

## Laboratory Data Management System

*Comprehensive Data Management Solutions for the Cement Industry*

For over 25 years Process Solutions has been focused solely on providing answers to the cement industry. We have maintained a simple philosophy of proactively listening to our customers and acting upon what they tell us. With this philosophy in mind we created a highly effective cement quality data collection organization and correlation LIMS tool set in our cement Laboratory Data Management System (LDMS).

LDMS is a cement quality management tool that integrates the laboratory and plant process to quickly and effectively analyze and isolate process & quality issues.

With over 42 LDMS installations in the United States, Canada, Australia, and New Zealand, we are a worldwide leader in the provisioning of corporate LIMS systems for the cement industry.

### Why LDMS

A laboratory is judged on the quality, accuracy and timeliness of its data. There is an increasing emphasis on the presentation, trending, reporting and review of its data. LDMS assists your laboratory to succeed without the large expenditure of both capital and time often associated with other LIMS solutions.

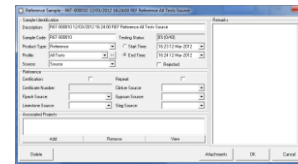
The strength of LDMS lies, not only with its intimate link to plant process data, but also its ability to link with a growing range of laboratory instruments. Electronic capture of information frees up laboratory staff to perform other tasks, and eliminates transcription errors.

### Efficiency & Flexibility

- ↪ Elimination of paper systems
- ↪ Electronic data capture through links to laboratory instruments and process control equipment.
- ↪ Simple and intuitive entry screens
- ↪ Tracking samples from creation to completion
- ↪ Provision of support tasks for automated publishing, statistical data monitoring, statistical trending, and automatic report generation

### Sample Creation / Sample Profile / Project Organization

The starting point of LDMS is the Sample Creation process; designed for the cement industry with ease of use and increased efficiency in mind:

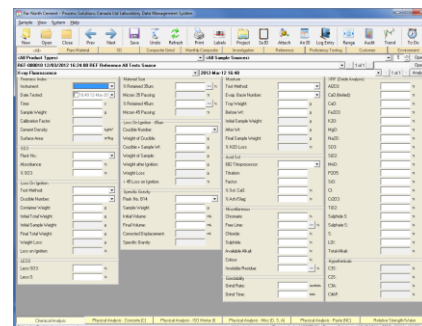


- ↪ Selection of a predefined profile containing a series of tests to perform on a sample
- ↪ Samples may be bar coded for ease of identification
- ↪ Dissimilar samples may be grouped into projects for specific reporting and analysis

### Data Entry

The data entry screen displays the tests defined during the Sample Creation phase. LDMS allows a user to easily navigate between samples and their assigned tests, providing a number of options to enter data into the system:

- ↪ Manual Entry by analysts
- ↪ Automated Import of Instrument Data
- ↪ Automated Import of Plant Process Data



The To Do List Scheduling feature of LDMS provides analysts with a list of scheduled tests ensuring all tests are performed within the standard window.

\* Process Solutions Canada Limited Windows applications are tested with current versions of Windows at time of release; however, we do not guarantee full functional compatibility with all Windows versions.



Cement Distribution Solutions

Quality Environmental Solutions

Plant Automation Services

Comprehensive Customer Care

### Result Validation and Publishing

A powerful feature of LDMS is the validation of test data against user defined ranges. The user defined ranges can include:

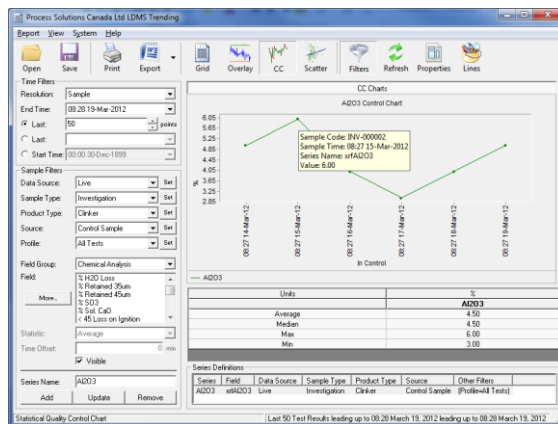
- ↖ Cement Standards (ASTM, ISO, NATA)
- ↖ Absolute Ranges
- ↖ Plant Ranges
- ↖ Product Type Ranges

If data falls outside the predefined ranges an authorized user will have to review these cases and decide if the data is acceptable and will be published or if the test needs to be repeated.

Process Solutions offers Auto Publishing which will automatically publish results which are within the defined ranges and will notify an authorized user when data falls outside the defined parameters.

### Process and Quality Data Correlation

Process & Quality Data Correlation allows the lab to get the story behind the sample. By utilizing LDMS and Trending, users can acquire detailed information of what was happening at the time a sample was taken, i.e. kiln temperature, mechanical issue, addition of admixtures. This can allow the plant to link process data with product quality results.



### Reporting and Analyzing Data

The reporting function of LDMS recognizes that each location has unique requirements and no two laboratories are alike, and therefore custom reports are created based on customer specifications.

By exporting data to familiar tools, such as Excel, to manipulate data, the need to learn a new complicated reporting package is reduced. Your staff already has the necessary expertise!

### Pocket LDMS

Pocket LDMS as an optional application that supports all LDMS functionality but is specifically designed to run on smaller portable devices. Extensively using barcode scanning technology Pocket LDMS allows for quick, accurate entry of data into a wireless device fully integrated with LDMS. Pocket CDTs supports range validation, audit logs, instrument calibration integration as well as Analyst Certification integration.



### For More Information

Process Solutions is dedicated to supplying data management systems to Cement and Concrete related industries. All of our laboratory solutions are tailored to your industry. Process Solutions' laboratory software maximizes the investment that a company already has in its lab and enhances the laboratory's contribution to overall profitability.

If you would like to discuss our cement quality data management solutions, please contact our Quality & Environmental Solutions Manager:

**Ian Harrison**

Telephone: (780) 452-2227 ext. 5267

E-mail: [ian.harrison@pscl.com](mailto:ian.harrison@pscl.com)

Visit our web site at [www.psc.com](http://www.psc.com)

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