Sarbati Devi Women's College, Rajgangpur

Department of Chemistry Study Tour Report

Introduction:

On **24th February 2025**, we visited the **Dalmia Institute of Scientific and Industrial Research (DISIR)** located in **Jhagarpur of the brick manufacturing process**. At the factory, we observed how soil is systematically collected, mixed with water to form the required consistency, and then moulded into the shape of bricks before undergoing further processing.

Following students attended the study tour:

- Madhusmita Nanda
- Deepika Soreng
- Priyadarshini Biswal
- Quasain Fatima
- Anikita Sharma
- Priyanka Markey
- Anjali Minz
- Shubhasmita Puntia
- Josada Majhi

Bricks Testing:

During our visit, we observed that the factory employs **a variety of modern machines** to test the quality of bricks. These include:

- Cold pressing machines
- X-ray machines
- Vibration machines
- Compression machines
- Water absorption testing machines
- Firing kilns

Each of these machines plays a vital role in ensuring that the bricks produced meet the required **strength, durability, and quality standards**.

Manufacturing Process:

The brick manufacturing process begins with the **collection of soil**, followed by mixing it with water and chopping to remove impurities. The mixture is then fed into **moulding machines**, which shape the bricks with high precision.

Once moulded, the bricks are **fired in kilns**, which significantly increase their **strength and durability**. We observed that the firing kilns at the factory heat the bricks up to **1000°C**, resulting in the production of **high-quality, long-lasting bricks**.

Specialized Brick:

We were impressed to learn that the factory also produces a range of **specialized bricks**, including **silica bricks** and **magnesia (Mg) bricks**.

- **Silica bricks** are manufactured using high-quality silica sand and are well-known for their **strength and durability**.
- **Magnesia (Mg) bricks** are produced from a combination of **MgO and other minerals**, and are valued for their **eco-friendliness and thermal resistance**.

This diversification demonstrates the factory's commitment to producing both **conventional and advanced materials** to meet industrial needs.

Experience:

The factory visit proved to be a **highly enlightening experience**. We gained **valuable insights into the brick manufacturing process and its significance** in construction. We realized that while the workers' tasks are **physically demanding and technically challenging**, their dedicated efforts ensure the production of **superior quality bricks**.

We also had an interactive session with the **factory manager**, who shared detailed information about both the **manufacturing process** and the **quality testing methods** adopted by the factory.

Furthermore, we learned that the factory places strong emphasis on **training its workers extensively**, enabling them to perform their tasks **efficiently, safely, and with precision**.

Conclusion:

The study tour to **DISIR** factory was a **memorable learning experience** that combined **theoretical knowledge with practical exposure**. It enhanced our understanding of industrial chemistry applications and demonstrated the **importance of quality control, worker skills, and technological innovations** in modern manufacturing.