

## Testing Software for Building Materials PROTEUS-MT

We offer flexible and powerful building materials testing software. Available are different software packages in accordance with the relevant international standards.

The packages offers fully automatic control of the test procedure and data collection of results including analysis and reporting.

Control and evaluation has never been as user-friendly as it is now when using these application packages.

These packages offers you both, rapid and productive testing but also specialized applications for advanced testing requirements.

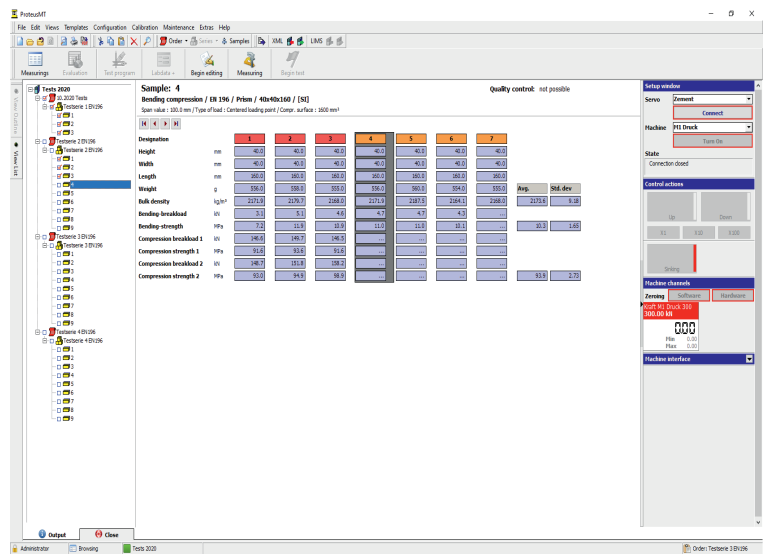
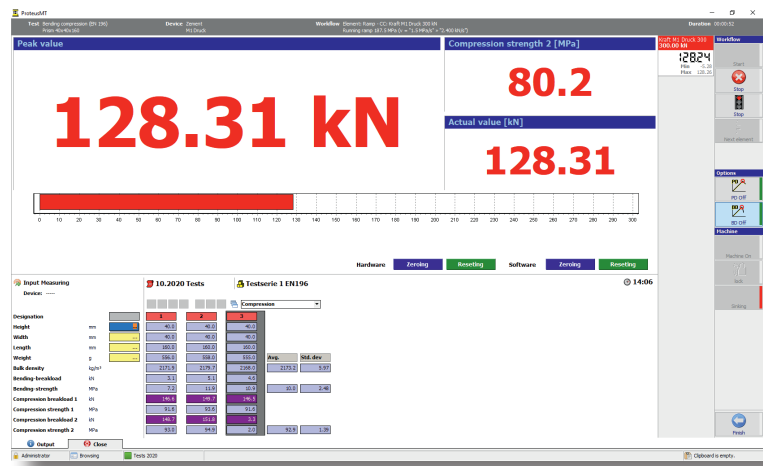


## Testing Software for Building Materials PROTEUS-MT

PROTEUS-MT offers many advantages in the field of building materials testing. Test control, data collection and evaluation and reporting capabilities have never been as user-friendly. PROTEUS-MT offers both, rapid and productive testing but also specialised applications for advanced testing.

### Features

- The high degree of flexibility brought by template generation and by the test editor allows configuring the program according to the exact specifications needed.
- PROTEUS-MT is not only used in cement and ready-mix plants, building material test laboratories, but also for R&D in technical universities.
- Standard test types according to current standards, can be expanded in a modular way.  
Option: test editor, to define custom-specific test sequences
- Supports all widely used sample bodies with no dimensional limitations.
- Standard tests and special tests defined and stored as test templates. (Parameters set automatically according to the Standard used.)
- Custom test templates can be scaled according to the number of measurements, of decimal places, etc.
- Keying in an order and testing as separate activities.
- Mixed tests within a single test order (e.g. Elasticity Modulus and Pressure Test, etc.)
- Log output (including charts) according to type of test and of sample.  
Option: form designer for custom adaptation of log.
- Structured Database (SQL) with additional custom data that can be defined at every level (Order-Series-Sample), Object-Oriented, Modular and Network-Ready
- Data export in ASCII-format.  
Option: additional processing in external software such as your Laboratory Information Management System.
- Supports measuring devices such as measuring station, scales and slide gauges.
- Password protection for sensitive functions (H/W configuration, templates, etc.)



## Testing Software for Building Materials PROTEUS-MT

### Templates Make Testing

#### Fast and Easy

Test templates contain all parameters needed for testing, such as Type of Sample, Type of Test, Test Standard, Quality Control, Graphical Representation and more. Several tests within a single order performed by assigning a test template to the series. Custom-made additional test templates can be defined in addition to the standard ones.

### Simple to Operate

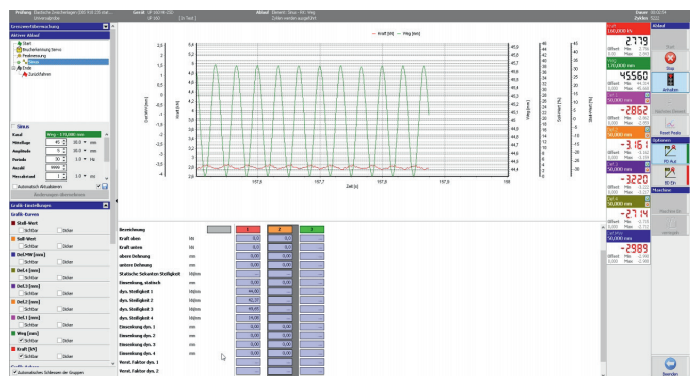
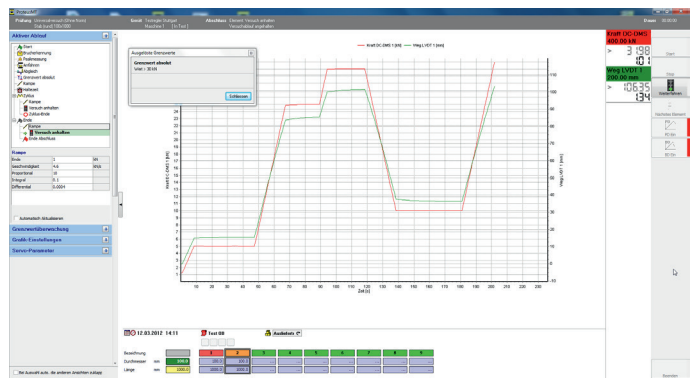
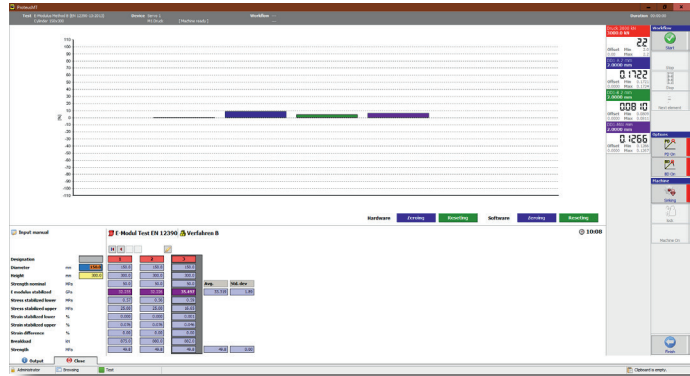
- All program functions can be selected with the mouse. The main functions may also be called with a combination of keys. Powerful object-specific functions called directly with the right mouse button to speed up operations: Copy, Paste, Clear
- Test classification in a relational database
- Database Structure: Databases can be structured according to any suitable folder hierarchy. Thus, tests can be sorted according to individual criteria, e.g. according to customers or suppliers, materials, type of test, time scales, test bodies. Each database contains any number of orders and series. A series contains at most 99 samples. Example: An order contains 3 series (Age 2, 7 and 28 days), each one with 3 samples.
- Data Export for Additional Processing: The data export function provides an interface with other external programs and stores the data in standard ASCII format. Option: Customer-specific ASCII formats.
- Logging: All series in an order can be printed out. The type of form is correctly handled by the Logging Manager, based on the test template. Option: Form Designer for custom-specific adaptation of forms.

### Standard Sample Bodies

Depending on the type of test and the standard, the following approved sample bodies are available:

- Cubes:  
10, 15, 20 cm, 4, 6 inch
- Cylinders:  
10 x 20, 12 x 36, 15 x 15, 15 x 30,  
16 x 32, 20 x 20, 20 x 40 cm
- Drilling Cores:  
50 x 50, 50 x 100, 80 x 80, 80 x 160 mm
- Prisms:  
40 x 40 x 160 mm
- Bars:  
10 x 15 x 70, 12 x 12 x 36,  
15 x 15 x 70, 20 x 20 x 90 cm
- Plates:  
60 x 60 x 10 cm

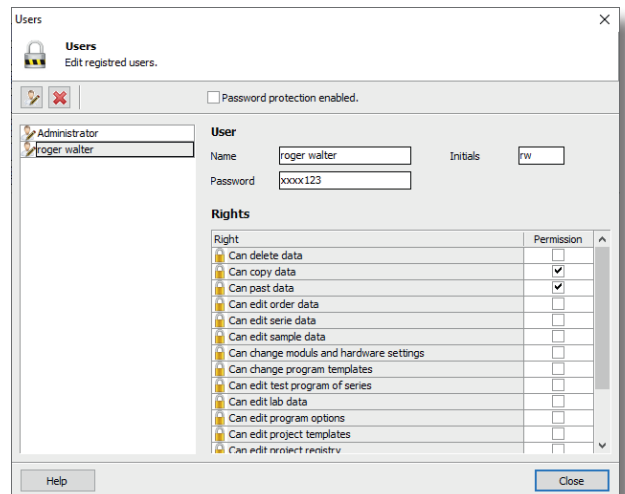
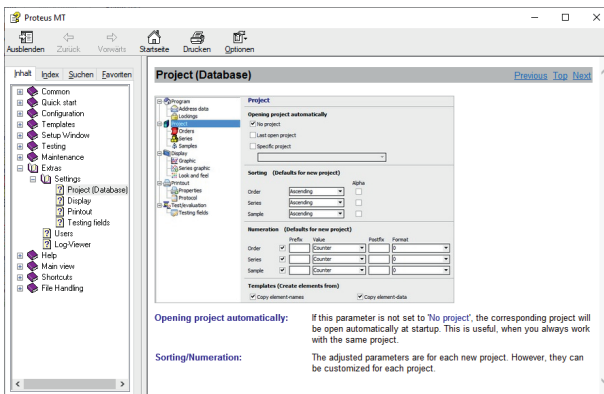
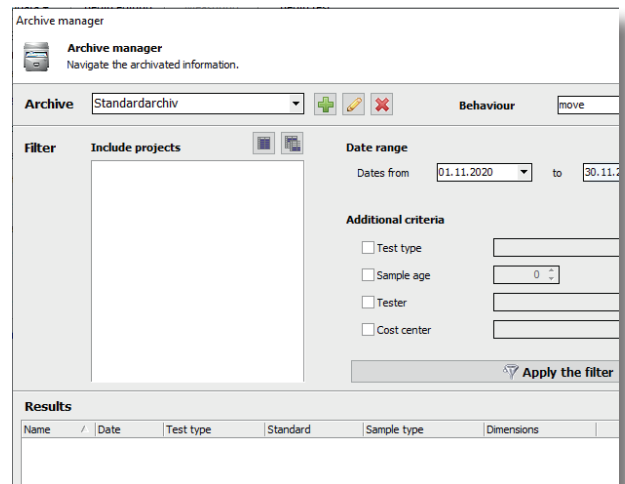
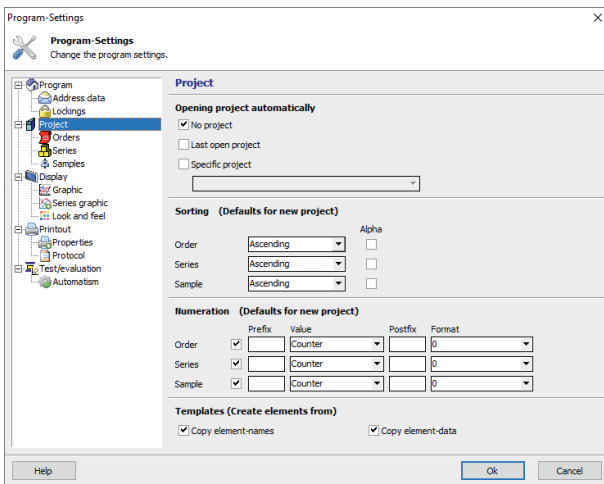
Dimensions to be selected without limitations.



## Testing Software for Building Materials PROTEUS-MT

### PROTEUS-MT Basis Module

- Data base contains a sample administration.
- Actual test and printer list with calendar make the daily work easier
- Connection of several controllers or measurements with up to 4 machines each
- is possible.
- For the combination bending-compression test 2 controllers are simultaneously in operation.
- Works with sliding gauge, balance, dial gauge and digital measuring station.
- Templates simplify the tests fundamentally. They are made with help of an assistant.
- Universal and special tests can be arranged on a graphically surface.
- Automated routine tests are easily created
- Password protection for the laboratory head for templates and hardware adjustments
- Standard export of the results in the ASCII-format for further processing in other programs
- Standard protocols for all tests, optional with or without graphic.
- Number of digits and rounding of the results can be indicated in the templates.
- Laboratory data base for further data fields in the order or series with choice of data, text and numeric fields with description and sorting
- Program for the calibration of the machine with DIGICON 4000



## Cement and Mortar Testing

For the automatic determination of the flexural strength and compression strength of cement and mortar samples.

- The testing in series allows calculation of mean and standard deviation
- Graphical analysis of force, deformation and deflection
- Sample administration with acquisition at time of delivery / production and testing of samples with date according test list
- Deformation control allows closed loop tests with force maximum
- Inputs of values from electronic sliding gauge and balance
- Simultaneous bending and compression testing with 2 machines controlled

| Bending and Compression Tests |   |
|-------------------------------|---|
| Standards                     | EN 196                                  |
| Samples                       | prisms, cubes, cylinders                |
| Determination                 | flexural strength, compressive strength |
| Calculations                  | density                                 |

The screenshot displays the software interface for testing cement and mortar samples. It is divided into several functional areas:

- Test Program Configuration:** Shows test parameters for "Bending compression, simultaneous EN 196 Prism 40x40x160". Dimensions are set to Height: 40.00 mm, Width: 40.00 mm, and Length: 160.00 mm.
- Real-time Data Display:** Two panels show force and strength for samples M1 10kN and M2 100kN. Both display "0.000 kN" for Actual value and "0.00" for Strength [N/mm²].
- Measurement Window:** A table displays test results for Order: BL852, Series designation: 852\_01 01.
 

| Parameter                   | Value  | Av.    | Std. Dev. |
|-----------------------------|--------|--------|-----------|
| Designation                 |        |        |           |
| Height                      | 40.0   |        |           |
| Width                       | 40.0   |        |           |
| Length                      | 160.0  |        |           |
| Weight                      | 300.0  |        |           |
| Bulk density                | 1171.9 | 1171.9 |           |
| Ausschalgewicht             | 300.0  |        |           |
| Bending breaking load       | 0.8    |        |           |
| Bending strength            | 1.4    | 1.4    |           |
| Compression breaking load 1 | 39.1   |        |           |
| Compression strength 1      | 24.4   |        |           |
| Compression breaking load 2 | 39.1   |        |           |
| Compression strength 2      | 24.4   | 24.4   |           |
- Control Panel:** Includes a test sequence list (Beginning of test, Break identification, Peak, Start, End test) and control parameters: Control: Kraft, End: 10.000 kN, Speed: 0.05000 kN/s, Measur. dist.: 100 ms.