TENSILE TESTER horizontal

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.

- Fife preset testing programs and applicable sample supports
- Test strips distingishable into test series (e.g. MD/CD)
- Pneumatic sample clamps and automatic sample detection
- Sample support prevents sagging of the sample
- Available force sensors from 50 to 1.500 N
- **FRANK-PTI** standard-ports

Applicable standards

- EN ISO 1924-1 | -2 | -3
- EN 12625-4 | -5
- TAPPI T494 om-96
- SCAN P38
- CPPA D34

Selection of test method via touch screen

Display of curves and values

Statistic menue with MD and CD values as well as ratio

Device description

The horizontal tensile tester was developed specially for the paper industry and its ease of use and high levels of precision are outstanding. The open design allows the samples to be easily placed in the grips, which are equipped with an automatic sample detector. Depending on the type of test, an exchangeable sample support is placed between the test clamps, which prevents sagging of the sample. The unit is operated via an integrated touch screen, from which the different test methods can be selected, and which also displays values and curves. The horizontal tensile tester is equipped with the standard **FRANK-PTI** connection *(see page 12)*.

Test description

The desired test method is selected from preset standard test methods or test programs previously defined by the operator. The sample clamps move to the selected start position and the corresponding sample support is inserted. Before the test is started, various test parameters are loaded, and then whether the test strip is MD or CD is entered. The strip is inserted and detected by the integrated sensor, which automatically starts the test. As soon as the sample breaks, the device stops and the test clamps return to their start position. The touch screen displays the test results as numbers, and also graphically. If more than one test in MD and CD is carried out, their statistics can be compared and their ratio displayed.

Specifications

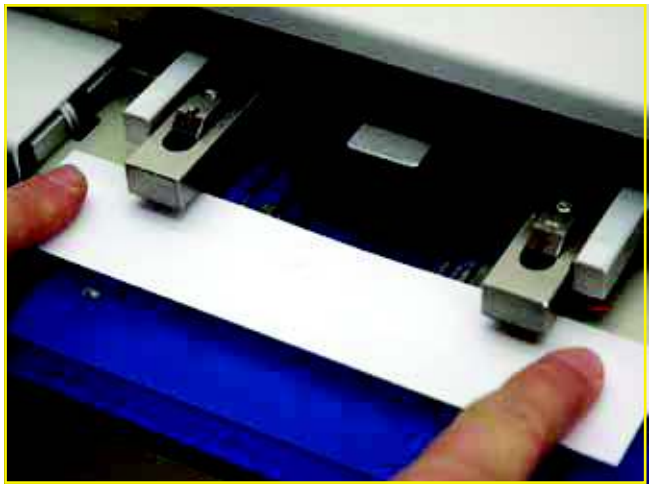
✓ Easy operation via the integrated touch screen
✓ 5 preset testing programs and applicable sample supports
✓ Test strips distingishable into test series (e.g. MD/CD)
✓ Automatic ratio calulation
✓ Pneumatic sample clamps and automatic sample detection
✓ Additional start button - for transparent samples
✓ 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 12)*
✓ Compatible with ProbeNet *(see pages 254 – 257)*
✓ Also as PTA-Line unit available *(see pages 172 – 197)*

✓ *Optional available:*
- Wet tensile test
- Calibration tool *(see page 77)*

Technical data

Electrical connection	110 – 230 V / 50 – 60 Hz
Water connection	No
Compressed air	400 – 600 kPa

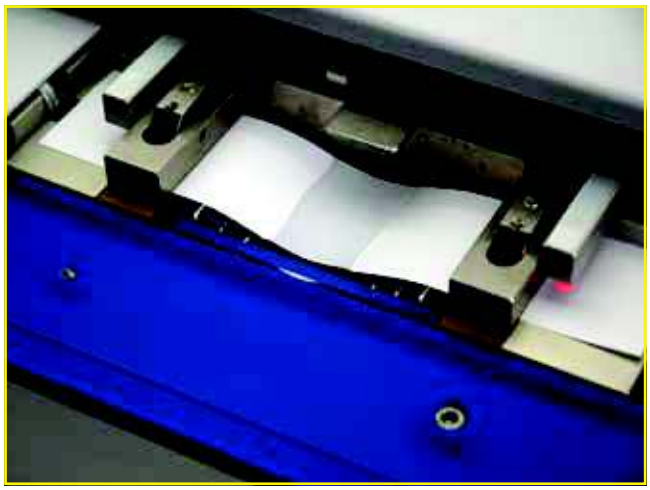
WET TENSILE TEST DIN EN ISO 12625-5



The sample may not be touched on testing area

Sample preparation

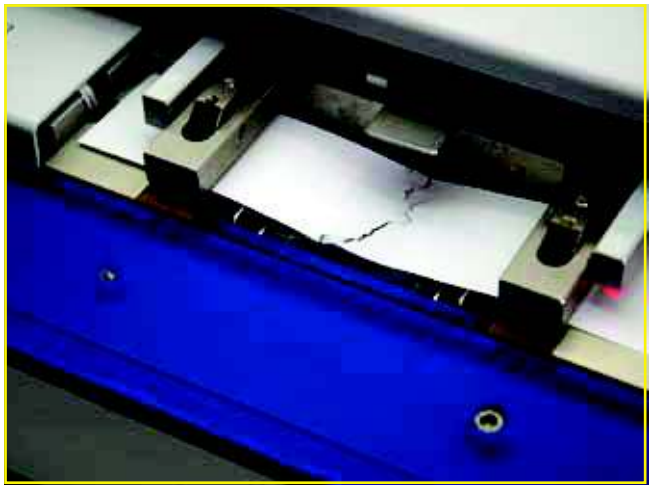
For the wet tensile test acc. to DIN EN ISO 12625-5 samples with a width of 50 mm ± 0.5 mm and longer than 15 cm are used, to enable detection by the sample sensor. It is important to ensure that the cut edges are undamaged, straight, smooth and parallel. The test strips are created using the double blade sample cutter *(see page 206)*. 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.

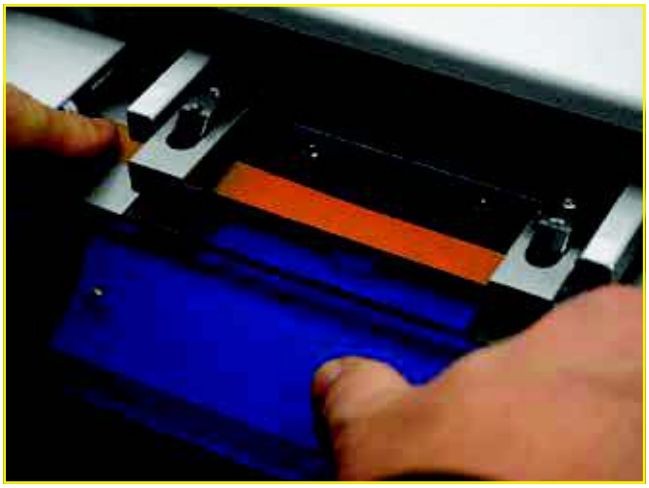


The sample is lifted out of the water and streched till it breaks

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.

DRY TENSILE TEST ISO 1924-3

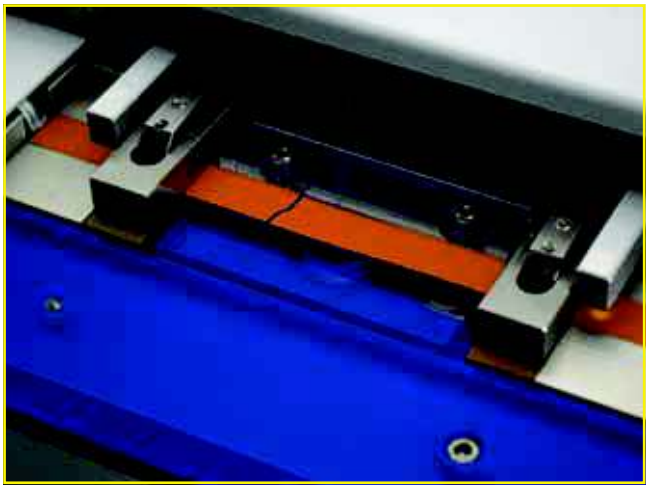


A sample with a width of 15 mm is placed between the test clamps

Test description

For the dry tensile test acc. to 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 *(see pages 205 – 207)*.

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.