



Shri Guru Gobind Singhji Institute of Engineering and Technology, Vishnupuri, Nanded

An Autonomous Institute owned by Government of Maharashtra

Phone: +91 2462 229234; Fax: +91 2462 229236; website: <http://sggs.ac.in>; email id: director@sggs.ac.in

MECHANICAL ENGINEERING DEPARTMENT

REPORT on INDUSTRIAL VISIT

Industrial Visits – (Date: 13/10/2019), 74 students of second year have visited to three industries situated in Jalna. For proper exposure to various aspects of Mechanical Engineering, visits were planned to include small scale units as well as medium scale units. The various industries visited included casting industry **1. Bhagyalakshmi Rolling Mills Pvt. Ltd.**, **2. Rota Moulding Industry Vinodrai Pvt. Ltd.** and a air conditioner's and refrigerator's component manufacturing company **3. Approcopp Pvt. Ltd.**

Observations or Operations:

Vinodrai Pvt. Ltd:

We 74 students and 4 faculty/staff members visited this industry on 13/10/2019 at near about 10.30 am.





Objective:

1. To understand manufacturing process of plastic tank.
2. To understand the moulding process for making plastic tank, 3D printing
3. To understand the motive of research and development department in the industry.
4. To understand how to make mould and roto mould process.

Observations (or highlights of the industry):

1. Common tank shapes include cylindrical, square, rectangular, hexagonal and octagonal. The heads and bottoms of plastic tanks also differ, according to their function.
2. The rotational moulding process for manufacturing water storage tank consists of the Cycle time generally varies from 6 to 10 minutes. Cycle as low as 2 minutes can be achieved and extremely large part with heavy wall requires 15 minutes for each moulding cycle.
3. Loading the Raw material in the form of powder (35 to 40 mesh) or liquid state, is loaded into the mould or cavities and mould halves are mechanically locked together. Loading is

generally accomplished before the machine has completed its previous cycle and ready to accept the mould.

4. The prepared mould is next placed in a closed chamber where it is subjected to intense heat upto 400⁰C while rotating the mould bi-axially. Rotation is at low speed generally in the range of 1 – 40 rpm on the minor axis and 1 – 12 rmp on the major axis. A 4:1 & 2:1 rotation is common however both variable speeds and variable ratios are used for moulding unusual configuration.
5. The mould containing formed part is then transferred to a second enclosed chamber where it is subjected to a combination of water spray and forced air cooling while continuing to rotate biaxially. This causes the part to cure evenly and mould to reach handling temperature.
6. Unloading can be accomplished manually by simply opening the mould and physically removing the parts or automatically by using forced air to facilitate the ejection of the part.
7. This rota moulding machines are made by this industry by various welding, joining, CNC machining operations that were also observed.

Bhagyalakshmi rolling mills Pvt. Ltd:

We visited this industry on 13/10/2019 at 1.45 pm.

We have taken lunch about 1.00 pm (74 students and faculty plus support staff) at a one hotel which is freely sponsored by Bhagyalakshmi rolling mills Pvt. Ltd. Jalna.

We are very thankful on behalf of our institute to management, HR and administration of Bhagyalakshmi rolling mills Pvt. Ltd. Jalna.





Objective:

1. To understand the manufacturing process of steel billets using metal scrap.
2. To understand the hot rolling process over rod to produce rods of various dimensions.
3. To understand the continuous casting process.
4. To understand the various testing operations on structural steel manufactured.

Observations (or highlights of the industry):

1. Induction furnace is used for melting the metal scrap.
2. Steel is separated on the basis of grades, that are on the basis of composition present.
3. We saw the actual working hydraulic mechanism used to transfer the 22 ton of molten scrap into the ladle.
4. We saw the electromagnet mechanism used to transfer the steel scrap into the furnace.
5. The ladle is then taken to the fluxes adding zone where calculated amount of fluxes i.e. CaCO_3 were added to the molten scrap.
6. We understand the vacuum mechanism for complete mixing of fluxes into the molten steel scrap.
7. This pure molten steel is then poured in a continuous casting mould of standard dimensions and allowed to cool. A continuous hot rod is then cut with required standard length and then cooled.
8. These rods are then marked with some colour depending upon the properties/grade which are then passed to the hot rolling area where the rods of standard dimensions are converted into required dimensions, either rectangular or circular.
9. Firstly the rod from casting are heated and then passed through multiple stages of rolling operation which changes their cross section, dimensions.
10. At last we visited to the research and development department. The lab in charge taught us about what are main tests are carried out on finished products.

Approcopp Pvt. Ltd.:

We visited this industry on 13/10/2019 at 5 pm.



Objective:

1. To understand the manufacturing process of Copper tube Components, which is extensively used for all kinds of Air Conditioners, Freezers and Refrigerators.
2. To understand bending process.
3. To understand brazing process.
4. To understand fitting process.

Observations (or highlights of the industry):

1. They manufacturing a Series of Process Tube by our team of experts with latest machinery such as cutting edge technology.
2. They ensure of different tube sizes and different operation such as expansion, flaring, dimpling, spinning, etc.
3. They are using excellent quality raw alloys such as steel, copper etc
4. They manufacture cross over condenser S_c Bends & process tubes with special tool designs. The product range is from OD 4.76 mm- 12.7 mm.
5. They have special set up for brazing assembly. Brazing methods are processed and performed with special fixtures by only expert and skilled operators.
6. 'U'Bend Series, Process Tubes & Small Bending Tube Series, Manifold, Muffler, Dryer & Strainer, Brass Distributor Series, Copper Tube Fittings Series, Heat Exchanger Series, Copper Tube Bending Series, Brazed Assemblies Product Series. Big Copper Tube Bending Series, Brazed Assemblies Product Series Aluminum Tube Bending Series, Brass Tubes Bending Series.
7. They have own R&D department and Quality department.
8. They make all type of refrigerator tubing parts.

Industrial Visits by Faculty:

Following faculty of Mechanical Engineering Department have visited industries along with the students. The details are given below. **Discussions are also done with the industries to permit our students for internships/placement.**

Name of Faculty /staff	Industry visited
Mr. K.G.Rajmore	1. Vinodrai Pvt. Ltd.Jalna 2. Bhagyalakshmi rolling mills Pvt. Ltd. Jalna 3. Approcopp Pvt. Ltd.Jalna
Mr.P.U. Mane	1. Vinodrai Pvt. Ltd.Jalna 2. Bhagyalakshmi rolling mills Pvt. Ltd. Jalna 3. Approcopp Pvt. Ltd.Jalna
Mr. R.U. Kalyankar	1. Vinodrai Pvt. Ltd.Jalna 2. Bhagyalakshmi rolling mills Pvt. Ltd. Jalna 3. Approcopp Pvt. Ltd.Jalna
Miss. Kandharkar Dipali	1. Vinodrai Pvt. Ltd.Jalna 2. Bhagyalakshmi rolling mills Pvt. Ltd. Jalna 3. Approcopp Pvt. Ltd.Jalna

Head,
Department of Mechanical Engineering



Shri Guru Gobind Singhji Institute of Engineering and Technology

Vishnupuri, Nanded, M.S. - 431 606. (India)

DTE Code : 2020

Govt. Aided Autonomous Institute

No. SGGSI&T/MECH/HOD/IV/19-20/ 1008
Date: 30/09/2019

To,
Managing Director,
Vinodrai Engineers Pvt. Ltd,
Village Dawalwadi,
Jalna - 431203

Subject: Permission for industrial visit on 13th October 2019.

Dear Sir,

Warm Greetings,

It gives me an immense pleasure to introduce our Institute to you. Ours is an Autonomous Institute owned by Government of Maharashtra. The Institute offers 10 UG programs, 07 PG programs and also Ph.D. programs under SRTM University, Nanded. On successful completion of TEQIP-I and TEQIP-II phases, the institute is now granted with TEQIP-III phase as a mentor institute for other reputed institutes.

We are always proactive in having healthy interactions with industries for the betterment of student community, because we earnestly believe that students can't become complete engineers without industrial exposure.

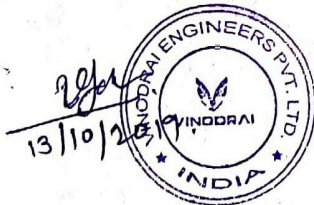
I solicit your support in this regards by permitting our second year mechanical engineering students to visit your esteemed organization.

We have planned to visit industries from Jalna and Aurangabad on 12th and 13th October 2019. We have received permission from few industries at Aurangabad on 12th October and now we are planning to visit industries at Jalna on 13th October.

I kindly request you to permit our students to visit your esteemed organization on 13th October, if the date is suitable to you. Number of students would be about 80 accompanied by 3 to 4 faculty members.

Anticipating your positive response, I remain with regards,

Thanking you,




Rajesh B. Parvekar
Mechanical Engineering (CAG) and
Head
Mechanical Engineering Department
S.G.G.S.I.E.&T., Nanded

E-Mail: director@sggs.ac.in

Website: www.sggs.ac.in

Telephone No.: Director (0) (02462) 229234

Fax No. (02462) 229236



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DTE Code : 2020

Govt. Aided Autonomous Institute

No. SGGSI&T/MECH/HOD/IV/19-20/ 1007
Date: 30/09/2019

To,
HR Manager,
Bhagyalaxmi Rolling Mill Pvt. Ltd (POLLAD),
Jalna - 431213

Subject: Permission for industrial visit on 13th October 2019.

Dear Sir,

Warm Greetings,

It gives me an immense pleasure to introduce our Institute to you. Ours is an Autonomous Institute owned by Government of Maharashtra. The Institute offers 10 UG programs, 07 PG programs and also Ph.D. programs under SRTM University, Nanded. On successful completion of TEQIP-I and TEQIP-II phases, the institute is now granted with TEQIP-III phase as a mentor institute for other reputed institutes.

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Thanking you,



Chajesh R. Harvekar
Mechanical Engineering (C.A.S.) and
Head
Mechanical Engineering Department
S.G.G.S.I.E. & T., Nanded

E-Mail: director@sggs.ac.in

Website: www.sggs.ac.in

Telephone No.: Director (0) (02462) 229234

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DTE Code : 2020

Govt. Aided Autonomous Institute

No. SGGSI&T/MECH/HOD/IV/19-20/ 009
Date: 30/09/2019

To,
Managing Director,
Approcopp Engineering Pvt. Ltd,
Industrial Area,
Jalna - 431203

Subject: Permission for industrial visit on 13th October 2019.

Dear Sir,
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Thanking you,



13/10/19


Rajesh P. Parvekar
Associate Professor (CAS) and
Head
Mechanical Engineering Department
S.G.G.S.I.E. & T., Nanded

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Website: www.sggs.ac.in

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