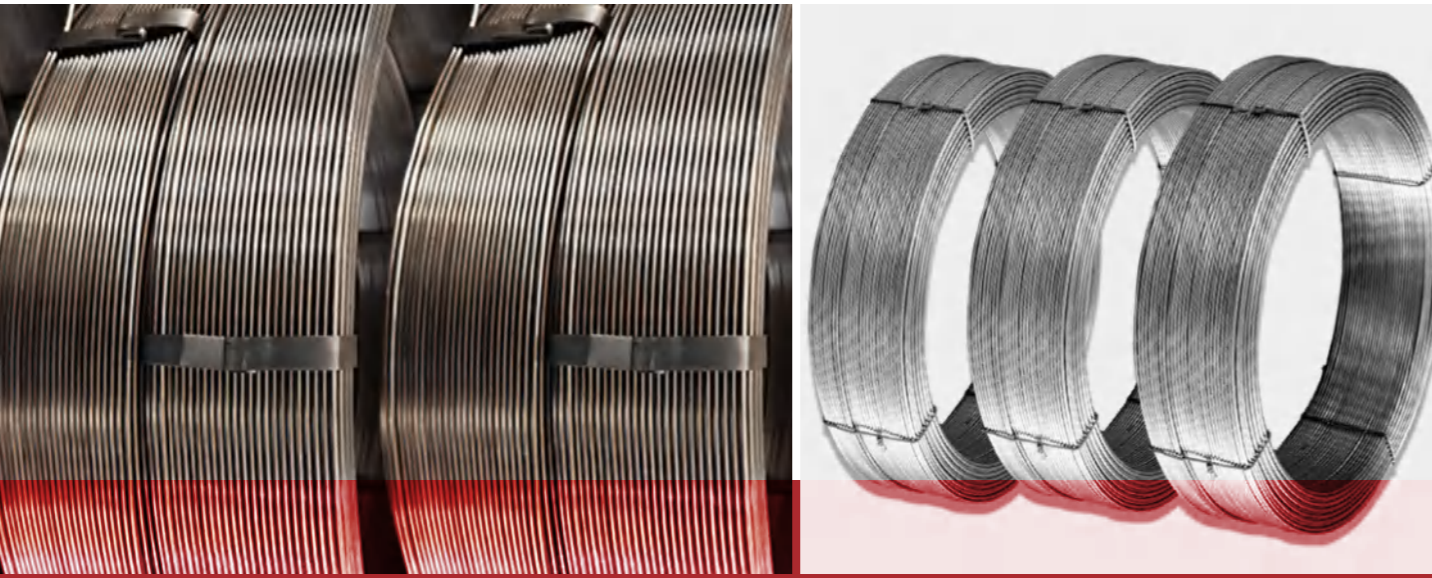
**Specification:** single layer, double layer, multiple layer hardfacing.

**Dia:** 2.4mm, 2.8mm, 3.2mm, etc.

## APPLICATION







## Industrial roller rebuilding welding wire

Industrial roller rebuilding welding wire is ideal for low investment costs and with this refurbishment technology we can achieve maximum plant availability by reducing wear and tear. Different service life can be selected according to customer requirements.

### SPECIFICATION

#### MillAid welding wires

The availability of processing equipment is the main concern of every plant, every mill is a continuous process plant. One process depends on the other, in cement and power industries, Vertical Roller Mills are used for grinding various raw material, crushing material into fine particles and feeding it for further processing, the VRM parts undertake severe wear caused during grinding and crushing, once there is wear problem, it can influence the most expensive part of the plant. A worn VRM roller profile also reduces grinding efficiency, increasing energy demands further. To reduce the machine downtime cost, we have developed the MillAid welding wires. It is a comprehensive solution for Mill wear problem.

#### RPEXtend welding wires

In cement and steel industries, roller presses is used for grinding raw materials, crushing minerals, materials between the rollers is crushed under pressure, causing abrasion and impact wear to the rollers, in order to increase the production efficiency of roller press, reduce down time, reduce roller damage, we have developed the RPEXtend welding wires to build-up and hardfacing the worn rollers.

We have specialist know-how and technology for the repairs on site, it will avoid time and handling costs for the removal and re-installation of mill table and rollers.

***We provide service for old roller refurbishment and new roller hardfacing. On-site and in house repairs are both available.***



## Gas shielded flux cored welding wire

Our gas shielded flux cored welding wires are developed to extend the service life of industrial parts. We develop specific welding wires for each application to meet the wear resistance need. The welding wires provide increased resistance to wear resulting from abrasion, impact, temperature, corrosion and erosion.

### SPECIFICATION

Model		
HS-AR	For hardfacing applications in construction, mining, cement, steel, power industries, rebuilding of large, severely worn parts, available in different welding thickness of 3mm~50mm.	Available diameter:1.2, 1.6. Packing:15KGS per Spool
HS-TR	With outstanding abrasive wear resistance even at elevated temperatures.	
HS-IR	For wear facing against abrasion and impact in impact and compressive load applications.	
HS-CF	For crack – free joining and build up applications.	
HS-WH	With excellent resistance to impact and work hardening capability.	
HS-C	Customized formula upon customers need.	





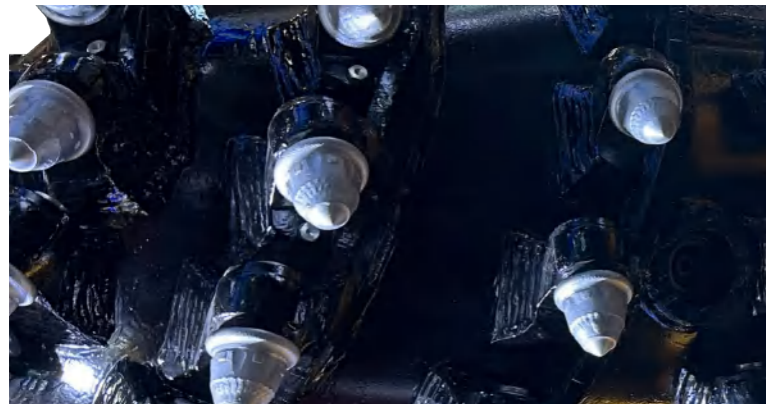
# WEAR SOLUTIONS

To design the best wear protection system for our customers, the following factors are important:

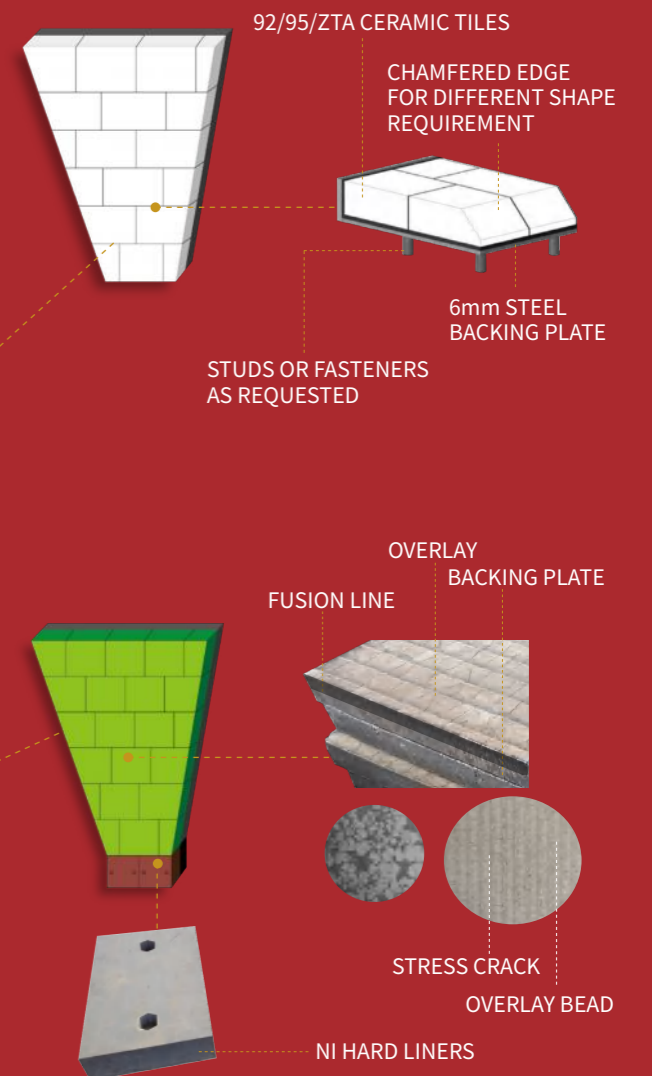
- Comprehensive consideration of wear factors at all stages of production, accurate analysis of local anti-wear requirements.
- Years of practical experience dealing wear problems is enough to save you from worries.
- Provide comprehensive customer service from consultation through delivery to final assembly.

## APPLICATION

They are widely used in mining, iron&steel, port, cement, concrete, aggregate, asphalt, coal-fired power, metal recycling, glass production, sugar, dredging, foundry, pulp and paper industries. Different diameters are upon request.



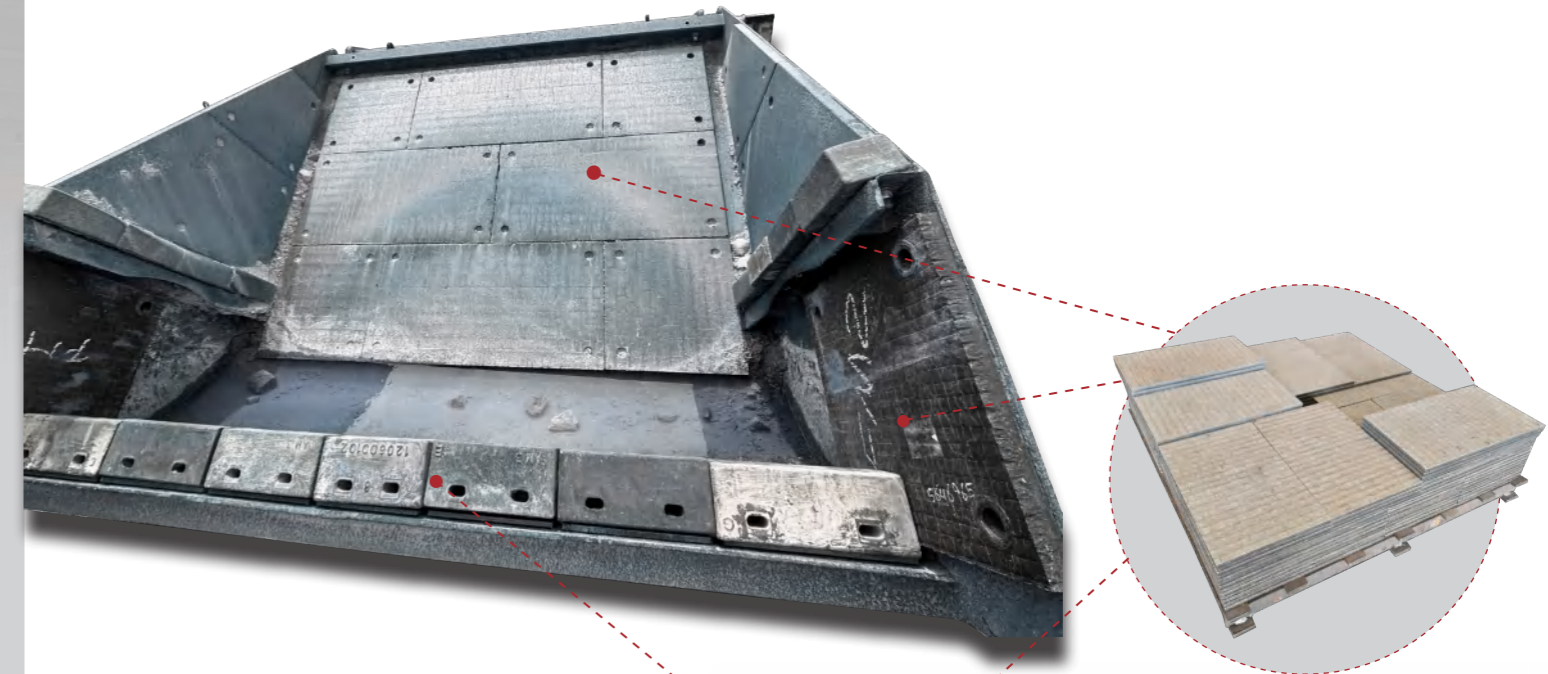
The head chute in port industry is designed with an advanced combination of wear resistant materials, including overlay wear plates, wear resistant ceramics and wear resistant castings, each selected for its specific properties to resist wear, impact and corrosion, improving the overall performance of the machine and reducing downtime and maintenance costs.



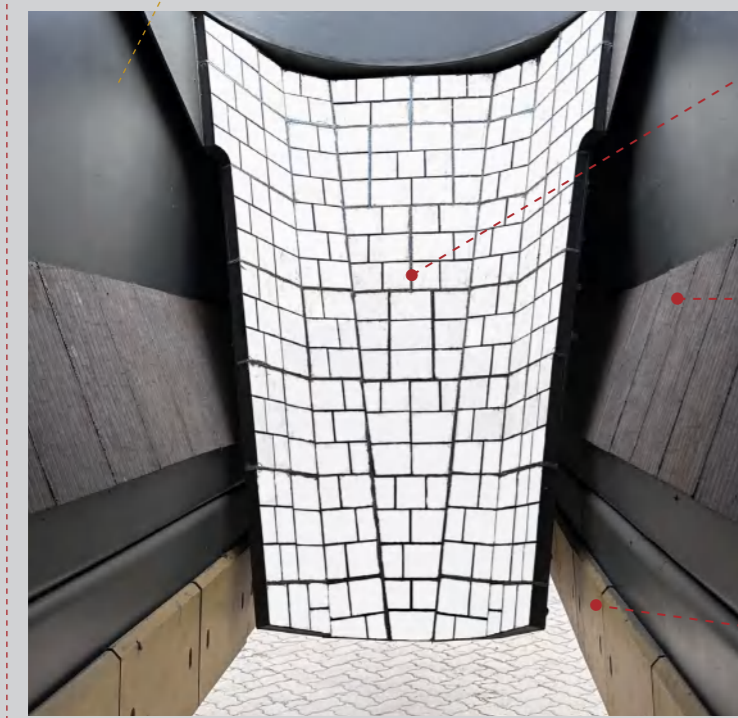


■ The chute feeder is equipped with overlay wear plates, wear resistant ceramics and wear resistant castings, making it a powerful solution for various mining applications from ore handling to material conveying. By prioritizing productivity and minimizing maintenance costs, it enhances overall performance and reliability in demanding mining environments.

■ The chute equipped with overlay wear plates and wear-resistant castings is highly beneficial for the mining industry, the combination provides superior protection against abrasion and impact, which are common in mining operations. This durability extends the lifespan of the chute, reducing the need for frequent replacements.



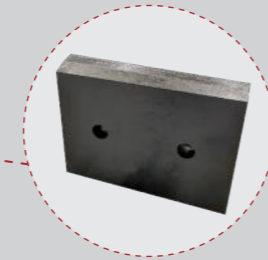
CCO PLATE



WEAR RESISTANT CERAMICS



CCO PLATE



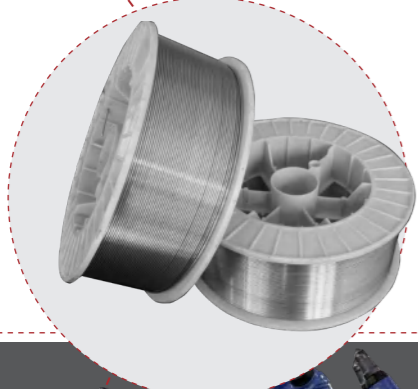
HIGH CHROMIUM WHITE CAST IRON



NI HARD BILLETS



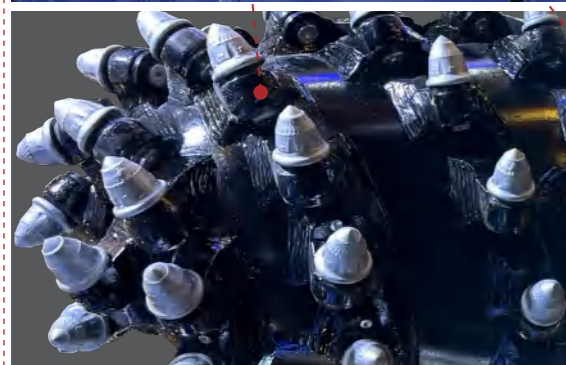
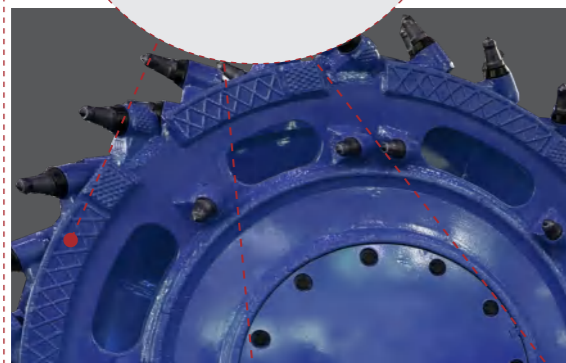
■ The combination of wear plates and welding wires significantly extends the lifespan of mining equipment. The wear plates provide a solid surface, while the welding wires can be applied to repair and reinforce areas that show signs of wear, reducing the frequency of replacements and repairs. It is a valuable strategy for maintaining and optimizing mining equipment.



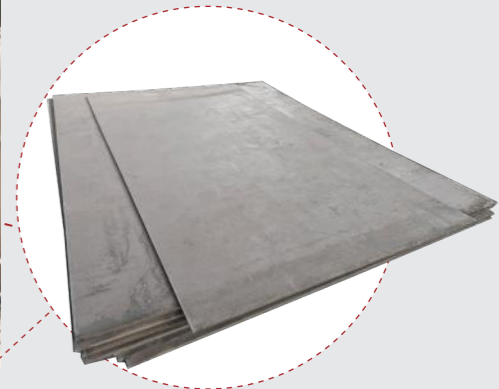
WELDING WIRE



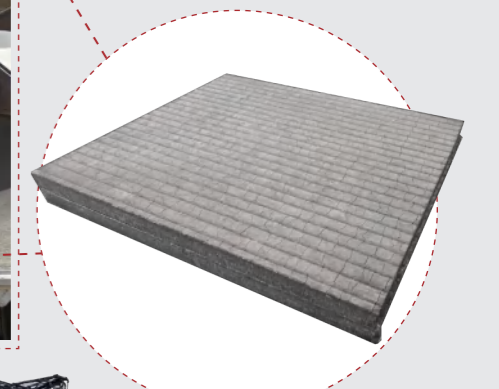
CCO PLATE



■ The bucket equipped with overlay wear plates and abrasion resistant (AR) plate is highly beneficial for the mining industry, the combination provides superior protection against abrasion and impact, which are common in mining operations. This durability extends the lifespan of the bucket, reducing the need for frequent replacements.



ABRASION RESISTANT STEEL PLATE



CCO PLATE

■ The truck bed covered by both abrasion resistant (AR) plate and chromium carbide overlay (CCO) plate, providing protection against both impact and abrasion. AR plate is designed to withstand heavy impact, making it ideal for areas where the truck bed may encounter heavy loads. CCO plate is specifically engineered to resist wear from abrasive materials, making them suitable for areas where the truck bed is exposed to sand, gravel, or other abrasive substances, thereby enhancing the overall performance and lifespan.

