



**THE INSTITUTE
OF INDIAN
FOUNDRYMEN**

**WESTERN
R E G I O N**

FOUNDRY TALKS

For The Foundrymen | By The Foundrymen

IIF WR E-Magazine

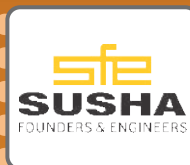
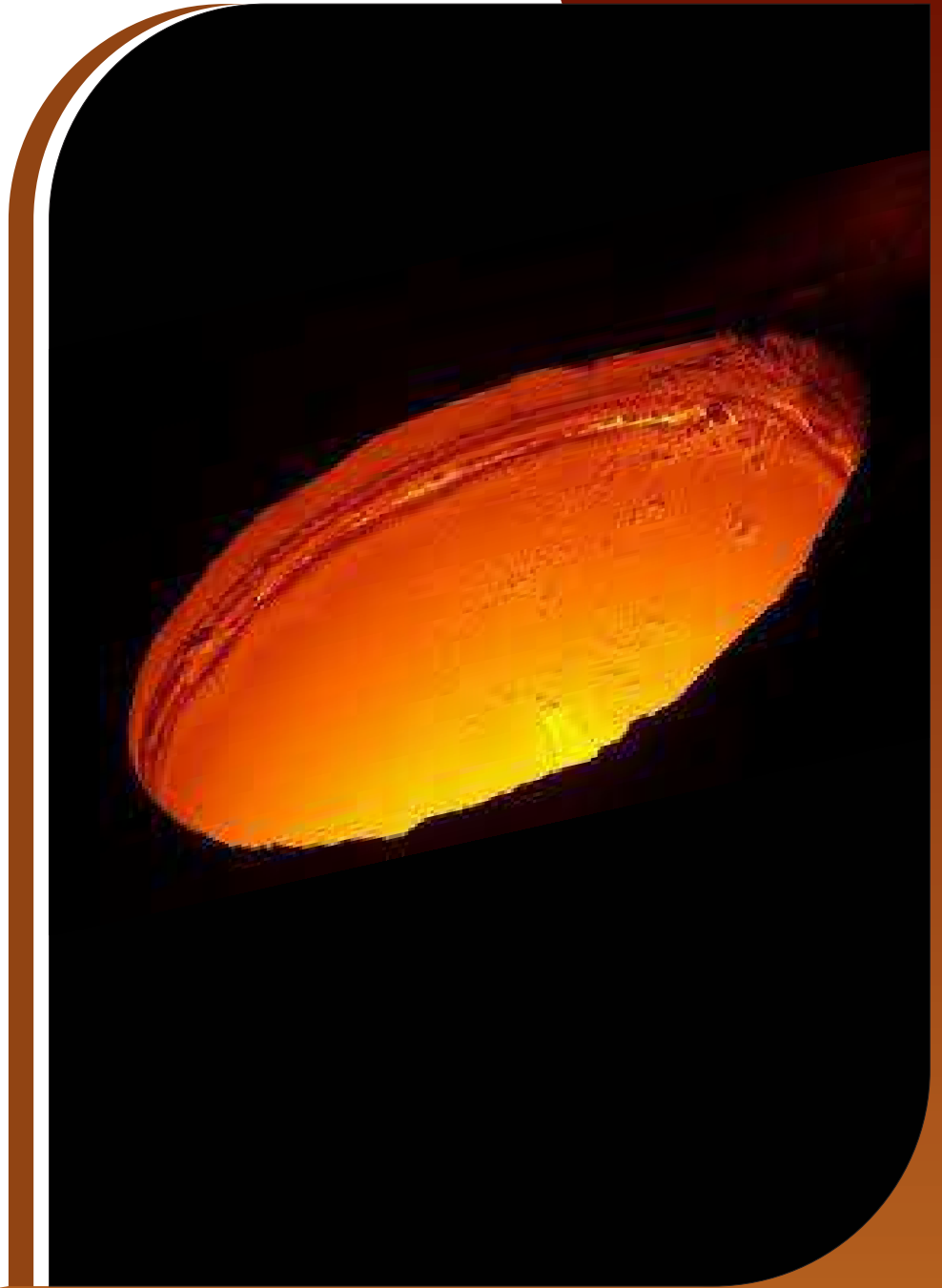
Edition : August 2023



Get Future Ready

Featured Article By

TRL ROSAKI



E - MAGAZINE TEAM

Message from IIF Western Region Chairman

Greetings to all readers!

August is the month of proud celebration for the entire nation celebrating **Independence Day** on 15th August and **National Foundry Day** on 17th August. **National Foundry Day** celebration is important as foundrymen because we are celebrating who we are. Some of us do enjoy being foundrymen, love the challenges it poses and embraces the hurdles coming along their way with new situation every time, but some do criticize the same considering it as an unhealthy environment. Till the things are in our control we are in comfort zone and able to deliver effectively for any situation but if we are clueless on the problems we go under fire-fighting mode which just aims to resolve the situation arise at that time by whatever mode it may be. I just want to make an appeal to all the foundrymen here to start adopting the best practices in all the foundry processes and to be able to take control of your ship for smooth sailing under all the circumstances.

Prayut Bhamawat

Director
Mangalam Steelcast Pvt Ltd
Siena Engineering Pvt Ltd

This issue of the magazine is particularly focused on Best Practices on the Refractory Linings, and I am thankful to our Guest Author **Mr. Shyam Kulkarni** for accepting the invitation at once to write for our readers giving his valuable input. On the same topic we have an article from **TRL Refractories** giving a deep description on the various types of linings. We also have a winner for our Foundry Quiz section and would like to congratulate **Mr. Ramesh Rajani** for being the 1st to answer all the questions correctly and winning the **1st Foundry Quiz competition** which was on the topic - pattern making. Also, we have results out for the Art Competition we conducted on the theme **"Environment Health & Safety in Foundry"** and has been declared on the last page of this issue. I would like to congratulate all the 12 artists for selection of their work for IIF WR calendar going to release in **WESCON 23 on 24th – 25th November 2023** and appreciate your efforts of all for their active participation.



Design By: Mr. Nikhil Sharma
Production Director | Shamlax Meta-Chem Pvt. Ltd.

Mr. Nikhil Sharma completed his B. Tech Chemical Engineering with specialization in polymer technology from Laxminarayan Institute of Technology, Nagpur. Started with Shamlax in the year 2019 as the Production Head, he has been contributing towards the welfare of the organization with new innovations and process automation techniques. Presently he is the Joint-Secretary of Indian Institute of Foundrymen Nagpur Chapter.



Foundry Quiz By: Mr. Sivakumar Subbarayan
Plant Head | Pitti Castings Pvt. Ltd.

Mr. Sivakumar Subbarayan did his Diploma in Mechanical Engineering in 1986 at Bhaktavatsalam Polytechnic – Kanchipuram. Completed his BE Degree in Coimbatore Institute of Technology. Continuously upgraded qualification in the field of MBA and Non-Destructive Testing And is now Pursuing Doctorate in Management. He has worked with many Manufacturing organizations from Hard Core Manufacturing, like Lakshmi Pattern Works, Sivananda Steels Ltd, Lakshmi Machine Works Ltd, Bradken India Pvt Ltd, and many more. With about 36+ years of experience in the industry, he has been recently awarded as the "Indian Foundry Man of the Year 2015" at national level by Institute of Indian Foundrymen.



Business Talk By: Mr. Mukund Pant
Managing Director | Metal Power Analytical Pvt Ltd

Mr. Mukund Pant holds an MBA from IIM Lucknow and a BE from BIT Mesra. He spent close to a decade in management consulting, assisting companies on diverse strategic, sales and operations projects. In Metal Power, leveraging his engineering background and management experiences he is ensuring rapid yet sustained growth in national as well international market.



Material Price Index By: Mr. Mahesh Date
Managing Director | Ved Industries

Mr. Mahesh Date is a dynamic and accomplished entrepreneur with a passion for innovation and growth. As the founder and MD of Ved Industries, they have led the company to new heights, achieving remarkable success in the industry. Their visionary leadership and dedication to excellence have earned them recognition as a leading figure in the business world. With a proven track record of delivering results, Mahesh Date continues to inspire and impact the business landscape.

GUESTS



Best Practices By: Mr. Shyam Kulkarni
Metallurgical Engineer & Senior Foundryman

Mr. Shyam Kulkarni is serving foundry industries from 1972 and has been adviser to many Foundries for the improvement in the melt shop. He is Life Member of IIF and was also an office bearer in IIF Ahmedabad, Pune, Bangalore Chapter & IIF Western Region. He visited more than 100 foundries under the IIF WR project - "Urja Sanchay" and helped them to evaluate and minimize the energy consumption in Foundries.

SPECIAL THANKS

Mr. C Sathyamurthy | Vice-President | Aquasub Engineering for sharing his knowledge and contributing in the magazine to ignite the grey cells of the foundrymen. He has warmly accepted to extended his support in putting up questionnaire for the Foundry Quiz.

Mr. Subodh Panchal | Managing Partner | Kastwel Foundries for sharing artwork created by him over the years, showing "ironies" of the foundry industry in a witty way- through his comic strip.

Mr. Bipin Sharma | Chairman | IIF - Ahmedabad Chapter to share his views and give message to the foundrymen.

IIF MEMBERSHIP BENEFITS CHART

Member's Benefit



Indian Foundry Journal (Monthly)



Attend Chapter/Region Activities



Conference fee rebate



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Enjoy discount on membership subscription



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Highlighting Policy Advocacy issues

Additional Benefit for Industry Member



Exhibition Space Rebate



Free Entry in Indian Foundry Directory



Organizing Yogyata Vikas Programs



Technical services from Centers of Excellence



"We will love to hear from you on activities of IIF & also about E-Magazine. Please share your view by scanning this QR Code Below"

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BEST PRACTICES

By: Mr. Shyam kulkarni
Metallurgical Engineer & Senior Foundryman

Medium Frequency, Coreless Induction Furnace Lining

Introduction

We all are aware that Medium Frequency Induction Furnaces are regularly used in Cast Iron & S.G. Iron Foundries. This furnace is easy for operation, with lot of benefits like, batch melting, easy change of grades, energy efficient etc.

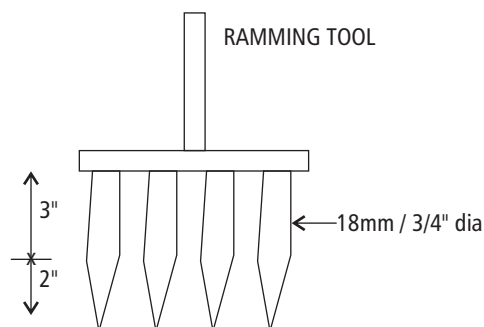
Our skills must be used in right direction to operate this melting unit successfully. Factors are, selection of lining material, percentage of binder, coil cementing, lining procedure, sintering, Melting practice, operating temp, Tapping procedures, Holding time & temp etc. Every factor is important & needs attention.

Before we start New Lining of induction furnace.

1. While removal of worn out lining, record Left Over Thickness (LOT) of lining at various places.
2. Check the insulation of coil by running empty Furnace at max power.
3. Ensure Coil Cementing thickness is not more, no moisture, smooth & in straight line.
4. Tighten all vertical & horizontal tie rods.

Lining Procedure

- A. Ramming Mass- Foundry making C.I. & S.G. Iron will go for Acidic/silica lining with binder as Boric Acid or Un hydrous Boron oxide. Addition to be decided based on operating temperature. Higher operating temp means lower addition of binder.
- B. Normally it is preferred to procure ramming mass with pre mix binder. If binder is boric acid, it must be pre heated & dried.
- C. Now a days different type of vibrating machines are used for performing lining. If done manually remember to use correct size & shape of ramming tools



- D. Look at the ramming tool, its 50 mm portion is tapered. This pointed portion helps in removal of trapped air. So each layer should not be more than 50mm.
- E. Use only fork while ramming for 15 minutes & no flat tools should be used. Flat tools are required only at the top of bottom lining & top of side lining.
- F. Former- shape & size must be as per Furnace manufacturer. Never reduce diameter of former. It affects performance of melting.

- G. Holes on Former must be drilled holes of 3 mm diameter. Holes should not be done by welding or gas cutter. If holes diameter founds to be bigger then close with plastic tape. Sintering of Furnace Heating is to be done with uniform rise in temperature. Correct practice is to follow 100 or 150 deg per hour up to 950 deg & then start melting.
- H. Complete Melting up to full level & hold metal at 1500 deg for one hr to get good results. Factors affecting lining life.
1. Ramming mass quality
 2. Binder percentage & mixing procedures.
 3. Cleanliness of scrap.
 4. Quantity of slag generated.
 5. Holding time.
 6. Holding temperature.
 7. Lining procedure.
 8. Sintering cycle.
 9. Daily Operating hours etc....

We should be good at all the procedure to get good results. Short cut or compromise in any factor will lead to failure or decrease lining life. So Take Care, Best Luck.



Raw Material Price Index

By: Mr. Mahesh Date
Managing Director | Ved Industries



Movement In Foundry Raw Material Prices Supported By | NowPurchase

The Raw Materials Price Index measures price changes for raw materials purchased for further processing by foundries. It is helpful to judge the market scenario and understand the trend. Prices provided below for the past 6 months are the prices collected from Kolhapur market just for the information only. These are approximate, ruling during the month and week as indicated in the table.

In the prices indicated below, transportation cost is included in most items. Only applicable GST is to be added. Prices of many materials are on the basis of "Immediate Payment"

(A) Major Ferrous Metallic Raw Materials, Low Ash Metallurgical Coke, and Electro-Graphite Fines {Rs / Tonne}

	Mar-23 2 nd Week	Mar-23 4 th Week	Apr-23 2 nd Week	Apr-23 4 th Week	May-23 2 nd Week	May-23 4 th Week	Jun-23 2 nd Week	Jun-23 4 th Week	Jul-23 2 nd Week	Jul-23 4 th Week	Aug-23 1 st Week	Aug-23 2 nd Week	Aug-23 3 rd Week	Aug-23 4 th Week
Foundry Grade PigIron	52616	52616	52116	50800	49866	49866	49366	49366	48866	48116	48116	48116	48116	48116
MS Scrap (good quality)	44500	45500	45000	45000	44500	44200	44000	44000	43500	43000	43000	43500	43500	43500
Low Mn Steel Scrap	46500	47500	47000	47500	46500	46500	46000	46000	45500	44500	45000	46000	46500	46500
Si Steel Stamping Scrap	45500	46000	45500	46000	46000	45500	45200	45000	44500	44000	44000	45000	45500	46000
Low Ash Met. Coke	49000	49500	48000	47500	47500	47500	47500	47500	47000	46500	46500	47000	47000	47000
Electro-Graphite Fines	105000	108000	102000	100000	95000	92000	85000	80000	80000	80000	81000	81000	81000	81000

(B) Major Ferro-Alloys {Rs./Kg}

Fe-Si (70-75% Si)	135	137	135	131	130	130	131	126	122	120	117	117	115	115
Fe-Si-Mg (5-7% < Mg)	210	225	210	200	205	200	210	215	215	215	220	220	220	220
Fe-Si-Mg (5-7% < Mg) (TOL)	±5	±5	±5	±5	±5	±5	±5	±5	±5	±5	±5	±5	±5	±5
Fe-Si-Mg (8-10% Mg)	220±5	235±5	225±5	220±5	220±5	218±5	225±5	218±5	218±5	218±5	220±5	222±5	225±5	225±5
High C Fe-Cr (60% Cr)	118	122	125	121	127	127	123	125	122	122	122	125	125	125
High C Fe-Mn (60% Mn)	95	105	100	99	105	105	95	85	85	79	80	80	82	82
Ferro-Moly (60% Mo)	3800	3750	2300	2600	2650	2700	2725	2750	2750	2800	2900	3000	3100	3175

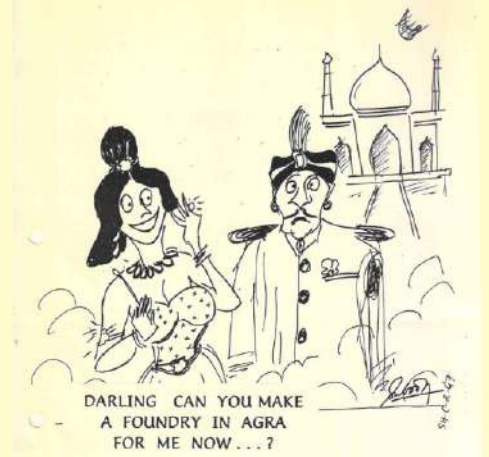
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Fettling Corner

Perspective of Foundryman

By: Mr. Subodh Panchal
Managing Partner | Kastwel Foundries





FEATURED ARTICLE

By: M/s. TRL Krosaki Refractories Limited

Dr. Arup Kumar Samanta | Mr. Abhijit Chanda

Refractories for Coreless Induction furnaces



About Foundry Industries

The history of the foundry industry reflects a journey of innovation, from early metal working techniques to advanced technologies, contributing significantly to the development of modern civilization and industry. The invention of efficient casting processes, such as the cupola furnace, enabled mass production of iron and steel components for railways, machinery, and infrastructure. Advances like sand casting, investment casting, and die casting emerged in the late 19th and early 20th centuries. These techniques allowed for greater precision, complexity, and consistency in casting various metals.

The mid-20th century brought further modernization with the integration of automation, computer modelling, and robotics in foundries. These advancements improved casting quality, reduced waste, and enhanced efficiency. The industry continues to evolve with the use of advanced materials like superalloys and composites, driven by aerospace and high-tech applications.

Induction Furnace

Induction furnace is the most important equipment in the industry of foundry casting. Induction furnaces play a crucial role in modern foundries, offering rapid and controlled metal melting processes that contribute to efficient and high-quality casting production. The refractory performance in induction furnace is the key parameter for the overall efficiency of any metal casting. The refractory performance in induction furnace depends not only the quality of refractory material but also the operational parameters like nature of input materials, mode of operation etc. Installation of refractory material in induction furnace is another important parameter to achieve the expected performance.

Effect of operational parameters on refractory performance in Induction furnace

There are several operational parameters which affect the performance of refractory and expected life of induction furnaces can not be achieved. The major parameters are mentioned below.

- Quality of input materials (e.g., Scrap, DRI etc.)
- Quality of steel grade
- Melting Temperature
- Tapping Temperature
- Duration of metal melting
- Mode of operation
 - (a) Continuous (b) Intermittent
- Slag condition
- Thermal spalling

The lining refractories of induction furnaces are to be designed in such a way so that it should have the following features.

- High refractoriness to withstand operating temperature.
- High corrosion/erosion resistance towards steel and slag
- Adequate workability for easy installation
- Chemically inert to Metal/alloy melt
- Volume stable at service condition
- Reasonably strong to withstand molten metal.
- Conserve heat
- High electrical resistivity to prevent short-circuiting.

Application / Installation of dry ramming mass in induction furnace

Apart from quality or grade of refractory materials for induction furnace, its proper application/installation is very important to get satisfactory performance. The ramming is done in dry condition which make it more difficult for proper compaction and densification. To achieve desired installation and optimum compactness, two kinds of rammer are necessary while install the ramming material manually as shown in Fig.1. One is flat head rammer and other is spike rammer. First, scrub all loose materials and clean the furnace. Spread the material at the furnace bottom to about 50 - 60 mm thick layer at each time followed by ram the layer uniformly using a suitable rammer. The material must be rammed layer by layer to get maximum compaction.

Before ramming to next layer, the top surface must be scratched to avoid any defects between the two subsequent layers of ramming. Place the steel former on the rammed bottom followed by fix the steel iron block at the centre of the steel former to get uniform thickness throughout the furnace wall. For ramming the upper portion of the sidewall just above the induction coil, mix the dry refractory material with Sodium Silicate solution and 3-4% water.

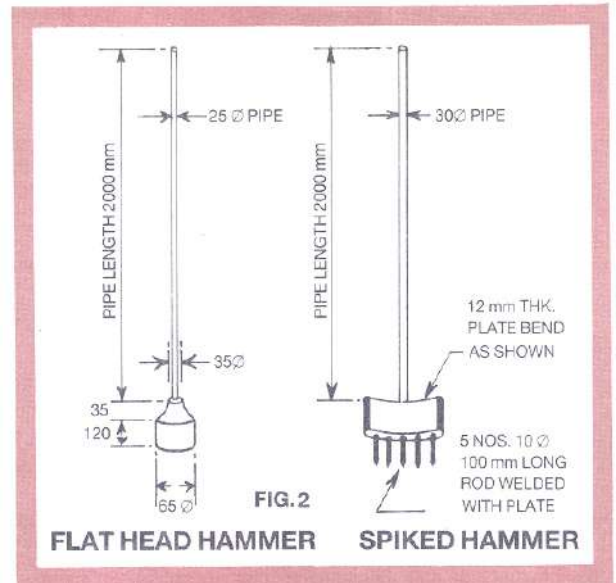


Fig.1: Types of hammers for installation

Sintering process of ramming mass

There is general sintering process in induction furnaces. However, sintering cycle is slightly different for different ramming materials like acidic ramming mass, basic ramming mass or neutral ramming mass. Rate of rise of temperature is maintained while controlling the power from electrical source. The sintering behaviour of the ramming mass is very important. The working lining should be sintered followed by semi-sinter and the material around coil must be in powder condition. A general sintering cycle for silica ramming mass is mentioned in Table.1. However, it may be varied based on furnace capacity, lining thickness, input power etc.

Table.1 General sintering cycle for silica (Acidic) ramming mass

Furnace Temperature	Rate of Heating with Holding Time
Ambient temp to 100°C	@ 30°C / hr.
Hold at 100°C.	4-6 hr depending upon the lining thickness.
100° - 800°C.	@ 50°C / hr.
Hold at 800°C.	2 - 3 hr.
800° - 1400°C.	@ 100°C / hr.
Hold at 1400°C.	4 - 6 hr.
1400°C to furnace operating temperature.	@ 100°C / hr.

Different ramming material in Induction Furnaces

In the ferrous industry, induction furnaces are widely used for melting and casting various iron and steel alloys. Along with iron and steel alloys, melting of aluminium, copper is also done in induction furnaces. Different refractory materials are employed in these furnaces to withstand the high temperatures, thermal cycling, and corrosive conditions. In general, three types of refractories are suggested as a working lining for coreless induction furnaces based on operational parameters, grades of metals, expected performance etc.

1. Acidic Ramming Mass
2. Basic Ramming Mass
3. Neutral Ramming Mass

Acidic Ramming Mass

Acidic ramming mass, made of quartz/quartzite grains, is one of the most widely used refractory in coreless induction furnace. However, selection of base raw materials and its characterization are very important to get the satisfactory performance. In general, boric acid is used as sintering agent for silica based ramming mass. Boric acid is a strong sintering agent and therefore its dose is critical to get the controlled sintering of the refractory lining.

Several sources are there for quartzite having similar chemical composition but having different physical properties specially in expansion behaviour which is required for this kind of application in induction furnaces. In Table – 2, properties of quartzite getting from three different sources are given. The chemical and physical properties are almost similar. While manufacturing silica ramming mass with these three quartzites, the properties of ramming mass are different specifically expansion behaviour as shown in Table - 3. In all cases 1% sintering aid was added. All the samples were fired at 1200°C and 1550°C for three hours and measured CCS and PLC. It is clearly observed that quartzite – B is showing highest expansion and Quartzite – C is the lowest. Quartzite – A is showing expansion in between B & C types. CCS is also important after firing as it indicates the sintering behaviour of the refractory lining. In most of the cases, people looking after CCS, and it is considered that any refractory having higher CCS should give better performance. However, in case of dry ramming mass used in induction furnace, higher CCS is not good. Rather, it sinters the whole lining and GLD may occur.

Table:2 Properties of quartzite from different sources

Property	Quartzite A	Quartzite B	Quartzite C
Apparent Porosity (%)	0.26	0.25	0.35
Bulk Density (g/cc)	2.645	2.643	2.637
Apparent Sp. Gravity (g/cc)	2.648	2.647	2.632
SiO ₂ (%)	98.57	98.73	98.43

Table:3 Properties of silica ramming mass with different source of quartzite

Composition	Quartzite A	Quartzite B	Quartzite C
Quartzite - A	100	X	X
Quartzite - B	0	100	X
Quartzite – C	0	X	100
Sintering aid	1	1	1
Property			
After firing at 1200°C/3hrs			
CCS (Kg/cm ²)	83.5	120	51.9
% PLC	0.66	0.71	0.52
After firing at 1550°C/3hrs			
CCS (Kg/cm ²)	12.4	5.27	16.2
% PLC	14.44	18.03	10.91



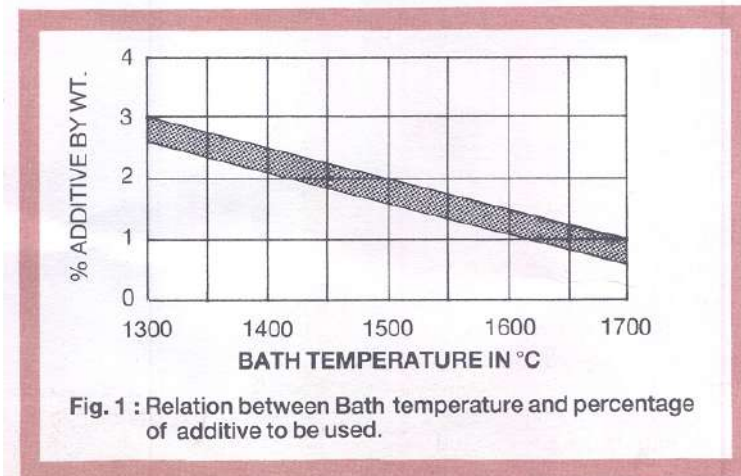


Fig.2: Dose of sintering aid with bath temperature

From this study it is well understood that the selection of quartzite is very important to get satisfactory performance though there may not be significant difference in chemical composition of quartzite. In this study, sintering aid was added 1%. But it can be varied based on the operating temperature and capacity of the furnace. In Fig. 2, an idea is given how to decide the dose of sintering aid.

TRL Krosaki manufacture acidic ramming mass based on both quartzite and quartz. In most of the cases, it is available in pre-mixed condition. However, binder (sintering aid) can be supplied separately as per customer’s requirement. In case of addition of binder at site, care must be taken to mix the binder properly with ramming mass to get homogeneous mix. The binder is hygroscopic in nature and hence slight warming before application of ramming mass is suggested.

Different items based on quartzite and quartz are available in TRL Krosaki’s product basket is mentioned below.

Quartzite base

- TRL Ram SK – 165 (B0)
- TRL Ram SK – 165 (B1)
- TRL Ram SK – 165 (B2)
- TRL Ram SK – 165 (B3)
- TRL Ram SK – 165 (B4)

Quartz base

- TRL Ram SK – 185 (B0)
- TRL Ram SK – 185 (B1)
- TRL Ram SK – 185 (B2)
- TRL Ram SK – 185 (B3)
- TRL Ram SK – 185 (B4)

Recently, TRL Krosaki has designed two more acidic ramming masses having better performance with different sintering aids and base raw materials. This material is having several advantages over the conventional ramming mass especially non-hygroscopic in nature and potential for higher performance.

Basic Ramming Mass

Basic ramming mass is another refractory material based on DBM (Dead burnt magnesia). This ramming mass is suitable where slag is basic in nature. This material can withstand at very high temperature, but it needs higher temperature for sintering. From the viewpoint of thermal stability this is inferior than acidic ramming mass and therefore this material is not suitable for bigger furnaces. Another bottleneck is volume stability. Basic ramming mass exhibits shrinkage and there is tendency for crack generation. There is limitation to use basic ramming mass where intermittent operation is there. But it gives higher life than acidic ramming mass. To control the sintering, chrome is used, However, the fraction of chrome is very important to get the optimum sintering behaviour of basic ramming mass.

To enhance the volume stability of basic ramming mass sometimes alumina is added which forms spinel and gives expansion. TRL Krosaki is having a series of basic ramming mass in MgO-Cr₂O₃ system as well as MgO-Cr₂O₃-Al₂O₃ system. The common items which are available in TRL Krosaki’s product basket is mentioned below.



- TRL Ram LMCX
- TRL Ram LM(CA)X
- TRL Ram LM(A)X
- TRL Ram - LCM
- TRL Patch - LMCX

Neutral Ramming Mass

With time, new technologies are coming for manufacturing special grade of steel where removal of unwanted elements/oxides are necessary like sulphur, phosphorus etc. To remove all those impurities, it is required to add several chemicals in induction furnace. Addition of chemicals change the slag chemistry where neither acidic ramming mass is suitable nor basic ramming mass. A new material is required which is suitable both in acidic medium as well as basic medium. Neutral ramming mass is having the capability to work in wide range of slag basicity. Not only the cases for dephosphorisation and desulphurisation in induction furnace, neutral ramming mass is suitable in general application also where performance is many folds against acidic and basic ramming mass. However, the price of neutral ramming mass is higher than others.

The main raw materials to design neutral ramming mass is technical alumina and DBM. But the top size of grain and grain size distribution for this product is very important to achieve expected performance. Several works are going on to further improve the performance while improving the slag corrosion resistance and thermal spalling resistance. To get the maximum life, patching grade material is required to repair the original lining as and when necessary. It is the common practice to add sodium silicate liquid binder with the material and apply as patching purpose. However, addition of proper amount of liquid binder at site may not be possible every time and therefore users prefer material where water can be added instead of liquid binder. On the other hand, addition of sodium silicate is not good as it is having lot of alkalis which are not good for refractory material.

To meet the customer requirement, TRL Krosaki has designed special grade of neutral ramming mass with water which is suitable for repairing. This material is having very good patching consistency and there are no cracks while drying and firing at application temperature (Fig.3)

Based on steel grades like MS/SS/Alloy, TRL Krosaki is having special material. The following are the common neutral ramming mass available in TRL Krosaki's product basket.

- TRL Ram NR - 2202
- TRL Ram NR – 2202(SG)
- TRL Ram NR – 2202 SG(WB)



Fig.3: Appearance of water based neutral ramming mass (Left – after firing at 1600°C, Right – after firing at 1000°C) suitable for patching purpose

TRL Krosaki has designed neutral ramming mass with highest purity raw materials along with technology from Krosaki Harima Corporation, Japan. The performance of neutral ramming mass is encouraging in different capacity of furnaces starting from 300 Kg to 20 MT.

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- "Development and Characterization of Alumina-Based Ramming Masses" by N. Kumar et al.



BUSINESS TALK

By: Mr. Mukund Pant
 Managing Director | Metal Power Analytical Pvt Ltd

Strategy – A detailed blueprint to achieve your Vision

A Vision itself doesn't tell you how to get to it. It only sets an overarching ambition and tells you about the direction of the organization. The "how to get there" aspect is where the Organization Strategy comes in. The Organization Strategy consists of three distinct aspects – Corporate Strategy which is defined at an overarching level across different Business Units; Business Strategy that defines a strategy for each Business Unit in a manner as to align with the Corporate Strategy; and Functional Strategy, which is defined at a Function level to deliver on the goals set in the Business and/or Corporate Strategies.

Corporate Strategy – How do we orient towards success?

The Corporate Strategy serves as the roadmap through which the organization will work towards achieving its long-term objectives and in alignment with which it will prioritize actions, make decisions, and develop lower-level strategies, plans and tactics. A good Corporate Strategy has deliverables across four major areas:

Portfolio Management

The Corporate Strategy must define the businesses and markets that the organization will focus on and build upon. Within these, there could be nuances. For example, in particular areas the business may require a consolidation strategy, while in others it may call for a growth strategy and these priorities too may change over time. These are addressed by the Business Strategy. At a Corporate Strategy level, the decisions on portfolio revolve around which products and markets the organization will work in and which it will avoid or exit.

Organization Structure

Organization structure is a critical aspect that is often taken less seriously by business leaders, but is absolutely critical to get right. Decisions on how to structure the organization should take into account how to drive efficiencies, prevent the formation of silos / break silos that exist, and also leverage synergies across business units. The Organization Structure must also ensure that there is no over-centralization of power, while guarding against a dilution of accountability for critical tasks.

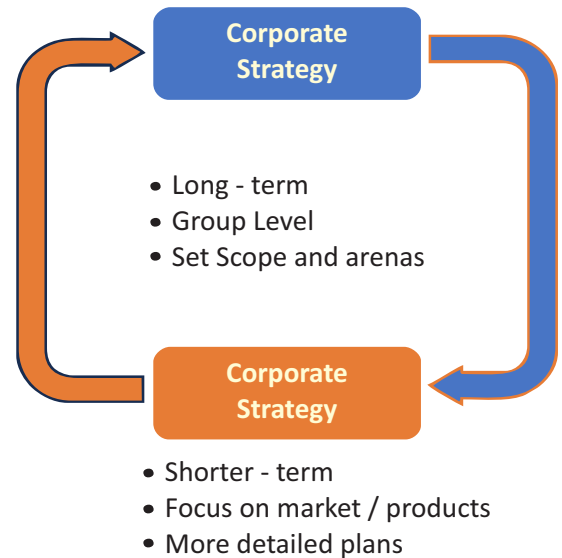
Resource Management

Every Organization has only a finite set of resources whether it be financial capital, people, real estate or leadership bandwidth. The Corporate Strategy is therefore the key method to ensure that the right level of resources are allocated to each different area – be it different business units, different initiatives or infrastructure and projects being built for the future success and growth of the organization.

Prioritization and trade-offs

Every decision has pros and cons. In multiple instances, an opportunity that an organization decides to pursue will imply that another has to be foregone. The Corporate Strategy must take into account the risk-return profiles of all potential strategic options while making decisions and also define how any further trade-offs should be assessed and how ongoing opportunities and options should be analysed, prioritized and decided upon.

Corporate and Business Strategies must feed into each other and be in alignment



Business / Product Strategy – Driving Success in a Business Area

Every Business Unit or Product Unit requires a detailed strategy to deliver success. This strategy is typically defined with a shorter horizon than the Corporate Strategy – and specific elements of the Corporate Strategy are embedded directly into it from the outset. For example, the overarching philosophy of product positioning and the Core Values that the business will stand for, as well as multiple elements of the Organization Structure must be taken as-is from the Corporate Strategy. That said, this still leaves a lot for the Business Unit to define at a strategic level.



The definition of the Business Strategy should always begin with the Go-to-market Strategy. This defines a number of critical areas that teams need to know in order to have full clarity. The Go-to-market strategy defines the value proposition of the product as well as the various markets that will be serviced. Here, “markets” refers to both geographical markets as well as the specific customer groups / segments that are to be catered to. The definition of a go-to-market strategy is an involved exercise which must consider:

1. Customer expectations across different segments and geographies
2. Competition offerings along each of these cuts
3. Definition of an optimal value proposition in alignment with Corporate Strategy, customer market analysis and also competitive position of the Business
4. Communication strategy that will be used to showcase and support the value proposition in order to drive success

Once the Go-to-market Strategy has been defined, the next level is to define how this strategy will be implemented on the ground. Some of the most critical aspects of delivery are:

1. Channel mix

Channel mix definition involves a definition of how Pre-Sales, Sales and After-Sales will be delivered by the Business. This could lead to a single-channel, multi-channel, or omnichannel model and ideally, the mix should consider all aspects of each market being catered to. This implies that the mix chosen may even vary across products and markets. A simple example could be one where Pre-Sales and Sales are driven directly by the Business’ own employees, while Service is outsourced (Car companies often employ this model) or it may be one where the “home” country is serviced directly while overseas markets are serviced by distributors. Again, an “exclusive distributor” model may be chosen or a multi-distributor one. Similarly, for some products (typically low-differentiation commodity or consumer products) the decision may be to employ portals and online marketplaces while in some lower-value B2B products an “omnichannel” model may be employed (a mix of direct offline and online channels), whereas in others (for example for proprietary or high-value products), the decision may be that only direct in-person sales will be undertaken with only communications leveraging online channels. These decisions can vary by business, by the product itself, or by the geography. This is however one of the most critical decisions that directly and immediately impacts success.

Pricing Model

A fundamental truth is that “cost-plus” models of pricing belong to the dustbin of history. The market determines the price. “Market” of course includes customers, competitors and also the economic environment. Having the right pricing model is therefore critical to ensure that success is delivered. This includes a brutal and honest assessment of the products, their strengths and weaknesses in comparison with available alternatives and a massive amount of analysis to determine the optimal price points to deliver the required / expected volume of business. Should the product be a commodity or have a substantial external dependency on a variable input price, the pricing model should be made in a flexible manner. Some models that have been used include:

- Input-linked long-term pricing formulae (Used often in the power and energy sector)
- Index-linked pricing for commodities (used often for foods, metals, minerals)
- Fixed pricing with “promotions” used for temporary adjustments (FMCG, online sales etc.)

Product management

No product remains static. Product management therefore is absolutely critical through the lifecycle to ensure that the product remains fresh and up-to-date and doesn’t get left behind by the competition or by movements in technology or customer expectations. Product management must be multi-faceted including customer experience, user-interface / interaction points, feature-set, aesthetics (where involved), packaging (even the “unboxing” experience now counts!) etc. Product management consists of the activities involved in conceptualizing a product, monitoring its performance, driving improvements, enhancements and tweaks (including value engineering / cost reduction opportunities), as well as knowing how to handle the period when the product begins to fade and needs to be phased out / replaced.

Several of the aspects described above and their related areas, deserve a lot more detailing, which shall follow in later pieces.



FOUNDRY QUIZATHON

By: Mr. Sivakumar Subbarayan
Plant Head | Pitti Castings Pvt. Ltd.

Quiz Prizes Supported By



Test your Basics on Lining & Refractories
Supported By | Shamlax Meta-Chem Pvt. Ltd.

Last Date of Submission: 25th September 2023

- 1) % of Alumina in Melting furnace Neutral lining material.
 - a. 80 to 85%
 - b. 10 to 20%
 - c. 5 to 10 %
 - d. 3 to 12 %

- 2) Boric acid % in Melting furnace Acidic lining.
 - a. 10 to 15 %
 - b. 25 to 35 %
 - c. 40 to 50 %
 - d. 0.9 to 1.3 %

- 3) Type of Former used for Steel melting furnaces?
 - a. Straight type former
 - b. Elephant foot former
 - c. Glass type former
 - d. Cross type former

- 4) Maximum Sintering temperature for Steel melting furnace?
 - a. 1400° C Max
 - b. 1550° C Max
 - c. 1700° C Max
 - d. 1650° C Max

- 5) How much quantity of lining material is used with respect to Furnace capacity?
 - a. 50 % of Furnace capacity
 - b. 65 % of Furnace capacity
 - c. 55 % of Furnace capacity
 - d. None of the above

How to Participate in the Foundry Quiz:

Option 1) Scan the QR Code to Start the Quiz and fill out the basic details, click next, answer the questions and then click on submit

Option 2) Send answers to the following questions on western.region@indianfoundry.org with basic details (Name & IIF Membership No.)

Winner will be based on first one to answer the maximum correct answers



[Click Here](#)

QUIZ WINNER!



Congratulations to
Mr. Ramesh Rajani
Drashti Casting

100%
Score

For securing the first position in Foundry Quizathon on the topic: Pattern Making. He will be awarded with the NCTS voucher worth Rs. 750/-

2nd Position (100% Score)
Mr. Debashish Bose Metso Ahmedabad

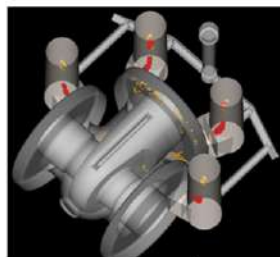
3rd Position (75% Score)
Mr. Sundaram C Krishna Western Meta Flux

Foundry Quizathon (July Edition)
Answer Key: 1. a | 2. c | 3. d | 4. a | 5. b
To view the following quiz questions, [Click Here](#)

Quiz Prizes Supported By



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Message from Chairman IIF Ahmedabad Chapter

Dear Foundrymen & Members of IIF,

It has been an honor & privilege to interact with you once again through Foundry Talks- WR monthly E magazine. Our Western Region Chairman's theme for this year is "Reform, Perform and Get Future Ready."

It is heartening to learn from Foundrymen who have returned from Germany post GIFA, that the European & American companies have turned positive for procurement of castings from India. The process of transition is not going to be a smooth ride, to thrive in an increasingly competitive global market; foundries must embrace reform, enhance their performance, and prepare for the future to ensure long-term success.

Mr. Bipin Sharma

Chairman IIF Ahmedabad Chapter

Reforming Foundries:

- a) **Advanced Technologies:** Embracing cutting-edge technologies like automation, robotics, and artificial intelligence can streamline processes, improve efficiency, and reduce costs. Automated systems can handle repetitive tasks. Small foundries with fund constraints can start with mechanization in material handling & repetitive human task.
- b) **Compliance and Standards:** Adhering to international standards and regulations is crucial for export-oriented foundries. Implementing quality management systems, environmental sustainability practices, and safety protocols not only ensures compliance but also enhances reputation and customer trust.
- c) **Process Optimization:** optimizing various processes within foundries, including melting, molding, casting, and fettling. Techniques for streamlining workflows, reducing waste, improving cycle time & eliminate bottlenecks.

Performance Enhancement:

- a) **Training and Skill Development:** Investing in training and upskilling programs for employees is essential to keep up with evolving technologies and industry trends. Continuous learning and development empower the workforce to adapt to new processes and technologies, improving overall performance.
- b) **Supply Chain Optimization:** Collaborating closely with suppliers and customers can optimize the supply chain, ensuring timely delivery of raw materials and finished products. Efficient logistics and inventory management practices can minimize lead times and improve customer satisfaction.

Future Readiness:

- a) **Digital Transformation:** Embracing digital technologies like cloud computing, Internet of Things (IoT), and data analytics can unlock new opportunities for efficiency, predictive maintenance, and product innovation.
- b) **Research and Development:** Investing in research and development activities fosters innovation and enables foundries to develop new products, materials, and processes. Collaboration with academic institutions and industry partners can drive technological advancements and open doors to new markets.
- c) **Sustainability and Green Practices:** With increasing environmental concerns, adopting sustainable practices is not only responsible but also a competitive advantage. Foundries can explore energy-efficient technologies, waste reduction initiatives, and recycling programs to minimize their environmental footprint.

At the end a humble request to WR Chairman to invite suggestions & inputs from the companies from WR who already well-established Export ready foundries must suggest bare minimum requirements of testing equipments, benchmarking of process etc. so small foundries can benefit.

I hereby extend my heartiest best wishes & Good luck to Mr. Prayut and his new WR Team for the successful year ahead.

WESTERN REGION ACTIVITIES



National Foundry Day Celebration with Vadodra Chapter

ART COMPETITION WINNER



1st in Junior 1 Category
Mst Prakarsh Bhatt
 Age: 5 Yrs
 Son of Mr. Bhushan Bhatt
 Vezapp Solutions
 IIF Vadodara Chapter



1st in Junior 2 Category
Ms. Riya Chendake
 Age: 6 Yrs
 Daughter of
 Mr. Sandeep Chendake
 Menon & Menon
 IIF Kolhapur Chapter



1st in Senior 1 Category
Ms. Madhushri Monpara
 Age: 11 Yrs
 Daughter of
 Mr. Sagar Monpara
 Sagar Techno Cast.
 IIF Rajkot Chapter



1st in Senior 2 Category
Mrs. Monika Bhatt
 Wife of Mr. Krunal Bhatt
 IIF Vadodara Chapter



Other Drawings Selected for Calendar



Junior 1 Category
Mst. Ayaansh Bhamawat
 Age: 4 Yrs



Junior 2 Category
Mst. Vairaj Shah
 Age: 9 Yrs



Junior 2 Category
Mst. Vishwesh Bhagat
 Age: 9 Yrs



Junior 2 Category
Mst. Krishiv Bhatt
 Age: 7 Yrs



Junior 2 Category
Mst. Kabir Vyas
 Age: 8 Yrs



Junior 2 Category
Ms. Shanaaya Bhamawat
 Age: 8 Yrs



Senior 1 Category
Mst. Arnav Mankar
 Age: 14 Yrs



Senior 1 Category
Ms. Yashti Bhatt
 Age: 11 Yrs



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info@cfmenginers.com | +91 9558689560 | www.cfmenginers.com | Location: Rajkot

Dynamic Technology Systems are a leading distributor of analytical & scientific instruments & research equipment, based in Mumbai (India). We deliver the most reliable and highest quality products through partnerships with global original equipment manufacturers. We have consistently grown to become a prominent distributor for analysis, inspection and research instruments in metallurgical industry.
mumbai@dts-india.co | 1800-22-8522 | www.dts-india.com | Location: Mumbai



We, at Gargi, are committed to developing, manufacturing and supplying foundry consumables and chemicals conforming to international standards. We deal in Resins, Coatings, Exothermic Sleeves & Other Foundry Chemicals. Our priority is total customer satisfaction by anticipating and meeting the changing needs of our customers.
gargiha@ha-group.com | +91 (022) 68785656 | www.ha-group.com, www.chemex.de | Location: Mumbai

Incorporated in 1994, Kelsons Engineers & Fabricators is a well-known manufacturer and supplier of Moulding Machine, Intensive Mixer, Shell Moulding, Shot Blast Machines, Foundry sand Testing Equipment, Metal testing Equipment and Ladles providing full range of equipment for foundry processes. We provide turnkey solutions for foundry sand plant projects
Mktg.kelsons@gmail.com | +91 9822112162 | www.kelsonsgroup.com | Location: Kolhapur



Started in the year 1987, Laxmi Pattern have got more than 25 years of experience in the field of manufacturing of patterns. We have established ourselves as a leading manufacturer of Metal Pattern, Teak Wood Pattern, Casting Pattern, Gunmetal Pattern and many more. We are equipped with 3-D modelling and CNC machines for precision and matriculate work
laxmipatterns@gmail.com | +91 9979955889 | www.laxmipatterns.com | Location: Anand

MPM Pvt Ltd having 35+ years of expertise in foundry solutions and services are the one of India's leading manufacturer of foundry consumables used and applied in the critical spectrum and eco system of casting preparation such as Mold & Core Making, Feeding & Methoding systems & Melt Preparation. MPM is the pioneer and largest manufacturer of engineered Lustrous Carbon Additives for use in foundry green sand molding practice.
info@mpmindia.com | +91 98224 64730 | www.mpmindia.com | Location: Nagpur



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foundry@nowpurchase.com | +91 6289078550 | www.nowpurchase.com

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info@pshotblast.com | +91 97370 61333 | www.pshotblast.com | Location: Vadodara





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info@newstarinfotech.com | +91 99042 25550 | www.plasmagroup.in | Location: Ahmedabad

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mehtapmet@gmail.com | +91 9327308669 | www.p-met.com | Location: Vadodara



Porwal Auto Components Limited a listed company on BSE is one of the leading foundries in India with in house machining facility, it is an ISO 9001: 2015 and IATF certified unit. We are certified Class "A" Foundry by RDSO & approved by IRIS (International Railway Industry Standard). We are major supplier to Auto Mobile and Tractors, Railways, Defence and heavy engineering sectors like BHEL etc. Our products range covers Grey Iron, Ductile Iron, Carbon Steel, WCB and Austempered ductile iron (ADI) and casting weight from 1kg and 800 kg.

edp@porwalauto.com | +91 9752146341 | www.porwalauto.com | Location: Indore

Shamlax is pioneers in manufacturing Colour Changing on drying Foundry Refractory Coatings since 2010. The company also manufactures speciality (sulphur-block) coatings and modified sleeves for S.G. iron castings to control surface micro-structure. We also produce Exothermic and Insulating Riser Sleeves of all shapes and sizes up to 24 inches & Foundry Fluxes for domestic and export market. Shamlax continues to provide customized solutions and solves various casting defects in the foundry sector.



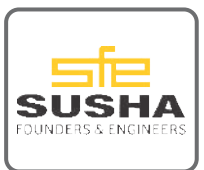
info@shamlax.com | +919860365715 | www.shamlax.com | Location: Nagpur.



Sinex Primemovers are a leading manufacturer of wide range of Unbalance Weight Vibration Motors, Pneumatic Ball Vibrators and Pneumatic Piston Impact Vibrators with over 30 years of experience. The vibro motors and vibrators are sound engineered and have innovative features to make them excellent products. The loaded parts in these products are generously dimensioned to make them quite sturdy, giving excellent performance and long trouble-free life with minimal maintenance.

info@sinexvibratorsindia.com | +91 9998217448 | www.sinexvibratorsindia.com | Location: Mumbai

Susha Founders & Engineers offers a complete range of foundry machines. Our product range includes Core Shooters, Low Pressure Die Casting, Gravity Die Casting, Degassing, Decoring, Sand Coating Machine. Now we have to our credit over 4500+ installations in India & abroad. With over 62+ years experience our main focus is on making user friendly machines with high productivity, low maintenance & latest technology.



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