TATA METALIKS

TATA eFee

TATA

PRAYAS

2022

HIGHLIGHTS

"As a socially sensitive and committed organisation towards sustainability, Tata Metaliks is working on reduction in carbon footprint in its complete value chain..."

- EVP Marketing and Sales

Volume 1 | Issue 17 | July 2022

Foreword
by EVP Marketing and Sales

Dear Customer,

It has been quite a while since we came out with our Technical Newsletter, Prayas, primarily due to the pandemic. We are back and we assure you that we would continuously be in touch with you through this Newsletter as customer-centricity is at our core.

During the last few years, we have been working on creating and sustaining mutually rewarding relationships with our customers through our differentiated product and service offerings. We have also been working on ensuring deeper customer engagement leveraging digital and analytics solutions. Many of you must have had an opportunity to use our CRM (Customer Relationship Management) platform through which we propose to improve the ease of doing business and also provide you with an online order booking facility, besides providing real-time visibility of orders, payments, stocks, status of complaints, etc. Further, the availability of CRM on mobile not only enhances flexibility and ease of doing business for you, but also ensures our agile response to your specific needs.

We continue to provide you with our value-added technical services, both at your premises as well as virtually through webinars and technical sessions. We urge you to make best use of the services as it comes at a very nominal cost to you with commitment from our Technical Services Team on increase in melt rate and productivity and reduction in rejections and GHG emission. As a socially sensitive and committed organisation towards sustainability, Tata Metaliks is working on reduction in carbon footprint in its complete value chain and therefore, we would like to extend that service to our customers too.

Continuing on our differentiated offering, we have developed Tata eFee Aquawell which is specifically customised to meet the pig iron quality requirements of hand pump manufacturers. It will help you to optimise your charge-mix and improve your productivity and quality parameters. We are in the process of developing more such end-use application based products for other kinds of castings too, on which you will hear from our Team in due course.

We would like to thank you for providing valuable feedback during the third-party administered customer satisfaction survey and assure you that we will work on improving all the attributes on which you provided your inputs. We thank you once again for being with us and look forward to serving you with our best products and services at all times.

Happy reading and do provide us with your valuable feedback for improving Prayas so that you find it interesting and valuable.

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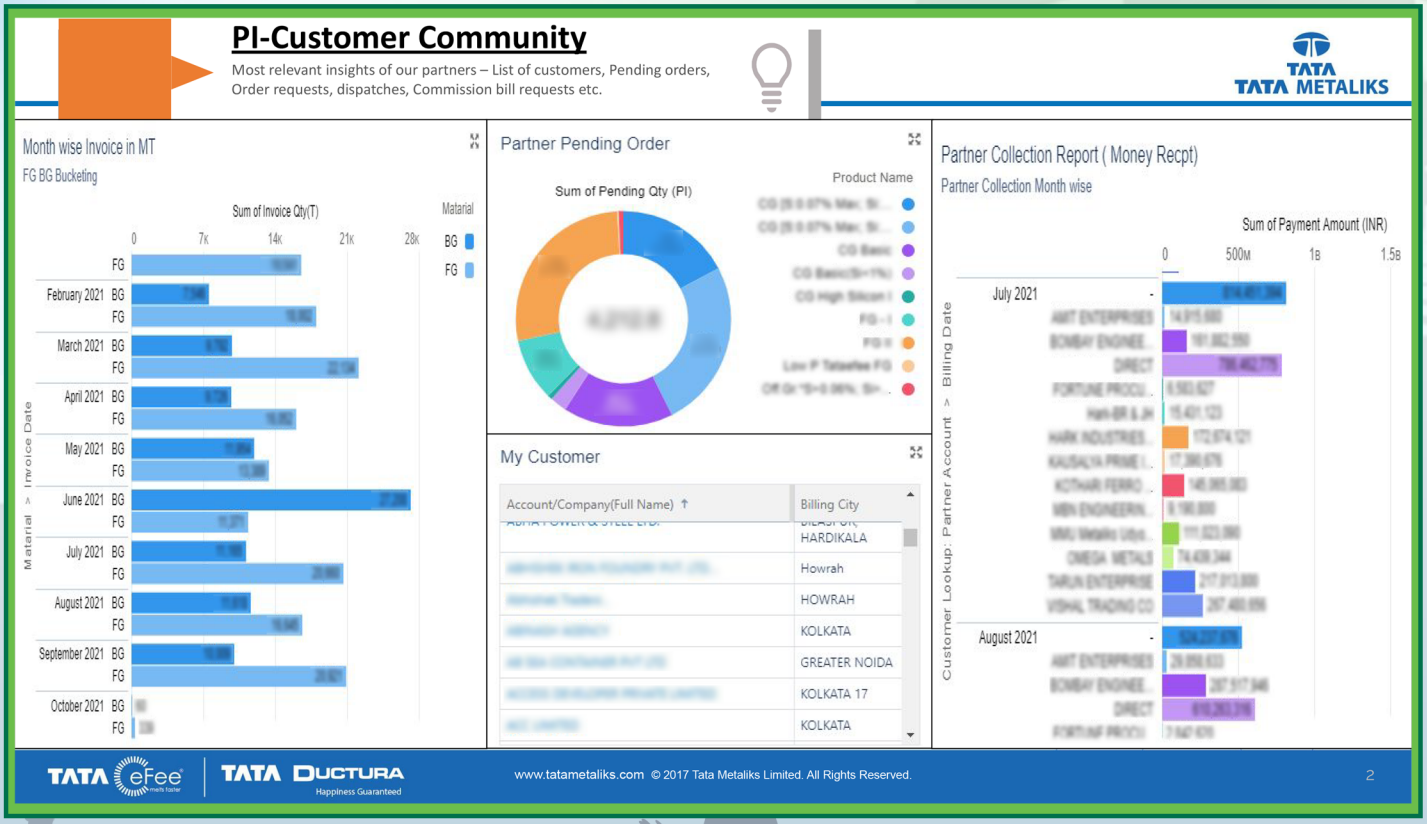
Customer Relationship Management

Our customer-centric culture is enabled through various customer facing processes. The use of digital platforms is continuously increasing in our customer facing processes. Our ongoing digital transformation journey is focused on ensuring 'ease' of customers. Towards this, we have implemented our end-to-end digital Customer Relationship Management (CRM) platform while extending it to end-customers as well as to our channel partners. The platform offers 24/7 online order booking facility, besides providing real-time visibility of orders, invoices, test certificates, payments, status of complaints, etc. to our customers and channel partners through secured logins. Further, the availability of CRM on mobiles not only enhances flexibility and ease to our customers, but also enables us respond to their specific needs with agility. We thereby believe that this platform will provide unparalleled customer experience by enabling real-time visibility of their above mentioned transactions with TML along with 24/7 order logging facility. In FY 2021-22, ~ 98% of PI orders were booked through CRM of which ~ 70%+ orders were logged by channel partners and customers themselves. Through this implementation, Tata Metaliks is the first pig iron manufacturer to implement all its marketing and sales related processes on a single platform to manage its entire lead to cash cycle including after sales while enabling "Business on Mobile" for its customers and channel partners.

Preview of Customer Relationship Management Dashboard Accessible to Our Key Customers



Why Use Tata eFee Aquawell?

Objectives of End Use Application Based Pig Iron:

1. To minimise no. of input materials / charge mix constituents into a melting system to make smooth operation.
2. Removing / transfer to TML, burden of charge mix calculations.
3. Reduction / optimisation of input materials cost.
4. Reduction in % of rejections due to metal composition variation and chilling.
5. Reduction in machining time, increases cutting tool life & increase in machining productivity.

Selection of Casting Segment:

1. Casting which is produced in most foundries & foundry clusters.
2. Casting which is produced regularly throughout the year.
3. Casting which is prone to chilling and has a high impact on quality due to weather conditions.
4. Casting which has low section thickness.
5. Components which have many casting components.
6. Casting which has higher % of rejections at various levels of production.

Hand Pumps:

7. It Contains 5 CI parts, weighing between 0.5 to 8 Kgs.
8. Various capacity hand pumps, weighing between 14 to 24 Kgs / hand pump.

4 trials conducted for end use based grade (hand pump) – an average of Rs1000 / ton has been identified in these trials.

Recommended charge mix for hand pump production with Tata eFee Aquawell

Charge Mix %	Tata eFee Aquawell (%)	CI Scrap of Min.1.5 % Silicon (%)	Foundry Returns (%)
	45 - 50	35 - 40	10 - 20

Advantages of Using Tata eFee Aquawell:

1. Less no. of charge mix constituents making it easier to procure & store.
2. Reduction in input materials cost.
3. No burden of charge mix calculations.
4. Reduction in % of rejections due to metal composition variation and chilling.
5. Reduction in machining time and increased cutting tool life & machining productivity.

Understanding the Carburisation Process

Carburisation (Carbon % Increasing Methods) in Cupola and Induction Furnace Melting Operation

Carburising or Carburisation is a heat treatment process in which iron or steel absorbs carbon while the metal is heated in the presence of a carbon-bearing material, such as charcoal or carbon monoxide. The intent is to make the metal harder. Depending on the amount of time and temperature, the affected area can vary in carbon content. Longer carburising times and higher temperatures typically increase the depth of carbon diffusion. When the iron or steel is cooled rapidly by quenching, the higher carbon content on the outer surface becomes hard due to the transformation from austenite to martensite, while the core remains soft and tough as ferritic and / or pearlite microstructure. In Grey Iron / Ductile Iron metal preparation, carburisation means, increase of carbon % of the metal as per the grade of casting. There are various ways available to increase C % of metal.

Methods to Increase Carbon % in Liquid Metal:

In Cupola furnace, the following methods are used:

1. Use of carbon blocks.
2. Increase in pig iron proportion in charge mix.
3. Increase in coke bed height.
4. By lowering the air blast.
5. Graphite injection through tuyeres of cupola.

In Induction furnace, the following methods are used:

1. Use of calcined petroleum coke / charred coconut shell (activated carbon) / graphite electrode scrap.
2. Increase in pig iron proportion in charge mix.

Carbon Blocks:

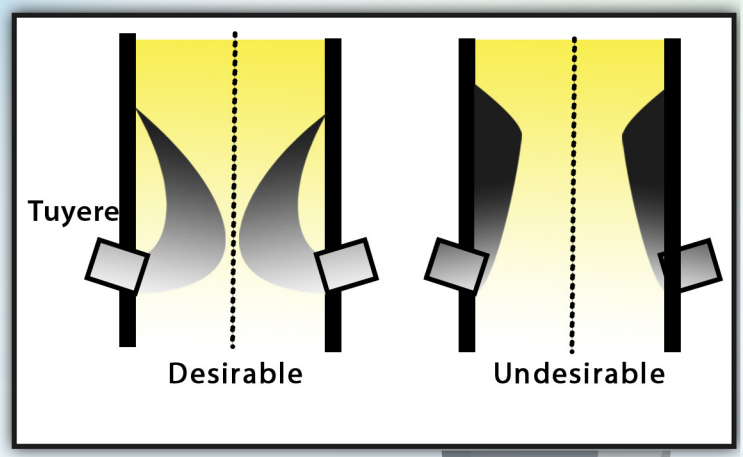
Understanding the Carburisation Process

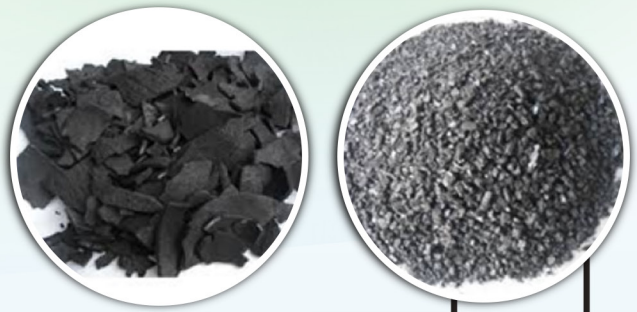
Pig Iron:

In cupola operation, adding / increasing pig iron is the best and immediate result option to achieve the desired chemical composition.

Calcined Petroleum Coke / Charred Coconut Shell (Activated Carbon)/ Graphite Electrode Scrap:

Air Blast:





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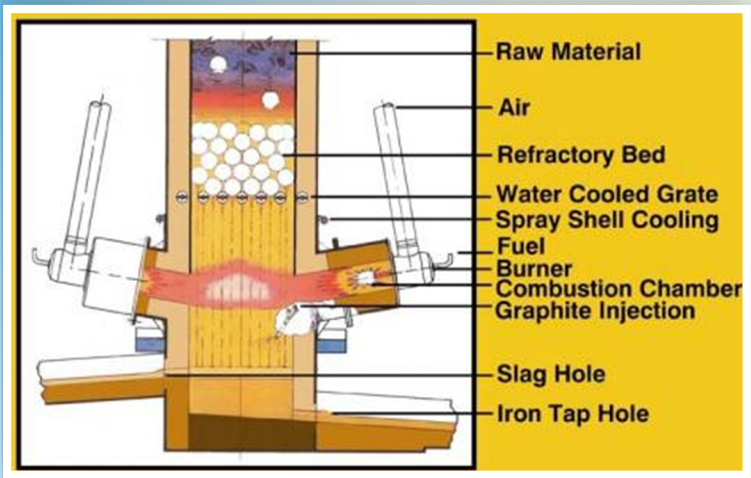
Understanding the Carburisation Process

Graphite Injection Through Tuyeres of Cupola :



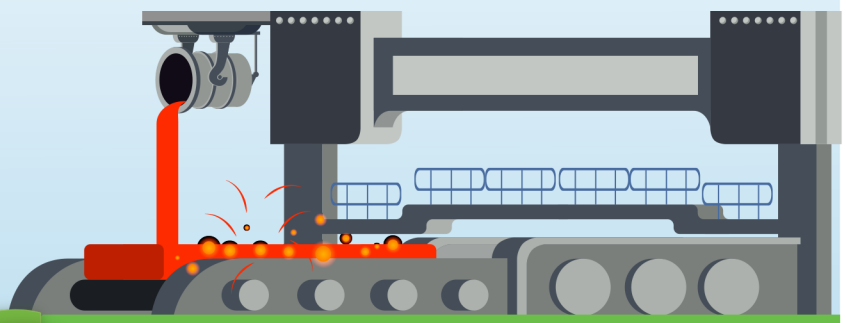
Methods to Decrease the Carbon Content in Metal:

Cupola and Induction Furnace:

1. Use of M S scrap.
2. Change in charge mix proportions.
3. Increase in air blast in cupola operation

Take away:

1. Control of chemistry is required to get desired properties in castings.
2. Close control of chemistry is required in raw materials like pig iron on a consistent basis to retain and improve customer satisfaction.
3. Benefits of customised grades of pig iron are:
   a. Desired properties according to application defaultly.
   b. Minimised cost of production.
   c. Minimised avoid human errors.
   d. Avoidance of unnecessary inventory maintenance.



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Bouquet of Technical Services

Charge Mix and Melting:

1. Suggesting suitable charge mix considering chemistry required in casting, grade of the casting and melting unit.
2. Cupola operation (coke bed preparation, charge materials size & weight optimisation, advice on charging sequence in the cupola, air requirement of cupola, taphole preparation and inoculant addition) and improving melt rate in cupola.
3. Suggesting charging sequence in induction furnace to get maximum recovery of additives and to reduce power consumption.

Moulding and Core Making:

1. Suggesting and conducting demo of suitable moulding & core making methods depending on the accuracy needed in casting.
2. Services to upgrade from one system to another as per production requirement.
3. Services to improve surface finish of the casting.
4. Services to reduce non-conformities in casting.
5. Suggesting and conducting demo of suitable core making method depending on the accuracy needed in core area.
6. Firming up standard operating procedures.

S G Iron Production and Development:

1. Services in S G Iron production (selecting raw materials for ductile iron, composition according to grade requirement, desulphurisation and carburisation techniques, selection of spheroidising additives, fading of the spheroidising effect and inoculation technique).
2. Services in S G Iron development (selection of the process, selection of treatment technique, Mg alloy calculation, terminology, grades etc.).

Project Based Consultancy:

1. To modify combined blast to divided blast cupola.
2. New product development (from methoding to approval by customer's customer).
3. Rejection control.

Pollution Related:

1. Services to control suspended particulate matter in cupola stack gases and to improve the efficiency of the pollution equipment.

Customised Training:

1. Cupola preparation & operation and charge mix calculation.
2. S G Iron development and production.
3. Non-conformities analysis and implementation of corrective and preventive actions.
4. To reduce production costs and non-con formities %.
5. Safety aspects.

Testing Facility:

1. Customer service centre is equipped with the laboratory to provide the testing facilities for test foundry raw materials and consumables.
2. Coke and Coal: ash, volatile matter, carbon, sulphur and phosphorus.
3. Casting, scrap & pig iron: carbon, silicon, manganese, sulphur, phosphorous and chromium.
4. Limestone: CaO & MgO.
5. Graphite powder, fire bricks and ferro alloys are also tested as per customer requirement.

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Customer Testimonials and Game Section

Voice of Customers

"Well known brand and they supply only best quality of materials to their customers"
Kapoor Casting Corporation, West Bengal

"I have tried other brands material, but no one is comparable to Tata Metaliks' quality and service"
OM Trading

"Their team is very supportive and also they are having good name in market"
Victor Engg. Co., Punjab

"Best material and better service providers"
Ferro Casting Concern, West Bengal

"It is a most trusted company for the quality of products"
Shiv Shakti, West Bengal

Game Section

Guess the Word

01. YRGEEN
02. TEECIIN
03. LSMET
04. ETSAF
05. IAGNTC
06. RNOI
07. UHUPLSR
08. YFRDNUO
09. TMALE
10. SUROHPSOHP
11. PCAOLU
12. NOITCUDNI
13. GNDILUMO
14. EEFE
15. NBORCA
16. IYTLIBANIATUSS
17. CUEERD
18. TNEMNORIVNE
19. TIYEDNS
20. CEARUNF

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