

TMS conactive Laboratory (TMS CL)

The indispensable assistant for professional and modern concrete technologists

When designing concrete mixes, it is important to consider the product requirements of your customers, the development process and product quality, as well as the cost implications of production. Flexibility is required to be able to quickly change the mix according to differences in raw materials, changing environmental conditions and new technological insights. In this way, the continuous production of a highquality ready mix can be guaranteed. All these requirements are built into TMS conactive Laboratory in order to support the technologist in meeting quality procedures and standards.

General

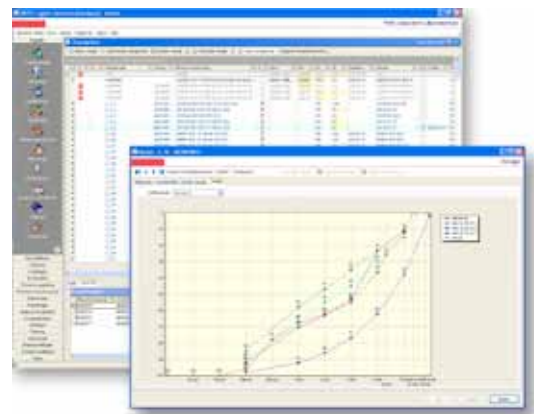
TMS CL was developed using the latest state of the art software architecture and technology and was designed in close cooperation with concrete technologists. The resulting product is flexible and very userfriendly to operate. The concrete technologist will benefit from the flexibility of system set up and concrete mix design and be able to keep track of quality control procedures. The system and data are easy to navigate through by means of convenient visualization, sorting and grouping options.

TMS CL in brief

- Raw material analysis and intake control
- Automatic mix calculation
- Mix optimization
- Sample analysis
- Stock management
- Norm statistics and reports
- Multi user, multi site, multi...
- Easy to use and smart look and feel

Raw material analysis

The concrete technologist inspects and analyses incoming raw materials. TMS CL supports easy registration of raw material supplies and input of related analyses. This data is not only important in determining the mix calculation, but it also ensures that raw materials can be tracked and traced. In addition to the ability to extensively record data linked to the raw



material such as, supplier, origin and transport, it is also possible to input various analyses, e.g. the sieve analysis of aggregates.

Automatic mix calculation

TMS CL can calculate the concrete mix based on the technologist's specific input criteria, as well as all applicable standards, and restrictions. The user can select the required raw materials for a mix and also specify the requirements that the mix must meet. In addition, norm standard specifications and restrictions are registered by default in TMS CL. Numerous and varying mix parameters can be entered: minimum / maximum fine, waterbinder ratio, maximum amount of waste water, pumpmix etc. It is even possible to define company specific calculation parameters. Once the mix calculation is completed, the system provides a complete mix overview of raw materials, indicating wet and dry weights. This list can also be used to transfer data to the batching system.

Should a raw material property change, such as the sand grading, TMS CL can recalculate a mix recipe instantly, using the new data. Raw materials can be exchanged without the need to redesign the mixes by applying the 'virtual material' functionality. Again TMS CL immediately recalculates the mixes automatically.

Mix optimization

A special, integrated mix optimization algorithm ensures that optimal concrete mixes are calculated based on product requirements and costs. In this way, TMS CL calculates the optimum cement content, sand / gravel ratio, filler and additives. By finetuning mixes in this way, processes can be streamlined and cost reductions made.

Sample analysis

Daily QC processes involve analyzing samples and recording the results. These results provide insight into the production process, which facilitates process improvements. The recording of analyses data and



results is made easy in TMS CL. It is even possible to define your own analyses methods and to enter new ones as they are introduced in the industry. Analyses can be linked to raw materials, (e.g. density), raw material supplies (e.g. aggregate grading), raw material silos (e.g. sand moisture) or test samples (e.g. compressive strength). Samples taken from the produced concrete mortar may require several different analyses, such as slump, flow, temperature, etc. In the TMS CL sample analysis module, this information can be recorded and linked with sample types using cubes and prisms.

Stock management

When TMS CL is linked to a batching system, actual weighed materials can be exchanged, ensuring that TMS CL keeps perfect track of your stock. During intake control of raw materials the received amount is input and TMS CL accurately calculates material consumption.

TMS conactive

Norm statistics and reports

The integrated information module contains a wide variety of reports, including reports required for norm standard statistics, such as the compressive strength and product statistics sheet and other reports such as laboratory operations, sample results and sieve analysis.

Multi user, Multi site, Multi...

The software is designed for both standalone use and multiple production sites in one server/ database environment, from a single user to multiple users. TMS CL also has the ability to centrally manage the mixes of companies with multiple production sites. The same mix can even be used across several production sites and TMS CL will also take into account all local raw material characteristics and restrictions. Furthermore, multiple standards can be recorded in the system so even your own company standards can be entered.

Benefits for your company

- Increase product quality and efficiency
- Quick and easy mix design
- Advanced QC monitoring system
- Cost reductions by using the mix optimizer

Other TMS CL functionality

- Convenient grouping, search and selection functionality
- TMS CL data can be exported to MS Excel
- TMS CL interfaces with order entry and/or batching systems