PULP AND PAPER

Laboratory and automated paper testing

Testing and industry-specific instruments

Leading measurement solutions
for better quality control

Laboratory paper testing

In all types of production, process optimization is required for a company to stay competitive. For papermakers, it's a continuous challenge to produce the product within the given specification at the lowest possible cost.

One way to help achieve that is standardized paper testing. Whether it's the strength, texture, stiffness, thickness, brightness, or color, ABB provides the industry with a wide range of measurement equipment for paper quality control.

With almost four decades of experience, ABB can also provide consultation on what's important to measure based on your end product and testing best practices to ensure optimum quality.

Surface Testing

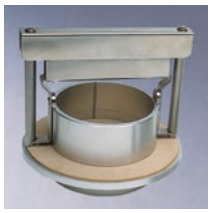
Paper is a complex product. When printing, the result depends not only on the surface roughness, but also absorption, permeability, formation and thickness.

L&W Micrometer
gives precise thickness measurements of paper, board, corrugated board and tissue. It combines the latest materials and manufacturing procedures to ensure accurate measurements.

L&W Bendtsen Tester
is designed for rapid routine measurements, in accordance with both traditional and new standards. The Bendtsen method, which measures surface roughness, is a popular test for newsprint and linerboard.

L&W Air Permeance Tester
uses the latest technology to measure air permeance in accordance with the most common measuring methods.

L&W Sheffield Tester
combines rapid routine measuring with high precision to measure surface roughness according to the Sheffield method. This can be applied to paper or paperboard, from newsprint to liner.



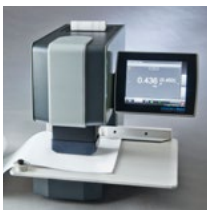
L&W Cobb Sizing Tester
measures the weight increase of a sample when exposed to water for a given time.

L&W PPS Tester
is used to measure the surface roughness of coated and calendared printing and writing paper. The results give a good overview of printability.

L&W Moisture Tester
measures the moisture content in pulp and paper products. It can be used for production control and verification of online systems and for back-up of online moisture sensors.

L&W Stylus Roughness Tester Emveco
measures the micro surface roughness of paperboard and linerboard. This is known as microdeviation, a topography measurement that helps detect and analyze surface characteristics that affect print uniformity.

L&W Elrepho
measures color, brightness, opacity and whiteness of paper, paperboard, pulp, coating inks and fillers. The measurement conforms to all established standards for optical measurements.



L&W OptiTopo
measures surface roughness and helps predict printability using camera technology. Developed by Innventia, this method has proven to be an outstanding way to assess the correlation between paper surface and print defects.

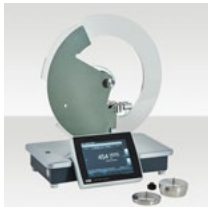
Strength properties

Strength characteristics of paper products are of great importance. For example, printing paper must have good runnability through the printing press and a corrugated box must sustain high loads and stresses.

L&W ZD Tensile Tester
measures internal bond strength (a paper's strength in the thickness direction). The test sequence is fully automated, including tape application and removal.

L&W Tensile Tester
measures all important tensile properties with precision on tissue and packaging board. It is designed with attention to ergonomics and efficiency.

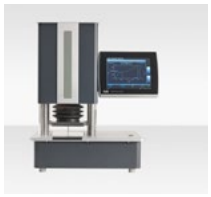
L&W Bending Tester
measures a material's resistance to bending and is designed for measurements of creased and uncreased paperboard.



L&W Tearing Tester
measures tearing resistance according to the classical Elmendorf method. The instrument now offers several enhanced features for automatic, easy and safe operation to complete more accurate tests – faster.

L&W Bursting Strength Tester
measures bursting strength of paper, paper board, and corrugated board. Two different versions are available depending on testing standard.

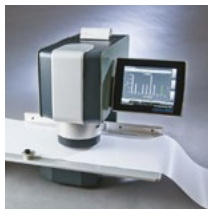
L&W Compressive Strength Tester STFI
measures the compression strength of liner and fluting quickly and reliably. High compressive strength is important for good stacking ability of corrugated boxes.



L&W Crush Tester
is used for compression tests of liner, fluting and corrugated board. New properties, such as flat crush hardness and energy absorbed during a FCT measurement, can be measured.

L&W S- Tester
offers a better and easier method for strength classification of medium fluting than the CMT measurement. This method will help paper producers save time, improve quality and reduce costs.

L&W 4-point Bending Stiffness Tester
measures the bending stiffness of corrugated board and heavy paperboard rapidly and accurately. The pneumatic clamps unique design allows warped or twisted samples to be measured without impairing results.



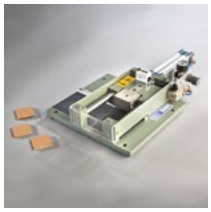
L&W TSO Tester
measures TSI and TSO to predict the performance of paper in a sheeting process, a multicolor printing process, laser copying machines, and when manufacturing corrugated board.

Sample preparation

There is no guarantee that the test results will be correct if the test specimens are not prepared in the correct manner, i.e. using precision, purpose-built sample cutters and punches. To ensure successful measurement results, the proper sample preparation tools must be used.

L&W Profile Trimmer
can cut a 300 mm wide sample strip from most paper or board samples. This sample can then be tested in L&W Autoline or L&W TSO Tester.

L&W Strip Punch
provides you with precisely cut sample strips that can be used for tensile tests, fracture toughness tests, compression strength tests, RCT, CMT and CCT.

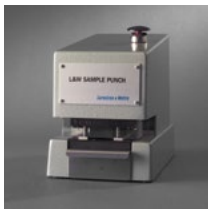


L&W ECT Cutter Billerud
prepares accurate samples of corrugated board for ECT testing. This tool, which cuts the edges parallel, is the established tool for preparing the edges of an ECT test piece, regardless of standard.

L&W Circular Cutter
cuts circular test pieces of paper, board and corrugated board for use in flat crush tests.

L&W Profile Cutter Advanced
cuts wrinkle-free sample strips to a fixed width directly from the machine reel that automatically wound onto a removable cylinder. These can be used for testing in L&W Autoline or L&W TSO Tester.

L&W Profile Cutter Basic
cuts wrinkle-free sample strips to a fixed width directly from the machine reel. These can be used for testing in L&W Autoline or L&W TSO Tester.



L&W Sample Punch
creates accurate test pieces for use in tearing tests, bending resistance tests, folding strength tests. The test pieces can also be used for brightness, opacity and color testing in L&W Autoline.

L&W Sample Cutter
provides easy, accurate and precise cutting of paper test pieces. The tool is for use with the L&W Tearing Tester and the L&W Bending Tester.

Next-generation automated paper testing for fast and accurate results

In less than 10 minutes after turnup, papermakers can easily get reliable test results across the entire reel, with little manual effort. This information helps speed up corrective actions to keep quality on spec and reduce rejects, for better productivity and profitability.

ABB's newest L&W Autoline is the fastest, most reliable automated paper testing system ever, quickly analyzing samples to deliver accurate and repeatable results, and actionable quality reports. This makes sure your quality is always right on target, with no off-spec rejects and no unnecessary waste of costly fiber, energy and chemical resources, which can happen when you overshoot quality targets.

Reliability based on 40 years of experience
The quality of the paper testing portfolio is a testament to the reliability and innovation of Lorentzen & Wettre, who pioneered automated paper testing in the 1970's. This is further validated by the thousands of L&W paper testing instruments in use today, as well as L&W Autoline systems at over 500 customer locations worldwide.

100 quality parameters checked for deviations
The L&W Autoline automatically measures and calculates more than 100 quality parameters per position to easily detect any deviation. The scalable system uses measurement methods that conform to industry standards and handles everything from sample preparation to the final reel report in under 10 minutes, with minimal operator involvement. This rapid feedback based on credible, low-variability data allows corrective actions to be taken immediately if required.

The unit measures strength, optical, surface and structural properties in the sheet via a modular system with more than 20 module combinations that comply with ISO and TAPPI standards. It can also archive data and communicate with other devices that monitor process parameters, allowing deeper data analysis if needed.

Benefits
- Improves paper quality, based on accurate, repeatable, credible testing methods
- Increases productivity, helping to consistently meet quality targets, with less deviation
- Helps you make faster, smarter decisions about process adjustments, when necessary
- Increases profit potential by quickly reducing off-spec production and making on-spec tonnage at least cost

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