



Implementation of Ensō-LIMS at- Torch Material Testing Laboratory (TMTL)

CASE STUDY

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1. Project Details

Torch Material Testing Laboratory (TMTL), a prominent facility in Qatar established in 2018, faced significant challenges with managing its testing processes for various building materials. Without a Laboratory Information Management System (LIMS), TMTL struggled with inefficient data management, slow testing workflows, and complicated reporting. To overcome these obstacles and enhance operational efficiency, TMTL initiated a process to procure a modern LIMS solution. The new system was intended to streamline workflows, improve data accuracy, ensure compliance with industry standards, and ultimately reduce operational costs.

2. Scope of Work

TMTL aimed to improve the operational efficiency of its laboratory by automating and streamlining workflows. The ENSOLIMS system was designed to manage the entire lifecycle of a sample, from induction into the laboratory to final reporting and archiving.

Key functionalities included:

- Sample storage and accessioning with unique identification numbers.
- Comprehensive tracking of samples through various testing stages.
- Maintaining a complete audit trail of sample information.

Key objective of LIMS for TMTL:

- Improve the management of materials, energy, and environmental resources.
- Enhance quality, productivity, and cost-effectiveness.
- Develop human resources competency and productivity.
- Support over 40 concurrent users.
- Improve quality control workflows in the laboratory.
- Innovate for durable infrastructure and affordable housing

3. Challenges

TMTL faced several challenges that necessitated the implementation of a new LIMS:

- Managing a high volume of samples daily across multiple projects.
- Processing substantial amounts of technical data from various locations.
- Significant effort was required to maintain workflows and generate necessary audit reports.
- Ensuring a complete Chain of Custody (CoC) for all samples, guaranteeing traceability.
- Difficulty in work assignment and tracking, leading to cost overruns.
- Manual data acquisition resulted in errors and inaccuracies in reports.
- Searching for information within the database was cumbersome.
- These challenges diverted focus from TMTL's core mission of research and analysis.

4. Solution

After a thorough assessment of TMTL's business processes, a web-based integrated LIMS solution was developed to encompass:

- **Invoice generation** - Automated the creation of invoices based on services or products sold, reducing manual effort and errors.
- **Real-time reporting** - Provided up-to-date insights into operations for better decision-making and monitoring.
- **Maintenance and calibration management** - Tracked equipment maintenance and calibration schedules to ensure compliance and minimize downtime.
- **Inventory management** - Monitored laboratory supplies and chemicals to optimize stock levels and procurement processes.
- **Secure access for remote branches via VPN** - Enabled secure, remote access for branches through a VPN, ensuring data safety and availability.
- **Customer data management** - Centralized customer information to improve relationship management and service delivery.
- **Quotation processing** - Streamlined the creation of accurate and timely customer quotations, improving sales efficiency.
- **Sample management** - Facilitated the tracking and handling of laboratory samples to ensure proper testing and compliance.
- **Task management** - Enabled the tracking and assignment of tasks, improving team coordination and workflow efficiency.
- **Test data processing** - Automated the processing and recording of test data, ensuring accuracy and efficient report generation.

5. Outcome Benefits

With the implementation of ENSOLIMS, Torch Material Testing Laboratory has experienced transformative benefits:

- TMTL operates with a fully configurable and scalable system that complies with QGOS and other relevant regulatory standards.
- Comprehensive sample inventory management and accurate records of test results have improved operational reliability.
- The lab has significantly reduced the manual effort involved in sample reception, tracking, and testing, enhancing accountability and security.
- Streamlined reporting processes allow TMTL to generate custom reports for clients and management efficiently.
- With the new system in place, TMTL can focus more on quality assurance and client services, ultimately leading to improved satisfaction and performance.



“We are extremely pleased with the work done by Enable IT Solutions Team, with the implementation of ENSOLIMS, our sample logging, analysis and results delivery to our clients are done in real time, thereby helping our clients to schedule production on time”

Laboratory Manager, TMTL