



## **DEPARTMENT OF MECHANICAL ENGINEERING**

### **REPORT ON INDUSTRIAL VISIT - 2019**

**DATE – 28/08/2019 (WEDNESDAY)**

**TIME – 10:30 AM Onwards**

#### **PLACE OF VISIT:**



**ALL WIN ALUMINIUM INDUSTRY**  
Allwin Compound, Maheshwari Mill Road,  
Nr Panchal Industrial Colony, Tavdipura,  
Ahmedabad – 380004.

## Industrial Visit – All Win Aluminum Industry

As a part of the GTU Curriculum, Mechanical Department of Khyati School of engineering organized an Industrial Technical Visit for the III<sup>rd</sup> Semester (II Year) Mechanical Engineering students at **All-Win Aluminum Industries**.

Diploma Mechanical Engineering in its II<sup>nd</sup> Year inculcates an important subject of Manufacturing Engineering-I for the students which includes a broad concept of Casting Process and working of a Foundry.

To understand the technicality and practical approach to the sandcasting process and to understand the same in foundry environment was the basic aim of the technical visit.

The visit was organized on **28/08/2019 (Wednesday)** from 10:30 AM onwards.

### • BACKGROUND OF THE COMPANY

All - Win Aluminum Industries located at Tavdipura, Ahmedabad is involved in the business of manufacturing of non-ferrous castings for the past 21 years. The company owned by experience technocrats and the workshop equipped with latest foundry equipment's, backed by skilled, technical & dedicated staff, the company is able to ensure the best quality of castings. Along with aluminum casting, company specializes in the field of Phosphorous Bronze, 85:5:5:5 Gunmetal, Brass castings & Aluminum Bronze. Apart from the foundry division, the company also possesses all in-house machining facilities, finishing department, sand blasting department, vacuum impregnation plant and art division for art castings.



- **DESCRIPTION OF THE VISIT**

The visiting team included 20 students of mechanical department accompanied by faculty of the department Mr. Akash Shukla. Around 10:30 AM the team entered in the premises of **All-win aluminum industries**. We were given a warm welcome by Mr. **Omprakash khotari**, CEO of the industry. He gave a welcoming speech to us and introduced All Win aluminum Industry to the students. Thereafter he explained regarding the safety measure to be taken in the industry. He also motivated the students to be an Entrepreneur.

Thereafter the students started the tour in the foundry. The main part of the foundry included the **Sand-Casting section**.

➤ **Sand casting**

The students were made aware with the different steps in a sand casting process:

1. First they mixed the raw sand and the binder in the **sand mixture machine**. As a binder they used molasses. Then the mixed sand is used for sand casting in make the mold of the pattern in the cope and drag. Then they made the gate, runner, and riser which acts a passage for the molten metal.
2. For the purpose of melting the raw metal, they used **Pit Furnace, Induction Furnace and Electric Resistance furnace**. The molten metal was removed from the furnace with the help of tongs and crucible which had the temperature of 1000 to 1200° C and poured it in the mold.
3. Then they let it cool down and after that they opened cope and the required object is obtained. In heavy castings they use the **CO<sub>2</sub> gas** to strengthen the casting sand.

Students thoroughly understood the sand casting process as they spent around 2 hours in the same. The glimpses of the same are as follows:





### ➤ Fettling shop (finishing shop)

In this department the finishing of the casted metal is done. The finishing work includes casted removal of the feeder, riser and extra projections through the processes like grinding, polishing etc.



### ➤ Centrifugal Casting Shop

Axis symmetric components can be manufactured by the centrifugal casting process. The students were shown and explained the working of the centrifugal process of casting.

In this department they used Induction Furnace for the melting of the metal but unfortunately the furnace was not in working condition due to some technical issues.

The students were also explained the working of Pyrometer- Temperature Measuring Device to check the temperature of the furnace.



### ➤ Gravity Die Casting Shop

In the third workshop the students were explained the gravity die casting .By the use of gravity die casting they are making the valves which is used in foot valves and pumps.

The dies were not made by the company but were imported from other manufacturing unit and they just performed the casting process.



➤ **Ending The visit**

Around 2 PM the students had finished visiting the entire foundry and were thoroughly satisfied with the visit of each and every shop of the industry.

The students were then offered snacks and cold-drinks as a part of hospitality. Some final words of encouragement were given by Mr. Omprakash Kothari to the students and then the students gathered outside the company premises for the group photograph.

Khyati school of Engineering was also given Indian Tricolor as a symbol of long and fruitful relation with ALL WIN Aluminum Industry.

The students of Mechanical Department fully enjoyed the technical visit and would like to thank Mr. Omprakash and his team for their invaluable time and guidance throughout the visit.

The students of mechanical department would like to thank Dr. Shital Shah, Principal and Mr. Kartik Patel, Trustee and Binita Mam, Director for allowing them to go for an intriguing technical visit.



**Industrial Visit Coordinator:**

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