

INTERNAL BOND TESTER model IBT

Method to determine of the internal bond strength of single and multi-ply paper and paperboard by dynamics delaminating according TAPPI T569 om-09 – Scott Bond method



The new IBT Internal Bond Tester realizes a dynamic measuring principle to determine the internal bond strength of paper, board and compound materials. The significant influences of sample preparation and climatic conditions became consideration in the construction.

The examination of the internal resistance or bond strength of papers and multi-ply materials in the printing or converting processes is only relevant for evaluation by a dynamic measuring method

- Sample preparation integrated for 5 samples simultaneous (bonding, pressing, cutting)
- Processor controlled clamping pressure and press time
- 4 measuring ranges approx. 52,5 J/m² to 2100 J/m² (Scott bond low and high included)
- Statistic function (AVG – average value, DEV – standard deviation)
- Selective indication of measurements in: J/m², ft-lb/sq.in. or mJ/sq.in.
- Monitoring of the climatic conditions
- Output of measuring data and parameters to PC
- Self calibrating
- Automatic pendulum test according to DIN 51 222
- Digital reading
- Includes Cable and Test Software

CONSTRUCTION AND FUNCTION

Assembling and functionality of this test method for determining the internal bond strength follows TAPPI standard T 569 om-09 (Scott type). A specimen will be prepared as a sandwich of double-sided tape, the test sample and double-sided tape pressed between an aluminium platen (angle) and a metal anvil. The effective area is 25.4 mm x 25.4 mm (1 inch x 1 inch). The specimen will be prepared by adjustable clamping pressure and press time.

In process of a test the sample carrier of the specimen will be fixed automatically and the pendulum electromagnetically unlocked. The pendulum, with a defined amount of energy, impacts to the upright stub of the angle, causing it to rotate split the paper specimen. The absorbed energy of the pendulum correlates with the internal bond strength (Internal Bond) of the sample.

The measuring of the energy absorbed to rupture a specimen will be conducted by two methods:

Potential Energy – traditional method

Within this method the deflection of the pendulum will be measured, which the pendulum reaches after impact with a repaired paper sample. The difference to the maximum deflection of the pendulum at a void stroke without any specimen (reference measuring) is the amount for the absorbed energy to rupture the specimen.

Kinetic Energy – dynamic method

Within this method the velocity of the pendulum will be measured before and after the impact. The changing (decrease) of the velocity is an amount of absorbed energy to rupture the specimen.

TECHNICAL DATA

- Measuring range: 4 measuring ranges – 210 J/m² / 525 J/m² / 1050 J/m² / 2100 J/m² (Nominal amount of energy approx. 0.25 J till 1.5 J)
- Repeatability: < ±2 % (self calibration)
- Angular resolution: 0.04° / 0.09° (depending on the device version)
- Sample dimension: 25.4 mm x 25.4 mm (1.0" x 1.0")
- Number of samples: 5 pieces
- Clamping pressure: max. 1410 kPa (at 6 bar compressed air, 0.1 bar step size)
- Press time: 1 - 60 seconds (1 sec step size)

CONNECTIONS:

Electrical: 230 V 50 Hz or 110 V 60 Hz (single-phase)

Compressed Air: 6 Bar filtered, oil free

DIMENSIONS AND WEIGHT:

Dimensions: 500 x 400 x 520 mm (M x D x H)

Box for transport: 740 x 650 x 740 mm (M x D x H)

Weight Net/Gross: 35 Kg / 55 Kg

DELIVERY CONTENT:

> Internal Bond Tester model IBT

> 5 Sample Angles of 25,4 x 25,4 mm (1 x 1 inches)

> Cable and Test Software

