



Dr. D. Y. Patil Technical Campus

## **Dr. D. Y. Patil School of Engineering**

Dr. D. Y. Patil Knowledge City, Charholi (Bk), Lohegaon, Pune - 412105

**DPARTMENT OF CIVIL ENGINEERING**

**B.E (CIVIL)**

**20<sup>TH</sup> SEPTEMBER 2017**

**GUEST LECTURE REPORT**

**ON**

**KALIKA STEEL**



The department of Civil Engineering, Dr. D. Y. Patil School Of Engineering, lohegaon, Pune, organized a two hour educational guest lecture on kalika steel at Dr. D. Y. Patil college, lohegaon, on 20<sup>th</sup> September 2017 for B.E Civil Engineering students. Lecture was organized as per Pune University guidelines and recommendations regarding syllabus of B.E Civil Engineering.

Guest lecture has organized with the prior permission and guidance of honourable Director of DYPSOE, Lohegaon. Dr. S.S.Sonawane & by the initiative and hard efforts of head of Civil Engineering department Prof. R.C.Katdare, & class teacher Prof.J.D.Dalvi , guided the students . Along with the staff members, students of B.E Civil takes hard efforts and initiative under the continuous guidance of Prof. Sanjay Karodpati, which made this lecture a grand success.

- **LOCATION :- DR.D.Y.PATIL SCHOOL OF ENGINEERING**
- **DAY & DATE:-Friday , 20<sup>th</sup> September 2017**
- **GUIDE BY :- Prof. SANJAY KARODPATI**
- **LECTURE BY: - Mr. GHANSHYAM C GOYAL.**



## INTRODUCTION

Kalika steel Established in 2003, at Jalna, Kalika Steel Alloys Pvt. Ltd. is today one of the best and well- known TMT Steel Reinforcement Bar manufacturer in Maharashtra. The company initially set up an Advanced Steel Melting Shop (SMS) with annual capacity of 36000 MT. The production of Thermo Mechanically Treated (TMT) bars was started in 2005. The company currently runs an integrated SMS (Steel Melting Shop) and state of the art Rolling Mill from Primetal Technology (SIEMENS-VAI) with an annual capacity of 3,00,000 MT.

Kalika Steel Alloys Pvt. Ltd. is the "Most Preferred TMT Bar Brand" in Maharashtra, which continues to respond by modernizing its manufacturing processes and consolidating businesses to increase productivity and cater to the rising demand for quality TMT Bars. We have been able to carve a niche position in the steel sector by producing advanced and high-strength TMT Bars, which is the most sought after product available today for the civil construction sector. We at Kalika Steels care for our Mother Earth and hence are contributing our bit by recycling the waste metal scrap and converting it to high quality and high strength steel through world class manufacturing techniques.

Kalika Steel Alloys Pvt. Ltd. is committed to achieving success through integrity, transparency, implementation of best practices and usage of advanced technology to produce supreme quality steel.



## **WHY USE KALIKA STEEL**

1. Now, with a world class PRIMETAL TECHNOLOGY (SIEMENS-VAI) to ensure excellent quality.
2. Cost Effective - Precise WEIGHT per meter
3. Confirm STRENGTH of Fe - 500 and ELONGATION of 16% plus.
4. Uniform RIBS for the strongest and safest construction.
5. World acclaimed SIEMENS - POMINI Thermo Mechanical Treatment.
6. Automation ensures ENHANCED and CONSISTENT QUALITY throughout the bar length.
7. Unique features of SEALED MASTER BUNDLES ensure CORRECT WEIGHT AT DELIVERY POINT.
8. Committed for BEST QUALITY product and SERVICE par excellence

## **PRODUCTS OF KALIKA STEEL**

### **Billet production**

We at KSAPL cast square mild steel billets of cross sections 100mm, 110mm and 130mm through a continuous caster. The billets are manufactured by induction furnace route and the chemical properties are strictly maintained.

Billets are manufactured as per IS standards (2831-2012) and are used for manufacture of TMT Re Bars. Mixture of Sponge Iron, DRI and high quality industrial scrap are fed into induction furnaces of capacities 25 and 30 MT in steel melting shop to produce supreme quality mild steel. After going through rigorous treatment and chemical analysis, the molten steel is cast into square billets of the desired cross section in high speed CONCAST (now Primetals) CCM (Continuous Casting Machine). The cast steel is cooled with the help of regulated water and air pressure to form billets of accurate cross section. As the billets pass towards the cooling bed, they are accurately cut into the required lengths by high accuracy shearing machines. Finally, the hot

billets are laid on the insulated roller transfer tables to be transported to the rolling mill.

## **QUALITY CONTROL PRACTICES FOR BILLET MFG**

Quality Control Measures Adopted:

- Modern chemical analysis equipment
- German made Spectrometer for quick and accurate analysis
- Automatic mould level control in caster
- Billet macro analysis for internal structure control

## **TMT BAR production**

We offer TMT bars of the following cross sections:

8mm	25mm
10mm	32mm
12mm	36mm
16mm	40mm
20mm	

In the new established facility of the company, which is highly technically sophisticated and best in class, the square cross section billets go through precise and uniform size reduction in linear movement of material, unlike traditional cross-country mills. This helps impart high quality, bendability and surface finish to our finished products. With a mix of highly advanced rolling mill designs and machinery from Germany, the quality quenching system from Pomini (Italy) and the world renowned SIEMENS automation, the new facility of Kalika Group is one of its kind in India.

The Pomini Quenching system makes the Kalika TMT Bars strong and flexible and capable of sustaining massive pressure during earthquakes. The world class quenching system is capable of producing bars of export quality as well.

After obtaining the standard length, bars are cut and carried to the finished goods yard, where these finished TMT Bars are labelled as per grade, size and length and stored accordingly.

## **TMT CONTROL**

With the highly advanced automation of SIEMENS, the quality of every bar is regulated while the reduction itself. The production process includes use of fast, responsive PLCs, high accuracy HMD's and sensors to ensure that every bar produced is at par the desired characteristics with a uniform cross section and ribs.

The quality control department keeps a close watch on the finished goods by conducting various quality tests at fixed intervals.

Quality control tests:

- Universal Testing Machine (UTM)
- Chemical Etching Test
- Bar profile measurement system



## **Summary**

This lecture covers a brief history of Manufacturing of steel, and highlighting the developments of steel construction. The development and classification of steel are also discussed. We also learnt about various documentation required for manufacturing of steel. Role of Steel Design and Steel Manufacturing Planning are also discussed.

**Prof. SANJAY KARODPATI**  
**Civil dept. SOE**

**Prof. R.C.Katdare**  
**(H.O.D)**