Advanced Rubber Testing Technologies
ABOUT QUALITEST

Qualitest is a global contender and one of the top-ranking suppliers of testing technologies worldwide. With our extensive portfolio of state-of-the-art and competitively priced testing machines, systems and software, we supply standard or customized solutions for many test, measurement and quality control tasks required in the world of modern materials testing.

The key products from Qualitest range include hardness testers, universal testing machines, metallography, materials testing equipment, spectroscopy, microscopy, portable testers, and instruments for testing metals, plastics, rubber, textiles, paper, paint, cement, concrete and packaging materials, as well as technologies for NDT/Ultrasonic, surveying, automotive, aerospace, mining, oil/gas/pipe industries, gold & Jewellery applications and much more.

RUBBER TESTING TECHNOLOGIES

- Universal Testing Machines
- Durometer - Shore Hardness Tester
- Abrasion Tester & Rebound Tester
- Specific Gravity Tester - Densimeter
- Environmental Chamber
- Rheometer
- Flex Tester
- Specimen Dies, Molds & Clicker Presses
- Low Temperature Tester - Combo
- Block Oven / Aging Oven
- Relaxation Tester
- More Rubber Testing Instruments
QUALITEST NETWORK

We believe in participating responsibly in the global marketplace. We are committed to understanding and respecting the laws, values and cultures wherever we do business; profitably growing in all markets; promoting a healthy business climate globally; and contributing positively in every community we call home, both personally and organizationally.

Together with our WorldofTest.com network of partners, Qualitest offers a complete selection of testing machines and systems. Today Qualitest has 50 - 70 associates who are contributing to our growth.

Through our team’s unrelenting focus on productivity and innovation, we also offer efficient customer service support directly or via our worldwide QualiService authorized partners.

Qualitest and WorldofTest.com network today is a leader in the global testing technology industry.

QUALITEST CUSTOMERS

Qualitest has had the privilege of serving many Fortune 500 companies and global industries. Our growing network of customers include major corporations.

SUPPORT & SERVICES

Quality and customer satisfaction is our top priority. With direct support/service or via our authorized QualiService network we ensure that your Qualitest product stays fully functional wherever you are.

TECHNICAL SUPPORT
Help you to better understand our products and provide support when you need it.

CALIBRATION
We provide fast, quality, accredited calibration services to our products.

REPAIR
Repairing services will also be provided by us to ensure your machine works properly.

PARTS & CONSUMABLES
Qualitest also provides parts and consumables for the long run.
Rubber compounds are one of the most complex and universally used materials and the flexibility of the compounds and their ability to absorb particle filter like carbon black, silica, and clay in amounts more than their own weight results in a wide range of properties, possible to achieve. Quite often, rubber and elastomer compounds are used where resistance to impact, or toughness is desired. Where elasticity during stretching and recoil are needed, rubber and elastomers are ideal materials. An elastomer can be stretched to many times its original length yet bounce back without permanent deformation.

Some rubber and elastomer products are quite economical. One of the popular elastomers for many consumer products, such as toys has been plasticized PVC. To minimize the cost of a low performance rubber product, the compound can be heavily filled with clay. On the higher end of the price range, specialty elastomers made of exotic compounds are used for aerospace applications and possess critical properties for high temperature environments. As a rule of thumb, higher performance and higher temperature usage specifications mean higher cost products and more careful and complex testing is required.

Tires are a typical example of a product made from optimized compounds consisting of several natural and synthetic rubber compounds along with numerous reactive agents and carbon and other particles. The complex rubber compounds used in tires have taken many years to optimize and still intense formulating and testing continues on improving their consistency and performance.

Rubber compounds used for shoe soles, tires, gaskets, belts, and pulleys are optimized formulations, utilizing precise amounts of many different components. This complexity makes testing functions, a huge responsibility within any organization whose products include performance specifications.

The high capacity of rubber to absorb filter material and mix with other polymers enables these compounds to achieve an expansive range of properties. Tires, hockey pucks, drive belts, running shoe soles, exercise mats are all examples of rubber compounds optimized with different compounds and levels of fillers. Latex gloves are a form of natural rubber with limited vulcanizing and little or no fillers.

Polyamide based elastomers provide some of the highest strength and toughness properties known and are used in top of the line clothing and sports gear. One of the higher performance elastomers used in applications requiring durability is considered to be Polyurethane. Where molding of many small parts require to be inexpensive, Thermoplastic rubber (TPR) is a common choice.

Silicone based elastomers and fluoropolymer elastomers are also used in high temperature applications.
Universal Testing Machine

https://www.worldoftest.com/universal-testing-machine-qm-series

The Universal Testing Machine is loaded with technical features, ergonomic design and is produced with the highest quality as a benchmark. This instrument is 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.

<table>
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<th>QM-series Universal Testing Machine range</th>
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<tr>
<td><strong>Model/Specs</strong></td>
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<tr>
<td>Capacity (kN)</td>
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<tr>
<td>Total Cross-head Movement (mm)</td>
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High & Low Temperature Universal Testing Machine

https://www.worldoftest.com/high-low-temperature-universal-testing-machine

ISO 527, ASTM D 638 and the equivalent.

Environmental system enables the testing of material and components under a variety of real world conditions. Cooperating with environmental chamber, UTM machines can realize variety of tests at low or high temperature.

- It consists of three parts: main frame, grips and moveable high & low temperature cabinet.
- Import full-digital AC servo system and high rigid structure enable high precision of the measuring result. The cabinet, with a double-heat insulation glass door, is convenient to observe the test; stainless steel test cabinet is resistant to corrosive.
DIN ISO 7619, DIN EN ISO 868, ASTM D2240, NF EN ISO 868, JISK 6253
Qualitest offers Digital Hardness Tester HPE III which provides significant test data for the use in laboratory or field. Companies that develop or use the products made of soft elastic materials product have usually a laboratory in which the products and raw material are regularly tested according to the standard.

Pusey & Jones Hardness Tester - Plastometer

DIN ISO 7619, DIN EN ISO 868, NF EN ISO 868, ASTM D2240 (DIN 53505)
Digital Shore Durometer - HPE-II Series Digital Durometers are high-end hardness testers for accurate and repeatable hardness measurement of rubber, plastics and other elastomers within the Shore A, A0, B, 0, C, D, D0, 00, 000, 000S, E, scales and much more. This portable handy instrument is available in the widest range of scales and L/c as well as Variant C (Asker C), CS, F and BARCOL.

Pusey & Jones (P&J) hardness tester (Plastometer) serves for the determination of the penetration depth on rubber and elastomer materials like rubber rollers and standard blocks made of rubber with a minimum thickness of 13 mm as well as paper rollers. The electronic dial gauge is integrated in the instrument and shows the indentation depth to an accuracy of 3 decimal places (0.000 mm).
**Automatic Motorized Durometer - DigitTest II**

The most accurate and versatile hardness tester on the market, DigitTest positions itself as the top level Shore/IRHD hardness tester with a modular design to suit virtually every Shore or IRHD hardness measurement scale for Polymers. The automatic test procedure of DigitTest eliminates the operator’s test influence on test procedure and thus always provides the most accurate results.

**IRHD Micro Hardness Tester III**

The IRHD Micro Hardness Tester III - New Generation - 3rd series of this popular IRHD Hardness Tester line has a more convenient and user-friendly operation. Accurate IRHD Micro hardness measurement of soft elastomers such as O-rings, seals and gaskets, with thickness down to 0.6mm, is guaranteed.

**Automatic Hardness and Density Testing**

This product is developed for customers who need a large number of hardness test pieces every day for hardness and density test, such as tire factory, seal factory’s mixing center and mixing plant, raw material factory, etc. The HAD 325 is a large console machine, particularly suitable for large tyre plants with large sample testing tasks every day.

**Temperature Controlled Automatic Motorized Durometer - Digi-Chamber**

The revolutionary Temperature Controlled Automatic Motorized Durometer - Digi-Chamber - SHORE & IRHD Scales consists of a Digi-Test II Hardness Tester and a temperature chamber which allows tests to be carried out at above or below ambient temperature. With the function of temperature control, the specimen can be examined of its hardness change in extreme temperature conditions.
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 technique. This top quality unit is ideal for the quality control of foam materials during the production and in the acceptance department.

DIN 53516, DIN ISO 4649, ASTM D 5963

This top quality and highly popular abrasion tester determines the resistance of elastomers in regard with the frictional loss on rubber products, such as tires, conveyor belts, hoses, footwear, floor covering etc. Since wear is always a result of abrasion, different test methods have been developed for the simulation of long term wear.
Environmental Chambers

https://www.worldoftest.com/environmental-chambers

Temperature Humidity & Walk-in Chambers

https://www.worldoftest.com/temperature-humidity-chamber
https://www.worldoftest.com/walk-chamber

Temperature humidity chamber is used to test material structure or composite, in the high temperature and ultralow temperature continuous environment. Suitable for electronic, LED lighting industry, auto parts, chemical industry, building materials, mobile computers, batteries, plastic, metal, rubber etc. Walk-in Chambers are available for variety of sizes, from a small box that fits on the bench top to a room-sized chamber for large objects or for testing large batches of product simultaneously.

Ozone Chamber

https://www.worldoftest.com/ozone-tester-ozone-chamber

Ozone test chamber is a major factor in rubber cracking although it is rare in the atmosphere, ozone aging tank simulates and enhances the condition of ozone in the atmosphere to study the effects of ozone on rubber, and then identify and evaluate the method to resist ozone and aging for rubber, adopt effective anti-aging measures to enhance the life of rubber products.

Xenon Test Chamber

https://www.worldoftest.com/xenon-test-chamber

Xenon test chamber is affordable, full-featured, and has a large specimen capacity. It provides precise control of critical test parameters including spectrum, irradiance, relative humidity, chamber temperature and black standard temperature.

Thermal Shock Chamber

https://www.worldoftest.com/thermal-shock-chamber

Thermal Shock Chamber can be used for testing most commercial products to see how they withstand drastic temperature changes. A thermal shock chamber will subject a product to the most extreme temperature conditions, instantly. The purpose of testing a product under these circumstances by the thermal shock chamber is to observe changes in the products characteristics and check for failure occurrence of different materials and thermal expansion coefficients.
Rain Test Chamber

https://www.worldoftest.com/rain-test-chamber

Rain Test Chamber is designed according with the standards of IEC 60529-2001 and mainly used for electronic products to do the waterproof test. Water pump for rain test chambers uses highly pressure stainless steel pump, ensure water pressure and flow of the test cycle, the pump is installed in the side of the IP test device, and both ends of the inlet and outlet to set up the joint, easy to replace and repair.

UV Test Chamber

https://www.worldoftest.com/uv-test-chamber

UV test chambers have been developed to provide a UV weathering. The UV simulates the effect of sunlight with fluorescent ultraviolet (UV) lamps, while rain and dew are simulated by the condensation of humidity.

Salt Spray Tester

https://www.worldoftest.com/salt-spray-tester

The Salt Spray Tester – Salt Spray Cabinet – Chamber – Fog Apparatus is used to create and maintain the salt spray (fog) test environment, and test the anti-corrosion quality of all the materials surfaces after the rust-proof of painting, coating, electroplating, anodizing and rust-proof of greasing. Our salt spray testers available in two capacities meet ASTM-B117, JIS-D0201, JIS-H8502, JIS-H8610, JIS-Z2371 and other International Standards test methods. Power supplied can be configured upon request.

Brittleness Temperature Tester QT-BPT

https://www.worldoftest.com/brittleness-temperature-tester-qt-bpt

The Brittleness Point Temperature Tester - QT-BPT Series Brittleness Tester covers the determination of the temperature at which rubber, plastics and elastomers exhibit brittle failure under specified impact conditions. Samples to be housed in a thermostatic bath based on the reference standards ASTM D746, ISO 812, as well as and other international standards.
Moving Die Rheometer (MDR)

https://www.worldoftest.com/moving-die-rheometer-mdr

ASTM D5289, ISO-6502
The Moving Die Rheometer MDR- 3000 measures the change in stiffness of a rubber sample. The sample is compressed between two heated platens and by an applied oscillating force. The degree of vulcanization determines the cure characteristic of the sample as it is heated and compressed. Our Moving Die Rheometer offers affordable testing and stunning results. We offer sealed die and unsealed die type configurations to suite your application.

Mooney Viscometer

https://www.worldoftest.com/mooney-viscometer

ASTM-D1646, ISO-289, JIS K 6300
The Mooney Viscometer measures the change in a rubber and plastic elastomer properties over time, from uncured to scorched state. The specimen is physically deformed by a rotating platen which will determine changing viscosity at pre-set temperatures. When the test is completed, the dies will automatically reset and allow for removal of the specimen. With the PID temperature controller you can assure that smooth and accurate data will be taken throughout the test.

Foam Pressure Rheometer

https://www.worldoftest.com/foam-pressure-rheometer

The Foam Pressure Rheometer is for the determination of various vulcanization characteristics of different rubber compounds. This series is divided into two machines, the QT-M3000F and the QT-M3000FA. The Foam Pressure Rheometer - QT-M3000F is able to precisely adjust the gap between upper and lower die freely. The Foam Pressure Rheometer - QT-M3000FA able to isolate the die’s opening and frame by the sealed ring. The upper and lower die can be completely sealed.

Rubber Process Analyzer

https://www.worldoftest.com/rubber-process-analyzer

ASTM D 5289, ASTM D 6204, ASTM D 6601, ISO 6502, DIN 53529
RPA9000 Rubber Process Analyzer is designed for measuring the viscoelastic properties of polymers and elastomeric compounds before, during and after cure. The acquired data gives exact information about the processability, cure characteristics, cure speed, and behavior of the compound at the after-cure.
DeMattia Flex Tester

The machine is used to determine the rubber subjected to the constant compression load under certain amplitude and frequency to assess its rising speed of temperature, dynamic and permanent deformation but it’s available for testing the rubber with the hardness from 30 to 85 IRHD.

Ross Flexing Tester

The Ross Flex Tester - Ross Flexing Tester is designed to determine “resistance of vulcanized or synthetic elastomers to cut growth. It conforms to ASTM Method D1052. The rubber will form cracks when subjected to repeated flex or bending under specified conditions and known periods. The tester model QT-RF100 can test six pairs of samples simultaneously (twelve total). The frequency of the flexures is 100 cycles per minute.
Gehman Tester

https://www.worldoftest.com/gehman-tester

ASTM D1053, ISO 1432

Gehman Tester - ET-02 - Relative Stiffness Characteristics Determination for determination of the relative stiffness characteristics of vulcanized or thermoplastic rubbers, also called the Gehman procedure. The test is done according to ISO 1432, ASTM D1053, or technical equivalent standards.

The Gehman Tester - ET-02 - Relative Stiffness Characteristics Determination, has 6 test stations, is computerized and performs the test automatically.

TR Tester - Low Temperature Retraction Tester

https://www.worldoftest.com/tr-tester-low-temperature-retraction-tester

The TR Tester - ET-01 - Low Temperature Retraction Tester is primarily used to determine low temperature characteristics by the temperature retraction procedure according to ISO 2921 and ASTM D-1329.

The TR Tester - ET-01 - Low Temperature Retraction Tester has 6 test stations, is computerized and performs the test automatically after the cooling media has been cooled down and the samples have been mounted. An automatic release of the samples is initiated after the pre cooling period has been completed.

Brittleness Tester - ET 05 II

https://www.worldoftest.com/brittleness-tester-et-05-ii

ASTM D746, ASTM D2137, ISO 812, ISO 974

It is used for the automatic determination of Brittleness point according to ISO 812, ISO 974, ASTM D746 and ASTM D2137. The price includes the instrument and software, but not the computer.

The test rig is raised by pneumatic cylinders, which require an air supply of 6 Bar. The brittleness tester is designed as a falling weight tester, where the speed is set by the height and the energy by the attached weights.

Low Temperature Compression Set Rig


Low Temperature Compression Set Rig - EV-09 performs compression set at low temperatures without having to open the deep-freezer and influence the compression set result has always been a problem.
Cabinet Aging ovens for precision ageing of rubbers and plastics under controlled conditions. They are designed to give very low temperature variations in time and space, low air speed and controlled air exchange rate. This is achieved by using an inner chamber with a controlled air flow.

ISO 3384, ISO 6914, ASTM D 6147 Stress Relaxation Tester - EB 02 Relaxation system for continuous measurement in either compression or tension. The Stress Relaxation Tester - EB 02 meets the requirements in ISO 3384, ISO 6914 and ASTM D6147.

ISO 3384 and ISO 899-1 With the Automatic Creep and Stress Relaxation Tester - EB-18-II-3 for Testing of Rubber - tests can be done. The instrument is based on our triple temperature oven EB 07, which means that each test station can run with an individual temperature.

Cabinet Aging Oven - EB Series
https://www.worldoftest.com/block-oven-aging-oven

Stress Relaxation Tester
https://www.worldoftest.com/stress-relaxation-tester

Automatic Creep & Relaxation Tester
https://www.worldoftest.com/automatic-creep-relaxation-tester

Specimen Dies & Molds
https://www.worldoftest.com/specimen-dies-molds

ASTM Standard Cutting Dies

| ASTM D-412 A to F Tensile Sample Cutting Die | ASTM D-1708 Micro tensile Die |
| ASTM D-638 Type I – V Tensile Die | ASTM D-746 |
| ASTM D-1822-S | ASTM D-1938 |
| ASTM D-624 Sample Cutting Die | Other ASTM Dies Available Upon Request |

Our molds are made of P20 tool steel that is hardened, ground and polished, then chrome-plated with the option of Teflon coating. Both molds and dies meet most national and international standards such as ASTM, DIN and ISO.

Laboratory Sized Swing Arm Clicker Press

QTSE Series Hydraulic Swing Arm Clicker Presses are the most widely used die cutting machines in the world. The constant attention to customer’s feedback has allowed us to produce a product able to satisfy the needs of reliability, productivity and energy savings.
Full Notch Creep Tester - QT-FNCT-6 Series

https://www.worldoftest.com/resonant-fatigue-testing-machines

ISO 16770 and ISO3501

Full Notch Creep Tester (FNCT) - QT-FNCT-6 Series - is used to determine the stress cracking resistance of polyethylene materials in any environment.

Carbon Black Dispersion Tester

https://www.worldoftest.com/carbon-black-dispersion-tester

ISO 11345-1997

Carbon Black Dispersion Tester is designed to ensure uniform dispersion of carbon black in the polymer substrate, which influences the product’s characteristics and is therefore vital to check.

Optical Sorting Machines

https://www.worldoftest.com/optical-sorting-machines

Qualitest offers a line of optical sorting machine that can also be used to do automatic sorting. The optical sorting machine product line offers users flexibility over a wide range of parameters that can be measured as well as sorting machines that are designed specifically for certain objects such as screws, rivets or bolts.

Tire Plunger Tester

https://www.worldoftest.com/tire-plunger-tester

Our advanced range of Tire Plunger Tester machines are available in different configurations for various tests such as, plunger test, bead unseating, vertical elasticity coefficient, lateral elasticity coefficient, footprint analysis, dimension measurement, envelope stiffness, bevel stiffness, torsion, and inflation pressure tests.

Carbon Black Content Analyzer

https://www.worldoftest.com/carbon-black-content-analyzer

The Carbon Black Content Analyzer - ES-14 - Tube Oven can be used for the following and similar test methods:

- ISO 247 Rubber - Determination of Ash
- ISO 1408 Rubber - Determination of carbon black content
- ASTM D297 Rubber - Determination of carbon black and ash content
- ASTM D1603 Plastics - Test method for carbon black in olefin plastics

Temperature controller, over temperature thermostat, drying tube, flow meters, wash bottles and 5 quartz glass boats are included.
Qualitest has a wide network of agents and sales/service partners in North America and worldwide. Please contact us for the nearest distributor, sales office to you.

**Qualitest USA**

Toll-Free: 1 877 884 TEST (8378)  
Fax: 954 697 8211  
E-mail: info@qualitest-inc.com  
Mailing/Shipping Address: 1323 SE 17th St., # 200 Ft. Lauderdale, FL 33316, USA

**Canada & International**

Tel: +1 905 944 9825  
Fax: +1 905 944 0304  
E-mail: sales@qualitest-inc.com  
Mailing/Shipping/Corporate Office Address: 70 East Beaver Creek Rd., #9, Richmond Hill, Ontario L4B 3B2, Canada

**Qualitest FZE - GCC/Middle East/ African Regional Office**

Tel: +971 4 8819252 / +971 4 8818896  
Fax: +971 4 8819262  
Email: uae@qualitest-inc.com  
Jafza One, BB 1610, Jebel Ali Free Zone PO Box 261440, Dubai, UAE

**Qualitest Asia - Representative Office**

Tel: +852 2855 6970  
Fax: +852 2855 6800  
Email: asia@qualitest-inc.com  
Level 3, Three Pacific Place, 1 Queen’s Road East, Hong Kong  
Responsible for Asia Pacific Countries. Languages spoken: Mandarin, Cantonese and English

**Qualitest India - Representative Office**

2/F, Kalpataru Synergy, Santacruz East, Mumbai, India  
Tel: +91 22 6169 5990  
Fax: +91 22 6169 5999  
Email: india@qualitest-inc.com