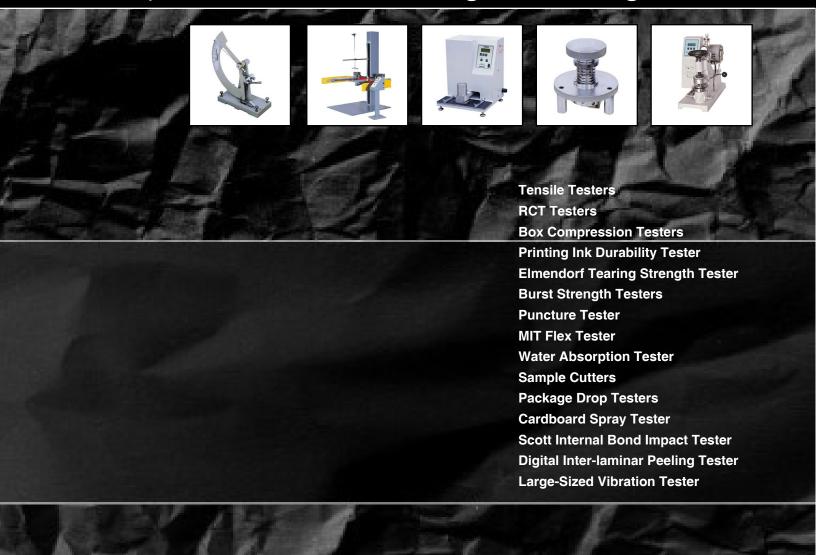


Advanced

Paper, Cardboard Testing Technologies

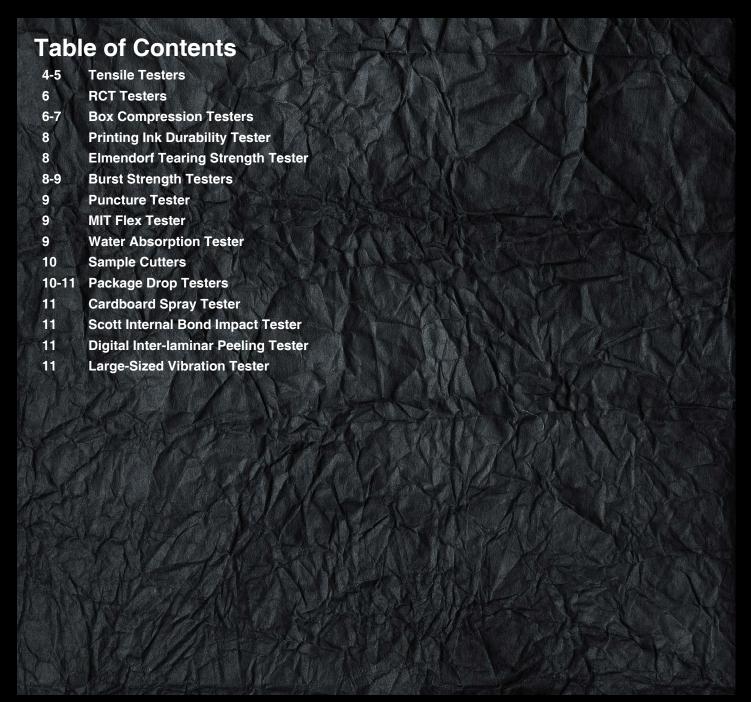


About Qualitest

QUALITEST, together with the WorldofTest.com network, is a global supplier of testing technologies that help customers improve their design, development and manufacturing processes. Our mission is to help our customers design, develop and produce their products faster, with higher quality and at a lower cost. A leader in offering the widest range of precision metal testing technologies on the market, Qualitest leverages extensive industry experience to provide products that determine the mechanical properties of metals including steel, aluminum, alloys, iron, and much more. These solutions include portable and low cost instruments as well as bench-top and sophisticated systems to meet your highest demands.

With rapidly growing presence in North America and worldwide, Qualitest maintains offices in USA, Canada, UAE, Asia and Mexico with a wide network of sales and service partners. This global presence ensures that Qualitest customers have fast and efficient access to Qualitest service, support and consulting services to realize optimal return on their testing solution investments.

Qualitest offers direct after sales service/calibration support or through our authorized and nationwide A2LA accredited and ISO 17025 certified service centers.



Paper, Cardboard

Paper is typically made from cellulose pulp fibers and formed on a wire screen, which dries the material into flexible sheets. Differences among the grades and types of paper are determined by several factors: the type of fiber used; the preparation of the pulp (mechanical, chemical, or a combination of the two); the addition of other materials to the pulp (such as bleach or coloring); and the conditions under which the sheet is formed (such as its weight).

The pulp and paper industry is one of the most important industries in the world, supplying an essential product to over 5 billion people worldwide. As such, the quality of paper must be accurately tested to meet a wide variety of applications. The strength and durability of paper is determined by factors such as the strength and length of the fibres, their bonding ability, the formation and structure of the sheet, and optical properties including its brightness, colour, opacity, and gloss.

General Applications

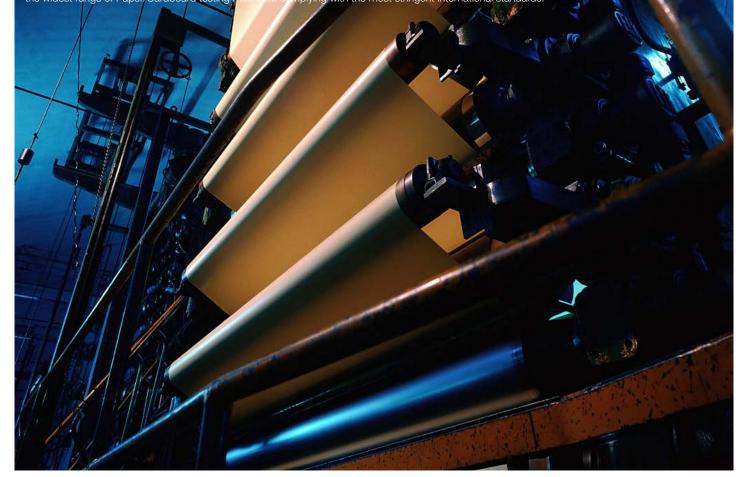
Paper is one of the widely-used materials in many industries—there are more than 5000 products made from paper and its by-products for various applications. Aside from the typical use of paper in writing and illustration, it is also used in agriculture for seed packets and animal bedding. In the construction industry, paper is used in wallpapers, damp-proof courses, roofing, plasterboard, and decorative laminates. In the electrical industry, it is used in special insulating boards, wrapping for electrical cables, printed circuits, and battery separators. Paper is also used extensively in the filtration of water, air, and oil. Finally, in medicine, paper is used in bandages, first-aid bands, clothing for nurses, face masks, surgeons' caps, disposable bed pans, sheets, and pillowcases.

With such a wide variety of applications, the quality of paper must be accurately tested for many different industry needs.

Qualitest's Advanced Testing Technologies are the most reliable and cost-effective solutions for Paper/Cardboard Testing.

Qualitest's Advanced Testing Technologies allow laboratories all over the world to test and evaluate paper and cardboard to ensure the high quality of these essential products.

Together with our network of partners, Qualitest offers a comprehensive selection of testing machines and systems for Paper/Cardboard testing. We supply an extensive range of competitive solutions such as Box Compression Testers, which are customizable and equipped with advanced software, as well as the widest range of Paper/Cardboard testing machines complying with the most stringent international standards.



Tensile Testers

www.WorldofTest.com/tensiletester.htm

Qualitest offers the most competitive line of Tensile Tester range in the industry. Our comprehensive range of Tensile Tester products, along with our extensive range of grips/fixtures, load cells, extensometers, offer the best price/quality ratio models on the market. The Qualitest Tensile Testers range is designed for quick and reliable tensile tests on Paper, Cardboard products.

Qualitest series of Tensile Testers is loaded with technical features, ergonomic design and is produced with the highest quality as a benchmark. These instruments are suitable to be used in: Production lines, where the operator has to be fast and efficient, and accurately control the test, Testing lab environments, where using the advanced software, the users can analyze the test data, have full control on processing, filing, and test management. The Tensile Testers series provides very high value to its users, as it is designed with advanced technology for easy operation and data retrieval and manipulation – at a very reasonable price, very efficient and comprehensive support with Qualitest's professional after sales service team.

Tensile Tester Series	
Models	Capacity
ESM303	1.5 kN / 300 lbf / 150 kgf
QM 2	2.0 kN / 450 lbf / 200 kgf
Q2.5	2.5 kN / 550 lbf / 250 kgf

ESM 303 Tensile Tester

www.WorldofTest.com/esm303.htm

The ESM303 is a highly configurable motorized test stand for tension applications up to 300 lbF [1.5 kN]. The ESM 303 is engineered on a unique modular platform, allowing companies to customize the configuration.

Integrated travel indication, overload protection, and a host of programmable parameters makes the ESM303 quite sophisticated, while its intuitive menu structure allows for quick, simple setup and operation.

With a rugged and modular design, the ESM303 is a compelling solution for applications in textile industry.

Features

- Selectable speed setting
- Upper and lower travel limit switches
- Adjustable, removal controller with intuitive menu navigation
- Password protection of test parameters
- Stepper motor-driven, producing smooth and quiet operation with no speed variation under load
- USB output of force vs. time or force vs. travel
- Compact footprint, suitable for crowded workbenches
- Ergonomic design, with smart, clean cable management
- Integrated electronics assembly, easily removed and transported

Technical Specifications

Load Capacity	 300lbf (1.5 kN) @ up to 24 in/min (610 mm/min) 200lbf (1 kN) @ > 24 in/min (610 mm/min)
Speed Range	 Standard: 0.5-13 in/min or 13-330 mm/min Optional: 0.02 – 45 in/min or 0.5-1,100 mm/min
Maximum Travel	18.0 in [457 mm]
Speed Setting Accuracy	± 0.2%
Speed Variation with Load	± 0% [Stepper motor driven]
Travel Accuracy	± 0.002 in per 10 in [±0.05 mm per 250 mm]
Travel Resolution	0.001 in [0.02 mm]
Limit Switch Repeatability	± 0.001 in [0.03 mm]
Power	Universal Input 80-240 VAC, 50/60 Hz
Weight	56.5 lb [25.6 kg]

QM-2 Tensile Tester

www.WorldofTest.com/gm-utm.htm#gm_1

Features:

- Single Column, Stand Alone System with 2kN (450lbf) Maximum Capacity
- Ergonomic Design with many Advanced Features
- 2 Years Warranty
- Flexible and Modular Design for Easy Expansion in the Future
- Excellent Price/Quality Ratio
- Precision reducers, ball screws which significantly reduce the noise and transmission losses while increasing the transmission efficiency.
- The seal plate mining anode hardening protects the ball screw and increase service life and precision of the instrument.
- Load cell has memory lock function which memorizes various parameters.
- Plug and play load cell.
- When using the external I/O signal contact various functions can be expanded.
- Jog control and very easy for operation of machine
- Many relevant tests can be performed with optional grips and extensometer of fixtures.



Technical Specifications for the QM-2	
Capacity	2 kN / 450 lbf
Measuring accuracy (%)	+/-0.5
Test force resolution	1/20000
Total Cross-Head Movement (mm)	800
Stroke Resolution (mm)	0.0001
Speed Range (mm/min)	25-500
Testing Space	Ф 140mm
Pc-Port	USB
Hardware safety protection	Up/down limit, emergency stop button
Motor type	Servo Motor
Dimension (mm)	550 x 550 x 1490
Weight	80 kg / 180 lbs
Power	110 / 220V AC, 5A

Q 2.5 Tensile Tester

ASTM E4,EN-ISO 7500/1

www.WorldofTest.com/utm.htm

The 2.5 kN Q2.5 is the Tensile Tester with the state-of-the-art design, built to the highest quality levels and with many advanced technical features. Programming tests and monitoring results can be controlled through our powerful and intelligent Graph work 5.0 test software, which allow complete and accurate data management in accordance with North American and International Standards. This instrument is suitable for use both in production lines where the operator has to be fast and efficient and can accurately control the test with the optional remote control unit, and also laboratory environments where the advanced software lets users analyse the test data. Graph work allows full control of processing, filing, managing, and transmitting data to the company network, database, and performs many other functions. This Q2.5 frame has a flexible and modular construction. This user-friendly instrument can be fitted with additional load cells with lower capacities, providing the highest resolution and accuracy for micro-loads.

Features

- Single-column rigid system with 2.5 kN / 550lbf maximum capacity
- Stylish design and advanced features
- Two-Year Warranty
- Flexible and modular design for easy future expansion
- Key technical advantages include extremely high resolution of load and stroke readings for the high performance and most accurate results
- Manufactured by an ISO 9001 certified company
- Excellent price-to-quality ratio



RCT Testers

www.WorldofTest.com/ringcrushtester.htm

RCT Compression Tester- Computer Controlled

This machine is used for determining the ring crush resistance (RCT) of paper or paperboards less than 1mm in thickness. This machine is equipped with a high precision sensor to detect the pressure signal. After being analyzed by the dedicated software, it can monitor the specimen strength and the test displacement in real time. The dedicated software can display the force versus displacement, from which the force trend is analyzed. The analyzed result can be saved and printed. By the use of various attachments, it can determine the upright crush resistance, adhesive strength and parallel strength of paperboards. This machine is designed and constructed with various devices for protecting it against damage during operation. The limit system can prevent the load cell from being damaged during testing.



RCT Compression Tester- Micro Controller

www.WorldofTest.com/ringcrushtester.htm

Qualitest's RCT Compression tester is designed to carry out highly accurate measurements of compression for a variety of materials. The microprocessor controlled cardboard compression tester is available with operator friendly software and optional accessories required for standardized testing, The RCT compression tester meets or exceeds all International testing standards for accuracy, precision and parallelism. The main applications for the RCT tester are RCT - Ring Crush Test, PAT - Pin Adhesion Test, ECT - Edge Crush Test for corrugated tubes, cores, bottles and cans. The RCT tester is also suitable for compression testing of flexible packaging, plastic products and building material.



Box Compression Testers Bobbin Compression Tester

TAPPI-804, JIS-Z0212

This machine is used for determining the lateral crush resistance of paper tube, bobbin, adhesive tape tube, paper can, etc. Apply a pressure to the upper platen to compress the specimen between the platens at a given speed. The load cell will detect the pressure and convert the pressure into the voltage signal that will transmitted to the display and meanwhile the pressure value will be displayed on the digital display.



Servo Control Container Compression Tester

TAPPI-804, ISO 12048, JIS-Z0212

This tester is used for determining the compression resistance of carton. The lower compression plate of the tester, driven by motor, moves up at specified speed to compress the specimen between upper and lower compression plates. Then the indicator will display the resistance value of it.



Box Compression Tester - 7001 Series

TAPPI-804, JIS-Z0212

www.WorldofTest.com/boxcompressiontester.htm

It is used for measuring the resistance of cartons, containers etc. to compression. It uses the dynamic pressure-holding technology to simulate the stacking test so as to know the resistance of packing materials to compression during transporting and stacking. It employs the Load cell as the sensing device, and displays the resistance values directly via computer. Adopting the high-end computer and self-developed software (U62), it is simple to set test conditions, control operating mode, acquire data, process operation, display printing result, etc. This self-developed software system features rapid speed, new interface, flexibility, stability and simple operation. It can analyze relevant test data based on national and international standards or customer requirements, count and process test data, output test report and characteristic curve of various formats. This machine is driven by the AC servomotor in such a way that it moves the crossbeam up or down via the belt and gears. After the specimen is compressed, the computer system will analyze the data acquired from the load cell. With well movement and speed control and feedback function, it is easy and rapid to operate. The use of high-precise load cell and gapless ball screw along with servo-driven system, its force accuracy is up to ±0.5%, and movement accuracy is up to 0.004mm. The combined type load cell is used. Four load cells are installed on four corners of the bottom plate so that it will not cause data error even if the pressure is not applied on the center of the bottom plate when a specimen of larger area is tested. The use of top and bottom security protective devices can prevent platens from collision and avoid damaging machine. The software system is also protected by limit devices. Test conditions and results are saved automatically. It records and saves test data in the whole test, and provides comparison and tracking functions. The curve is designed with stress, strain, force-time, strength-time, etc. and can be zoomed in locally and compared by overlapping. The gapless and wear-free ball screw can eliminate the operating noise and vibration. The use of the pulley ensures the crosshead moves stably and the load uniformly is applied to the specimen. Zeroing load, shifting gears, calibrating the system, detecting break point, returning to original position of the crosshead, displaying the curves, etc. are totally executing automatically. Through intelligent operation interface (icon), accurate calculation unit, prompt sampling rate (at 200 times/sec.) and automatic memory performance, completely analyze the data and record it as well during the test.



Box Compression Tester - XYD Series

TAPPI T804, ASTM D642, ASTM D4169, ISO 12048, JIS Z0212,

XYD-15K Box Compression Tester can be used to measure the compressive resistance, deformation and stacking capability of cartons, beehive crates, plastic tanks (for edible oil and mineral water), paper tanks, paper cases, IBC tanks and other packages. The instrument is controlled by micro-computer with menu interface, PVC operation panel and the testing process is automatic. It is having 4 testing modes: deformation under defined load, load under defined deformation, maximum load and stack tests. This machine is having dynamic digital-display of the test number, specimen deformation, real time load and initial load. The single-phase power and direct-current drive guarantee the adjustability, accuracy and stability of test speed. The overload protection, maximum stroke protection and error alert for safe test operation. This compression tester is having light-weight design, which is suitable for various floor loads. It is equipped with micro printer which is convenient to the printing of test data.



Box Compression Tester - i-Boxtek

TAPPI T804, ASTM D642, ASTM D4169, ISO 12048, JIS Z0212 www.WorldofTest.com/boxcompressiontester.htm

I-Boxtek Box Compression Tester is designed for the determination of compressive resistance, deformation and stacking capability of cartons and beehive crates, which can be used to judge the ability of cartons to resist compression. It is also available for compression resistance test of plastic tanks (for edible oil and mineral water), paper tanks, paper cases, IBC tanks, hollow containers and other packages. I-Boxtek supports online data management and relevant data monitoring. There are three available test modes: crushing force test, stacking test A and stacking test B. This tester is having wide power input, step motor control and three test speeds to meet different test requirements. It has over-load protection, maximum stroke protection and error alert which provide a safe test operation. The instrument utilizes Windows operation interface and can be easily operated with a mouse and a keyboard. Test pressure and deformation can be dynamically displayed on standard LCD monitor. It is equipped with four USB ports and dual Internet ports which make it convenient for data transmission. Its miniaturization and integration structure design is suitable for various test environments. It is having embedded computer control system which provides safer and more reliable data management as well as test operation.



Printing Ink Durability Tester

TAPPI-UM 487

This machine is designed for determining the rubbing resistance of the printing ink on the printing product. The rubbing paper is wrapped around the rubbing finger, which rubs the surface of the specimen to-and-fro at a given speed and pressure. The rubbed specimen and the rubbing paper are checked for their staining grades, or the specimen surface is checked for the pile or wear.



Elmendorf Tearing Strength Tester

TAPPI-T414, JIS-P8116

www.WorldofTest.com/elmendorf.htm

The ELM Series Elmendorf Tearing Testers are accurate, low-cost and high quality falling pendulum tear testing Instruments with analog display for determination of the average force required to propagate a single-rip tongue-type tear starting from a cut in paper, cardboard, plastics, non-woven and woven fabrics, with proper configuration. The model ELM-6400, meeting ASTM standards is suitable for most fabrics including woven, layered blankets, napped pile, blanket, and air bag fabrics, and provided the fabric does not tear in the direction crosswise to the direction of the force application during the test. The fabrics may be untreated, heavily sized, coated, resin-treated, or otherwise treated. This test method covers the measurement of the average force required to propagate a single-rip tear starting from a cut in a non-woven fabric using a falling-pendulum (Elmendorf) apparatus. The model ELM-100, meets TAPPI T414 standard, for Internal Tearing Resistance of Paper (Elmendorf-Type Method) this method measures the force perpendicular to the plane of the paper required to tear multiple plies through a specified distance after the tear has started using an Elmendorf-type tearing tester. The measured results are used to calculate the approximate tearing resistance of a single sheet.



Digital Elmendorf Tearing Strength Tester

TAPPI T414, ASTM D5734, ASTM D1922, ASTM D1424, ASTM D689, ISO 4674-2-040, ISO 6383-1-1983, ISO 6383-2-1983, ISO 1974

www.WorldofTest.com/elmendorf.htm

Digital Elmendorf Tearing Strength Tester is designed for the tearing test of films, sheets, flexible PVC, PVDC, waterproof films, woven materials, polypropylene, polyester, paper, cardboard, textile and non-woven and etc. Lift the pendulum up to a certain height to give it an initial potential energy. The pendulum tears the specimen while swinging down. Computer calculates the decreased energy caused by tearing to obtain the required force for tearing. The instrument is controlled by computer with automatic and electronic measurement which is convenient for the operation. Pneumatic specimen clamping and automatic release of pendulum could avoid the system error effectively. Computer assisted horizontal adjustment system could maintain the instrument optimum status. It is equipped with pendulums of multiple capacities. The professional software supports multi-unit data output. It is equipped with RS232 port which is convenient to the data transmission and external connection. It supports data sharing system for uniform and systematic data management.



Burst Strength Tester

TAPPI-T403, ASTM-D2210,ISO-2759,JIS-L1018,JIS-P8112

www.WorldofTest.com/burst.htm

This machine is used for determining the burst strength of materials such as leather, textiles, paper, etc. This machine is also used for products which are packaged by corrugated paper such as electronic instruments, electric were, hardwares, bike, valise, food, shoe, furniture etc. to test the bursting-resistance strength of paper box; This Bursting strength tester is adopted with signal output of pressure. While specimen is breaking, the max. Breaking value will be kept with the alarm buzzer & alert light automatically. Its accuracy has promoted 20times more than the traditional gauge.



Digital Burst Strength Tester

TAPPI-T403, ASTM-D2210 ,JIS-L1018,JIS-P8112 www.WorldofTest.com/digitalburst.htm

This Digital Bursting Strength Tester is used to test the bursting strength of corrugated papers, synthetic leather and cloth. It can detect and grip the specimen automatically when placing it onto the compression plate. By pressing the "Test" button, it will automatically test, calculate, save and print.



Automatic Burst Strength Tester

TAPPI-T403, ASTM-D2210, ISO-2759, JIS-L1018, JIS-P8112, JIS-L1004 www.WorldofTest.com/burstingstrengthtester.htm

This type of Digital Bursting Strength tester is able to test bursting resistance of the specimen automatically. As alone as placing the specimen, it will automatically perform detection, testing return, calculation, and saving / printing out test data.



Puncture Tester

TAPPI-T803, JIS-P 8134

www.WorldofTest.com/puncturetester.htm

This machine is used for determining the puncture resistance of paperboards or corrugated boards. Under the specified test conditions, the specimen fixed in the puncture tester is pierced by the dart connected to the swing arm so as to determine the energy required for puncturing the specimen. These energy units are made up of two major components: the energy to tear the material and the energy to bend it out of the way of the point. The test data can be read directly from the scale according to the selected capacity.



MIT Flex Tester - MIT Folding Endurance Tester

TAPPI-T423PM, ASTM-D2176, JIS-P8115

www.WorldofTest.com/mitfoldingendurancetester.htm

This tester is used for determining the folding endurance strength of paper and paper board, using hang type weight method (QT-6014-A). The specimen is clamped by upper and lower grips. Exert the specified load onto the upper grip to have the specimen bear a certain tension. The specimen is vertically placed against the ground surface and is folded to two sides by lower grip. Record the numbers of folding after the specimen breaks.



Water Absorption Tester - COBB Tester

TAPPI-T441, JIS-P8140

www.WorldofTest.com/cobbtester.htm

This device is used for determining the water absorption of paper and not applicable to porous paper. Fix the weighed specimen between the bottom of the device and the water tank. Fill the water tank with pure water. After a predetermined time, empty water and remove the specimen. Reweigh the specimen to calculate the quantity of water absorbed by the specimen.



Sample Cutters

Paper Die Cutter

TAPPI-T409, JIS-P8113

www.WorldofTest.com/paperdiecutter.htm

This machine is used for preparing the standard specimens for ring crush test, tensile test or others. The precise cutting mechanism with a sharp blade is helpful to make your specimen easily.



Sample Cutter For Column Compression Tester

JIS-Z0403-2

There are two type of cutters, Parallel Cutter & Angle Cutter, which are used to get a standard specimen for column compression test. Parallel Cutter cut the specimen in a perfect parallel manner. The distance of two parallel plates is adjustable. While the Angle Cutter cut the specimen to get two angles on both sides.



Flat Crush Cutter

ISO-3035

Flat Crush Cutter is used to get a standard specimen for horizontal ring crush test. Put the circular specimen between two pressing plates of ring crush tester. Then ring crush strength can be determined.



Strip Sample Cutter

ASTM D 882

www.WorldofTest.com/stripcutter.htm

It is a dual-blade sample cutter which is designed for laboratory and plant floor use. It features high-quality hardened ground steel blades and a heavy-duty base. It is available in a variety of configurations, for precision cutting of strips of plastic film, plastic sheet, paper, laminations, foils, and other sheet materials. It can increase your productivity, replacing hand-trimming with the ability to cut precise multiple strip samples of your sheet materials with one pass. Precise parallel edges are accomplished with a single stroke. By providing consistent test samples, this labor-saving machine maximizes the accuracy and usefulness of your various test instruments.



Circular Sample Cutter

www.WorldofTest.com/circularsamplecutter.htm

Circular Sample Cutters use a drawing action to cut accurate circular samples with smooth edges. Even difficult materials such as fine knits, thin films, tissue paper, corrugated cardboard and synthetic leather can be cut conveniently. For testing the weight of unit area of paper and textile, the specimen should be made by neat cutting to lessen burr to keep the measure of area. The weight of unit area can be easily calculated by weighing scale. The cutting diameter of specimen is 100 cm². The base is of porous rubber, which allows the cutters to cut into the base with complete safety. With Circular Sample Cutter, samples ranging from thickness 0.01mm to 5mm can be cut.



Package Drop Testers

Drop Tester

ASTM-5276

www.WorldofTest.com/packagedroptester.htm

It simulates the drop/fall of the packaged finished products to evaluate their damages. All the rhombohedrum, angles and faces of the package container can be tested, so that the manufacturer can know how to take measures effectively to protect its products against damage during transportation. During dropping, the carrier will rotate to allow the packed products to fall freely. It can test the faces, edges and corners of the product, with small vibration, and stable and reliable operation.



Large-Sized Drop Tester

www.WorldofTest.com/packagedroptester.htm

It is a larger capacity drop tester for furniture, appliances and other large Items. It simulates the drop/fall of the largesize furniture or appliance to evaluate their structure strength and or their damages. So as to evaluate the capability of the package to protect its contents. The specimen is raised to a specified height and then drops freely to impact the workbench. The base of the workbench is made of an impact resistant material, which is hard to be deformed during impacting.



Pneumatic Type Drop Tester

ASTM D5276

This tester is driven by a pneumatic cylinder controlling a single wing structure. It only takes a small space to operate and is ideally suited for testing the impact of packaging products such as cartons, luggage cases, suitcases, electric equipment, etc. The test result can be as safety basis for packaged goods of shipping or as safety evaluation of goods suffering drop impact during using.



Cardboard Spray Tester

CNS 3687

This tester is used for determining the waterproof ability of paper and paperboard. User can examine scar and condition of water passage. Then, consult the standard table and assess its repellent grade.



Scott Internal Bond Impact Tester

TAPPI-UM403

www.WorldofTest.com/scottbondimpacttester.htm

This machine is used to test the energy absorption as well as the peeling strength of the card boards impacted by the specified load at a certain angle. The energy absorbed can be read from the scale.



Digital Inter-laminar Peeling Tester

TAPPI-UM403

The energy absorbed is measured after the specimen is impacted at a given angle and weight, and the inter-laminar peeling strength of a corrugated board is indicated. It is designed in accordance with TAPPI-UM403.



Large-Sized Vibration Tester

This machine is designed for determining the resistance of large-size products to vibration during transporting, as well as the damage to the packed products during vibrating. This machine is driven by a speed-adjustable inverter motor, belt and chain, so it can be operated stably and smoothly, and has a powerful load capacity. It is characterized by the stable operation, powerful loading capacity, convenient operation and safety. The time for vibration can be set to allow the machine to stop automatically.





