

Bending Resistance Tester

For the determination of bending resistance and stiffness of paper and paperboard

Applicable Standards

ISO 2493, SCAN P29, DIN 53121, BS 3748, TAPPI T556, NFQ 03 – 048, IS 3748

Test description

Bending resistance in paper and board is a complex property depending upon the network characteristics of the sheets as well as the fundamental fibre properties to which it relates. It varies with the type of paper, the fibres used, the making process and the bulk and grammage of finished sheet. The two main criteria which govern stiffness are fibre dimensions and bulk. Rigidity has been found to be linearly proportional to the square root of thickness for a given grammage. Since the bulk density of a sheet is closely related to the degree of bonding and fibre strength, a change in any of the fundamental fibre properties will affect bending resistance.

After configuring test conditions, the test can start immediately. By pressing the “Start”, button the sample is moved automatically. The sample-holder now moves to the preselected angle-position and the curve with the determined values are indicated on the large touch screen. The test will be started automatically as soon the load-cell is touching the sample (pre-load selectable).

With the holding function, a holding time can be selected and then a second measurement can be taken. The holding times is very useful for testing label-paper, when the bending resistance on wet samples should be tested. After the test has been done the sample holder returns to its starting position and the sample can be taken out. By means of the statistic function, the statistic values can be read (maximum, minimum, average, standard, deviation, ratio MC/CD,..) on the graphic display



Characteristics



Measurement values

Karl Schröder KG
Mierendorffstrasse 28
D-69469 Weinheim

Web: www.schroeder-prueftechnik.de
@: info@schroeder-prueftechnik.de
T: +49 6201 9068-0
F: +49 6201 9068-29

- Universal equipment for paper applications. Measurement of paper and paperboard.
- Manual sample clamping or Pneumatic sample Clamping. Must be specified in the order.
- Large graphic touch screen.
- Clear acrylic security cover.
- Verification kit included (Weight + Support).
- Sample template 38x80 mm included.
- Bending resistance, bending resistance index results.
- Fatigue. Strength of split, Split recovery.
- Creaseability Test: BS, Slop, B. Moment, etc.
- Taber Measurement Units.
- Test length from 0,1 to 50 mm.
- Test speed from 0,1 to 50%/s.
- Pre-settable bending angle (0.1 to 90 degrees).
- 2 times of test and 2 points of measurement angles.
- Load cell 10N- Range 0 -10000mN- Accuracy $\pm 2\%$ (up to 100 mN) and $\pm 5\%$ rest of range.
- Bending stiffness.
- Slop.
- Max bending moment.
- Bending moment at 90o.
- Bending moment on relaxation.
- Angle at max bending moment.
- Angle at zero-moment on return movement.
- Bending work (area under the curve)

Connections

- Electric: 110 V – 230 V, 50 – 60 Hz (40 W).
- Air supply: Max. 6 Bar (Pneumatic model).

Weight and dimensions

270 x 500 x 270 mm (W x L x H)
15 kg

User interface

- Machine controlled by means of a touch screen and an auxiliary Test button.
- Through the visualization and control screen, the total control and configuration of the machine can be managed. Easy and intuitive operation of the control menu, configurable in different languages.
- 2 result tables with a maximum of 20 test results. One table for MD results and other for CD results.
- Possibility of display the test results in graphic way.
- Statistical control. Mean value, standard deviation and maximum and minimum values.
- Different configurable units.
- Periodical programme updatings (without additional cost).