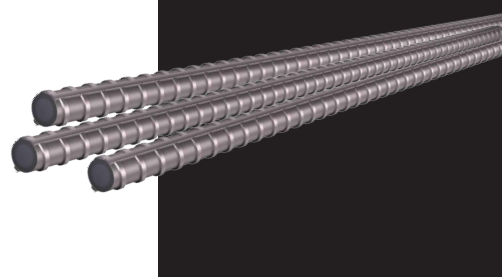


# MELTING, CASTING & ROLLING



**Complete list of products for the  
Steelmaking Process.**





## Meltshop

Complete scope of supply with execution of Erection & Commissioning



## CCM

Complete scope of supply with execution of Erection & Commissioning



## Rolling Mill

Complete scope of supply with execution of Erection & Commissioning

## UNISONS KEY SERVICES

Unisons is an engineering company formed to provide various custom-tailored solutions to industries around the globe. A few of our key services are listed as follows,

- Melt shop & Rolling Mill Optimization.
- Yield & Production Enhancement.
- Team Trainings & Consultations.
- Roll Pass Design.
- Industrial Automation.
- Software Development.
- Reverse Engineering.

## 50+ PROJECTS & CONSULTATIONS

ROLLING MILLS SINCE 2017	08
CCMs SINCE 2017	07
INDUCTION FURNACES SINCE 2020	09
INDUCTION HEATER SINCE 2021	02
DUST CONTROL SYSTEM SINCE 2019	03
REHEATING FURNACE SINCE 2020	01
REVAMPING SINCE 2018	20
PROJECT FEASIBILITY SINCE 2021	01

# HOT ROLLING MILL FERRO ALLOYS

Ferro Alloys play a crucial role in the Steelmaking process by enhancing the properties of steel during its production by improving strength, hardness, ductility, and resistance to corrosion or wear, making the steel more suitable for Hot Rolling.

Ferro Manganese	Ferro Chrome	Ferro Silicon
		
Ferro Silico Manganese	Ferro Nickel	Ferro Vanadium
		

## MELTING NEUTRAL RAMMING MASS

Made from high purity, high density and high strength fused magnesia and fused corundum, through optimizing material particle gradation and it ensures the material can flow under small vibration, which can obtain the higher bulk density.

- Good slag resistance
- Liquid metal corrosion resistance
- High temperature performance
- Thermal Stability



# HOT ROLLING MILL CAST ROLLS



Cast Rolls are essential components in the hot rolling mill process, used to shape and deform steel under intense heat and pressure. These rolls are manufactured using high-strength alloys designed to withstand the extreme thermal and mechanical stresses of rolling operations. The following is a brief list of our Cast Rolls for Hot Rolling Mills.

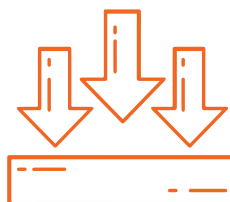
Alloy Cast Steel Rolls	Adamite Rolls	Graphitic Steel Rolls
		
HSS Rolls for Bar Mill	Cast Rolls with Grooves	Pearlitic Nodular Cast Iron Rolls
		
Alloy Indefinite Cast Iron Rolls	Rolls for Section Mill	Tungsten Carbide Rings
		



**High Wear  
Resistance**



**Excellent Heat  
Conductivity**



**Hard Surface Layer**



**Cost Efficient**

# HOT ROLLING MILL COPPER MOLD TUBES



These mold tubes are used to shape molten steel into solid billets or slabs as it cools and solidifies within the mold. Copper is an ideal material for this application due to its excellent thermal conductivity, which helps maintain uniform cooling rates and prevents thermal stresses in the solidifying steel.

## Square Copper Mold Tubes

- + **Square Billets** for construction materials, such as beams, channels, and other structural steel products.
- + **Reinforcement bars** for the construction industry, where precise dimensions are necessary.

### Square Billets for Rebars



## Rectangular Copper Mold Tubes

- + **Rectangle molds** are used to produce slabs that are further processed into sheets, plates or coils.
- + **Larger rectangular blooms** are cast for structural steel components such as beams, girders, and heavy machinery parts.

### Slabs for Sheets, Plates & Coils



## Round Copper Mold Tubes

- + **Round mold tubes** are used for casting round billets, which are further processed into steel rods, bars, and wires.
- + **Round billets** cast using these tubes are often processed into steel pipes and tubes.

### Round Billets for Steel Pipes & Tubes



# HOT ROLLING MILL CASTING POWDER

Casting powder, also known as mold flux, is a crucial consumable in the steel production process, playing a pivotal role in the continuous casting stage before the hot rolling mill. It is applied on the surface of molten steel in the mold to facilitate smooth steel withdrawal and prevent surface defects.

- **Lubrication:** Provides a lubricating film between the mold and the solidifying steel to reduce friction
- **Slag Formation: Thermal Insulation:** Forms a protective layer on the molten steel's surface, reducing heat loss and ensuring consistent cooling during solidification.
- **Slag Formation:** Melts to form a liquid slag that absorbs impurities, contributes to surface smoothness, and enhances the overall quality of the final product.



**HENAN LONGCHEN**  
CASTING POWDER

CHENGFEI  
成飛

# CHROMITE SAND

Nozzle Filling Compound/Free Opening Sand

Nozzle Filling Compound / Chromite based NozzleX is a highly refractory, granular product with selected particle size and distribution which remains flowable at high temperature, ensuring consistent and trouble free ladle slide gate operation.

Chromite sand enhances the life of the well block, nozzle, and slide gate plate due to its high refractory material, with good fluidity, fast flow, proper sintered layer thickness and anti-erosion, ensuring a smooth casting process.



**PURMETALL**  
CHROMITE SAND

# K-90 (GREEN MORTAR)

K-90 is a high-performance refractory material commonly used in the fixing of slide gate plate and well-blocks particularly for lining furnaces, ladles, and molds in steel production. Known for its excellent thermal stability and resistance to wear, K-90 is engineered to withstand the extreme heat and mechanical stresses encountered during the casting and rolling of steel.

- **Thermal Stability:** K-90 can withstand high temperatures without degrading, making it ideal for applications in the hot rolling mill process.



**PRCO**  
濮耐股份

## MELTSHOP

**INDUCTION FURNACE**

Induction Furnaces are a vital component in the Steel Melting process, providing an efficient and controlled method for melting and refining steel before it undergoes the casting process.



**+09** Induction  
Furnaces supplied



## HOT ROLLING MILL

**INDUCTION HEATING****BILLET INDUCTION HEATER**

Induction Heaters play a crucial role in the Hot Rolling Mill process by providing precise and efficient heating of steel billets before they entering Hot Rolling. Through controlled heating the steel's workability is improved, reduces wear on rolling mill equipment, and enhances the quality of the final product.



Billet Induction Heater Execution of Commissioning at Naveena Steel

MELTSHOP

# INDUCTION FURNACE

## Spares & Consumables

Furnace Coil	PCB Cards	Slag Pots
		
Coil Grout	Lining Machine	Ramming Mass
		
Furnace Crucible	Capacitors	Pumps
		
Pyrometer	Rectifier Transformer	Contact Blocks
		

## YOUR DEDICATED PARTNERS IN

# GENERAL INDENTING

Unisons has been carrying out General Indenting services since 1999, supplying essential industrial items tailored to meet the unique demands of our valued customers. With a commitment to reliability, efficiency, and aftersales services, we are your trusted partner for streamlining operations and driving productivity.



## Motors



AC, DC & Universal

## Cardan Shaft



For all Industrial purposes

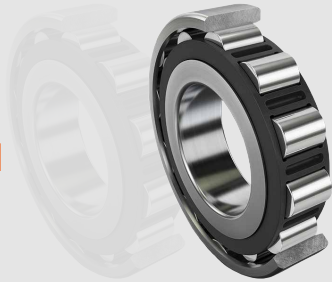
## Magnets



For every Industrial need

## Bearings

For all industrial applications.



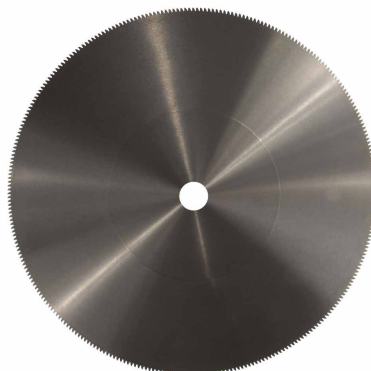
## Stainless Steel Pipes & Fittings

For all industrial applications.



## Saw Blades & Disc Springs

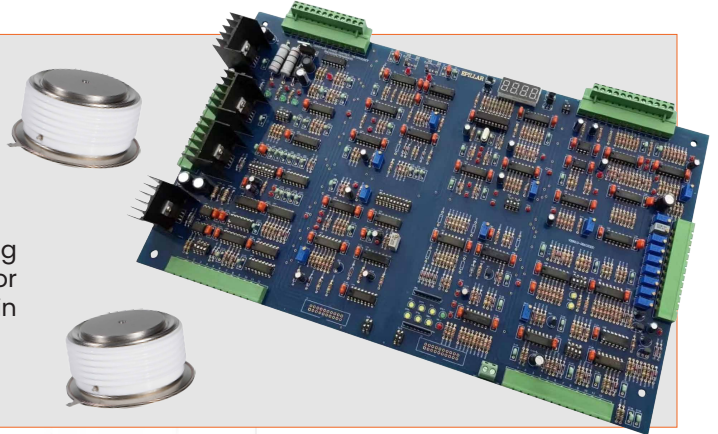
High-performance cutting tools designed to handle extreme temperatures. Built for durability, they ensure precision and efficiency in demanding industrial applications.



## PCB Cards & Thyristors

For all industrial applications.

Essential components in industrial electronics, enabling efficient power control and management. Designed for reliability, they support high-performance operations in steelmaking and other heavy industries.



## Electrical Transformers



## Inverters



## Thermocouple Rods

For temperature measurement with precision.



## Hydraulic Seal Cylinder

For all industrial applications.



## Sensors & Measurement Systems



Hot Metal Detector

Loop Scanner

Laser Measuring Sensor

# Smart **MELT**

DIGITALIZE YOUR STEEL MAKING.

**ACCESS YOUR DAILY  
PRODUCTION, REPORTS,  
TRENDS AND ERP**

**ANYWHERE, ANYTIME.**

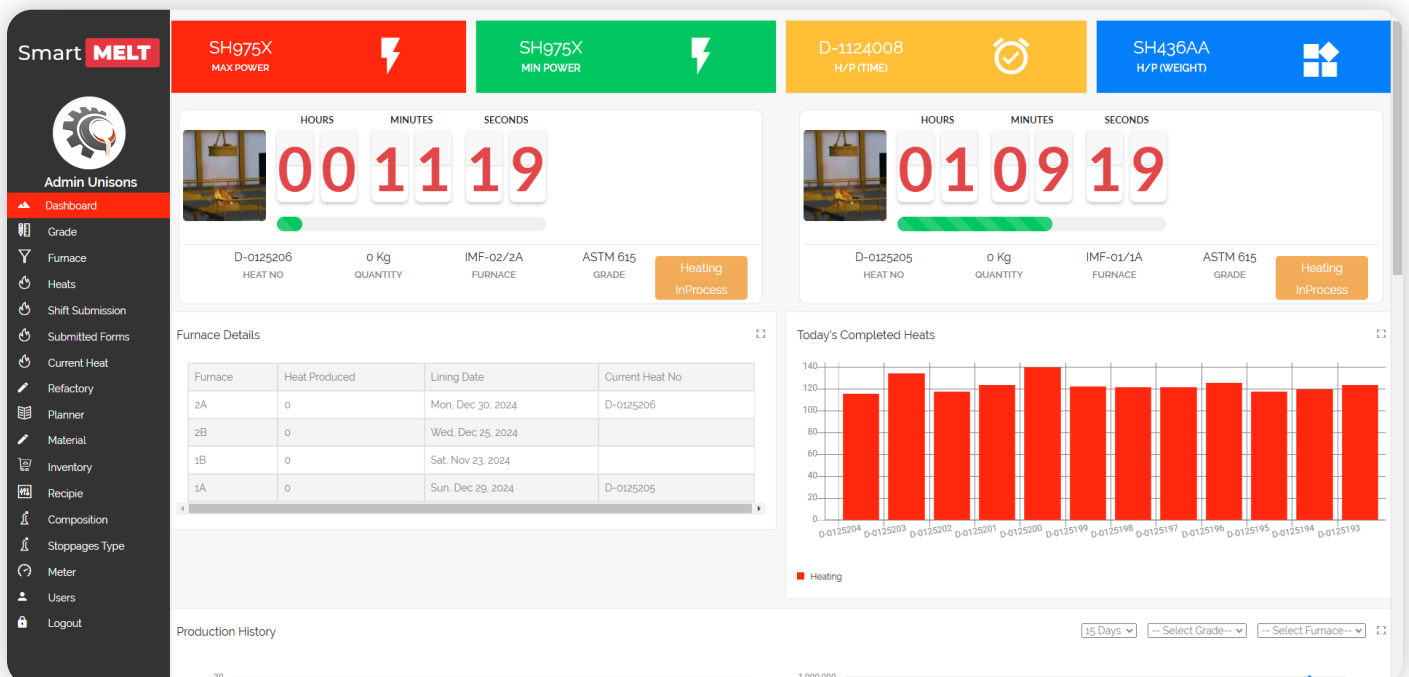


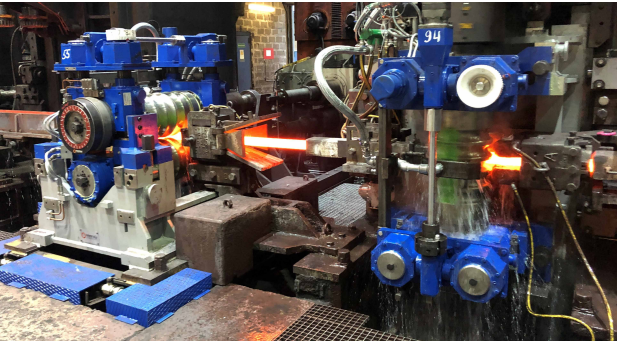
**Smart Melt** is a new innovation in the world of Metallurgy. It is an application by Unisons that allows users to completely digitalize their Steelmaking process and make their day-to-day trends and reports available to them anywhere, anytime!

From the Scrapyard to final production, Smart Melt has the capability to record, maintain and display all data to you which will help you to analyze your production cycle in a more efficient and profitable way.

**Manage all your Melting processes and data from one place.**

**Smart Melt** allows users to manage and operate the entire Steelmaking process, keep track of all current heats and manage data, including scrap and alloy consumption, power consumption and other vital information across multiple sites centralized into one device.





**50+** Projects & Consultations

 20+ Revampings

 10+ Project Feasibilities

 9+ Induction Furnaces

 8+ Rolling Mills

 7+ CCMs

 3+ Dust Control Systems

 2+ Reheating Furnaces

 2+ Billet Induction Heaters



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