

An Internship Project Report on Quality Control in Cement Production at OCL, Rajgangpur

The internship project undertaken by the M.Sc. Chemistry students of Govt. College, Sundargarh, from 05.02.2019 to 18.02.2019, involved 12 students who participated in two batches. The project encompassed a comprehensive study of quality control processes in a leading cement production industry. The primary objective was to gain practical insights into the testing procedures for raw materials, intermediate products and finished products in the cement manufacturing process.

Cement is a vital component in the construction industry and ensuring its quality is paramount. The interns aimed to understand the various chemical and physical analyses carried out on raw materials, intermediate products and the final cement product. These analyses are crucial for maintaining product consistency and meeting industry standards.

Objectives:

- To comprehend the raw materials used in cement production.
- To learn about the chemical and physical testing methods for raw materials, intermediate products, and finished cement.
- To understand the significance of quality control in cement manufacturing.
- To analyze the impact of quality control on the final product's properties and performance.

Methodology: During the internship, the students were given hands-on training and exposure to the following aspects:

Raw Material Analysis: Understanding the chemical composition, mineralogy, and physical properties of raw materials such as limestone, clay, and gypsum.

Intermediate Product Analysis: Studying the chemical reactions during the clinkerization process, analyzing clinker composition, and evaluating its reactivity.

Finished Product Analysis: Conducting tests to assess cement quality, including setting time, compressive strength, fineness, and soundness.

Through the internship, the students made several key observations:

- The raw materials' quality significantly influences the final product's properties.
- Precise control of the clinkerization process is essential for achieving the desired cement composition.
- Rigorous testing ensures that the finished cement meets industry standards and customer expectations.

Conclusion:

The internship project provided invaluable practical knowledge to the MSc. Chemistry students regarding the quality control processes in a cement production industry. Understanding the testing methods for raw materials, intermediate products and finished cement highlighted the meticulous procedures involved in ensuring a reliable and superior-quality end product.

By gaining hands-on experience, the students not only enhanced their technical skills but also developed a profound appreciation for the critical role of chemistry in the construction industry. This exposure will undoubtedly serve as a foundation for their future careers in chemical analysis, quality control and related fields.

Acknowledgments:

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