



Tram A/S

TramQA instruction manual

This manual contains important operation information about the TramQA system. We recommend that you carefully read the content of this material prior to the operation of our test machines. Please do not hesitate to contact us if you have any questions.

www.benttram.com

TramQA

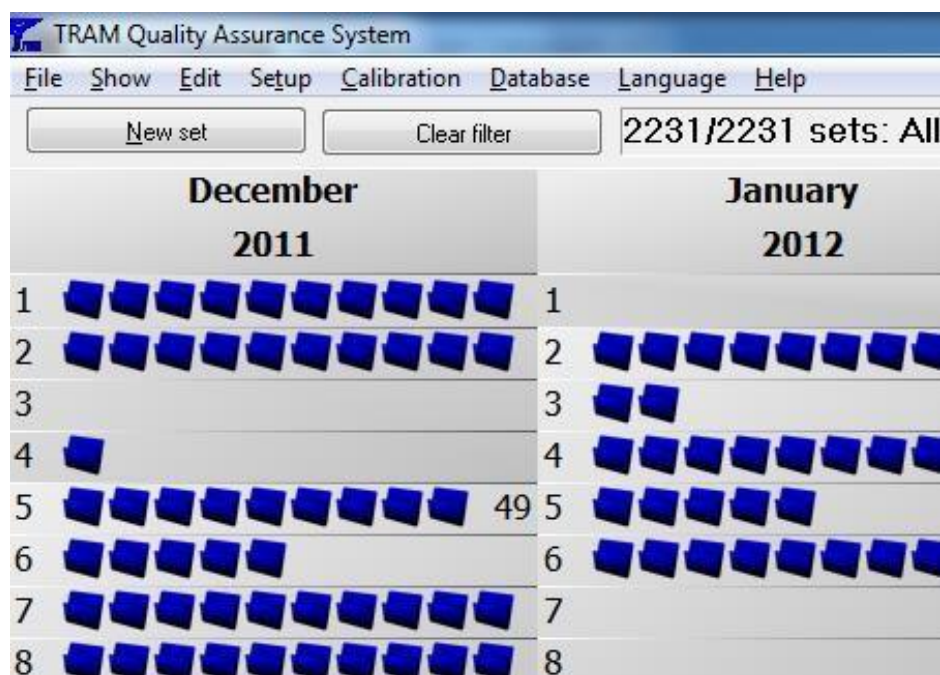
TramQA is a versatile testing package, especially designed for the Tram Testers equipment. Running on the MS-Windows platform, TramQA is extremely easy to use.

TramQA gives:

- ✓ automatic storage of data and direct overview of the archive in a calendar.
- ✓ automatic calculation of key-figures (makes it easy to control when outside of tolerance).
- ✓ easy to handle many types of tests and products.

The screens viewed by the ordinary user are kept to a minimum of 3 screens resulting in a quick learning process. The screens depicted here below comprise a calendar, a spreadsheet, and a curve.

The calendar



In the calendar, the sets of tests for the previous months are shown and here you can create new test sets.

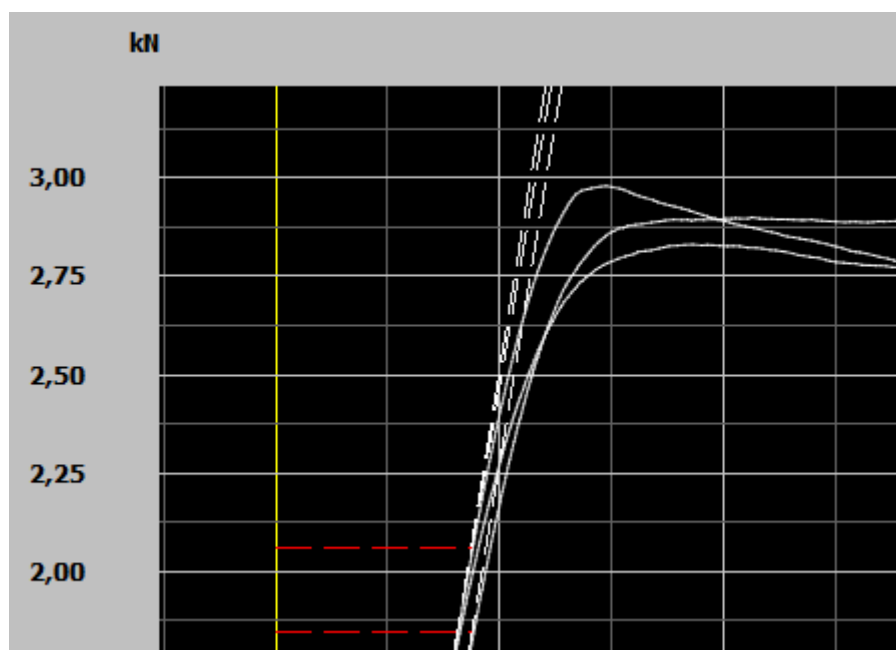
The spreadsheet

Compression		Method	EN 826
Production date	10-04-2012	Set creation timestamp	10-04-2012
Sample time	09-04-2012 10:50	Lamella dir	●
P-load	5,0 kPa	Compression	14 %
Sample length	240,0 mm	Sample width	300,0 mm
		Aged	●

at	Density kg/m ³	Deformation at P-load		σ_c kPa	σ_{10} kPa	σ_e kPa	
		mm	%				
13	66	1,0	0,7	*	39,14	25,56	2,
09	66	0,8	0,6	*	37,97	23,49	2,
71	62	0,9	0,6	*	36,94	28,57	2,

In the top part of the spreadsheet, shared data for the individual test is visible (e.g., date and product information). The tests are recorded in the table. The measurements, results, and calculations displayed will be set to meet your individual requirements.

The graph



In the graph, you get a visual image of the test data, enabling you to quickly recognize irregularities in your test products.

Features of TramQA

TramQA not only controls the testing of products, but the system also creates a dated logbook and displays results in a spreadsheet with specific formulas for the type of sample tested. Furthermore, it can generate extensive posttest analysis. It also contains an easy-to-use editor for programming your own test sequences for non-standard samples.

A special feature of TramQA is the facility to include conditions in the test sequence. Even the sample weight can be included in the condition. This feature makes it possible to do non-destructive proof testing as part of a strength-testing program, thus, saving material. The test sequence can also be set up for repetitive loading to a chosen condition.

PC-specification recommendations

- ✓ 2Ghz CPU
- ✓ 2Gb ram
- ✓ 80GB hard disk
- ✓ 100/1000Mbit Ethernet Microsoft Windows XP/Microsoft Windows
- ✓ 7 Optical mouse

Specifications

✓ Test history

Calendar marked with tested sets of samples. The calendar can be set to show only specific groups of tests using the filter property.

✓ Test results

Test results are shown in spreadsheets with calculations specified for each product or test type. Each type of product has its own layout for the spreadsheet, including set

up, formulas, and printing of data. The pattern is produced according to your design and in any language desired.

✓ **Testing of sample**

It is easy to set up test sequences involving speeds (load, deformation, etc.), load-cycling, various conditions, etc. During testing an on-line curve, e.g., load/deformation is shown - together with the actual stage in the test.

✓ **Posttest facilities**

Showing test curves together with tangents for E-modulus, max. load, tolerances, etc. Calculation on almost any parameter based on the curve. Spreadsheet of a set of tested samples where each line is a tested sample and calculated results. Both can be shown on the monitor, zoomed, and printed on paper or as a PDF-file.

✓ **Test sequence editor**

Mouse controlled editor for making special test sequence for controlling the machine. The programming language contains selections and iterations. The commands for making the machine move are extremely versatile and cover all possible needs.

✓ **Other facilities**

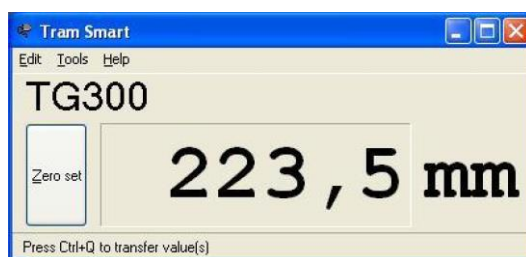
Calibration of the load cells and other transducers, fully software based. Manual control of the machine with the PC keyboard. Optional individual posttest analyses providing automatic data analysis. Export of test results (tables and load/deformation curves) in a format, which can be read by virtually any spreadsheet or word-processor. Optional import of weight to TramQA from a balance through the RS232 connection. Optional import/export module to databases (refer separate brochure).

Tram Smart

Tram Smart makes it easy and fast to perform and record many measurements. It is a tailor-made interface between a serial (RS232) measuring device and any Windows program (e.g., MS-Excel, Access). Depending on your choice of measuring device, you will be able to record various types of data. You can record dimensions and dimensional changes with the LG210 & TT20, weight and weight changes with a balance, thickness of special materials with the Laser Gauge TG300 etc. Tram Smart can handle several devices at the same time.

The results of tests performed with each measuring device are transferred and recorded directly into e.g., MS Excel. This way typing errors or lost data are completely avoided and an accurate storage of all test data is obtained with minimum user-involvement.

To transfer the measurements, just set up line/row jump for each measurement transfer. Push Ctrl+C (or set-up another keystroke that you prefer), and you are on your way.



- ✓ The name of the chosen measuring device. The result is shown. Push the button to set the zero position. Press Ctrl+Q to transfer the value to any open Windows program.
- ✓ Direct transport of data to MS Excel from certain devices with RS232 interface.
- ✓ One-button measurement.
- ✓ 100% reliable, no more mistyping.
- ✓ Set-up measuring line/row jump for each measurement transfer.
- ✓ Fully compatible with Windows XP/Vista.
- ✓ Available in YOUR language.
- ✓ Can be used even on a portable PC Requirements: * One available COM port.