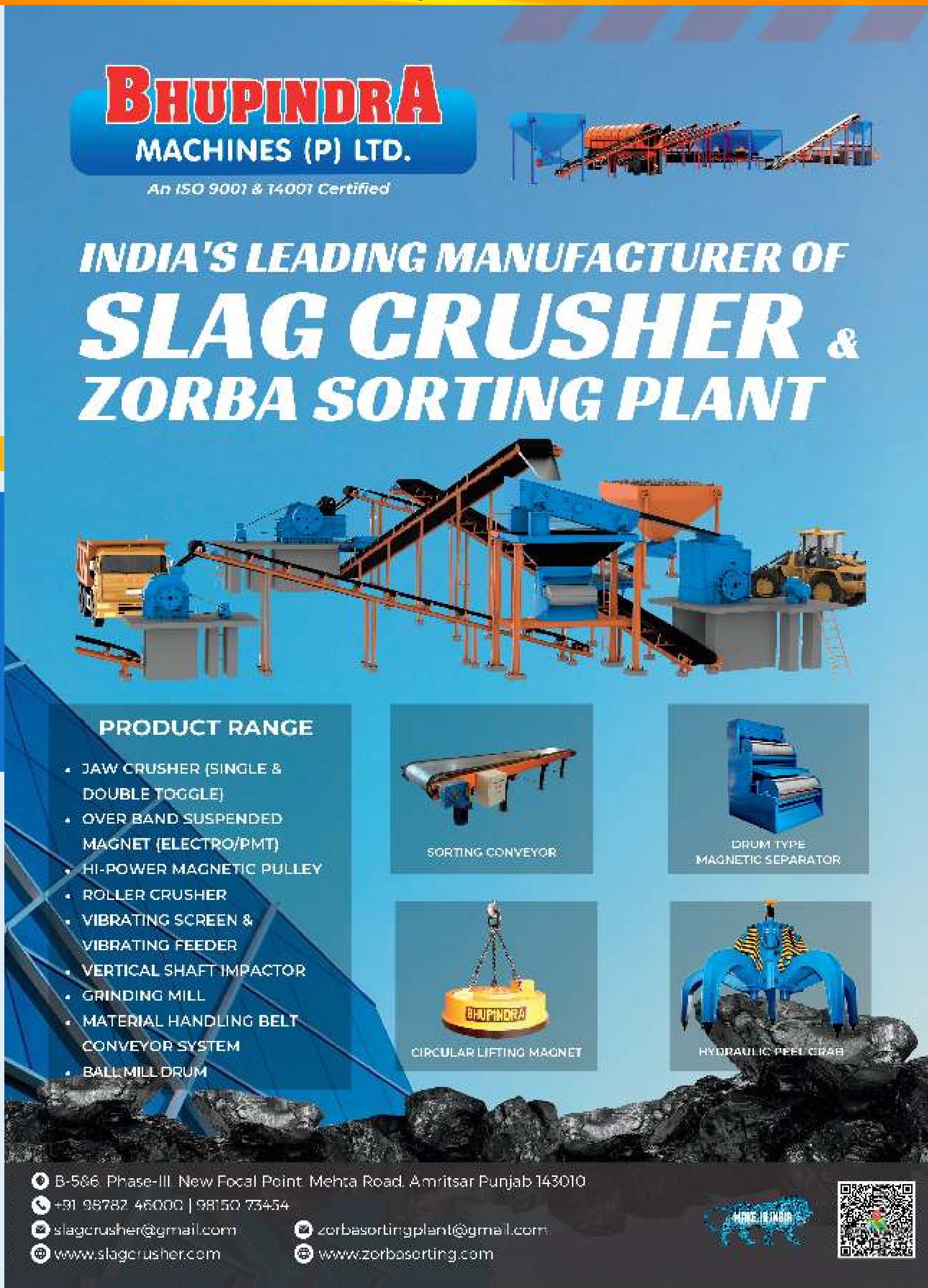
ALL INDIA INDUCTION FURNACES ASSOCIATION
AIIFA
Voice of Indian Sustainable Steel Manufacturing Sector
NEWSLETTER
VOL. No. XXIV
ISSUE No. 2, Feb. 2024

What's Inside

AIIFA SECRETARIAT:
504, Pearls Omaxe, Tower-1
Netaji Subhash Place,
Pitampura
Delhi-110034, INDIA
Tel: 011-42725051/27351345
M: 9810410186/9810410815
Email: aaiifa6@gmail.com
Website: www.aaiifa.org
Twitter:
SteelEx_AIIFA
Instagram: steelex_aiifa
Facebook: SteelEx AIIFA
YouTube: AIIFA NEWS



ELITE STEELS PVT. LTD.

Manufacturer of EOT Cranes, Electromagnets and Electro-hydraulic Grabs

Plot no. 13 & 14, Sector 25, Faridabad -121004 (Haryana) INDIA
Tel. +91-1292233170, 2232555
Mob. +91-9350360636
Email. info@elitecranes.com, marketing@elitecranes.com

REGIONAL OFFICES:

Delhi (HO): +91-9873355019 Kolkata: +91-9711302262
Chennai: +91-9890003480 Pune: +91-9311803902

www.elitecranes.com


sentra.world
Get your
CBAM (EU export)
compliance here!
Decarbonising
Steel Manufacturing
Measure, Report, Certify and Reduce CO_2 Emissions
#CBAM reporting
#ADX #DFM #BRSR
#Scope3
#GreenSteel certification
sentra.calculus
Absolute
3,212,653
Intensity
1.14
Absolute emission by scope
Top 5 categories
CO_2 & ESG Reporting
Tailored for Steel Industry
Efficient & Cost Effective
sentra.world
contact_us@sentra.world
+91 9667233899

LIFTLINE INDUSTRIES

YOUR ONE-STOP SUPPLIER FOR ALL NEEDS


Sintering Pre Heater

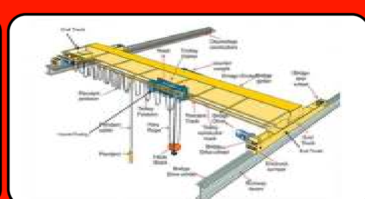
- Sintering Pre Heater
- Ladle Pre Heater
- Tundish Pre Heater

Electromagnet

- Scrap Lifting Circular Electromagnets
- Billet and Bars Lifting Rectangular Electromagnets
- Scrap Lifting Elliptical Electromagnets

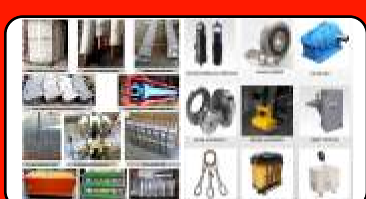

Cable Reeling Drum

- Cable Reeling Drum
- Lining Vibrators
- Electrical Control Panel

EOT Crane

- Single Girder EOT Crane
- Double Girder EOT Crane




Spare Parts & Accessories

- Spare Parts & Accessories of EOT Cranes
- Spare Parts & Accessories For Induction Furnace

Manufacturer & Exporters of EOT Cranes, Scrap Lifting Circular Electromagnets, Billets & Bar Lifting Rectangular Electromagnets, Induction Furnace Electric Sintering Heater, Ladle Electric Pre-Heater, TundishElectric Pre-Heater & All Components and Accessories related to EOT Cranes, Electromagnet & Steel Industries.

LIFTLINE INDUSTRIES

Works Office
Plot No-11, Nichi Mangali, Chandigarh Road, Ludhiana – 141123, Punjab, India

Phone
+91 7626938310
+91 7626918013
+91 8700055427

Email
liftline8013@gmail.com
info@liftlinecranes.com
sale.liftline@gmail.com

Website
www.liftlinecranes.com

Ingot Casting, Continuous Casting and Foundry Casting, Are the Primary Shaping Process of Liquid Steel Produced from Induction Furnace

Kamal Aggarwal
Hon. Sec. General, AIIFA

Introduction: The solidification process and shaping of liquid steel is most pertinent as only solidified state only comes as usage for further processing for different applications to understand the different modes of nucleation and the uneven rates of growth throughout the melt. It is also important to know the constraints and also growth of functioning that definitely influence the crystal structure and the structure related properties of the steel casting. The freezing pattern of the liquid melt decides the feeding of the mold which is instrumental in producing a complete and compact casting like ingot steel or concast products or shape cast in foundry.

For pure metals and even in case of alloys with a narrow freezing range a well-defined solid–liquid macro-interface exists. The feeding of the solidifying casting is the easiest, by the common lowering of the liquid metal surface in the mold. The solid–liquid interface could be discrete and not continuous. On grounds of above it is implied, the process of solidification by casting constitutes an important aspect in the production of a defect free steel casting.

Indian induction melting furnaces produce all the grades of steel by melting recycled ferrous scrap and ferrous scrap substitutes. The liquid steel produced by all the steel making processes converts product as solidified shape and finished. The traditional forming method, called ingot casting, continuous casting or shape casting in foundry which involves pouring of liquid steel into ingot molds or continuous casting machine or in foundry casting., allowing the steel to cool and several steps of the conventional ingot teeming process by casting steel directly into semi-finished shapes.

Molten steel is tapped in ladle and inert gas argon purged in the liquid steel and then liquid steel teemed in the mold of different sizes. Argon Purging Systems , applicable to purging in lade filled with liquid steel tapped from induction melting furnaces. This helps to reduce metallic inclusions to improve the overall purity of the melt. The system is an economical way to produce clean steel mainly alloy steels.

On the other hand liquid steel is poured into a reservoir, from which it is released into the molds of the casting machine where metal is cooled as it descends through the molds, and before emerging, a hardened outer shell is formed. As the semi-finished shapes proceed on the run-out table, the center also solidifies, allowing the cast shape to be cut into lengths.

Induction furnace operator/melter should have ideas about types of steel that should be produced as melt fully deoxidized before casting and no gas evolves during solidification, the resultant steel is known as killed steel which is characterized by a high degree of chemical homogeneity and liquid steel is completely deoxidized by the addition of an de-oxidizing agents before casting such that there is practically no evolution of gas during solidification confirming high degree of chemical homogeneity and freedom from gas porosities as liquid steels contain dissolved oxygen after their conversion from molten to solid state. but the solubility of oxygen in steel decreases with cooling.

Al and Si mainly used to produce killed steel where **aluminum, the primary de-oxidizing agent. killed steel** is that in aluminum-killed steel, the primary deoxidizing agent. Both Aluminum-killed and silicon-killed steel are two variations of steel produced through different de-oxidation processes. The choice between the two depends on specific manufacturing requirements and the desired steel characteristics.

Semi-killed steel is commonly used for structural steel with a carbon content between 0.15 and 0.25% carbon, because it is rolled, which closes the porosity. It is also used for drawing applications, characterized as semi-killed steels. Structural steels containing 0.15 to 0.25% carbon are generally semi-killed.

Technology of Ingot Casting or Continuous Casting or Foundry Casting - Ingot casting is a conventional casting process for liquid steel. Production of crude steel through the ingot casting route constitutes a very small percentage of global crude steel production. However, the method of casting of the liquid steel in ingot moulds is still fundamental for specific low-alloy steel grades and for special forging applications, where products of large dimension, high quality or small lot size are needed.

Ingot casting -Typical application for conventional ingot casting products includes the power engineering industry (e.g. shafts for power generation plants, turbine blades), the oil and gas industry (conveying equipment, seamless tubes), the aerospace industry (shafts, turbines, engine parts), ship building industry (shafts for engines and drives), tool making and mechanical engineering (heavy forgings, cold, hot and high-speed steels, bearing, drive gears) as well as automotive engineering (shafts, axles, gear etc.).

It is known to pour steel ingots or slabs in the killed, un-killed, or semi-killed condition. Un-killed or semi-killed solidification being generally preferred because of the reduction of shrinkage, voids or cavities (pipes) in cast ingot. The elimination of shrinkage voids reduces top waste considerably and thus leads to a not inconsiderable increase in production as compared with steel solidified in the killed state.

In the case of un-killed solidification, however, ingot segregation becomes an inconvenience because the alloying elements of the steel are distributed irregularly over the cross section of the ingot. Ingots solidified in the semi-killed state do not have this disadvantage; in their case the distribution of the iron content, added elements and added alloying elements is homogeneous over the cross section of the ingot while there is relatively little shrinkage voids and little top waste.

On the other hand, ingots solidified in the semi-killed condition have the disadvantage that a part of the carbon monoxide that forms during solidification remains in the solidified skin layer of the ingot in the form of small blisters. Such subcutaneous blowholes constitute a very disagreeable defect which has a very detrimental action particularly in the further processing of the ingots. The formation of subcutaneous blowholes is frequently so serious that a considerable proportion of the skin layer must be removed by scarfing or similar measures.

With ingot casting, the molten steel from the steelworks solidifies in moulds to form conical blocks, each with a mass of several kilograms up to several tons. The conical shape makes it easier to remove the moulds (which are usually made of nodular cast iron) after the steel has solidified. The solidified blocks are also called *ingots*, which is why this kind of steelmaking is called *ingot casting*.

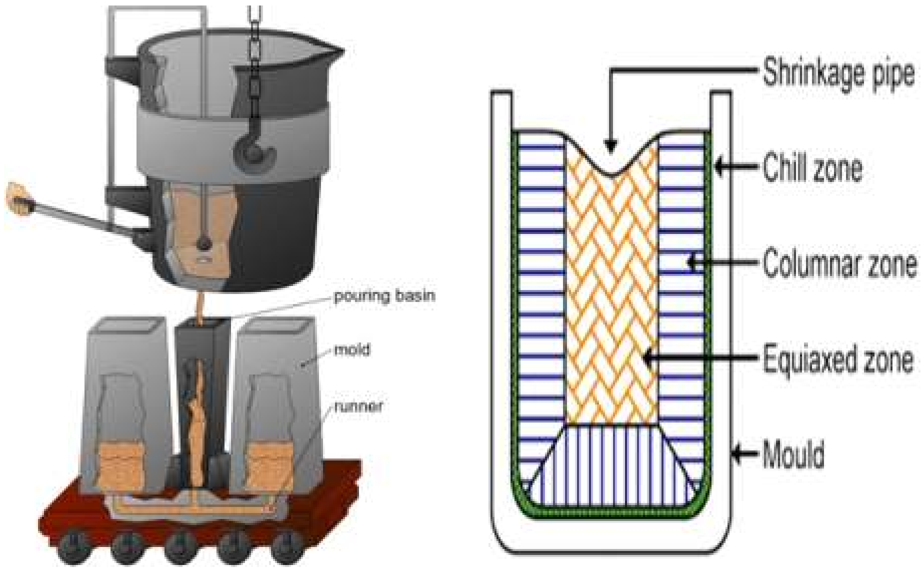


Figure: ingot casting by bottom pouring.

If the ingots are rolled into oblong blocks with a rectangular cross-section, they are also referred to as *slabs*. Slabs are supplied as semi-finished products to rolling mills for the production of *sheet steel*, *hot rolled strip* and *cold rolled strip* or to forges.

However, overall ingot casting is not suitable for mass production. It is mainly limited to high-alloyed steels such as tool steels and highly critical grade steels mostly routed through forging units in small quantities and also flat products.

If the ingots are rolled into oblong blocks with a rectangular cross-section, they are also referred to as *slabs*. Slabs are supplied as semi-finished products to rolling mills for the production of *sheet steel*, *hot rolled strip* and *cold rolled strip* or to forges.

Today, slabs for mass production are mainly produced using the more efficient con*tinuous casting* process (explained in more detail in the following section).

However, overall ingot casting is not suitable for mass production. It is mainly limited to high-alloyed steels such as tool steels and *rolling bearing steels*, which are only produced in small quantities.

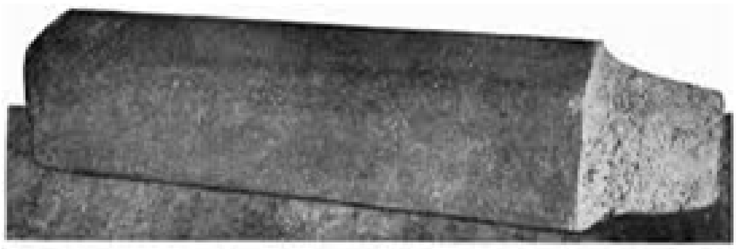
Today, slabs for mass production are mainly produced using the more efficient con*tinuous casting* process (explained in more detail in the following section).

Depending on whether the ingot mold is filled from above or below, a distinction is made between *top pouring* (*top casting* or *downhill casting*) and *bottom pouring.* Normal structures usually include a chill zone, a columnar dendritic zone, and an equiaxed zone, as shown in image. The chill zone forms rapidly as the hot liquid steel contacts the relatively cold mold wall, creating a very high thermal gradient at the ingot surface.

The specific solidification pattern of ingots leads to a characteristic shrinkage appearance. There is always a shrinkage cavity in the hot top, but it has to be assured that this primary shrinkage does not extend into the block. In case of an un-favourable solidification pattern, shrinkage can also appear inside the block, far below the hot top. Dissolved gases can also influence porosity development in a steel ingot. In many cases, problems with centre-line porosity are reported. This porosity is small in comparison to the hot top shrinkage cavity and is found along a line in the centre of the block.

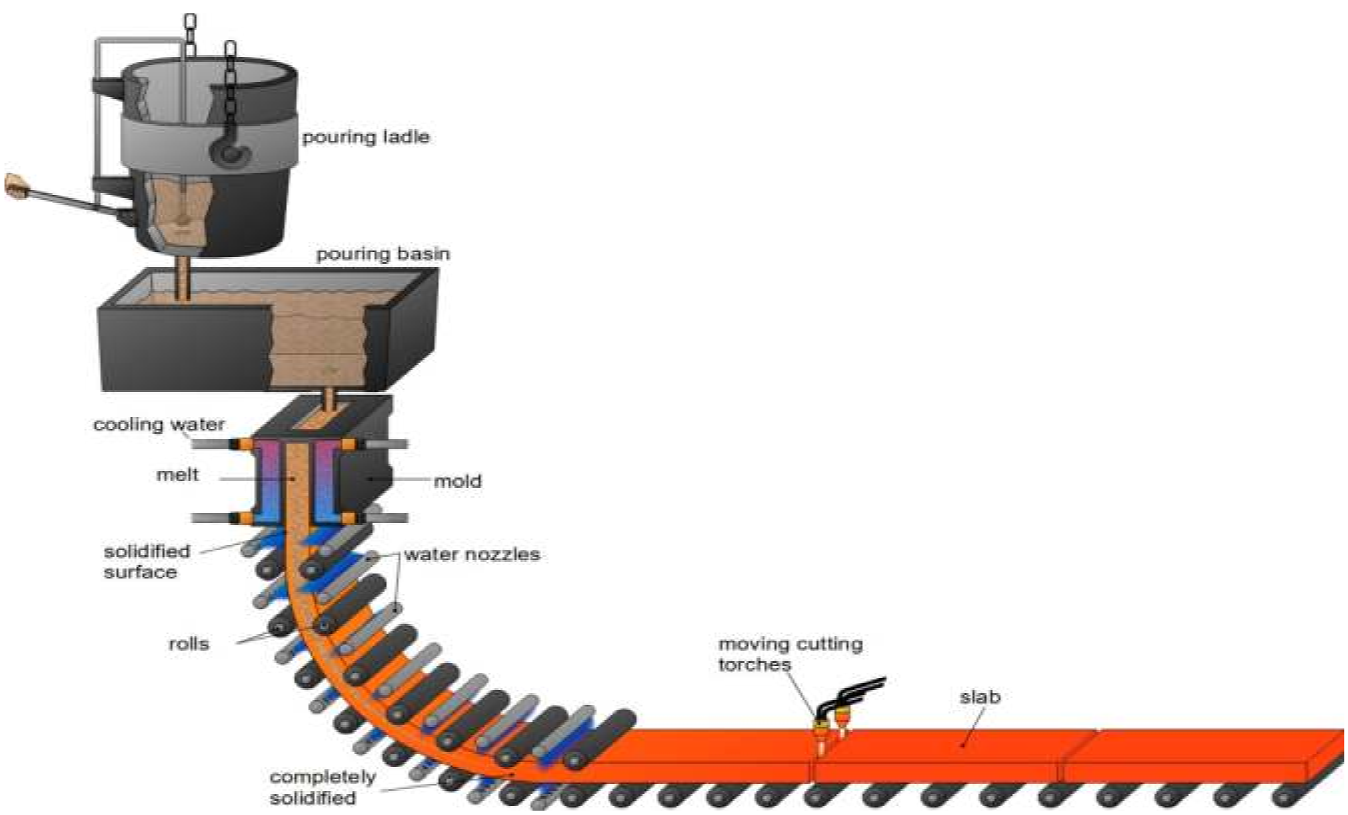
Porosity in ingot casting is influenced by various factors like insulating powder, hot top insulation, hot top geometry, ingot height and diameter (H/D), ingot conicity and so on. Depending on the size and position of porosity, it is possible to close them in subsequent hot deformation process, e.g. forging, Casting process simulation can be applied to optimize the casting process to prevent porosity from being formed. If its presence is inevitable, it is of importance to transfer information about the size and position of the porosity to the deformation simulation. There, it is possible to determine the forging process parameters that are required to close the porosity or to maximize the yield of the final product.

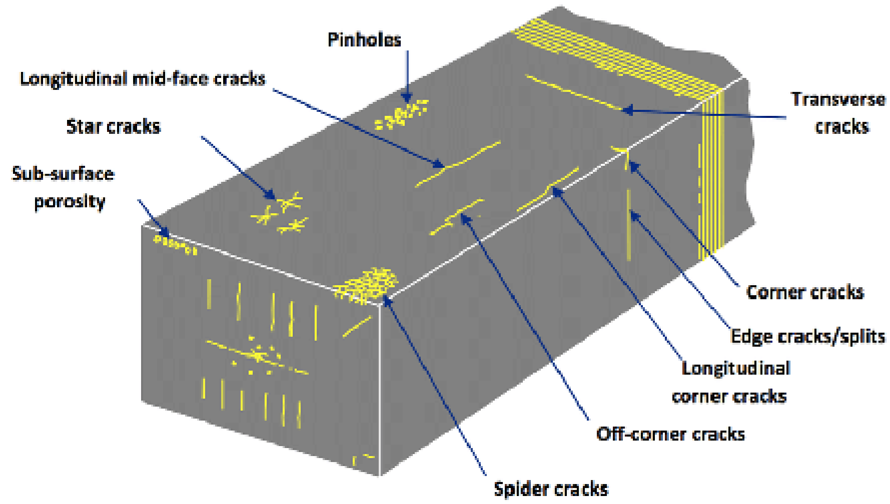
Defect Free Steel Ingot



Continuous Casting Process: The process is a technically sophisticated process where molten metal is poured into an open-ended mold that can be made of graphite or copper. Graphite molds are widely used both in vertical and horizontal continuous casting. Most molds are made from iso-statically pressed graphite. However, extruded graphite molds can also be used for vertical casting of large shape products.

Depending on whether the ingot mold is filled from above or below, a distinction is made between *top pouring* (*top casting* or *downhill casting*) and *bottom pouring.*





It is known that the carbon monoxide produced during solidification leads to un-killed or semi-killed solidification, depending on the amount formed. To what extent un-killed or semi-killed solidification takes place in individual cases depends on the extent to which the steel deviates from its carbon-oxygen equilibrium at a given temperature. In order to achieve semi-killed solidification, the carbon and oxygen contents are adjusted either by pre-deoxidation or by vacuum treatment so that they are appreciably beneath their respective equilibrium values, while the latter is nevertheless exceeded by carbon and oxygen segregation in the region of the solidification front.

In the case of killed steels the free oxygen content of the steel is generally reduced, by adding elements having an affinity for oxygen, such as aluminium, silicon, and titanium, to such an extent that carbon-oxygen equilibrium is not achieved during solidification. It has now been found that a steel will solidify in the killed condition if its carbon and oxygen content is reduced to low values, for example, by vacuum treatment, and if the steel has a manganese content determined by ICC said values. Expressed differently, this means that the steel will solidify in the killed state with a given oxygen and manganese content provided its carbon content is below a determined value. The following conditions have been found for dependence of the carbon content in respect of killed solidification:

Most steel producing process in the continuous casting for both long and slab/ flat products to produce semi-finished products (slabs, blooms or billet) in the most suitable cross-section further Improving the steel quality and the steelmaking process has been a target of steelmaking industries in a demanding market for better products at highly competitive price. Prediction of quality of each continuous casting product and the assessment are essential for increasing the yield of rolled product and in cost-effective way.

High quality concast products means defect free cast products A defect is always the result of multiple interacting causes which are dependent on variation of the operating parameters which mainly consists of the phase transformation, heat transfer within the mold, the cooling water sprays, friction between strand and mold, mechanical effects due to misalignment of the casting machine, and straightening strains Secondary cooling control is an important factor in the continuous steel casting process,

In continuous casting process, defects of the steel billet (e.g. crack, pinhole, blowhole, central shrinkage, slag entrapment and appearance deviation, etc.) negatively affect the quality and the yield of rolled products.

In continuous casting of mini steel plants, the ladle of steel is poured directly into a water-cooled copper mold the reciprocating motion of the mold sides and a suitable dressing prevents sticking. The resulting concast products typically around 250 mm, but this has been reduced in some specialized 'mini steel plants' operations to even 50 mm, thus shortening the rolling process. More recent advances aimed at direct strip manufacture even less than 2 mm material a realistic prospect as cost saving and increased yield.

Process contact water cools the continuously cast steel and is collected in settling basins in the casting process. The steel is further processed to produce slabs, strips, bars, or plates through various forming steps. The most common hot forming operation is hot rolling, where heated steel is passed between two rolls revolving in opposite directions. Hot rolling units may have different stands, each producing an incremental reduction in thickness. The final shape and characteristics of a hot formed piece depend on the rolling temperature, the roll profile, and the cooling process after rolling.

Continuous casting gives out tremendous savings in terms of time, energy, labor and capital. The process involves casting steel straight away into the semi-finished shapes. Then there are some steps set eliminated which are involved there in the traditional way of casting. The steps like ingot teeming transfer; stripping, soaking pits and primary rolling are complete taken off. The process of continuous casting also peps up the yield as well as the product quality. Also, the products obtained by following this manufacturing process are more homogeneous.

In subsequent cold forming, operation in line, the cross-sectional area of unheated steel is progressively reduced in thickness as the steel passes through a series of rolling stands. Generally, wires, tubes, sheet, and strip steel products are produced by cold rolling operations. Cold forming is used to obtain improved mechanical properties, better machinability, special size accuracy, and the production of thinner gauges than hot rolling can accomplish economically. During cold rolling, the steel becomes hard and brittle. To make the steel more ductile, it is heated in an annealing furnace.

Billets, blooms, rounds or slabs are produced directly from molten steel. Liquid steel is poured from a ladle into the caster. As the steel flows slowly through the copper mold, cold water cools the steel, causing it to solidify. A moving torch then cuts the steel into desired lengths. Continuous casting is more efficient than ingot casting.

Currently, several induction furnace units in India have installed continuous casting process for steels produced in induction furnace and products as raw materials feeding to rolling mills.

Rolling of Concast Products: Billets, blooms, or slabs of steel are heated and passed between the heavy rolls of a **rolling mill** squeezing them into the desired width and thickness.

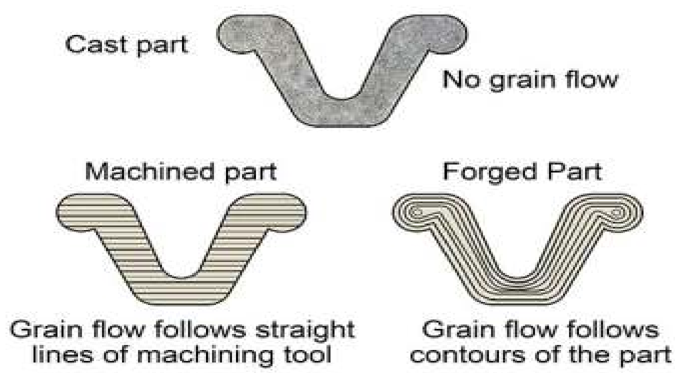
Currently, many induction furnaces melting units have installed matching secondary refining units like LRF and VD and even AOD. The steel melting and secondary-refining method comprising the steps of: melting steel manufacture raw materials while the molten steel is subjected to oxidation and decarburization so that the oxidation and decarburization are substantially completed before melt-down; after melt-down, heating the molten steel to a temperature above a liquidus line temperature and below 50° C. in temperature increment from the liquidus line temperature, and thereafter tapping the molten steel into a primary ladle.

Foundry Casting- It is one of the most economical and efficient methods for producing metal parts for various industries. In terms of scale, it is well suited for everything from low-volume, prototype production runs to filling global orders for millions of parts even in critical shape. Casting also affords great flexibility in terms of design, readily accommodating a wide range of shapes, dimensional requirements, and configuration complexities. The casting from its beginnings to the current state, creating a timeline marked by discoveries, advancements, and influential events. It also lists some of the major markets where castings are used.

Foundry casting is a process that involves melting metal and pouring it into a mold, producing hollow or solid pieces of metal known as castings. It involves using sand molds to create the final product, also known as green sand casting or permanent mold casting. There are various types of foundry casting, each with its own benefits and limitations. Understanding this process is crucial for understanding how finished metal parts are produced from raw materials. Hollow into a mold, a process used to create castings. These hollow metal pieces as structural components in machinery or as decorative pieces.

Pouring molten metal melt in induction furnace (at places, metal melted in cupola furnaces) into a mold, typically sand creates a casting. The metal often includes additives, such as carbon, to strengthen it. When the metal hardens, it forms a cast in the same shape as the mold. Because the mold is sand, it's destroyed in the process, and the molten metal otherwise could not flow into the correct shape.

Grain-Flow Mechanism



Casting of Common Alloy Steel Grades Melt in Induction Furnace - There are many different alloy steel grades, each with unique properties. Some of the most common types of alloy steel grades in different engineering industries include 4130, 4140, 4340, 52100, 16/20MnCrf, En353, En31/ 52100 and 8620, Tool Steel grades 4130 is a low-alloy grade steel Cr-Mo with carbon 0.30 that is common as component in aerospace and automobile industry. 4140 is also a Cr-Mo with carbon 0.40 steel used to manufacture large equipment, such as cranes, gears, and turbines. 4340 Cr-Mo-Ni -is popular for producing aircraft components, while 8620 is popular in the manufacture of auto parts.

Production by Induction Furnace Units in Steel Standards -

Indian induction furnace produces all grades of steel specified in National & International Standards including the Society of Automotive Engineers (SAE), the American Society for Testing and Materials (ASTM/ AISI), IS(EN/BS)), IS (Indian) and the International Organization for Standardization (ISO). These standards ensure that alloy steel grades are produced to a uniform level of quality and consistency, regardless of the manufacturer.

Acceptable Standard for Product Composition from Cast Composition – C 0.2 → 0.02, C > 0.2 → 0.03, Mn →0.05, Si →0.03, Cu →0.03, S →0.005, P →0.005 (As per International Standard)

Steel PLI 2.0 put on hold at the moment, 5 cos start rolling out products under existing PLI scheme

February 22, 2024

The scope of PLI 2.0 was to cover strategic sectors like defence, nuclear space and infrastructure

- The PLI 2.0 scheme for speciality steel has currently been put on hold, and proposals relating to it could be explored only after a review of the performance of the first phase, which is currently ongoing, senior officials of the Union Steel Ministry told

The review will be carried out of the proposals that take place under PLI 1.0, including the time taken to roll out of products (under it) and the financial outgo, apart from market demand for new products, before any announcement on PLI 2.0 is made. Proposals could come under a new policy head too.

PLI 2.0, which was targeting a disbursal of ` 4,300 – ` 4,500 crore, would cover segments like coated & plated steel, high strength and wear-resistant offerings, speciality rails, alloys including wires and tubes, electrical steel, among others.

The scope of PLI 2.0 was to cover strategic sectors like defence, nuclear space and infrastructure.

“We do envisage that there will be interest in specialised steel making. But since these projects have long gestation period, and are high capex, a call has to be taken considering the change in market conditions in future. Right now, the focus would be on putting in place PLI 1.0 and ensure its roll out,” the official said adding: “So PLI 2.0 is on-hold at the moment.”

In the case of PLI 1.0, MoUs have not been received in respect of 13 approved applications, and the official said that despite attempts these applicants have not been on-boarded for the ongoing scheme. Out of the 67 approved applications, 54 MoUs were inked.

Drop-outs happened for various reasons that include changing demand patterns, high capex, environment clearances, and land litigation, because of absence of expertise in the segment, or also because clearances were granted in parts and not as a whole.

Apart from India, steel demand, including that of specialised steel offerings, continues to remain depressed across key markets in Europe. There has been a drag–down effect by excess stocks in a slow-moving Chinese economy.

Source: Business Line

IAEA report unveils nuclear-hydrogen combination as catalyst for steel industry decarbonisation

Feb 20,2024

Nuclear and clean hydrogen are among the big energy movers in the race to help reduce the world's carbon dioxide (CO2) emissions.

Now, a new report from the International Atomic Energy Agency (IAEA) has identified a combination of the two as a potential game-changer in progressing the development of “green” steel.

Leading global iron ore producer Rio Tinto has described green steel as the “holy grail” of the iron ore industry's commitment to decarbonise.

The IAEA also says using low carbon nuclear power to produce hydrogen could have an impact on the industry's decarbonisation aims.

Steel production accounts for more than 7% of global CO2 emissions.

That percentage is set to soar in the coming decades along with a rising demand for steel, which is vital for sectors ranging from energy and transport to construction and consumer appliances.

Nuclear energy could help put steel production on a path to net zero.

New cleaner methodology

About two billion tonnes of steel are currently produced annually around the world and steel demand is projected to rise by more than a third by 2050.

The steel industry largely depends on coking coal to power blast furnaces, which turn iron ore into steel, a process that emits large quantities of CO_2.

However, it is possible to create steel using a method called direct reduction of iron, in which hydrogen reacts with iron ore without melting and emits water vapour and no CO_2.

“The amount of hydrogen needed to create green steel is staggering,” said Francesco Ganda, technical lead for non-electric applications at the IAEA.

“Traditionally, fossil fuels have been used to generate almost all hydrogen, therefore finding the necessary amount of decarbonised hydrogen is going to be one of the biggest challenges.”

“Nuclear hydrogen production, with zero emissions, can really be a game-changer for the sector as nuclear power has the potential to provide sufficient heat and electricity 24/7 to produce the required amount of hydrogen.”

“This could help to make huge strides in the clean energy transition.”

Source : Metal Junction

BSP breaks record with 315 consecutive heats of rail steel casting

Feb 06,2024

The Bhilai Steel Plant (BSP), a unit of the state-run Steel Authority of India Limited (SAIL) based in Chhattisgarh, achieved a national record for the consecutive casting of heats of rail steel in any caster, just one day before its foundation day.

A remarkable total of 315 heats were continuously cast from the bloom caster, establishing a new milestone for the longest sequence length in any caster in India, as announced by a spokesperson from BSP. The previous record of 309 heats was held by SAIL?s Rourkela Steel Plant.

The accomplishment took place at BSP's Steel Melting Shop 2, where cast blooms are produced from bloom casters and subsequently rolled into rails at the Rail and Structural Mill. SAIL-BSP serves as the primary supplier of world-class rails for Indian railways, with lengths reaching up to 260 meters.

The achievement was a collaborative effort, with various departments such as instrumentation, PPC, RED, BF, WMD, T&D, and RCL, in addition to SMS-II collective, contributing to the success.

Notably, SAIL-Bhilai Steel Plant has played a significant role in national infrastructure and defense projects. The plant supplied approximately 15,900 tonnes of steel for the recently inaugurated Mumbai Trans Harbour Link, India?s longest sea bridge. Out of the 16,300 tonnes supplied by SAIL, BSP contributed 15,883 tonnes, comprising 13,803 tonnes of the desired grade and dimension of TMT bars and 2,079 tonnes of the desired grade of steel plates for construction from 2019 to 2023

Source: Metal Junction

Steel and port ministries lay out guidelines for hydrogen usage

Feb 06,2024

Steel and Port Ministries aims to build refuelling stations, storage, and distribution networks to extend green hydrogen use in the maritime sector.

The Steel and Port Ministries have jointly released a comprehensive plan to foster the adoption of hydrogen, with a scheme valued at Rs 570 crore. This initiative is aligned with the broader National Green Hydrogen Mission, with a total budget of Rs 19,477 crore.

Within the Steel Ministry's budgetary allocation of Rs 455 crore until 2029–30, incentives will be provided to encourage the integration of hydrogen in various processes, such as direct reduction of iron-making, blast furnaces, and the gradual substitution of fossil fuels with green hydrogen. The scheme extends support to pilot projects exploring innovative uses of hydrogen to reduce carbon emissions in iron and steel production.

The guidelines propose a phased approach, allowing steel plants to commence by incorporating a small percentage of green hydrogen, with plans to increase the blending ratio over time incrementally. It emphasises that upcoming steel plants should be equipped to operate with green hydrogen to participate in future low-carbon steel markets globally. The scheme also considers greenfield projects aspiring to achieve 100 per cent green steel production.

Simultaneously, the Ministry of Ports, Shipping, and Waterways (MoPSW) has introduced parallel guidelines to stimulate the adoption of green hydrogen, allocating a budget of Rs 115 crore until FY26.

Under the pilot projects, two focal areas have been identified. Firstly, retrofit existing ships to accommodate green hydrogen-based fuels; secondly, develop bunkering and refuelling facilities in ports along international shipping lanes. This strategic move aims to establish essential infrastructure, including refuelling stations, storage, and distribution networks, creating a more extensive ecosystem for green hydrogen adoption in the maritime sector.

Source: Metal Junction

State signs MoUs for green hydrogen projects and steel plant

Jan 30,2024

The state government of Maharashtra has signed seven MoUs for green hydrogen projects worth ` 2,76,300 crore and an MoU with Arcelor Mittal Nippon Steel for a `40,000 crore steel plant. These projects aim to generate 910 KTPA of green energy and create 63,900 job opportunities.

Mumbai: The state government of Maharashtra on Monday has signed seven Memorandum of Understanding (MoUs) for green hydrogen projects, amounting to a total investment of ` 2,76,300 crore. Additionally, an MoU was signed with Arcelor Mittal Nippon Steel for establishing a steel plant with an investment of `40,000 crore.

Deputy Chief Minister Devendra Fadnavis highlighted Maharashtra's leadership in green energy. The green hydrogen projects aim to generate 910 kilo tonnes per annum (KTPA) of green energy, creating employment opportunities for approximately 63,900 individuals.

Stay tuned for all the latest updates on Ram Mandir!

The MoUs entail collaborations with various companies, including NTPC Green Energy Limited, JSW Energy Limited, AVAADA Green Hydrogen Private Limited, Bafna Solar and Infra Private Limited, ReNew eFuels Private Limited, Welspun Godavari GH2 Private Limited, INOX Air

Products Private Limited, and L&T Green Energy Tech Limited.

Fadnavis commended Maharashtra's Green Hydrogen policy, which garnered positive responses from 7 leading companies.

Furthermore, an MoU with Arcelor Mittal Nippon Steel was signed for establishing a Green Steel Plant in Maharashtra, representing an investment of ` 40,000 crore and creating 20,000 job opportunities, tweeted deputy CM Devendra Fadnavis.

Source: Metal Junction

Incentives Planned to Drive Green Transition in Steel Industry

Jan 30,2024

In a proactive move towards fostering environmental sustainability, the government is formulating a series of incentives to encourage the adoption of eco-friendly practices within the steel industry. The forthcoming measures aim to accelerate the green transition of steel companies, aligning with global efforts to reduce carbon footprint and promote sustainable construction materials.

These incentives are designed to support and reward steel companies that prioritize environmentally conscious processes, energy-efficient technologies, and overall sustainability. By offering a slew of incentives, the government seeks to create a conducive environment for the steel sector to embrace green practices, thereby contributing to the nation's commitment to a cleaner and greener industrial landscape.

The proposed measures reflect a strategic approach to balance industrial growth with environmental responsibility, addressing the challenges posed by carbon emissions in the steel manufacturing process. Incentivising eco-friendly initiatives is expected to drive innovation and investment in cleaner technologies, positioning the steel industry as a key player in India's sustainable development journey.

This initiative underscores the government's commitment to fostering a green economy and supporting industries in their transition towards more sustainable practices, emphasising the crucial role of the steel sector in achieving broader environmental goals.

Source: Metal Junction

India's steel consumption flat in Jan'24, mills feel inventory pressure

The market remained lacklustre in January amid excess supply in both longs and flats. Inventories pressured prices.

Production: India's crude steel production was up a marginal less than 1% in January 2023 to a provisional 12.14 million tonnes (mnt) while finished steel production dipped 2% amid the lack of demand. But mills did not opt for production cuts.

Demand: Finished steel consumption remained almost flat at around 12 mnt in January 2024 amid sluggish demand. For tier-1 steel producers, bulk purchases in longs reduced drastically amid need-based procurement for projects. Liquidity crunch and construction ban in the Delhi-NCR region -- the hub of demand in northern India -- challenged induction furnaces. In flats, additional supplies impacted demand. Around 60,000 tonnes of hot rolled coils from NMDC's Nagarnar plant and some amount from JSPL's new 5.5-mtpa HSM at Angul added to domestic supplies. Plus, imports inflated supplies.

Prices: BF-route rebar prices slipped 4% in January to INR 51,775/tonne ($624/t) from

December 2023's INR 53,840/t ($649/t) and were at similar levels into February. In end-January, mills effected a hike of INR 500-1,000/t ($6-12/t) in rebar list prices.

IF-route material fell a lesser 1% to INR 48,700/t ($587/t) in January, because of fluctuating raw material prices despite dull demand. But average prices edged down in early February.

In flats, mills started CY'24 with an increase of INR 500-1,000/t. But average prices slid around 2% in January to about INR 57,275/t ($690/t) and further to INR 57,000/t ($687/t) in February as markets spurned the hike.

Exports: The exports markets of Middle East and Vietnam were range-bound. However, offers to Europe rose slightly to $720-725/t CFR Antwerp from previous $690-700/t levels. Offers to Vietnam resumed in early January but few deals happened only lately.

Imports: Additionally, the presence of cheaper imports from previous bookings kept buyers away from the trade segment, pressuring prices resultantly.

Bulk HRC and plates imports in January touched over 586,451 t, surpassing December 2023 levels of 529,661 t.

Inventory: In the blast furnace-route rebar space, sluggish demand and need-based buying led to a rise in inventory by 8% or an additional 40,000-50,000 tonnes (t). Thus, January saw a stock pile-up of over 600,000 t which continued into early February.

Outlook

Prices for longs may remain stable but production cuts may be in the offing amid continued dull demand.

Domestic flats, on the other hand, may see a price hike on the back of rising iron ore and coking coal prices on a quarterly basis.

In exports, Indian mills may try to seize opportunities during the quiet Lunar holiday period by quoting higher in the absence of China, Japan and Vietnam.

Source: Metal Junction

SUSHIL'S®

AN ISO 9001 : 2008 CERTIFIED CO.

www.jindaltransformers.com

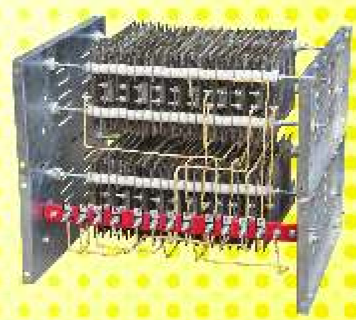
SUSHIL ELECTRICALS

Works & Office : F-9, Phase-VII, Focal Point, Ludhiana - 141 010 (Pb.) INDIA
Tel. : 0161 - 2676733, 2677822 Mobile :+91 - 98140 - 21233
E-mail : info@jindaltransformers.com, sushilelectricals@yahoo.com

Scrap Lifting Circular Electro Magnet - PLC Controlled

Ladle and Sintering Preheater with Bottom Heater

Automatic Servo Voltage Stabilizer & H.T. Transformer

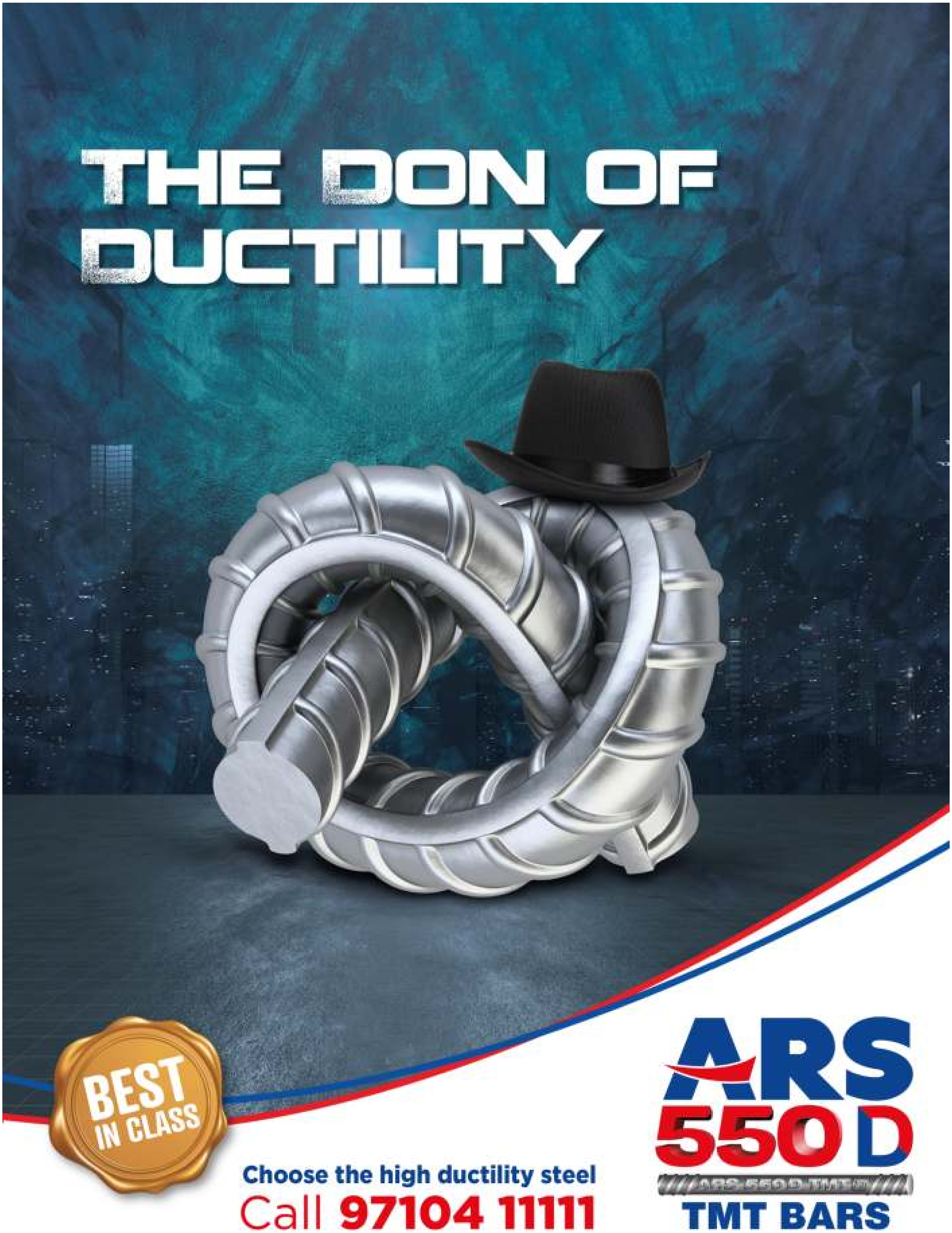


Heavy Duty Punch Grid Resistance Box

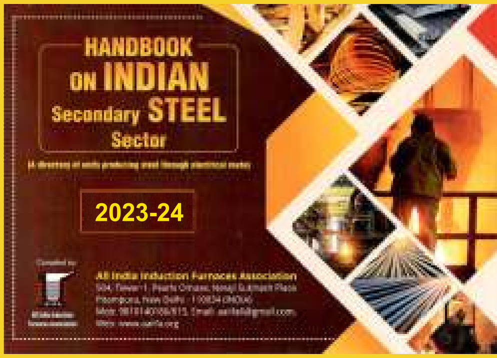
Manufacturer & Exporter of Scrap Lifting Circular Electro Magnet PLC controlled, Heavy Duty Elliptical Electro Magnets, Billets & Bar Lifting Rectangular Electro Magnets, Automatic Servo Voltage Stabilizers, Silicon Power Rectifiers, IGBT Base Rectifiers, Ladle & Sintering Preheater with Bottom Heater, Power & Distribution Transformers and Heavy Duty Punched Grid Resistance Box etc.


SARU
AIKOH
CHEMICALS
PRODUCT RANGE
› Fluxes
› Granular Fluxes
› Tablet Grain Refiner
› Tablet Degasser & NT Based
› Master Alloy Ti, B
› Mag Remover
› Phosphoreus Copper
› Coating G.D.C.
› Die Release Agent H.P.D.C.
› Plunger Lubricant
› Copper & Brass Fluxes
› Teeming Compound
› Fluxes of Copper, Brass, Lead, Mg , Ferrous & Non Ferrous Metal
ABOUT US
› Long Term Support
› Strong R & D
› Prompt Delivery
› Consistent Quality
› 80 Years of Experience
› Export to More than 75 Countries
• Technical Collaborations with M/s Aikoh Co. Japan
• Sales & Distribution with M/s JS Chemical INC, USA
• Technical Collaborations with M/s NTC Japan
SARU AIKOH CHEMICALS PVT LTD.
A-2, INDUSTRIAL ESTATE, PARTAPUR, MEERUT - 250 103 INDIA
el. :0121 2440636, 0121 2440641, +91 7302000969, Fax : +91 121 2440644
E-mail: info@saruaikoh.com, customer.support@saruaikoh.com, Website :- www.saru.co.in


THE
HIGHEST
POWERED
156 MVA
ARC FURNACE
TRANSFORMER
transformers & rectifiers (india) ltd
ISO 9001:2015 | ISO 14001:2015 BS OHSAS 18001:2007
MADE IN
INDIA
THE POWER OF
WE
transformerindia.com
bijoyen.das@transformerindia.com | marketing@transformerindia.com



THE DON OF DUCTILITY
BEST IN CLASS
Choose the high ductility steel
Call 97104 11111
ARS 550 D
TMT BARS



NEW!!!
HANDBOOK ON INDIAN SECONDARY STEEL SECTOR

(a directory of units producing steel through electrical route)

Broadly Covered the following Parameters:

Segment covered: Electric Arc Furnace, Electric Induction Furnace, Rolling & Re-Rolling Mill, Sponge Iron and Ferro Alloy units

Distribution of Units: State-wise

Details Covered: Name of Unit, Factory Address, office Address, Director/ Contact Person with Name, Phone, Mobile No., Email Ids etc.,

Additional Information: Consultants, Equipment Manufacturers, Experts from individual sector

Details of on line payment is given below :

Yes Bank	:	G.F., D. Mall, Netaji Subhash Place
A/c No.	:	018494600000338
IFSC	:	YESB0000184

Claim your copy today:

Contact:
All India Induction Furnaces Association
504, Tower-1, Pearls Omaxe, Netaji Subhash Place
Pitampura, Delhi - 110034 Mob : 9810410186
Email: aaiifa6@gmail.com; web: www.aaiifa.org

Note: Price of Handbook Rs. 20,000/- exclusive of GST with effect from 1st April 2023