



## A Report on Industrial Visit at “Jay Metal Tech”, Surat

### EXECUTIVE SUMMARY

Mechanical Engineering Department of S.N.P.I.T. & R.C., Umrakh arranged an industrial visit to Jay Metal Tech Surat, Gujarat, India on 18<sup>th</sup> January 2019 with 130 students of 2nd year Mechanical Engineering. The purpose of the visit was to enhance industrial exposure of the students, get practical knowledge of manufacturing procedure of various products made by casting processes and related with other advanced machineries. The team of two faculty coordinators Dr. Shakil Kagzi & Mr. Hiten Mistry and with them one lab assistant Mr. Jignesh Soni took part in prestigious industrial visit.





## **AIM OF INDUSTRIAL VISIT**

Industrial visit is considered as one of the tactical methods of teaching. The main reason behind this- it lets student to know things practically through interaction, working methods and employment practices. Moreover, it gives exposure from academic point of view. Visiting different companies actually help students to build a good relationship with those companies. We know building relationship with companies always will always help to gain a good job in future. After visiting an industry student can gain a combined knowledge about both theory and practical. Students will be more concerned about earning a job after having an industrial visit.

## **ABOUT INDUSTRY**

Jay Metal Tech is established in the year 2001, and is ISO 9001 certified organization engaged in manufacturing and supplying Industrial Valves and Castings. Comprehensive range includes products like Propeller Shaft Casting, Pump Casting, Railway Pin Insulator and Sluice Valve and also offers a wide range of Butterfly Valve, Check Valve, Clutch Pressure Plate and Propeller Shaft Casting. Their range is manufactured using high grade material like stainless steel, carbon & alloy steel, cast iron, ductile (S.G.) iron, nonferrous metal and others.

JMT's value for money range is manufactured at company's state-of-the-art manufacturing unit using sophisticated machines. JMT specialize in manufacturing ductile iron and gray iron casting in weight ranging from 300 grams to 5000 kilograms. Their range is manufactured using heat treatment, surface treatment and machining process, which makes it ready to assemble. The Power Grid Corporation of India – PGCIL has approved JMT as the supplier of SG Iron castings to various insulators manufacturing industries. It is testimonial to the high standards castings manufactured by them. JMT is backed by a team of after sales personnel, which maintains healthy business relations with our clients, enabling us to understand their specific requirements. Owing to all these factors, they are able to garner clients all over India.

Under the guidance of mentor, Mr. Jayesh Wankawala, JMT is able to offer their valuable clients, a range that is appreciated for its quality, durability and longer service life.

## **VISIT INSIGHT**

With the use of sophisticated machinery, JMT is able to provide a range that is efficiently catering to the demands of their clients. JMT undertake different processes for the production of their range. All these processes are an integral part of manufacturing and are undertaken by experienced workforce.

**Following process are undertaken for the manufacturing of various casting products:**

### **MELTING**

- Induction Furnaces - 2 Panels (Dual as well as Mono Track) with 4 Crucibles
- Melting capacity 40 tons per day liquid metal aggregating 10,000 Tons Castings per annum



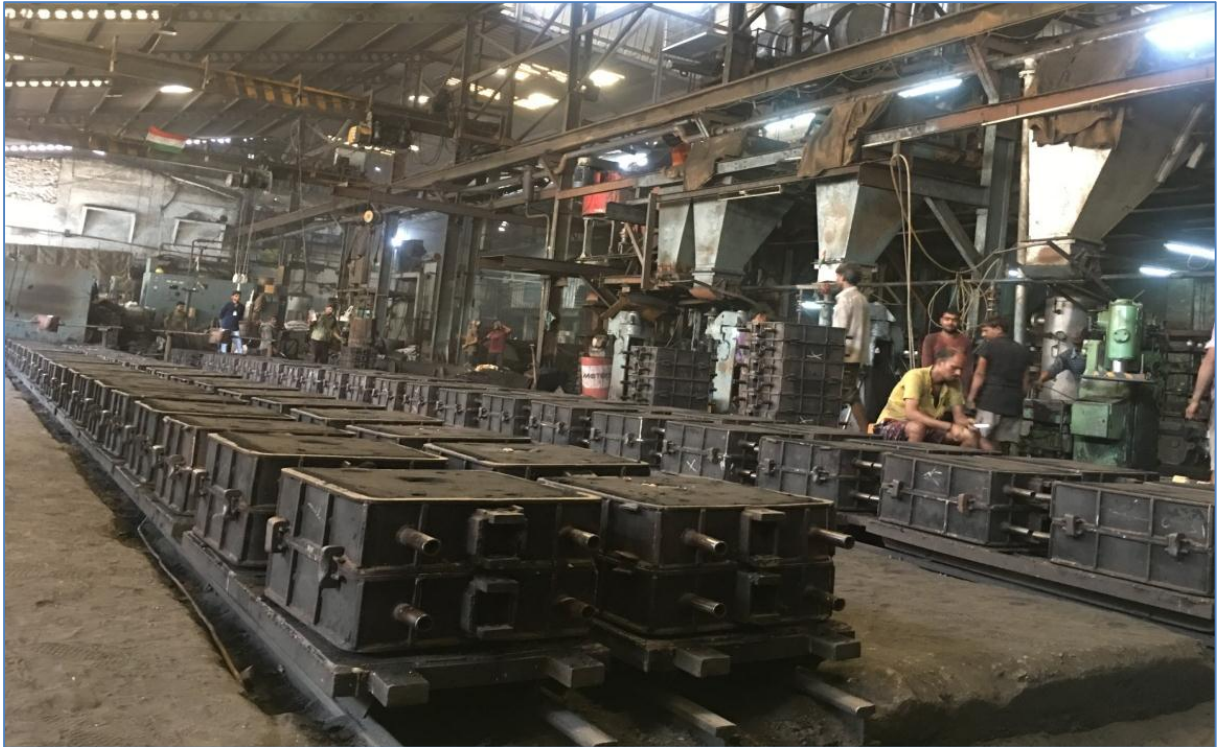
Gang of treatment & pouring ladles for maximum size up to 5 tons per single piece

### **SAND PROCESSING**

- Green Sand conditioning plants with a capacity of 300 M. T. of processed molding sand per day
- Fluidized bed & rotary drum type sand cooling system equipped with pollution control equipment
- Silicate Sand mixtures with Auto Binder Addition Pumps with sand attrition & reclamation plant equipped with pollution control equipment

### **MOLDING**

- Molding line equipped with ARPA 450 & ARPA 300 equivalent simultaneous jolt squeeze molding machines



- Molding Capacity of 3000 per day, supported by hydraulically operated mold handling system
- Hand molding facility up to 3.0 \* 3.0 meters
- Box size by silicate and chemically bonded sand process

### CORE MAKING

- Vertical & Horizontal parting shell core shooter machines





- Sand mixtures with Auto Binder Addition Pumps for CO<sub>2</sub> & Single part no-bake cores

#### **COMPONENT DRESSING AND FINISHING**

- Chain of fully automatic shot blasting machines equipped with dust collection units
- Full line of swing frame, pedestal, bench and pencil grinders

#### **HEAT TREATMENT**

- Oil fired bell type furnace of 2 tons per batch capacity
- With auto temperature controller
- With 3 pen graph plotter suitable for stress relieving, annealing, normalizing, tempering, heat treatment process

#### **MACHINING**

- Set of conventional and CNC machines suitable for various type of jobs (Out sourced)

#### **SURFACE TREATMENT**

- Crucible type fully equipped gas fired & electric hot dip galvanizing plant (Out sourced)
- Trolley type diesel fired oven and booth type powder coating facility

#### **PATTERN MAKING**

- Fully fledged pattern development facility with experienced team



As scheduled, the visit team reached Jay Metal Tech Surat at 10:00 am warm welcome was received from company representatives and they gave us the brief idea about their work culture, vision & Mission then Technology description by HR member and team was imparted to us.

Below is the Technology learning from the industrial visit at Jay Metal Tech Surat which will impart roots of knowledge in our students of Bachelors of Engineering

### **APPRECIATION**

The students got the opportunity to learn about different products and process which undergoes the subject Manufacturing Process II. In addition, Machine learning was given by their officials at every corner of their plant. We S.N.P.I.T. & R.C. Mechanical Engineering department team are really thankful to the Jay Metal Tech Surat and their team.

Report prepared by,  
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