

TENSILE TESTER

horizontal

For determination of tensile strength, fracture toughness, elongation, tensile stiffness, breaking length, and tensile energy absorption of paper, board, and tissue in dry or wet state

- For 15, 25, or 50 mm wide samples
- Preset testing programs: ISO 1924-2 and -3 for samples of 100 mm length, and inv. ISO 1924-1 for samples of 180 mm length
- Pneumatic sample clamp with flat faced jaws (according to standard)
- Automatic sample detection (for transparent samples, the test can be started by pushing a separate start button)
- Automatic return of clamp after test is complete.
- Force sensors: 100, 200, or 500 N
- Wet tensile test device is included as standard.
- Easy sample feed due to open construction
- MD and CD measurements, ratio calculation
- Connection for printer (HP Laserjet compatible)
- No sagging of samples due to sample support



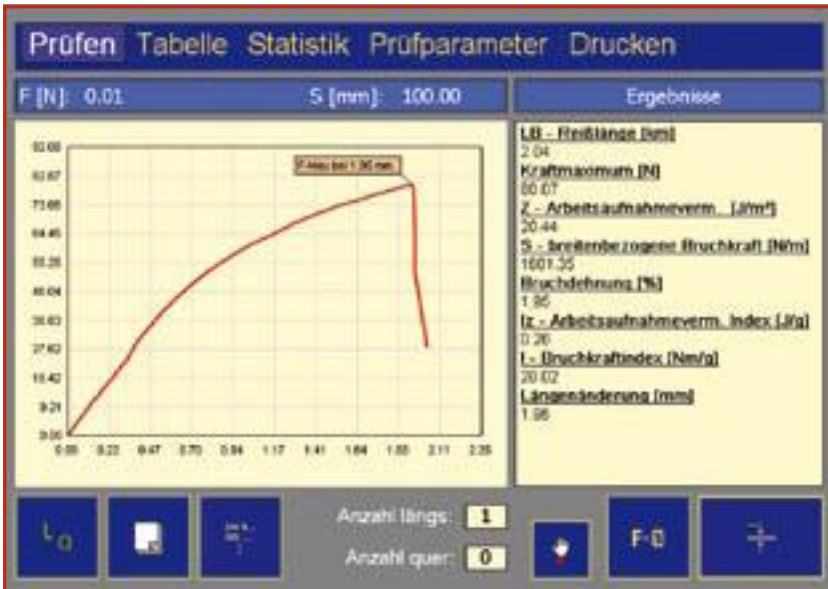
Applicable standards:

ISO 1924/1 +2+3
Scan P 38, P 67
TAPPI T 494, T 456
PAPTAC D 34
EN 12625-4 & 5
DIN 53112/1, DIN EN ISO 12625-4 and 5
APPITA/AS 1301.448



Touch Screen, Main Menu

The operator chooses the desired test program from the main menu. Parameters are set according to the standard. Subsequently, the Tensile Tester switches the test mode. The test procedure starts automatically after placing the sample. Transparent materials might not activate the automatic detection in which case start can be initiated by a separate button.



Display of graphs

The left part of the display shows a trend curve. A caption marks the maximum force. The chosen characteristics are shown on the right part of the display.

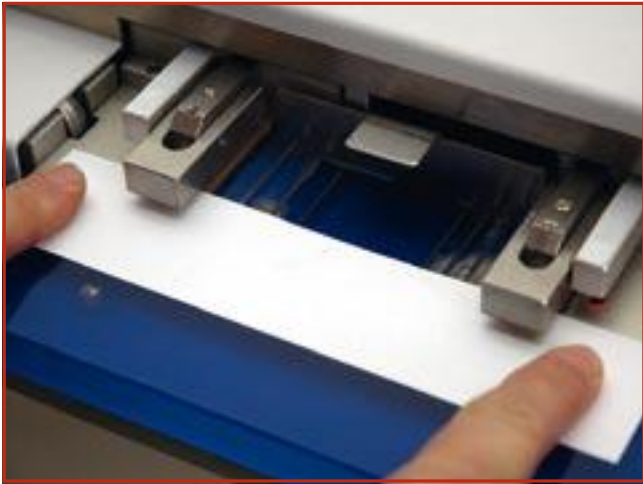
Längsrichtung			
Berechnungen	LB - Reißlänge [km]	Kraftmaximum [N]	Z - Arbeitsaufnahmeverm. [J/m ²]
Mittelwert	1.95	76.50	17.26
Minimum/Maximum	1.90/1.98	74.36/77.67	15.40/18.42
Standardabweichung	0.05	1.86	1.63
Var. Koeffizient %	2.41	2.43	9.44

Querrichtung			
Berechnungen	LB - Reißlänge [km]	Kraftmaximum [N]	Z - Arbeitsaufnahmeverm. [J/m ²]
Mittelwert	1.83	71.67	13.71
Minimum/Maximum	1.71/1.95	66.09/76.45	10.25/17.18
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/m ²]	S - breitenbezogene Bruchkraft
1.07	1.07	1.26	

Statistic Menu with Display of MD/CD Ratio

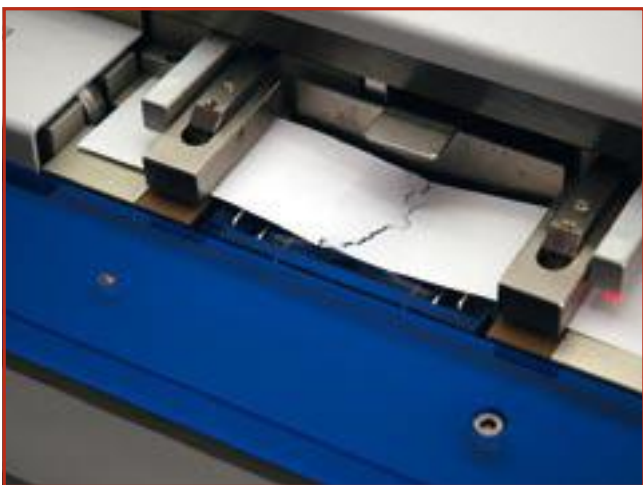
The operator may choose the values to be shown.



50 mm Sample



Clamping and Watering



Sample is taken out of water and tested

Description

The horizontal Tensile Tester, model FRANK-PTI, has been developed especially for the paper industry. Designed to provide ease of operation and precision measurement. Accurate sample clamping method, and a sample support avoids sample sagging. Colour touchscreen displays values and graphs. Test methods are selectable from the main menu. No further settings are required. The instrument measures according to relevant standards. Changing from MD to CD simply by one keystroke gives ratio calculations. A standard printer can be connected and prints single values as well as graphs..

Test description

Test program selection (e.g. wet tensile test according to EN 12625-5) is at the touch of a button and automatically configures the correct test program and applicable parameters. The specimen is given an identification number. Before wet testing, check and if necessary fill the water tank. The operator inserts the sample (in this case 50 mm). The clamps detect the sample and close. They move towards each other and immerse the sample (depending on the preset time, this will be approx. 15 sec). After immersion time, the tensile process starts. The sample is tensioned until it breaks.

Other programs (e.g. EN 12625-4, or ISO 1924-1, -2, or -3) immediately tension the sample.

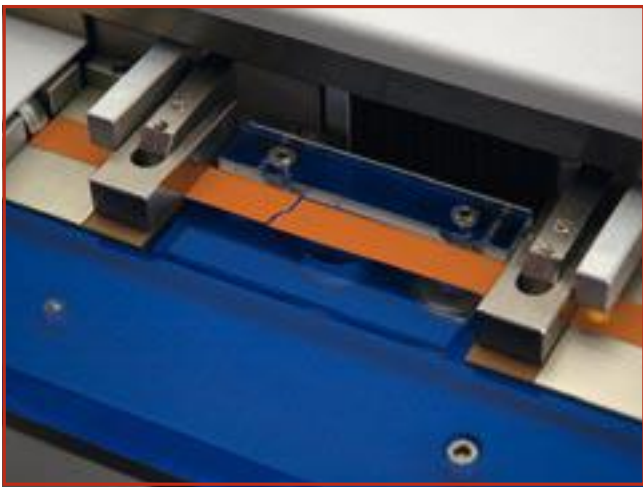
The touchscreen displays graphs and single values. The clamps return to their initial position and release the sample ready for a new sample to be inserted and tested. By changing from MD to CD, values are allocated and stored separately. The single curves can be viewed on the touchscreen. The statistics display gives the single values as well as the MD/CD ratio. Values and graphs can be printed on a standard printer.

The clamps have been specially designed for paper testing. The clamps correspond exactly to the appropriate standards. Practically no clamp breaks occur.

The FRANK-PTI Tensile Tester also allows measurement according to the withdrawn standard 1924-1. Some clients had tested with 180 mm samples for decades. These samples can be still tested on our horizontal tensile tester.



15 mm Strip



Sample tested



With calibration-tool

Specifications

- Wet and dry tensile tests are possible
- Suitable for paper, board, and tissue
- Pneumatic sample clamping – clamping force adjustable from 100-7,000 N
- Automatic sample detection
- Test can be started manually if necessary
- Touchscreen operation
- Sample widths: 15 / 25 / 25.4 / 50 mm
- Standard sample lengths: 100, or 180 mm
- Maximum sample stroke: 300 mm
- Test speed adjustable from 1-200 mm
- Quick clamp return after sample break
- Accuracy: max. 1 % in the range of 1-100 % of the nominal load
- Display of results according to the selected standard; statistic functions and MD/CD
- Display of: tensile strength (kN/m), breaking length (km), tensile index (Nm/g), test time (s), breaking elongation (mm), relative elongation (%), breaking force (N), tensile energy absorption (TEA – J/qm), TEA index (mJ/g), tensile rigidity, tensile index, Young's modulus
- RS 232 interface for result transmission
- Printer interface (parallel) for HP Laserjet compatible printer
- Compatible to MiniStat and PaperLIMS

Electricity	110–230 V, 50–60 Hz
Water supply	None
Compressed air	400–600 kPa
Dimensions (WxDxH)	57x52x24 cm
Net weight	38 kg
Gross weight	44 kg

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