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TENSILE TESTER HORIZONTAL

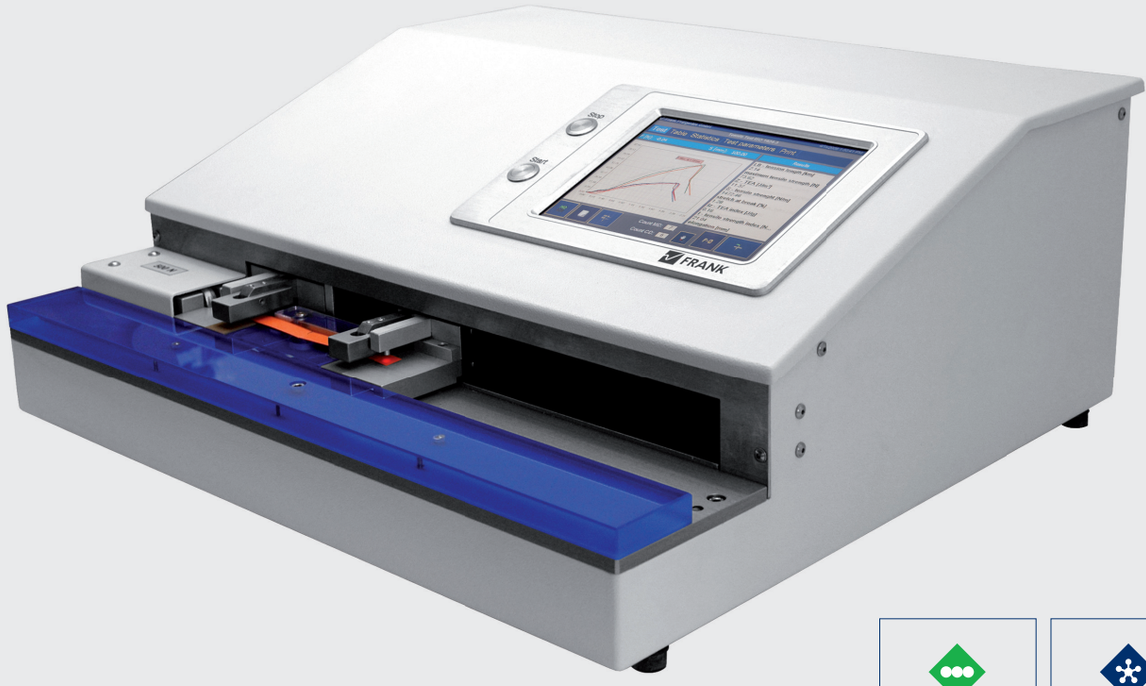
For:

✓ PAPER

✓ BOARD

✓ TISSUE

For the determination of tensile strength, elongation, tensile stiffness, breaking length and tensile energy absorption of paper, board and tissue in dry or wet condition.



ModularLine-version available

✓ ProbeNet-capable

MOST IMPORTANT BENEFITS

- ✓ Plug and Play
- ✓ Automatic ratio calculation
- ✓ Automatic sample identification
- ✓ Pneumatic sample clamping
- ✓ Graphs showing the measuring process

PRODUCT DESCRIPTION

FRANK-PTI's horizontal tensile tester is one of the leading products of its kind. Its ergonomic design with touchscreen simplifies operation and reduces the testing time. The robust and reinforced construction helps to avoid falsifying influences like vibrations etc. This makes the results reliable even if measurements are repeated or done simultaneously. These optional features are available: tub for strength measurements with wet samples and a calibration device for performing self-tests of the load cell.

TEST DESCRIPTION

The measurement starts immediately because of the preinstalled measurement programmes. Select a test method and insert the sample support into the automatic sample clamps. Now the tester checks all the various sample parameters and determines whether the sample is an MD or CD strip. The tester identifies the test strip automatically when the sample is inserted. It starts the tensile test and completes it when the sample breaks. The sample clamps return to their initial position. The measurement results are displayed on the touchscreen. There is this practical feature: If you did various tests in MD and CD, you can compare the results in a statistics and display the ratios. It is possible to delete single measurements from the statistics.

TECHNICAL DATA

DEVICE/INSTRUMENT

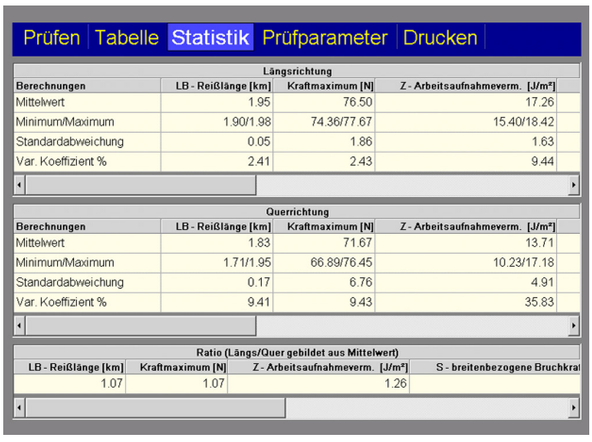
- Easy operation via the integrated touch screen
- 5 preset testing programs and applicable sample supports
- Test strips distingishable into test series (e.g. MD/CD)
- Automatic ratio calulation
- Pneumatic sample clamps and automatic sample detection
- Additional start button - for transparent samples
- Sample width: 15, 25 and 50 mm
- Sample supports prevents sagging of the sample
- Maximum sample stroke: 300 mm
- Test speed adjustable between 1 and 300 mm/min
- Available force sensors: 50 to 1,500 N
- Automatic clamp return after test
- FRANK-PTI standard-ports *(see page 6)*
- Compatible with ProbeNet *(see pages 84 – 87)*
- Also as ModularLine unit available
- Optional available:
  - Wet tensile test
  - Calibration tool *(see page 7)*

INSTALLATION REQUIREMENTS

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	4 – 6 bar

APPLICABLE STANDARDS

- DIN ISO 1924-3
- ISO 1924-2
- EN 12625-4 | -5
- TAPPI T494 om-96



Längsrichtung

Berechnungen	LB - Reißlänge [km]	Kraftmaximum [N]	Z - Arbeitsaufnahmeverm. [J/m²]
Mittelwert	1.95	76.50	17.26
Minimum/Maximum	1.90/1.98	74.36/77.67	15.40/18.42
Standardabweichung	0.05	1.86	1.63
Var. Koeffizient %	2.41	2.43	9.44

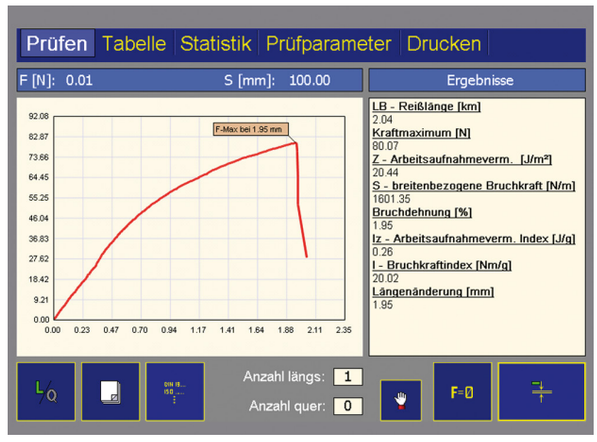
Querrichtung

Berechnungen	LB - Reißlänge [km]	Kraftmaximum [N]	Z - Arbeitsaufnahmeverm. [J/m²]
Mittelwert	1.83	71.67	13.71
Minimum/Maximum	1.71/1.95	66.89/76.45	10.23/17.18
Standardabweichung	0.17	6.76	4.91
Var. Koeffizient %	9.41	9.43	35.83

Ratio (Längs/Quer gebildet aus Mittelwert)

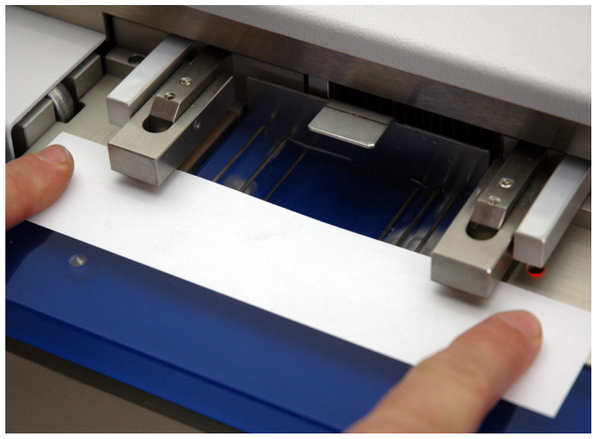
LB - Reißlänge [km]	Kraftmaximum [N]	Z - Arbeitsaufnahmeverm. [J/m²]	S - breitenbezogene Bruchkra
1.07	1.07	1.26	

Statistic menue with MD and CD values as well as ratio



Display of curves and values

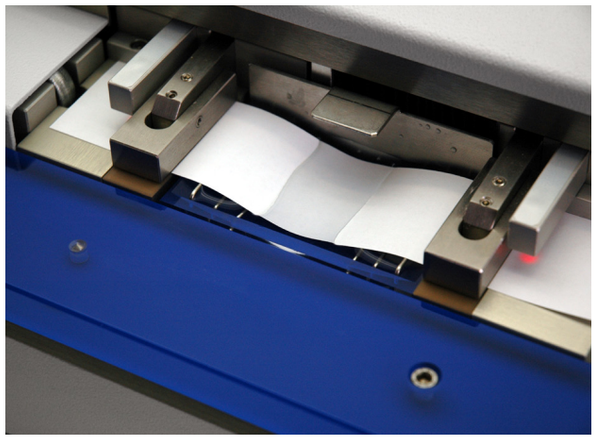
WET TENSILE TEST



The sample may not be touched on testing area

SAMPLE PREPARATION

For the wet tensile test acc. to DIN EN ISO 12625-5 samples with a width of 50 mm ± 0.5 mm and longer than 15 cm are used, to enable detection by the sample sensor. It is important to ensure that the cut edges are undamaged, straight, smooth and parallel. The test strips are created using the double blade sample cutter. To guarantee error-free test results, the sample should only be touched outside the test area.



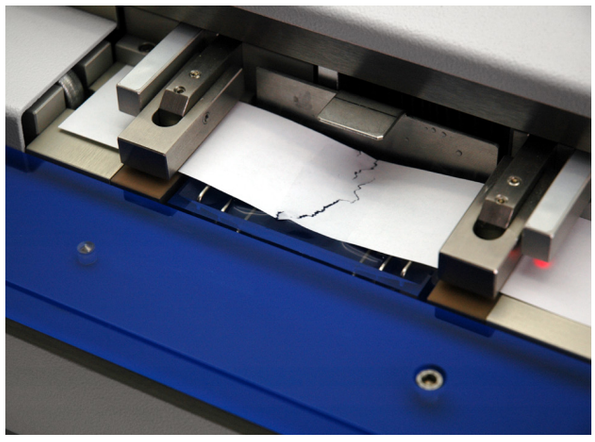
The predetermined breaking point sinks into the water

TEST DESCRIPTION

The program for wet tensile testing is selected from the touch screen and the corresponding parameters are automatically set. Before the test begins, the immersion container for the wet tensile test is filled with water to the lowest wire holder and placed between the test clamps. Then the test strip is placed in the test area. The sensors detect the sample, the clamps close, and the test begins automatically. The test clamps move towards each other and the test strip sinks into the immersion container, where the predetermined breaking point sinks into the water. It is held there for 15 seconds before the test clamps move apart again. This lifts the sample out of the water, and stretches it till it breaks across the entire width of the strip.

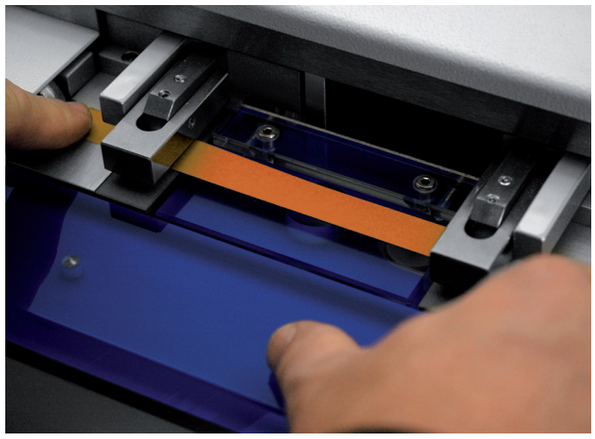
The test clamps move back to the start position and release the sample. The test results are displayed on the touch screen, with the individual measurements displayed numerically and additionally presented as a curve in real-time. The test can be carried out with further test strips, and the test results are recorded.

If a comparison of two test series (e.g. MD and CD) is desired, the tensile tester offers the option of selecting the test strips of one of the two test series, and the unit automatically calculates the relationship of individual results.



The sample is lifted out of the water and streched till it breaks

DRY TENSILE TEST

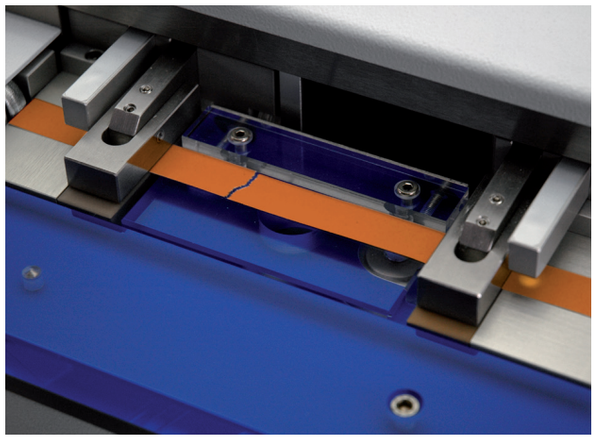


A sample with a width of 15 mm is placed between the test clamps

TEST DESCRIPTION

For the dry tensile test acc. to DIN ISO 1924-3, samples with a width of 15 mm ± 0.1 mm and longer than 15 cm are used. It is important to ensure that the long edges of the test strip are straight and do not deviate from the parallel by more than ± 0.1 mm. This requirement can be satisfied by creating the test strips with the strip punch or strip cutters.

The program for dry tensile testing is selected from the touch screen and the corresponding parameters are automatically set. The test strip is placed in the test area. It is important to ensure the sample is only touched outside the test area, to guarantee error-free test results.



The sample is stretched till it breaks

On insertion, the sensors detect the sample, clamp it securely and the test begins automatically. The test clamps move apart and stretch the test strip to such an extent that it breaks. Then the test clamps move back to the start position and release the sample. At the same time the individual measurements are displayed numerically and additionally presented as a curve in real time. The test can be carried out with further test strips, and the test results are recorded.

If a comparison of two test series (e.g. MD and CD) is desired, the tensile tester offers the option of selecting the test strips of one of the two test series, and the unit automatically calculates the relationship of individual results.

Device with attached calibration tool

OPTIONAL: CALIBRATION TOOL

To guarantee accurate measurements it is recommended that the load cell is checked regularly. The optional calibration tool is used for this task.

The calibration tool is placed on the test clamp, and weights are added. The force values displayed on the touch screen are then compared with the values on the weights. It is simple, following this procedure, to determine if the load cell is providing accurate results.