Advanced

Plastics Testing Technologies

QUALITEST™

WWW.WORLDOFTEST.COM

- Universal Testing
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- Impact
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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 plastics & polymer testing technologies on the market, Qualitest leverages extensive industry experience to provide products that determine the mechanical properties of polymers including plastics, rubber and other polymers. 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 and Asia 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.

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Plastics

Plastics consist of building blocks called hydrocarbons, typically derived from petroleum or natural gas. These monomers (small molecules) are bonded into chains called polymers or plastic resins. Different combinations of monomers yield resins with special properties and characteristics.

General Applications

Plastics replace other common materials such as metals and wood in unlimited applications because of their low cost and characteristics. Plastics offer innumerous advantages in production as they are easily softened or melted, and can be molded into any shape.

Plastics in general can be divided into two thermoplastics and thermosets processing groups.

Thermoplastic materials are made of polymers or long-chain macromolecules. Heat gives them sufficient mobility and allows them to be formed to the desired geometry of the part or semi-finished product. It also allows them to be reused or recycled. The other components are additives which tailor the properties to a given use, whether color, stiffness, weatherability, and wear resistance. Thermoplastic materials are mainly available as semi-products in the form of sheets, round bars, round bars with a steel core, pipes and sections.

Thermoset plastics are materials made of polymers, which are permanently set, with heat and catalysts, during the manufacturing of the part or semi-finished product. Reheating will not change their shape and heat at high temperatures will only damage them. These materials are thereby used at higher temperatures and pressures than thermoplastics.

The ideal combination of processing flexibility and performance enables plastics to be used in an extensive range of applications ranging from low cost disposable items to expensive parts. Plastics are key materials suitable for automotive parts, electrical appliances, aircraft and aerospace components, sporting goods, packaging, toys, food industry and much more due to their flexibility, fast molding qualities, color, resistance to chemicals water and corrosion, low weight, electrical and thermal insulation as well as toughness and strength.

The extensive use of plastics requires and demands testing at all stages of development, manufacturing and quality control, to ensure the products are accepted for their intended use. The tests are normally conducted as standard methods on standardized plastics specimens, or application specific tests.

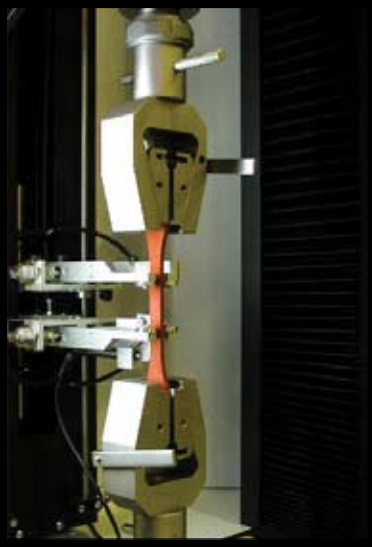
The characteristics of plastics are also influenced by temperature changes, and therefore testing should also be done at high and low temperature extremes. Temperature and environmental chambers provide the condition necessary for such testing. For tensile testing, laser and video extensometers are desirable for high temperature strain measurements as well as for plastics materials that are sensitive to contact stresses or contamination.

Universal Testing Machines

www.WorldofTest.com/utm.htm

Use of Universal Testing Machines in the Plastics Industry

Tensile testing is the most basic and common plastics test method, which provides data on ultimate strength, modulus, elongation, toughness and yield strength as per various North American or International standards such as ASTM D638.
Testing the bending and flexural properties of plastics are also quite common for the plastics as per ASTM D790 and other International test methods and the standard test fixtures are 3 point or 4 point types used to test rigid and semi-rigid plastics.
Also compression tests are very important for many molded parts as per ASTM D695 and other similar international standards. Compression test is commonly used on foams and packaging materials



Q-Series Advanced Universal Testing Machines

The Q-Series Universal Tensile/Compression Testing Machines, with a stylish look and state-of-the-art design, meet the highest demands of quality-testing professionals and test applications in the plastics industry.
The Q-Series UTMs' high resolution and the capability to extend the load cell user field to 1/500 allows users to perform accurate tests at very low loads, enabling the widest range of coverage with a single load cell.

Other advantages of the new Q-Series tensile testers starting from Q5 and up include a minimum test speed of 0.0005 mm/min., a stroke reading of 0.5 µm and a two-year warranty.

Programming tests and monitoring results can be performed through the powerful and intelligent GraphWork test software, which allows complete and accurate data management, in accordance with North American and international test standards. The advanced, modular software comes with a comprehensive library of test standards--in accordance with American Society for Testing and Materials (ASTM) and international norms--included at no extra cost.

The low-cost single column UTM model Q2.5 also comes with an integrated control console with high definition backlit display, and can optionally be supplied with the advanced GraphWork software.

Table-top Q-Series Universal Testing Machines	
Models	Capacity
Q2.5 Single column	2.5 kN /550 lbf/ 250 kgf
Q5 Double column	5 kN / 1,100 lbf / 500 kgf
Q10 Double column	10 kN / 2,200 lbf / 1,000 kgf
Q25 Double column	25 kN / 5,500 lbf / 2,500 kgf
Q50 Double column	50 kN / 11,000 lbf / 5,000 kgf
Q100 Double column	100 kN / 22,000 lbf / 10,000 kgf

Q2.5 Single Column UTM

Q25 UTM w/ optional Extensometer

Universal Testing Machines

For plastics and polymer industry, capacities up to 100kN loadframes are normally used, however the Q-Series UTMs are available with capacities up to 2,000 kN (440,000 lbf) in electro-mechanical design used for higher strength materials such as metals and composites. Qualitest also offers extended height or width loadframes for higher elongation materials or oversized samples.
We offer a wide range of tensile grips such as pneumatic, wedge, eccentric roller, pincer and screw grips with various jaw inserts to guarantee the optimum performance and test results. In addition to tensile grips, fixtures for other applications such as compression, 3 or 4 point flexure, COF, peel, shear, tear tests, as well as extensometers, temperature chambers, load cells and flexible leasing/ financing plans are all available upon request.

Q25 UTM w/ optional Temperature Chamber

Tear Test

As top of the line solution for high volume and in-line testing, Qualitest offers fully automated testing systems featuring Compact Line as lower cost alternative for low to medium testing requirements or the Multi-Line for the highest and most efficient automation requirements in the most demanding and highest volume testing environments.

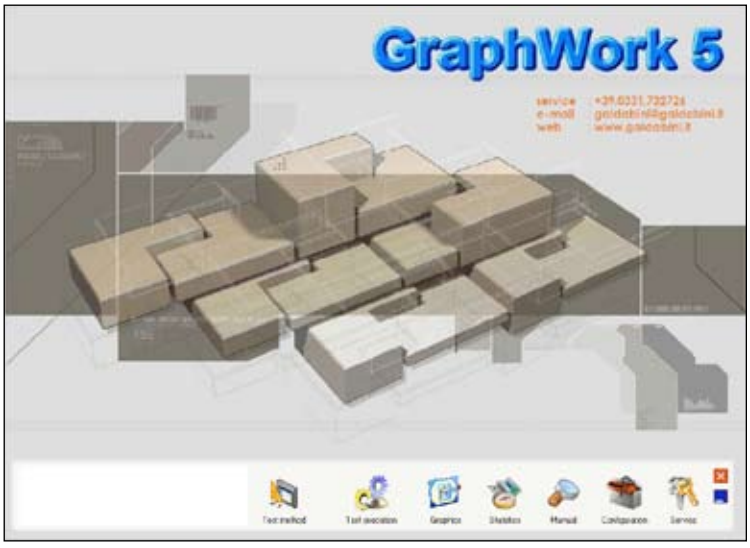
Automatic Handling Universal Testing Machines

GraphWork 5.0

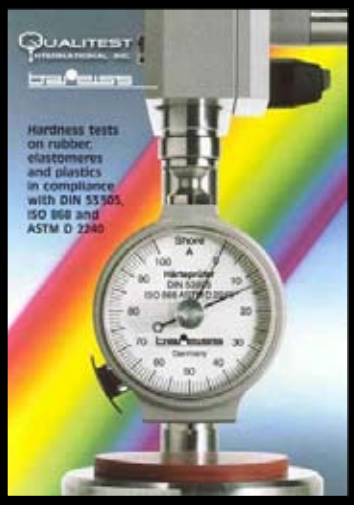
Advanced and Intelligent Test and Control Software

The advanced, and full-featured Windows-based GraphWork 5.0 test software, provides the ultimate control and most user-friendly environment for your test applications. The comprehensive and modular structure of this software allows the users to select from any of the most common standard test programs, according to ASTM, ISO, DIN, EN, JIS etc., or simply create your own specific test program according to your samples and application by following step-by-step instructions and via Help tool, built-in the
software,.
The latest version of the GraphWork software package comes complete with user-friendly graphic interfaces for:

- Language selection
- Test method and standard settings
- Starting and controlling tests
- Analysis of results
- Printing certificates and protocols
- Graphic post-analysis of tests
- Statistical analysis of tests



Durometers . IRHD Hardness Testers



HP-Series Analog Durometers

www.WorldofTest.com/durometer.htm

Our range of HP Durometers are suitable for accurate hardness measurement of all natural and synthetic rubber products, plastics, acrylic glass, acetates, casting resin, polyester, themoplastics, PVC, neoprenes, hardboards, wood, leather, and fruits within the Shore A, D, B, O, OO, OOO, C, DO scales and much more.

These durometers are the highest precision models on the market with very easy handling. HP Durometers can be used as portable instruments and together with our test stands as bench-top units. All of our analog durometers have a round, clearly arranged antiglare scale. The scale's graduation is always 0 - 100, divided in 100 units. The most important advantage of these handy analog durometers is the absolute precise indication of their measured values, due to the unique design and sophisticated engineering applied in the spring mechanism. Generally durometers are recommended to undergo annual calibration, however again due the excellent spring design and mechanism of HP durometers, these units will maintain their calibrations and accuracy within the ranges for a few years.

Our durometer line is optionally available with a maximum indicating pointer (models ending with "S"). This feature makes the maximum value easier to read and allows the determination of the flow characteristics of the material after a certain test time. The type D durometer, is the most common model for the plastics industry.

BS 61 Test Stand is an ideal accessory to be used with our HP Durometers for higher volume bench-top measurements. The pick-up device allows a quick and easy mounting of the durometer. The built-in loading device for hardness tests within Shore A range, guarantees a constant pressure as prescribed in DIN 53505 and ASTM D 2204. The hardness results can be measured without subjective influences because of this constant load. For Shore D durometers used with BS-61 test stand, an additional loading weight is also required to meet the standards requirements.

HPE-II Digital Durometers

www.WorldofTest.com/hpe.htm

HP-E II Series Durometers are high-end hardness testers for accurate and repeatable hardness measurement of rubber, plastics and other elastomers within the Shore A, D, B, O, OO, OOO, C, DO scales and much more.

The new generation of HPE offers extended range of applications as well as data logger and a new innovative radio data communication feature, which makes the HPE Series the most technologically advanced digital durometers on the market at a reasonable price.

HPE II can be conveniently used in any vertical or horizontal directions, and also in hard to reach areas. This unit can be used with the optional test stand as a bench-top laboratory instrument.

The patented pressure mechanism, integrated into the HPE, ensures a constant contact pressure according to standards, eliminating measuring errors caused and influenced by tilting or slope contact. The electronics is made into a robust and rugged aluminum shell, while the operation is done via a clearly arranged keyboard with an easy to read display. With using two buttons, the instrument is switched on and off and the measuring time can be adjusted from zero to 99 s. A flashing display indicates the current real-time measurement; while a beep signal alarms the end of the measurement. The measured value will be shown on the display until the next measurement, and subsequently the measured value can be transferred to PC or printer via the RS232-interface.

DigiTest Automatic Motorized Hardness Tester

www.WorldofTest.com/digitest.htm

DigiTest offers the highest level of precision, user-friendliness and repeatability for hardness measurement in any of Durometer A/D/B/C/DO/OO/OOO/Micro A/ Micro D as well as IRHD Micro/ Normal/ Soft/ Supersoft scales.

The modular construction of DigiTest allows the users to obtain this tester with a configuration to meet their basic needs in the most cost-effective way, and upgrade their system with additional measuring heads according to any of Durometer or IRHD scales, at any time at nominal cost. With the help of a newly developed plug-in system, all of the measuring heads are plugged into the pick-up bracket, and recognized and adjusted fully automatically.

DigiTest eliminates the operator's influence on the test results, and thus ensures the highest precision and repeatability for your measurements. With the optional HardTest software, you can transfer, analyze, and archive your measuring results in your PC.

The Automatic DigiTest system, fully meets or exceeds International standards according to: ASTM D 2240, ASTM D 1415, DIN 53505, DIN 53519 sheet 1,2, ISO 868, ISO 48, NFT 51 123, NFT 46 003, and BS 903 Part. A 26.

Pendulum Impact Testers

Charpy Impact
Test Configuration

Izod Impact
Test Configuration

Q-IMPACT Pendulum Impact Tester

www.WorldofTest.com/q-impact.htm

Q-Impact advanced Pendulum Charpy / Izod Impact Tester, available with energies from 1.75 to 25 Joules, is designed to determine the Charpy & Izod Impact strength of plastics and other materials. This sophisticated pendulum is controlled by a microprocessor which controls all the functions and the test protocols according to major International standards.

Q-Impact also comes complete with the self-calibration feature as well as an automatic function which compensates and corrects the friction during the tests. All the test data can be sent directly to a printer or to software on a PC.

The hammer can be stopped automatically in different positions by setting a special function on the console. This feature allows the operator to analyze the specimen after the pendulum hammer has passed. Q-Impact can also be instrumented for the dynamic analysis of the energy absorbed during the impact.

For operator's protection, this stylish instrument includes an electrically interlocked safety door.

The control system includes an LCD display for test parameters. It is possible to select different languages, the test type as per ASTM/ISO standards and many other features making this system the most user-friendly Pendulum impact tester on the market.

Basic Pendulum Impact Tester

www.WorldofTest.com/bpi.htm

The BPI Basic Pendulum Impact Tester determines the energy required to rupture standard impact specimens of plastic or ceramic materials. The BPI also determines the resistance of notched plastics and ceramics to breakage by flexural shock.

Specified in several test methods, this diverse apparatus is available in Izod and Charpy versions. The BPI Basic Pendulum Impact Tester features precision tuned bearing assembly for near-zero friction loss, resulting inrepeatable and comparable measurements. In the Izod test, the specimen is mounted in a vise in the base, then struck by the pendulum. The Charpy test uses a specimen mounted on an anvil supported near the ends, which is struck in the center by the impactor.

The BPI is a mechanical unit designed for simple impact energy scale and an easy to read analog display.

Advanced Digital Pendulum Impact Tester

www.WorldofTest.com/api.htm

The API is a high-performance pendulum impact tester that precisely determines absorbed impact energy and resistance to breakage of plastic specimens. Innovative mechanical design features make this instrument the most cost-effective and accurate impact tester available on the market. It meets and exceeds all ASTM and ISO requirements and has the flexibility to satisfy future test standards. An optional pressure chamber and instrumented versions of API are also available.

QPI Analog Izod/Charpy Impact Tester

www.WorldofTest.com/qpi.htm

QPI-IC Basic Izod/Charpy Impact Tester is a low cost unit which determines the energy required to break standard plastics impact specimens. Meeting ASTM D256 standard test method, this apparatus includes both Izod and Charpy configurations for impact test on plastic specimens in two different energy groups (3/6/9J or 7/14/21J).

QPI-IC is a universal mechanical unit designed for simple impact energy scale and an easy to read analog display.

Drop Impact Testers

Gardner Impact Testers

www.WorldofTest.com/gardner.htm

Gardner impact tester model IG-1120 has gained wide acceptance as a means of testing the impact resistance of many types of coatings from paints and vanishes to tough plated, plastic or laminated coatings. It is also used to establish quality standards for resistance to impact surface damage and penetration of many construction materials such as plastics, resins, fibreglass, sheet metals, plywood, etc. Also Gardner impact tester model IG-1142 was developed in cooperation with the Society of the Plastics Industry for evaluating impact resistance of rigid sheets of PVC (30-60 mils thick). Qualitest also offers a LightDuty Gardner Impact Tester as well as the top of the line Gardner system with Automatic Lift System.

FWP-Series Falling Weight Impact Tester

www.WorldofTest.com/dropweightimpact.htm

Model FWP-300C: Test pieces are subjected to blows from a falling striker, of specified mass and shape, dropped from a known height onto specified positions around the circumference of the test piece. The true impact rate of the batch, or production run from an extruder, is estimated.
The maximum value acceptable for the TIR is taken to be 10%.
There are two test methods, such as round-the-clock method and staircase method.
The model FWP-300C meets ISO 3127, EN744, and EN1411 standards
Model FWP-300D: This model is mainly used to determine of the impact resistance of thermoplastic pipe and fittings under specified conditions of impact by means of a tup (falling weight). Three interchangeable striking noses are used on the tup, differing in the geometrical configuration. Two specimen holders are described.
The model FWP-300D meets ASTM D 2444 standard

Drop Dart Impact Tester
ASTM D1709

www.WorldofTest.com/dropdart.htm

Series DX-8000 Dart Impact testers are full-featured models meet specifications of ASTM 01709 Methods A & B Standard Test Method for free falling dart impact testing of plastic film and sheet. The series 8000 Dart Impact Tester is a proven tool for more closely controlling nominal and peak strength characteristics to speed your production, additives settings, adjustments, research and development, inspection of incoming products and in-process checks to ensure on-spec product for converting operations.

Total Energy Drop Dart Impact Tester (DDI /TE)
ASTM D4272

www.WorldofTest.com/totalenergydropdart.htm

The DDI/TE is a comprehensive laboratory tool used to measure the impact toughness of plastic films and sheeting. Designed to meet ASTM D4272, the Total Energy System determines the total energy impact of plastic films by measuring the kinetic energy lost by a free-falling dart that passes through the specimen. The TE system evaluates the impact toughness of materials in applications such as the manufacturing of plastic films, packaging and construction materials. ASTM D1709 may continue to be performed when used with the appropriate weighted darts. The Total Energy System option features a simple, easy-to-use keyboard and multi-line LCD display.

Ball Rebound Tester

WorldofTest.com/ballreboundtester.htm

The microcomputer controlled ball-rebound-tester is designed for the determination of the rebound elasticity of foam materials acc. to ASTM D 3574 and DIN EN ISO 8307.

A quick, easy and reliable measurement can be done with the ball-rebound-tester because of its innovative design. This top quality unit is ideal for the quality control of foam materials during the production and in the acceptance department.

Hydrostatic Pressure Testing for Plastic Pipes

www.WorldofTest.com/hydrostaticpressuretesting.htm

HPT-series Hydrostatic Pressure Testers

The HPT-10A series Hydrostatic Pressure Tester is mainly used to determine time-to-failure of plastic pipe under constant internal pressure according to ISO 1167, ASTM D 1598.

The test stations work fully independently of another according to the client's requirements.

A fast processor and corresponding software supports the automatic adjustment of the pressure in the test samples. The test parameters can be set in via the touch screen, where the operator can also follow the actual test status.

Technical parameters:

Pressure: 0-16MPa

Pressure controlling Accuracy: +2% -1%

Display Accuracy of the Pressure: 0.001MPa

The Temperature Range of the test tank

Room temp.~95 or 15 to room temperature

The Temperature Controlling Accuracy of the test tank: ±1

The Working Time of the Timer: 0-10000h

The Interface of Pressure: one to twenty (Upon order)

Enclosure suitable for 16 to 630mm diameter pipes and fittings.

HPT-10B Burst tester

The HPT-10B tester is used to determine of the resistance of either thermoplastic or reinforced thermosetting resin pipe, tubing, or fittings to hydrostatic pressure in a short time period.

Procedure A is used to determine burst pressure of a specimen if the mode of failure is to be determined. Increase the pressure uniformly and continuously until the specimen fails, measuring the time with a stop watch. If the failure time is less than 60s, reduce the rate of the loading and repeat the test. The time to failure for all specimens shall be between 60s and 70s.

Procedure B is used to determine that a specimen complied with a minimum burst requirement. Increase the pressure uniformly and continuously, measuring the time. To determine that the specimen shall burst between 60 and 70s, or the minimum bust pressure shall be reached or exceeded between 60 and 70s.

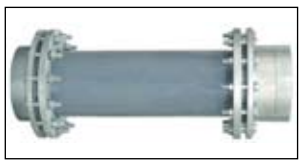
Standard: ASTM D 1599

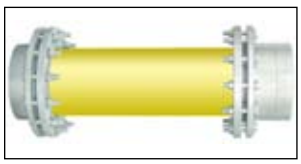
Test tank for hydrostatic pressure tester

Our test tank for hydrostatic pressure tester is made of stainless steel together with all the parts with stainless steel. It also has a 100 mm thickness heat-protection layer. There are two cycling pumps inside the test tank which could run alternatively and separately when troubleshooting happens. It has the temperature control system with accuracy of ±2 . The lid of the test tank could be opened automatically via a pneumatic device. The size and the interface of the test tank can be customized based on customer's requirements.

End Closures

An extensive range of End closures suitable for various diameters according to ASTM, ISO, DIN, EN and other standards





Sample Preparation

Laboratory Mixing Molder (LMM)
www.WorldofTest.com/lmm.htm
The versatile Laboratory Mixing Molder LMM is designed to mold miniature specimens for dynamic, tensile and impact testing. This benchtop mixer, extruder and molding machine will produce cost effective moldings using less than one gram of material. This compact R & D tool allows production of cost effective moldings for testing standard or newly developed thermoplastic material.

Tensilkut I-Series Sample Milling Machine
www.WorldofTest.com/tensilkut-1.htm
The Tensilkut I was designed for the specific purpose of preparing flat metal or non-metallic test specimens. The compact size of the equipment permits it to be conveniently located in the laboratory. Small table top units or larger floor mounted models are available to accommodate any space and/or work volume requirements. The specimens are accurate to within +.0005" when prepared on the Tensilkut machine with a Tensilbit and a standard or special master template.
Optional mist coolant and vacuum systems are available for the Tensilkut I.

Manual Molding Press MPM100
www.WorldofTest.com/moldingpress.htm
Small and low cost manual plastics molding press, providing a constant temperature and pressure environment for molding of tensile, impact or other specimens. With the output of 100kNf, plate size of 10 x 10 inch and temperature range of 50 up to 300 C, this molding press is a compact and low cost unit for low to mid volume production of plastics test specimens.

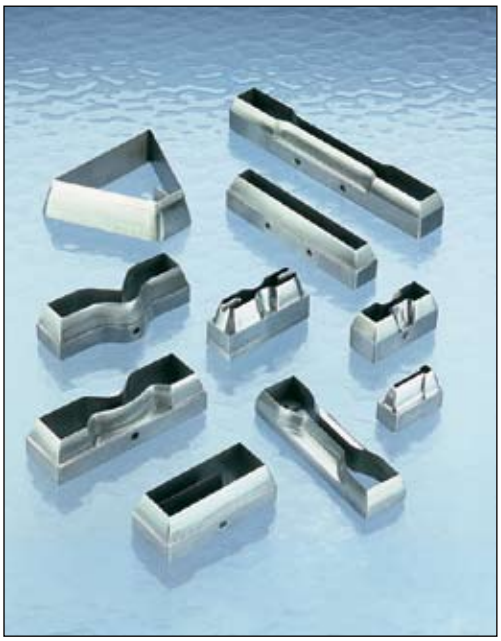
Hydraulic Molding Press MPH100
www.WorldofTest.com/moldingpress.htm
Heavy duty hydraulic molding press, with constant pressure suitable for larger size specimens with plate size of 12 x 12 inch.

Automatic Sample Notcher (ASN)
www.WorldofTest.com/notcher.htm
The Automatic Sample Notcher offers a safe, easy means of specimen preparation for impact testing of plastics and related materials. The compact, easy to operate notcher meets the broad range of test specifications including, ASTM D256, ISO 180, DIN 53753, BS 2782, JIS K 6871, and UNI 6323.

QuickNotch-II Impact Specimen V-Notcher ASTM D256
www.WorldofTest.com/quicknotch.htm
Low-cost, and accurate QuickNotch-II, for notching impact specimens. QuickNotch-II has two depth verification gauges and speed adjustor and meets ASTM D256.

Specimen Dies . Clicker Presses

www.WorldofTest.com/dies-molds.htm



Specimen Dies -
Fully Certified ASTM, JIS, DIN and ISO dies.

Miscellaneous
ISO 34 A
ISO 34 B
ISO 37, Type 1 through 4
BS 6746
IEC 540
ISO/DIS 3167
.250 x 5.0
.500 x 5.0
1.000 x 6.0

JIS Standard
JIS K-6301 1
JIS K-6301 2
JIS K-6301 3
JIS K-6301 4
JIS K-7113 1
JIS K-7113 2
JIS K-6781
JIS K-1702
JIS K-6301 A
JIS K-6301 B

DIN Standard
DIN 53504 S1
DIN 53504 S2
DIN 53504 S3
DIN 53504 S3A

Accessories
Mallet Handles
Shanks
Adaptors
Sharpening, Calibration & Certification

ASTM Standard
ASTM D-412 A Tensile Sample Cutting Die
ASTM D-412 B Tensile Sample Cutting Die
ASTM D-412 C Tensile Sample Cutting Die
ASTM D-412 D Tensile Sample Cutting Die
ASTM D-412 F Tensile Sample Cutting Die
ASTM D-638 Type I Tensile Die
ASTM D-638 Type II Tensile Die
ASTM D-638 Type III Tensile Die
ASTM D-638 Type IV Tensile Die
ASTM D-638 Type V Tensile Die
ASTM D-1822-S
ASTM D-1822 L
ASTM D-1708 Microtensile Die
ASTM D-624 B Tear Sample Cutting Die
ASTM D-624 C Tear Sample Cutting Die
ASTM D-624 T Tear Sample Cutting Die
ASTM D-1004
ASTM D-1922
ASTM D-746
ASTM D-746 T50
ASTM D-1938
ASTM D-2209 Leather Tensile
ASTM D-2212 Leather Slit Tear
Other ASTM Dies Available Upon Request

Specimen Molds - Our molds are made of P20 tool steel that is hardened, ground and polished, then chrome-plated with the option of teflon coating. Typical molds have one to four cavities. Various sizes are available. The mold's inside surface is perpendicular to the cutting edge and polished. This insures that test specimens are cut to uniform thickness. All of the molds meet most national and international standards such as ASTM, DIN and ISO.

Manual Test Sample Clicker Press - These units operate well in stand-alone cutting situations, and also compliment a Hydraulic press for smaller operations.
With the single lever rotation and compressing action, it's speed of operation is quite surprising and you can be up and cutting for a fraction of the cost of a hydraulic press.

Auto-Pneumatic Clicker Press - This low-cost and high quality Pneumatic clicker press only requires air with min. 5 bar pressure to operate and is widely used in the rubber and plastics industry for accurately cutting rubber, leather, and plastics specimens. The Auto-Pneumatic clicker press is available in 3 or 5 ton capacities which can be used to cut rubber samples with thickness up to 10 or 15mm. A compact, cost effective and high quality sample cutting press for any testing laboratory.

Model SE-Series Laboratory Sized Swing Arm Clicker Press - The reasonably-priced model SE-8 Hydraulic Mini-Clicker die cuts exact (dumbells, etc.) samples from split layered materials. The SE-8 automatically adjusts the stroke to the proper cutting height. Eight ton cutting pressure (Optionally up to 25 Ton) allows easy operation. This useful laboratory tool requires a minimum of floor space and is highly recommended for medium to high specimen cutting needs.

- Cutting Surface: 12" x 24"
- Cutting Arm: 10" x 14"
- Floor Space: 24" x 25"
- Tonnage: 8 Tons (Optionally 20, 22 , and 25 Tons available)

MFI . Capillary Rheometer . HDT / VICAT . LME

Melt Flow Indexer
www.WorldofTest.com/mfi.htm
The LMI 4000 series are highly precise melt testing instruments for the measurement of melt flow rate (MFR) or melt volume rate (MVR) in quality control and research applications. The LMI 4000 is the first melt flow indexer to utilize a powerful 32 bit microprocessor to provide test parameter control, self-diagnostics and digital calibration. The on board computer controls and displays temperature to ± 0.1°C using a unique PID control algorithm.

Melt Flow Indexer - 2000 Series
www.WorldofTest.com/mfi.htm
MFI-2000 series Melt Flow Indexers are affordable bench top Melt Flow Indexers that measure the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of a wide range of thermoplastic raw materials (granulate). The tester conforms to all National and International Melt Flow Resistance standards, including ISO1133, ASTM D1238 and GB/T 3682. Any temperature within 120 –450 (248 -842) can be accurately controlled. The model MFI-2000A allows for tests according to the standards ISO1133, ASTM D1238 Method A and GB/T 3682 Method A. The model MFI-2000AB is capable to test the melt mass-flow rate(MFR) and melt volume-flow rate (MVR) according to the standards ASTM D1238 (A & B Methods), ISO1133 and GB/T 3682, with the additional function of printing the test result by integrated micro-printer.

Melt Flow Indexer - 3000 Series
www.WorldofTest.com/mfi.htm
MFI-3000 series Melt Flow Indexers, with integrated touch panel display measure the melt mass-flow rate (MFR), melt volume-flow rate (MVR), as well as Melt density test according to the standards ASTM D1238 (A & B Methods), ISO1133 and GB/T 3682.

Capillary Rheometers
www.WorldofTest.com/capillary.htm
The new LCR 7000 Capillary Rheometer offers many new features and will meet the demands of a 24-hour a day shop floor operation while maintaining the highest possible level of accuracy, repeatability and sensitivity. The LCR series capillary rheometers are versatile and easy to use yet they offer the most sophisticated materials characterization, data analysis, and reporting capabilities. The LCR 7000 can be used with a standard load cell and a barrel mounted pressure transducer (optional).

HDT / Vicat Heat Deflection Tester
www.WorldofTest.com/hdt.htm
HDT / VICAT Systems offer Heat Distortion Temperature (HDT) and Vicat Softening Point of plastic materials. Qualitest offers a wide range of HDT / Vicat Tester models starting from low cost single station models up to advanced fully automated computer controlled models.

Laboratory Mixer Extruder
www.WorldofTest.com/lme.htm
The LME Laboratory Mixing Extruder is a unique laboratory tool developed to evaluate the processability of a variety of plastics and rubbers prior to production. From very fine powders to coarse materials, the LME will meet many extruding needs. The rotational shearing of the LME system provides extensive and intensive mixing and can be used in the production of polymer blends or alloys. These blends have been found homogeneous enough to be spun into fibers over the entire range of composition.

Specific Gravity . Brittleness . Freezing

www.WorldofTest.com/specificgravity.htm

Electronic Densimeter EW-300SG - A general-purpose new densimeter with high accuracy and additional advanced features for measuring specific gravity of rubber, plastics, metals, and much more. Simple & convenient operation by placing the sample on top of the container, and then in the water container.

Density Resolution: 0.01g/cm^3

Electronic Densimeter MD-300S - A general-purpose new densimeter with high accuracy and additional advanced features for measuring solid and liquid specific gravity.

Density Resolution: 0.001g/cm^3

Densimeter SD-200L - Top of the line Densimeter, for measuring solid and liquid specific gravity.
Capable of measuring solid specific gravity and volume, and its variations down to the fourth decimal place.

Density resolution: 0.0001g/cm^3

Brittleness & Freezing Testers

Brittleness Temperature Tester
www.WorldofTest.com/brittleness.htm
This test method covers the determination of the temperature at which rubber, plastics and elastomers exhibit brittle failure under specified impact conditions. Samples may be housed in a thermostatic bath, based on the reference standards ASTM D746, ISO 812, and GB/T 15256. The cooling medium can be either dry ice (solid CO2) or alcohol. Working temperature from –70°C to +20°C. With this test method the test specimens are mounted onto cantilever grips and then immersed into the low temperature bath for 3 minutes (rubber), or 2.5 minutes (other). Then by striking the specimens with the tip of hammers you can detect at what temperatures the specimens will fracture.

Freezing Testers
www.WorldofTest.com/freezingtester.htm
Our freezing testers available in vertical or horizontal configurations are used to test the bending/flexing durability of rubber, plastics, synthetic leather, shoes, etc., under cold temperatures as low as -30°C or -50°C depending on the selected model. The test chambers can be equipped with a variety of flexing/bending fixtures made of stainless steel. These models conform to ASTM D1790, and ASTM D1593 standards.

Film Thickness Gauges

www.WorldofTest.com/filmthickness.htm

Model CX-1000 Film Thickness Gauge - The CX-1000 combines our patented capacitance sensor with industry-leading software to give you plastic film thickness profiling resolution to one microinch. This gauge can be run as a stand-alone bench unit, or can be connected to a computer for RS-232 operation by our Model CX-1100 Quality Control Software. Capacitance measurement is industry-recognized as the best choice for off-line, high resolution, continuous gauge profiling for plastic films.

Model CX-1020 AutoCal™ Film Thickness Gauge - The CX-1020 revolutionized capacitance film thickness gauging with the introduction of our patented AutoCal™ concept - by adding an absolute (contact) measurement probe with the capacitance sensor, the CX-1020 is self-calibrating. No more need to create detailed recipes to recall calibration information. Accidental operator errors are reduced, accuracy is increased, because different polymers and blends require different calibration values.

Series 543 Bench Micrometers - Digital indicator and stand provides a convenient, cost-effective way to perform plant floor or laboratory spot checks of film and sheet thickness. Also ideal for tensile test sample thickness measurement. Resolution to 50 millionths of an inch with accuracy to 120 microinches. Glass scale technology is rugged and reliable. Can be connected to SPC software for statistical and graphical data analysis. 1.00 inch measuring range. Contact point matched to requirements of application.

Model MX-1210 Microgauge - The MX-1210 utilizes an LVDT sensor, contact foot and an isolated "C" frame assembly and resolves to ten millionths of an inch with accuracy to 20 microinches. Rugged and cost effective, the Microgauge can provide accurate measurement of caliper or thickness of paper, tissue and plastic films. Drive increments can be set for 1 to 6 inch steps (paper) or 0.20 to 4.0 inch steps (film) with other ranges available. Statistics are reported on the display on the faceplate, and the MX-1210 can operate our Model CX-1100 Quality Control Software.

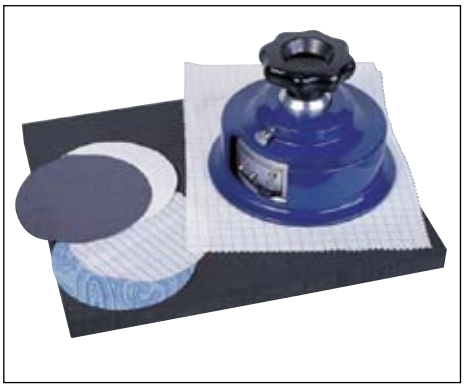
Model MX-1200 Microgauge - The MX-1200 utilizes an LVDT contact sensor, and an isolated "C" frame assembly which resolves to ten millionths of an inch with accuracy to 20 microinches. Measurement head automatically cycles up/down, with operator pulling samples underneath for up to 1024 readings per sample. Statistics reported on gauge display include high, low, average and standard deviation.

Model MX-1100 Microgauge - Economical, Accurate, Easy-to-Operate... the MX-1100 utilizes an LVDT contact sensor, and proven "Isolated C Frame" and resolves to ten millionths of an inch with accuracy to 50 microinches. "True Cam" for accurate descent rates, and one-button "zeroing" are standard. Equipped with an RS-232 port for a serial printer or computer. Manufactured to meet TAPPI specifications for paper or ASTM specifications for film. Range: 40 mils (0.04 inch), available to 0.50 inch.

Film Testing

Opacity Meter Model RT-6000
www.WorldofTest.com/opacity.htm
Ideal for the laboratory or plant floor, the Opacity Meter model RT-6000 is a simple to use, off line instrument that indicates relative opacity of plastic film,paper, laminates, printed packaging and other materials. With a single pass of the light source through your material, the system measures relative light transmission on a scale of 0 to 100 Opacity Units, representing perfectly transparent to purely opaque materials, respectively.

Model DT-1010 Dual-Blade Strip Cutter
www.WorldofTest.com/stripcutter.htm
The Model DT-1010 is designed to cut sample strips of uniform width, with precise parallel edges to very close dimensional tolerances. Common application is sample preparation for tensile testers when running tests on paper, plastic film, foils and other sheet materials. The DT-1010 prepares 1.0 inch wide strips, up to maximum strip length of 10.2 inches. Contact Qualitest for other length and width requirements.



Circular Sample Cutter
www.WorldofTest.com/circularsamplecutter.htm
Our PS100 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. The cutting pad is made of rubber, which allows the cutters to cut into the base with complete safety.

Gas & Water Permeability Testers
www.WorldofTest.com/filmpermeability.htm
Our Automatic Gas Permeability Testers are designed and manufactured according to ISO 2556, ASTM D1434 and GB 1038 standard test methods. These models are applicable in gas permeability test of multifold barrier materials such as plastic film, laminated film, and leather. The test gas can be oxygen, nitrogen, carbon dioxide, and other normal inorganic gas. Gas Permeability Tester is an indispensable instrument for the manufactures, users, and researchers of polymer materials.

Water Vapor Permeability Testers are also applicable in water vapor permeability test of barrier materials such as plastic film and laminated film. Users can control and adjust the technical index of packaging materials by testing the water vapor transmission rate. These equipment are designed and manufactured according to ASTM E 96, ASTM D1653, GB 1037, ISO 2528, and JIS Z0208 standards.

Hot Tack Heatseal Tester
www.WorldofTest.com/hottack.htm
Our Hot Tack units are one of the most advanced Hot Tack heatseal testers on the market and are used to test the strength of heatseals formed in the flexible packaging industry. The HTH2 is the only heatsealer to meet ASTM F 1921-98 method A. Some of our combination models are four machines in one with functionality for Hot Tack, Heatsealing, Heatsealing and Ultimate Strength, or Peel Strength of Heatseals or Laminations. These models have the best timing precision and temperature accuracy on the market, resulting in unsurpassed capability for commercial machine simulation.

MFFT
Minimum Film Formation Temperature Tester
www.WorldofTest.com/mfft.htm
Advanced MFFT Apparatus for determination of minimum film forming temperature, and white point/glass transition temperature of dispersion materials, synthetic resins, enamels, as well as blocking power and stacking capability of coated papers, foils, prints, etc. This state-of-the-art instrument meets the requirements of ASTM D 2354 - ASTM D 1465 - DIN ISO 2115 - DIN 53 366 - ISO 2115 - and ISO/DIS 4622 standards, and has the temperature range of -30°C up to +250°C.

Film / Transparency Testing

Coefficient of Friction (COF) Tester
www.WorldofTest.com/cof.htm
Our line of Coefficient of Friction Test instruments, can be configured to suit your individual needs for economical, quality control testing of Friction properties of film products. Each instrument is designed for ease of use and maintenance, while meeting the standards for ASTM testing. Films, Paper, and Foils can be tested with these instruments along with Heat or Chemical Seals.

Elmendorf Tear Strength Tester
www.WorldofTest.com/elmendorf.htm
Elmendorf Tearing Tester. to determine the ballistic tearing strength of plastic films, textiles, paper or board. Range from 8000 to 64000 Millinewtons with suitable pendulum.

Haze-Gard-Plus
The Objective Standard for a Clear View
www.WorldofTest.com/haze-gard.htm
The haze-gard plus quantifies the visual perception with objective measurement data. All essential criteria for transparency can be measured with one instrument:
– Total transmittance
– Transmission haze
– See-through quality

The Industry Standard according to ASTM
- Reference beam, self-diagnosis, and enclosed optics guarantee accurate readings – any time
- Built-in statistics with average, standard deviation, coefficient of variance, and min/max
- Large storage capacity and data transfer to a printer or PC for professional documentation

Haze-Gard-Dual
Two Standard Methods in one Unit
www.WorldofTest.com/haze-gard.htm
The haze-gard dual objectively measures Total Transmittance and Transmission Haze according to two international specifications:
– ISO 13468 Compensation method
– ASTM D 1003 Non-compensated method
Fast Measurement of a Variety of Samples
- Open sample area for small and large specimens
- Foot switch and automatic measurement allow hands-free operation
- Built-in statistics with average, standard deviation, coefficient of variance, and min/max
- Large storage capacity and data transfer to a printer or PC for professional documentation
- Operation in English, German, French, Spanish, and Italian – switchable

Precise and Reliable Readings – Any time
- Total Transmittance and Transmission Haze in one unit
- Reference beam, self-diagnosis and enclosed optics guarantee accurate readings
- Ready for measurement without warm-up time
- Automatic and long-term calibration guarantee reliable readings

ASTM D 1003
Measurement conditions are different during calibration and actual measurement.
During calibration, part of the light escapes through the open entrance port. While taking a measurement, the entrance port is covered with the sample. Thus, the amount of light in the sphere is increased by the light reflected at the sample surface.

Color Testing Equipment

Light Booth Range

www.WorldofTest.com/lightbooth.htm

Our light booths range starts from low cost units up to larger, more capable models. All models can help you take the guesswork out of color matching, saving you costly rejections, time, and customer confidence. The byko-spectra line of light booths helps reduce product return and mismatches and allows to see what your product will look like indoors and outdoors.

Portable Spectrophotometers (Color Meters)

www.WorldofTest.com/spectrophotometer.htm

The market for color instruments is changing with the need for precise, simple to use portable devices. Now color measurement can be done wherever it is needed with our range of Portable Spectrophotometers in randomly checking the color of outgoing products, controlling a production process for color variations, approving new batches and suppliers and testing pigments for weathering and temperature stability.

Qualitest offers a complete line of portable spectrophotometers for any application, the color-guide family, available as 45/0 or sphere geometry.

Spectro-Guide

www.WorldofTest.com/spectro-guide.htm

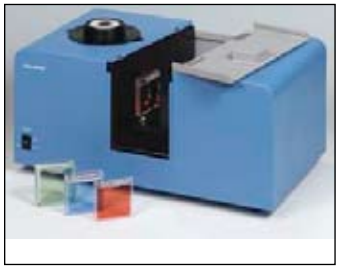
The overall appearance of a product is influenced by color and gloss. A sample of the same color but higher gloss level is visually perceived darker and more saturated than a low gloss sample. In order to get a uniform appearance, both attributes need to be controlled. The spectro-guide is unique as it measures both attributes simultaneously. Thus, the cause of a mismatch can be clearly defined in any situation.

- Color (45/0 or sphere) and 60° gloss are displayed at the same time
- In compliance with international specifications - DIN approval for gloss measurement
- Tolerances for color and gloss allow quick pass/fail decisions in production

Color-View Bench-top Spectrophotometer

www.WorldofTest.com/color-view.htm

Some applications require a laboratory reference instrument to perform detailed color analysis. The color-view spectrophotometer is a highly reliable 45/0 instrument with circumferential illumination. It is designed to measure rough, directional surfaces, pellets or powdered materials like plastic concentrates and resins, and smooth uniform surfaces like paint drawdowns and sprayouts, all with the same degree of certainty.



Color-Sphere Bench-top Universal Spectrophotometer

www.WorldofTest.com/color-sphere.htm

The color-sphere is a versatile spectrophotometer for the laboratory: reflectance, transmittance and haze measurement with one instrument. The top port design allows specimens to be simply placed on top of the unit, making it easy to measure the reflectance of not only flat paint drawdowns and plastic chips but also pellets, powders or slurries like plastic concentrates and resins.

Color Testing Equipment

Gloss Meters
www.WorldofTest.com/glossmeter.htm

A gloss meter is an important tool in the plastics industry which measures the specular reflection of plastics and other surfaces. The light intensity is registered over a small range of the reflection angle.
Qualitest offers a full range of gloss meters from low cost units up to advanced combination angle models which are available in 20°, 60°, 85°, 45°, 75° or TRI- Gloss versions. A top of the line TRI-Gloss model also has an integrated and built-in F/NF Coating Thickness Gauge.

Micro-Haze Plus
www.WorldofTest.com/haze.htm

The micro-haze plus measures gloss and haze in one measurement procedure – ideal for measurement on the finished product and quality control in the production process, or for technical service at the customer site.
- Haze and Gloss 20°
- Small and portable – fits in any lab coat pocket
- Calibrate in the protective holder by pressing one button
- Menu guided operation

Haze-Gloss
www.WorldofTest.com/haze.htm

The haze-gloss was designed for the needs in the laboratory. Gloss, haze and mirror reflection can be all measured with one instrument for low to high gloss surfaces.
- Gloss 20°, 60°, 85° and haze
- Mirror reflection for materials with very high reflection capabilities, such as metals
- Reference beam, closed optics and self diagnosis guarantee accurate quality control

Wave-Scan Dual
www.WorldofTest.com/wave-scan.htm

Orange Peel and DOI measurement on high to semi gloss surfaces. Appearance control is no longer limited to final topcoat inspection.
Like the wave-scan DOI, the optical profile of high gloss surfaces is detected using a laser light source. An additional, infrared - high energy LED allows measuring the same structure spectrum (0.1 - 30 mm) on medium gloss surfaces. The dullness measurement is recorded with state-of-the-art CCD camera technology. It gives information on the image forming qualities of the surface caused by structures < 0.1mm.

Wave-scan DOI
www.WorldofTest.com/wave-scan.htm

Surface appearances change with the size and distinctness of structures. Structures will be perceived as being very distinct, if e.g. an edge is reflected on the surface with high contrast and sharpness. The wave-scan DOI evaluates structure size as well as the brilliance of the surface.
Total Appearance – Orange Peel and DOI
- High correlation to the visual by analyzing the structure size: Ultrashort to Ultralong wave
- DOI: Distinctness of Image – objective criteria for brilliance and gloss
- Classical Long Wave (LW) and Short Wave (SW)
- Independent of paint system and refractive index - no matter whether comparing 1 K, 2 K or powder coating
- Reproducible results on test panels and curved parts
- For solid and metallic coatings

Micro-Wave-Scan
www.WorldofTest.com/wave-scan.htm

Orange Peel and DOI measurement for curved and small parts. Now you can measure Orange Peel and DOI on small and curved surfaces: Automotive add-on parts - like bumpers, gas tank doors, mirror housings, door handles, decorative trim or motrocycle parts.
- Curvature 300 mm
- Minimum sample size: 25 mm x 40 mm
- Selectable scan length 20, 10 or even 5 cm
- Measurement area: 4 mm x scan length
- DOI measurement possible without scanning the surface
- Good correlation to wave-scan DOI, the appearance standard in the automotive industry

Miscellaneous

Apparent (Bulk) Density Tester

www.WorldofTest.com/apparentdensity.htm

These series testers are used to measure of apparent density, bulk factor, and where applicable, the pourability of plastic materials such as molding powders. There are three methods according to ASTM D 1895 are applicable to various forms of these materials that are commonly encountered, from powders and granules to large flakes and cut fibers.

The apparatus consists of a measuring cup which is polished inside and a funnel.

Full Notch Creep Tester

www.WorldofTest.com/fullnotchcreeptester.htm

FNCT is used to determine the stress cracking resistance of polyethylene materials in any environment. A test specimen in the form of a square-section bar with coplanar notches in each face at the center, is subjected to a static tensile load in a temperature-controlled environment, for example air, water, surfactant solution. The geometry of the specimen is such that plane strain conditions are obtained and brittle failure occurs under appropriate tensile load and temperature conditions. The time for this brittle failure to occur after loading is recorded.

Environmental Stress-Cracking Tester

www.WorldofTest.com/stresscrackingtester.htm

This machine is used to determine of the susceptibility of ethylene plastics, as defined in terminology D883, to environmental stress-cracking when subjected to the conditions specified in ASTM D1639-01 under certain conditions of stress and in the presence of environments such as soaps, wetting agents, oils, or detergents, ethylene plastics may exhibit mechanical failure by cracking.
Principle: Bent specimens of the plastic, each having a controlled imperfection on one surface, are exposed to the action of a surface-active agent. The proportion of the total number of specimens that crack in a given time is observed.

Rotary Abrasion Tester

www.WorldofTest.com/rotaryabrasion.htm

Rotary Abrasion Tester (compare to Taber-type Abrasion Tester) is a cost-effective and high quality instrument used to determine the abrasion for rubber, leather, plastics, fabrics, paper, paint, plywood, tiles, glass, etc. and is built in conformance to ASTM D4157, DIN-53754/53799/53109/52347, and TAPPI T476. For this method of abrasion, a four-inch diameter sample is mounted on a rotating turntable. Abrasive wheels are applied to the sample using a fixed weight.

Limiting Oxygen Index Chamber

www.WorldofTest.com/loi.htm

The advanced LOI Limiting Oxygen Index Chamber accurately determines the relative flammability of plastics and other materials, by measuring the minimum oxygen concentration that will support combustion according to ASTM D2863 and ISO 4589 specifications. The test specimens are burned in a precisely controlled atmosphere of nitrogen and oxygen. The operator adjusts the supply gases and uses the flow meter readings to calculate the oxygen index.

QUALITEST™
WWW.WORLDOFTEST.COM

Qualitest also offers an extensive range of testing solutions for rubber, foam, paper & cardboard, textiles, cement & concrete, and metals.

Our rubber testing technologies include:

- Universal Tensile/Compression Testing Machines
- Durometers/IRHD Hardness Testers
- Abrasion Testers
- Resilience Elasticity/ Vertical Rebound Testers
- Carbon Black Dispersion Testers
- Rheometers
- Flexometers
- Specific Gravity Testers
- Densimeters
- Specimen Dies
- Clicker Presses
- Gehman Tester
- Temperature Retraction Test
- Stress Relaxation Testers
- Compression Set Test
- Williams Parallel Plate Plasometer
- Brittleness Temperature Tester
- Block / Aging Ovens
- Low Temperature Testers
- Slip Tester
- Tire Plunger
- Thickness Gauges
- much more

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