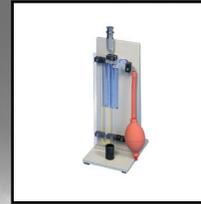


Advanced

Cement Testing Technologies



Physical and Chemical Properties of Cement
Setting Time and Consistency of Cement
Building Lime, Grout and Mud Testing
Preparation of Cement Specimens
Compression & Flexural Testing Machines



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.

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Cement

Cement, a binding material used in construction and engineering, is typically made by heating a mixture of limestone and clay until it almost fuses, and then grinding it to a fine powder. When mixed with water, the silicates and aluminates in the cement undergo a chemical reaction, which makes the resulting hardened mass impervious to water.

Cement is formed by perfecting the raw material mix, using only the highest quality substances to create the finished cement. This is crucial to ensuring the proper progression through the intermediate stages of clinker formation and completion of the burning process. The quality of the finished cement is monitored on the basis of the requirements of the All-Union State Standards, which consider several variables including density, fineness, soundness, consistency, setting time, compressive strength, and heat of hydration.

As different mixes of ingredients produce different strengths of cement, laboratories perform tests to ensure that the properties of cement correspond to the specifications of the industrial application.

General Applications

Cement is primarily used to produce concrete, the world's most versatile and durable construction material. Cement is also used in mortars and the manufacture of bricks, tiles, shingles, pipes, beams, railroad ties, and various extruded products.

Innovative applications for cement are also growing in importance. One of these is solidification/stabilization (S/S), a widely-used technique for the management and disposal of contaminated materials and wastes, including radioactive wastes. Cement is mixed into the contaminated substance, immobilizing the contaminants and preventing them from migrating to plants, animals, or humans. This process is most often used to reclaim polluted industrial sites for redevelopment or recreational use.

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

Qualitest's Advanced Testing Technologies allow laboratories all over the world to test and evaluate cement mixtures to ensure their strength and safety. Together with our network of partners, Qualitest offers a complete selection of testing machines and systems for cement testing. We supply an extensive range of competitive solutions such as Compression & Flexure testing machines, which are customizable and equipped with advanced software; the widest range of cement testing machines for determining physical and chemical properties of cement; and a multitude of Automatic Mortar Mixers complying with the most stringent international standards.



Physical & Chemical Properties of Cement

Expansion of Portland Cement

High Pressure Autoclave – QualiClave

ASTM C151, C141, UNE 7207

www.WorldofTest.com/qualiclave-mortar-prism-autoclave.htm

The High Pressure Autoclave - QualiClave from Qualitest is a pressure device with unique safety standards and TUV approval. The High Pressure Autoclave - QualiClave is a vital instrument to measure the expansion of cement when the materials are hydrated. Calcium Oxide and Magnesium Oxide both are capable of undergoing a chemical process known as hydration. This process causes water molecules to attach itself with each molecule of the oxides and thus causing the cement to increase in volume. However, this process occurs over a long period of time. An autoclave is used to estimate the effects of expansion on the cement



and to accelerate the chemical reaction. The High Pressure Autoclave - QualiClave is specially developed for testing the volume consistency of High Pressures. The High Pressure Autoclave - QualiClave consists of a high pressure steam compartment with inner dimensions of 168mm diameter and a height of 355mm to accept a sample holder, 8 prisms as per ASTM or 6 prisms as per DIN. All parts of the pressure compartment have been chemically nickel-plated. This High Pressure Autoclave - QualiClave unit has capacity of 7.8 L. The pressure generated can be up to 2.5 N/mm². A certificate is issued along with each unit's pressure chamber to ensure that it is to standard in regards to safety. The High Pressure Autoclave - QualiClave is equipped with a pressure gauge, manometer controls for pressure settings, safety pressure valve, safety temperature limiter, analogue thermometer, control lamps and ON/OFF switch. A blower on the bottom of the unit provides faster cooling. The pressurized container is insulated from the outside housing by a rock wool insulation mat.

Fineness of Cement

Air Permeability Tester - Blaine Apparatus – QualiPERM

ASTM C 204, EN 196, DIN 1164, BS 4550

www.WorldofTest.com/tonical.htm

An air permeability test can be done by any one of Qualitest's Blaine test apparatus. We have several options to choose from including an automatic air permeability test apparatus, a manual air permeability test apparatus, a PC-controlled air permeability test apparatus. The Blaine air permeability tester is mainly used to measure the fineness of the cement, which in turn can be an indication of speed of setting and rate of strength development. The testing principle is based on the permeability of air through a sample under certain conditions. This is the ideal testing instrument for cement and concrete testing. We offer variety of Blaine systems fitting the needs of the industry. **QualiPerm I** manual air permeability tester is able to perform the Blaine test with a traditional design. This Blaine tester has a manual aspirator to apply the air pressure for test. Qualitest offers this air permeability test apparatus as an alternative to automatic and PC-controlled. It is competitively priced as well as offering the tried and true classical design of a Blaine tester. The manual operation is has proven to be an effective means to carry out the tests. Moreover, the small footprint means that the machine will be the perfect addition to any facility. The automatic Blaine air permeability test apparatus **QualiPerm II** offered by Qualitest has a built-in pump that replaces the aspirator (bulb). The entire test can be run semi-automatically with a greater degree of freedom for the operator than the manual Blaine test apparatus. The automatic time registration is both precise and convenient. This automatic Blaine **QualiPerm II** performs Blaine tests according to EN 196, DIN 1164, BS 4550, and ASTM C 204. These international standards ensure that the Blaine tester can perform to the most stringent standards. Part of the maintenance of a Blaine tester requires routine calibrations; official calibration and other consumables can be purchased as accessories for this automatic Blaine tester when they are required. The built-in pump replaces the aspirator in this new design. The entire test can be run semi-automatically with a greater degree of freedom for the operator than the manual Blaine test apparatus. The automatic time registration is both precise and convenient. The unit runs at 230V/50Hz Operation and software of the **QualiPerm III** is similar to the other PC-operated units. The design of the main unit is unique in that the footprint is much smaller than those units and the measuring cell is fully encased in the metal housing. The sleek design allows for the testing unit to be placed conveniently on any atop any bench within your facility. The main unit is housed completely in metal. The load cell is also well-protected Electronic Blaine Apparatus, Dyckerhoff system, **QualiPerm IV** semi automatic device with pump and time registration for the rapid determination of specimen characteristics. Measuring cell dia. 41 mm, volume of measuring cell approx. 73cm³ 230 V / 50 Hz. **QualiPerm V** Blaine test apparatus is the next generation of testing apparatus; being fully automated. The test procedure and evaluation is run without the supervision of an operator and is automatic. This system comes complete with software. The measuring cell has a diameter of 41 mm and its volume is approximately 73 cm³. The machine runs on at 230 V / 50 Hz. Also available is a system with two-cells giving the ability to measure two points. The difference between the two air permeability tester in the series (**QualiPerm V and QualiPerm VI**) is the number of load cells available with which to perform the Blaine test. The **QualiPerm V** is a PC-controlled Blaine tester model that sports one load. The **QualiPerm VI** PC-controlled Blaine tester is the model that has two load cells. Both models perform tests that are monitored and recorded by the computer that is included.



Physical & Chemical Properties of Cement

Bulk Density of Cement – QualiBDC

Qualitest's Bulk Density Apparatus is designed to determine the bulk density of cement. It consists of a sieve funnel, an unit weight measure 1 litre capacity, a tripod, and straightedge.

- Overall dimensions: 350x350x520 mm
- Weight approx.: 3 kg

Heat of Hydration of Cement

Solution Calorimeter – QualiCAL

ASTM C 186, EN 196-8, BS 4550

www.WorldofTest.com/tonical.htm

Solution Calorimeter QualiCAL is an instrument used to analyze the setting behaviour of building materials such as cement and mortar. It is able to determine the rate of heat generation with respect to time with the rigid control of a computer control system.

Special Features

- Fully-automatic test procedure
- Evaluation and documentation of test results via computer
- Rigid, durable measuring instrument for industrial and laboratory use
- Simple operation
- Self-calibrating

The Solution Calorimeter for Cement and Concrete - QualiCAL is designed with a steel housing to protect the samples from environmental heat fluctuation as well as specimen-to-specimen heat transfer. Each measuring cell is also fitted with a heating element and thermoelectric conductive measuring chains for heat output readings. From the beginning of the test, the control device operates the procedure with a direct interface. The control stabilizes the thermal signal and amplifies it to be a measurable voltage. It also monitors the internal measuring cell temperature. All data is logged on an internal drive for later download.

Technical Specifications

- Consists of a Dewar vessel, which is located in an insulation wooden box, an electrically driven stirrer with constant speed and a funnel. (Dewar vessel can be easily removed from the wooden box and replaced.)
- Dimensions: 350 x 250 x 680 mm
- Weight: 15 kg
- Power: 230V / 50Hz
- Does not include: Thermometer and stirring rod

Semi-Adiabatic Langavant Calorimeter – QualiLang

EN-196-9

www.WorldofTest.com/semi-adiabatic-langavant-calorimeter.htm

The Semi-adiabatic Langavant Calorimeter - QualiLang system has been designed to measure the heat of hydration. This system serves only for determination of the heat of hydration in fresh mortar. The testing procedure consists of placing a sample of fresh mortar into a calorimeter, and determination of the amount of heat released on the basis of the temperature development that takes place. The Test Calorimeter with No. 1 consists of a thermos vessel with a thermally insulating closure and a stable aluminum enclosure that serves as a mount. The reference calorimeter with No. 2 has the same structural features and the same properties as the test calorimeter. The Mortar container is used to hold the mortar sample that is separated after each test. This container is water-vapor proof, and the cover (lid) is provided with a cylindrical thermometer fitting in its centre. EN 196-9 stipulates that the room temperature of the laboratory must be $20 \pm 2^\circ\text{C}$ for mixture of the mortar and for conduct of the testing. The interval between the calorimeters must be approximately 12 cm. The speed of air movement in the vicinity of the calorimeter must be less than 0.5 m/s (in other words: no draughts!). The test sample must have a total mass of 1575 ± 1 g. It must consist of the following mass proportions

- Cement (360.0 ± 0.5) g
- Standard CEN sand (1080.0 ± 1) g
- Deionised water (180.0 ± 0.5) g

Loss of Ignition

Muffle Furnace - QualiMfl

EN-196-2

www.WorldofTest.com/vicat-apparatus.htm

Muffle Furnace is designed for determining the loss on ignition of cement and building lime.

- Max. temperature: 1200°C
- Power: 4200 W
- Inside dimensions (lwxh): 210x280x145 mm
- Overall dimensions: 510x650x650 mm
- Weight approx.: 70 kg



Physical & Chemical Properties of Cement

Shrinkage & Expansion Tester

Shrinkage Cone – QT-SHC

www.WorldofTest.com/shrinkagecone.htm

Qualitest Shrinkage cone QT-SHC is designed with a double wall metal vessel for easy heating and cooling using an external liquid temperature control unit. A laser beam measures the very early shrinkage and expansion of building materials touch free and with 1 micron resolution. With the patented innovation of the Shrinkage Cone deltaEL it is possible to measure the shrinkage or expansion of fluid building materials in the first minutes and hours after start of mixing. The expansion of the building material is registered touch-free and very exact by a laser beam. There is no mechanical coupling between the fluid and the sensor. To ensure that the measured distance correlates with the relative length change of the material we use a specially designed specimen container. The length change is registered with a resolution of 1/10 micron and the measurement values are digitized and stored by the software delivered with the system. Synchronous with the length change, temperature, rel. humidity may be stored by the software.



Shrinkage Drain – QT-SHD

www.WorldofTest.com/shrinkadrain.htm

Qualitest Shrinkage Drain QT-SHD is made of a 1 m long u-shaped stainless steel profile which contains the specimen. To avoid wall friction the drain is covered with a removable Neopren[®] sheet. On one side a removable anchor is fixed. On the other side this anchor is movable and sliding on three wheels. The motion of this anchor is registered by a high sensitive LVDT probe. As displacement sensor we are using a digital probe which is connected to the Probe Interface Electronics, which converts the analogue signals from the probe head into a digital format. Up to 10 probes may be connected over a digital bus system. The distance between the probes and the Data logger may be several hundreds of meters. A data-logger supplied with the system records the data of several shrinkage drains and are stored in the logger as standard ASCII files. Optionally a synchronous registration of temperature and humidity is possible. Two temperature channels and a mixed temperature /humidity channel are available. The logger has a network interface (Ethernet) So you can easily integrate it into local Intranet. With standard web-browser software you can readout the data, and visualize it. Data handling can be done using Microsoft Excel or any similar visualization program. No special PC software is necessary.



Thin Layer Shrinkage System – QT-TLSS

www.WorldofTest.com/thin-layer-system.htm

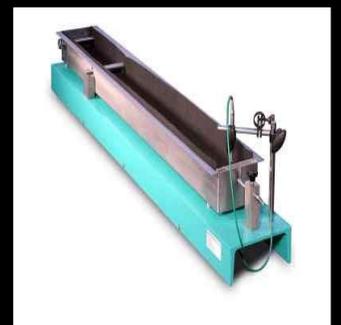
Some building materials like self-leveling flooring compounds or plasters are applied in thin layers. These fast setting mortars set and harden within a couple of hours and subsequent drying of such a thin layer is generally terminated after the first day. In order to investigate the dynamics of early shrinkage and expansion we developed a special set-up of two laser units which are horizontally aligned. This set-up allows to investigate the different formulation parameters and their influences onto the different stages of shrinkage and expansion, namely the plastic shrinkage, setting expansion and drying shrinkage. The shrinkage/expansion behavior is strongly related to both, external (climate) and internal (formulation) factors. With respect to the latter, begin, intensity and duration of setting are key to the overall shrinkage/expansion behavior. With building materials applied in thin layers shrinkage is one of the major issues because of two reasons: The high surface-volume ratio causes evaporation to be a dominant mechanism for strong and fast physical shrinkage, and the intense hydration reactions can cause a pronounced chemical shrinkage, or in case of ettringite formation a strong expansion.



Bending Drain – QT-BD

www.WorldofTest.com/bendingdrain.htm

With the Qualitest Bending Drain QT-BD you measure the shrinkage and bending of building materials. Also you may simulate with a built in electrical heating a real world floor heating. High precision measurements are guaranteed, by two static abutments and a massive u-shaped steel base plate. A neoprene foil between the form work and the material avoids friction and blocking of material, also when expanding materials are used. The form work is static independent from the mortar beam which is supported by two well defined points. The Bending Drain has an Intra- / Internet connection and an integrated data logger. No special PC is required during the measurement. The instrument is fully controlled



Physical & Chemical Properties of Cement

by your network browser software, like the Internet Explorer or similar software. All data are stored inside on non-volatile memory for weeks or months. By one mouse click you can load the data directly into your Excel worksheet over a network. You may also transfer you data with a removable Compact Flash card. You may integrate several Bending Drains into your network, but each of it is working independently. Two high resolution LVDTs with a stroke of 5mm and a resolution of 0.3 μ m are delivering high reliable results. Two RTDs are measuring the temperature on the bottom of the form work as well in the air or in the specimen. An additionally moisture/temperature sensor may be connected. For the floor heating you can program a temperature profile over time. For example rising the temperature after 6 days from 20°C to 60°C holding it for 3 days, and coming down to 20°C again.

Rheometers

QT-Viskomat NT Rheometer

www.WorldofTest.com/viskomat-nt.htm

The QT-Viskomat NT Rheometer is a versatile rotational viscometer for determining the workability of fine grained building

materials such as cement paste, mortar, fine concrete, plaster etc. with maximum particle size of 2 mm.

Following results can be obtained using this Rheometer:

- Flow curves and rheological parameters temperature dependent workability properties
- Stiffening behavior as a function of time
- Stirring speed effects of concrete admixtures and mineral blending agents on workability

Features

- Robust apparatus for industrial environments
- Quality control, research and development
- Informative, easy to use test procedures
- Automatic running of predefined test procedures which can be either standardized or tailored to your own requirements
- Inhomogeneous materials measurable with particles up to 2 mm using special paddles to avoid separation



QT-Viskomat XL Rheometer

www.WorldofTest.com/viskomat-xl.htm

The QT-Viskomat XL Rheometer is filling the gap between the QT-Viskomat NT for mortar and paste with a specimen volume of 360 ml and the concrete QT-RheoBT2 Rheometer with a sample volume of 20L. The operation principle of the QT-viskomat XL is similar to that of the QT-viskomat NT. So a mixer formed probe is measuring the torque, and the specimen vessel is rotating. An additional scraper is cleaning the wall of the vessel. The speed may be 0.001 to 180 rpm in both directions, clockwise or counter clockwise. You may define the speed in several steps, in a linear increase or decrease of speed. As option also an oscillating or a logarithmic mode is possible. The QT-Viskomat XL has a torque range from 0.300Ncm with a resolution of 0.05Ncm and accuracy better than 0.2Ncm. Optional we can install a sensor with a torque range up to 1000Ncm and an accuracy of 0.8Ncm. Temperature control is realized by a double wall specimen container, where a cooling liquid is circulating. The specimen temperature is measured with a RTD mounted inside the shaft of the probe. The sampling rate may be set from 0.005s to 10min. As option you may run the QT-Viskomat XL with a shear stress controlled mode. So you preset the torque over time, and the speed is automatically controlled to achieve the predefined torque. The QT-ViskomatXL is controlled via a network interface. Simply connect your PC and start your Internet Explorer for full control and data transfer. There is not any need for installation of special software.



Setting Time & Consistency of Cement

Vicat Needle Apparatus

www.WorldofTest.com/vicat-apparatus.htm

Vicat Needle Apparatus for Testing Cement Paste

ASTM C187-191, DIN 1164, EN 196-3, BS 4550

Comes complete with needle, dipping rod, glass plate, vicat ring & thermometer

Four Models:

- DIN 1164: Vicat Ring: Ø65/75 x 40 mm
- EN 196-3: Vicat Ring: Ø70/80 x 40 mm
- ASTM C187-191: Vicat Ring: Ø60/70 x 40 mm
- BS 4550: Vicat Ring: Ø80/90 x 40 mm

Vicat Needle Apparatus for Testing Gypsum

Comes complete with conical plunger, glass plate, & thermometer

Two Models:

- EN 13279-2, DIN 1168: Vicat Ring: Ø65/75 x 40 mm
- ASTM C472-99: Conical needle Ø1mm; Vicat Ring: Ø70/80 x 40 mm

Modified Vicat Apparatus for Testing Gypsum

- Complete with conical plunger, glass plate, & thermometer

Two models:

Modified Vicat Apparatus: For mixer slurry examination, with drop rod, conical needle 115g and additional 1kg weight. Modified Automatic Vicat Apparatus: For mixer slurry examination, with drop rod, conical needle 115g and additional 1kg weight

Vicat Needle Apparatus – Quali

ASTM C187-191/ ASTM C472-99/ DIN 1164/ EN 196 / BS 4550/ EN 480-2 / DIN 1168 / Test method B EN 12379-2 .

www.WorldofTest.com/toniset.htm

The Vicat Needle Apparatus -QualiSet units are to determine the initial and final setting time of cement, mortar pastes and gypsum according to DIN 1164/ EN 196 / BS 4550/ ASTM C187-191 EN 480-2 / DIN 1168 / Test method B EN 12379-2 / ASTM C472-99. The beginning and the end of the setting process is determined by the penetration behaviour of a steel needle into a cement paste sample, under certain specified conditions.

Computer Controlled Vicat Needle Apparatus for Testing Cement Paste

- Complete with conical plunger, glass plate, & thermometer
- Also available with 8 and 11 test stations

For automatic determination of the initial and final setting and for recording setting curves. The test sequence is programmable. The tests can be performed in air or in the temperature-controlled water bath. The total weight of the drop rod and the Vicat needle is 300g. After each insertion the Vicat needle is automatically cleaned by a cleaning device.

The 6, 8 and 11 test stations are arranged in a plastic tray.

Scope of Supply

The scope of supply includes the basic apparatus as a table model with control unit and standard software for performing and analyzing the tests (Windows operating system); included Vicat need and 6 vicat rings, needle cleaning device, heat exchange for constant water temperature.

- Dimensions (WxDxH): approx. 700 x 600 x 600 mm
- Weight: approx. 52kg
- Power: 230V / 50Hz, 110V / 60Hz

Use of the apparatus requires a standard PC with screen or a laptop, which is not included with the apparatus.



Setting Time & Consistency of Cement

Vicomatic – Automatic Vicat Needle Apparatus

ASTM C191, AASHTO T131, NF P15-414-431, DIN 1196-1198

www.WorldofTest.com/vicomatic.htm

The setting time determination of cement and mortars is one of the most important parameters for the quality inspection and verification. The Production and new mortars, admixtures and similar materials with the research activity has highlighted the need of sophisticated test apparatus capable of performing a variety of independent test cycles and procedures on numerous test specimens. Our New VICAMATIC apparatus fully satisfies these requirements and is capable of performing tests with start delays, adjustable dropping rate auto –mode and free or driven drop. The driven drop option allows the adjustments of the drop or lifting time within 10 -50 seconds. The VICAMATIC can also be equipped with needle cleaning device with water



container for testing in water as prescribed by EN. VICAMATIC apparatus consists essentially of a mechanism of four different stepper motors, which control the sliding weight with needle, the rotation and displacement of the table and the chart drum. The displacement of the sliding weight with needle is recorded by a pen in the chart drum and also read by an encoder for the data acquisition. The automation of the system is obtained by an electronic control card with microprocessor. The front control panel includes the membrane keyboard with large graphic display.

Features

- Automatic test cycle
- Double recording: analogical on paper and digital by electronic sensor
- Storing of test results, settings and data
- Large graphic display to follow the test in real time
- RS 232 output for connection to PC and printer
- High flexibility in programming the test cycles as test start delay, dropping rate auto-mode, free or driven drop
- RS 485 network facility for connection to PC of up to 16 independent Vicomatic for data acquisition and processing
- Fully conforming to EN, ASTM, AASHTO, BS and similar
- High versatility and vast applications: from the standard use in local laboratories to the multiple use in research and central laboratories
- Also suitable for tests on gypsum conforming to EN 13279-2

Technical Specifications

- Vicomatic Total rating: 25kW
- Dimensions (L x W x H): 180x300x440 mm
- Weight: 10kg

Vicatronic - Automatic Single Station Vicat Needle Apparatus

ASTM C191, EN 196/3, D.M. 3/6/68, DIN 1164, 1168, BS 4550, UNE 80102, NF P15-414, P15-431, AASHTO T131

www.WorldofTest.com/vicatronic.htm

The Vicatronic apparatus, designed and manufactured using the most recent and sophisticated technology, is used for the initial and final setting time determination of cement or mortar. The entire test is made in a fully automatic cycle and provides precise and repeatable results. The results are then printed on the integrated printer. The use of this Vicat instrument is extremely simplified by the guiding menu that is available in different languages. The large high contrast LCD display has a high resolution and displays the test data together with the general functions of the unit. It visualises for the first time in real time the graph of the test replacing and simulating the old-fashioned pen tracing on the paper. Vicatronic has a clock calendar that is used for programming the test cycles. Further programs can be developed by the operator using the specific menu “free tests” available on the base firmware; the user has the possibility to set 5 totally free test profiles defining the number of penetrations and the coordinates of each penetration (ray in mm of the circle where the number of penetrations have to be distributed) and number of circles. This possibility is particularly useful when testing new mortars, additives and for research &



development that requires sophisticated and flexible applications. The unit allows activating a delay to begin the tests. This program is particularly useful when the approximate setting time of the mortar is known and the operator wants to start the working of the Vicatronic after a certain time in order to concentrate the penetrations with a short interval of time between them and have better measuring values. The Vicatronic can save all the test parameters and results and stores a file with a capacity of more than 50 complete tests. In case of a power outage, even for a short time, during the test duration, the test will be invalidated and the instrument will automatically stop while keeping the set data. At the end of the test, Vicatronic will print the results and test report automatically on the integrated printer. The report includes all the data concerning the last test made including a graph tracing each single penetration with its values of time and penetration number. Vicatronic has a USB connection port for connection to a separate printer with standard format (accessory mod. E044-14) and HP protocol. Despite the totally independent working of the machine that includes an integrated printer, the Vicatronic has been designed for a PC connection (RS232) with the possibility to download the test data using a common program (Microsoft Hyper Terminal) that is normally included with the Windows PC package. In this case the data processing will have to be made by the operator. The “Vicat-Win” software (accessory mod. E044-11) allows receiving, managing, processing and completing the test dates; it will trace automatically the graph, personalize and print the test report. The Vicatronic offers the possibility, buying the kit “Vicat-Net” (accessory mod. E044-12), to connect up to 20 instruments on a network managed by a PC through two pins RJ45 with RS485 protocol.

Setting Time & Consistency of Cement

This allows obtaining a complete remote control from the PC of each single Vicatronic. The details of the performances are following:

- Transfer each single control or function of the Vicatronic on the PC
- Verify in real time each phase of the test being made
- Automatically download the final results at the end of the test on all the connected Vicatronic.
- Process and file at the same time all the tests without mandating the operator to move from his working place.

Additionally the firmware has many other functions detailed in the technical chart that will be transmitted to the user interested to know more about it. The Vicatronic is supplied complete with the integrated printer, two needle (one with 1 mm diameter and one with 1,13 mm. diameter), two conical moulds EN and ASTM, a glass plate to hold the conical mould.

Power Supply: 110 V/60 Hz or 220-240 V/50 Hz

Dimensions: 400 x 200 x 470 mm. h.

Weight: 13 kg.

Vikasonic - Measuring the Early Setting and Hardening with Ultrasonic Waves

www.WorldofTest.com/vikasonic.htm

The early setting is usual measured with the penetrometers or the Vicat apparatus. This kind of measurement has some disadvantages. In the early sixties some researchers suggested to use the ultrasonic transition time as method for measuring the setting of mortars or fresh concrete. In recent years the ultrasonic method was developed and used in the Vikasonic.

Measurement Principle for the Vikasonic Measuring the Early Setting and Hardening with Ultrasonic Waves

The fresh mortar is setting between two ultrasonic transducers, which are supplied with 0.25s or less pulses per second at a frequency of 54 kHz. The mortar changes, according to the setting, the ultrasonic transition time. From the beginning of first contact of the growing binder-stone, the ultrasonic sound speed increases. If there is a complete crystalline structure the change of the sound speed will be slower. Until further aggregation of the cement stone the ultrasonic sound speed increases again.



Measurement Setup for the Vikasonic Measuring the Early Setting and Hardening with Ultrasonic Waves

Each measurement cell is supplied with a pair of ultrasonic transducers. The Vikasonic continuously measures the ultrasonic transition time and the signal damping. The data sets are recorded digitally to a common USB stick. Also the sound speed and the elastic modulus is calculated and recorded. Additionally the temperature inside the specimen is measured with a type K thermocouple. The Vikasonic is an autonomous instrument and thus, during the tests no PC is required. The data may be directly imported into an Excel worksheet.

Comparison of Both Methods

The correlation between the classic Vicat test and the Vikasonic ultrasonic method is different for various materials and mix designs. For each mix design a calibration between both methods must be done. Once you have got his curve the Vicat test may be replaced by the Vikasonic ultrasonic test. You get faster results than Vicat test. The costs for the equipment are the same for the Vikasonic ultrasonic setup, but you can do this test with less manpower and you will get more objective results.

Setting Time of Cement – Gillmore Method

[ASTM C91](#), [ASTM C141](#), [ASTM C266](#), [AASHTO T154](#), [ASTM C1398](#)

Gillmore Apparatus is designed to determine the setting time of cement. The apparatus consists of two horizontal arms which carry two weighted steel needles precisely machined to meet the requirement. The initial needle 2.12 mm dia., weighs 113 g and the final needle 1.06 mm dia., weighs 453,6 g. The approximate weight of Gillmore Apparatus is 2.5 kg.



Water Vapour Permeability Test Cell

[EN 1015-19](#)

Water Vapour Permeability Test Cell is designed to determine the water vapour permeability of hardened rendering and plastering mortars. The apparatus is made of hard plastic resistant to corrosion having permeability area of 0.02 m² approx. and Weight 1 kg approx.



Building Lime, Grout and Mud Testing

Air Content

Air Entrainment Meter

ASTM C 185; DIN EN 459-2; DIN EN413-2

www.WorldofTest.com/air-entrainment-meter.htm

Qualitest Advanced Air Entrainment meters are used to measure the air content of freshly mixed mortar in accordance with the air pressure compensation principle. The meter has a pressure chamber in which a predefined pressure is generated. When the overflow valve is opened, the pressure is compensated with respect to the test pot, which is filled with the freshly mixed mortar. The pressure drop is measured to give the air content in the mortar. Air entrainment is the intentional creation of air bubbles in concrete or mortar. Excess water is often trapped within the mix as it hardens. The excess water eventually evaporates and leaves behind porous cavities. These pores create weaknesses in the concrete or mortar during freeze-thaw cycles. An air entrainment meter is used to measure the amount of air that is trapped within the mix. The sleek design of each of these units allow for easy storage on top of any workstation. Qualitest offers Air Entrainment meters in different capacities adhering to DIN EN 459-2; DIN EN413-2; ASTM C 185 and other international standards. These meters are either with a sturdy hand-operated pump or with an electrical mini compressor for rapid and uniform provision of pressure.



QUALIAEM-A1M Automatic Air Entrainment Meter 1L was designed to be efficient and easy to use for mortars. The built-in miniature air compressor is the perfect upgrade from the traditional manual pumps. This design also ensures that the operator doesn't require extensive training or technical expertise. The large central meter ensures that the results and reading can be done effectively, easily and without strain. The automated process also allows for great time savings and efficiencies in that it frees up the operator to attend to other tasks. QUALIAEM-A8 & QualiAEM-M8 Air Entrainment Meter was designed to be efficient and easy to use. The built-in miniature air compressor is the perfect upgrade from the traditional manual pumps. This design also ensures that the operator doesn't require extensive training or technical expertise. The large central meter ensures that the results and reading can be done effectively, easily and without strain. The automated process also allows for great time savings and efficiencies in that it frees up the operator to attend to other tasks with the QUALIAEM-A8. The manual Air Entrainment Meter design model QUALIAEM-M8 takes the best of the traditional machine and infuses it with a more modern look. It is the same, tried and true operation but with a sleek vessel and sturdy construction. Both units are built to last and would become the new work horses of your testing equipment. Another manual Air Entrainment Meter design is the QUALIAEM-M8I model for Concrete.

Features:

- Extreme sturdiness
- Simple operation
- Great accuracy
- Designed for ease of service
- Pressure gauge with Class 1.0 accuracy

The Air Entrainment meters are made of cast aluminum; locking bolts with palm grip give the test pot and upper section an airtight seal. Two ball cocks are provided to fill the required water and to vent the air. The air is compressed by means of a built-in hand pump. The connection valve for the initial pressure and the overflow valve are integrated into the pressure chamber. The connection valve is a sensitive needle valve with a knurled head screw. The over flow valve for the pressure compensation between the pressure chamber and the test pot is operated by means of a valve rocker. The pressure valve is installed directly on the pressure chamber and the scale shows readings with a range of 0-100 vol %.

Bulk Density of Lime

Bulk Density Apparatus

EN 459-2

Bulk density apparatus is designed for determining the bulk density of lime by the fall of the sample from a standard height into a container. It consists of a cylindrical container 1 liter cap; hopper and spring loaded yoke. The approximate weight of apparatus is 2 kg.



Yield of Lime

Slaking Vessel

EN 459-2

Slaking vessel apparatus is used for determining the yield of lime by leaving the sample to slake in an insulated vessel. Comprising a cylinder 113 mm dia. X 140 mm deep, externally insulated complete with cover. Overall dimensions of apparatus are 155 mm dia. x 200 mm height and Weight approx.: 2.1 kg



Building Lime, Grout and Mud Testing

Flow Properties of Grouts, Muds and other Fluid Materials

Flow Cone Apparatus

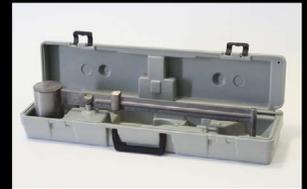
EN 445

Flow cone apparatus is designed for determining the flow properties of mortars, grouts, muds and many other type of fluid materials. The apparatus comprises a metal stand supporting the stainless steel cone having inside dimensions of 150 mm inside upper dia. x 280 mm height. When fit with the 10 mm nozzle the total height is 350 mm. The apparatus, as prescribed by EN 445, is supplied complete with 150 mm dia. sieve 1.5 mm opening, 10 mm dia. nozzle with fitting bush and 1 liter cap. cup. It can also be fit with other nozzles 8, 9, 11, and 13 mm int. dia. The approximate weight of apparatus is 10 kg.



Mud Balance

The mud balance provides a simple method for the accurate determination of mud density. The durable construction make it ideal for field use. Principally the balance consists of a base and graduated arm with cup, lid, knife-edge, rider, built-in spirit level, and counter-weight. The constant volume cup is affixed to one end of the graduate arm and the counter weight on the opposite hand. A plastic carrying case is provided that holds the balance in working position. The approximate weight of apparatus is 1.9 kg.



Fly Ash Determination of Fitness by Wet Sieving

Wet Sieving Apparatus - QualiWetSieve

The wet sieving apparatus is used for determining the fly ash fineness by wet sieving, comprises a special stainless steel sieve, 0.045 mm opening, a spray nozzle 17.5 mm dia. with 17 holes 0.5 mm dia oriented and spaced conforming to the specifications, a pressure gauge 80 mm dia. and fittings for connection to the water supply. The approximate weight of apparatus is 2 kg.



Consistency of Grouts

Flow Test Apparatus - QualiFlowApp

EN 13395-2

Flow test apparatus is designed for determining the consistency of the expansion pre-mixed cement mortars. Consisting of a special funnel fitted on a metal channel. The apparatus overall dimensions (lxdxh) are 954x205x370 mm and approximate weight is 6.5 kg.



Water Permeability of One-Coat Rendering Mortars with Substrates

EN 1015-21

The apparatus consists of a metal cone 200 mm dia. base with a reference mark at 100 mm and a glass burette 1 litre capacity with 1 ml graduation. The burette is held by appropriate base with rod and clamps.



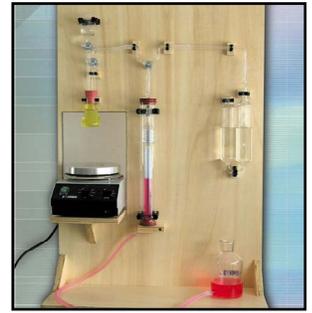
Building Lime, Grout and Mud Testing

Carbon Dioxide Determination

Kleine Apparatus

EN 459-2

Kleine Apparatus is designed for the determination of the carbon dioxide in lime. Consisting essentially of a decomposition flask 50 ml cap., of an absorption vessel to contain the potassium hydroxide solution, a measuring burette, funnel stopcocks, connections and wooden stand. To perform the test, a hot plate with magnetic stirrer and an adjustable height support are also required. The apparatus overall dimensions (lxdxh) are 550x400x750 mm approximate weight is 15 kg



Soundness of Building Lime

Steam Cabinet

EN 459-2

Steam Cabinet apparatus is designed for use with Le Chatelier moulds for the determination of the soundness of building lime which is subjected to the continuous action of steam at atmospheric pressure for a period of 180 ± 10 min. Stainless steel internal chamber housed in a stainless steel insulated exterior case.



Technical Specifications

- Power: 700 W
- Internal dimensions (lxdxh): 280x250x150 mm
- Outside dimensions: 480x400x210 mm
- Weight approx.: 11 kg

Preparation of Cement Specimens

Mortar Mixers

Automatic Mortar Mixer - QualiMix

ASTM C305, C277, EN 196, DIN 1164, BS 3892, ISO 679, NF P15-411
www.WorldofTest.com/qualimix-mortar-mixer.htm

The Automatic Mortar Mixer - QualiMIX series is used to make cement mortar and cement paste. It is offered in both manual switching or fully automatic. The unit comes with comprehensive safety equipment, a mixing bowl cover, electronic position monitoring of the mixing bowl, restart protection emergency stop switch, multilingual display and is freely programmable.

Safety Features

- Safety cover of the mixing bowl to protect against rotating parts (finger protection)
- Electronic position monitoring of the mixing bowl, ex. the mixer only works if the bowl is correctly inserted in the holders and is in the working position.
- Restart protection, ex. following system faults the machine must be switched on again.
- EMERGENCY STOP switch
- Clear layout of the controls
- Stable handles for safe transport of the mixer by hand
- Funnel for filling
- Optional: LED lighting, for improved view of the mixture in the mixing bowl

The heavy-duty design is made of aluminum and grey cast iron. The mixing bowl is connects to the mixer using a quick-release clamping system for convenience and quicker operation. The distance between the mixing bowl and stirrer is 3}1 mm and can be finely set using a simple device. The mixing bowl and stirrer are made of stainless steel. The drive has a powerful three phase DC motor. Quiet, maintenance-free operating due to planetary gears with toothed belt drive. The Automatic Mortar Mixer - QualiMIX comes with 2 mixing speeds: 140±5RPM and 285±10RPM. The mixing bowl can be lowered using a lifting device.

Technical Specifications

- Base Area 390 x 600 mm
- Height 700-860 mm
- Weight, gross/net approx. 70 / 62 kg
- Connected loads 400V / 50Hz / 0.37kW
- 110V / 50Hz / 60Hz
- 230V / 50Hz / 60Hz

Automatic Mortar Mixer - QualiMIX 3 Series

ASTM C305/ EN 196 / DIN 1164

- 5 litre capacity with manual switching.
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz

Automatic Mortar Mixer - QualiMIX 3i Series

ASTM C305/ EN 196 / DIN 1164

- Differential Calorimeter for Cement and Concrete - QualiMIX 3i
- 5 litre capacity with manual switching, sand dispenser, manually controlled
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz

Automatic Mortar Mixer - QualiMIX 5 Series

ASTM C305/ EN 196-1+3 / DIN 1164-5+7

- 5 litre capacity with programmed mode (can also be run manually), sand dispenser
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz



Preparation of Cement Specimens

Automatic Mortar Mixer - QualiMIX 6 Series

[ASTM C305/ EN 196-1+3 / DIN 1164-5+7](#)

- 5 litre capacity with programmed mode (can also be run manually), sand dispenser, and water metering
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz



Automatic Mortar Mixer - QualiMIX 6i Series

[ASTM C305/ EN 196-1+3 / DIN 1164-5+7](#)

- 5 litre capacity with programmed mode (can also be run manually), sand dispenser, water metering, and dust extraction
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz



Automatic Mortar Mixer - QualiMIX 6ii Series

[ASTM C305/ EN 196-1+3 / DIN 1164-5+7](#)

- 5 litre capacity with programmed mode, sand dispenser, and variable water metering
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz



Automatic Mortar Mixer - QualiMIX 6iii Series

[ASTM C305/ EN 196-1+3 / DIN 1164-5+7](#)

- 5 litre capacity with programmed mode, sand dispenser, variable water metering and dust extraction
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz



Automatic Mortar Mixer - QualiMIX Tq Series

[ASTM C305/ EN 196-1+3 / DIN 1164-5+7](#)

- 5 litre capacity with programmed mode, sand dispenser, and variable water metering (with additional consistency measurement)
- Determination of the optimum water requirement for the purpose of achieving desired mortar workability
- Repeated achievement of desired mortar consistency by controlled addition of water
- Heavy duty design made of aluminum and grey cast iron mixer bowl and stirrer made of stainless steel
- 2 mixing speeds: 140 / 285 RPM
- Power: 400V / 50Hz, 110V / 60Hz, 230V / 50-60Hz



Preparation of Cement Specimens

Vibration Table & Jolting Apparatus – QualiVIB Series

ASTM C109, EN196-1, 459-2, ISO 679, BS 4550, and BS 3892.

www.WorldofTest.com/tonijolting.htm

QualiVIB series of Vibration Table & Jolting Apparatus is used for the fabrication of mortar specimens. It is an accepted fully automatic specimen preparation machine, allowing your technicians to set up the specimens and walk away. Vibration Table & Jolting Apparatus - QualiVIB will ensure highly accurate and repeatable test specimens to increase your test production and results.

Advantages of the Vibration Table & Jolting Apparatus - QualiVIB:

- 100% Automatic Test Performance
- Reproducible Results
- Easy and Quick to Start
- No Operator Attention Required During Test
- Durable Motor and Build Quality
- Stainless Steel Construction for Durability and Easy Cleaning

Vibrating Table I

ASTM C109, EN196-1, 459-2, ISO 679

- 1 three-gang mould
- Switchbox fastened onto stand.
- Digital timer
- Peak-to-valley value: 0.4 to 1.0mm
- Dimension (WxDxH): 800 x 700 x 850 (1450) mm
- Weight: approx. 200 kg
- Power: 230 V / 50 Hz

Two Models:

- Quick-release: for fastening a precision three-gang mould with filling hopper
- Universal clamp: for fastening a three-gang mould with filling hopper

Vibrating Table II

EN196-1, 459-2, and ISO 679

- Elegant and robust stainless steel version
- 1 three-gang mould
- Separate switchbox for wall mounted installation. (Optionally mounted on a stand)
- Digital timer
- Peak-to-valley value: 0.4 to 1.0mm
- Dimension (WxDxH): 750 x 750 x 850 (1450) mm
- Weight: approx. 200 kg
- Power: 230 V / 50 Hz

Two Models:

- Quick-release: for fastening a precision three-gang mould with filling hopper
- Universal clamp: for fastening a three-gang mould with filling hopper



Preparation of Cement Specimens

Vibrating Table III

BS 4550

- For cube mould with 70.7mm edge length
- Weight: approx. 100 kg
- Power: 230 V / 50 Hz

Jolting Table

EN 196-1, BS 3892, and ISO 679

- Counting mechanism
- Electronically controlled speed for exactly 60 strokes/min
- Weight: approx. 60 kg
- Power: 230 V / 50 Hz

Accessories

Safety & Sound Insulating Cover

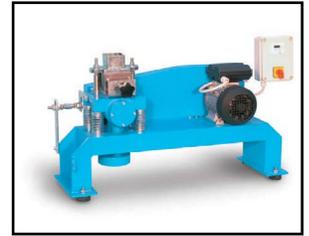
Safety and sound insulating cover is used for reducing sound emissions. The protective cover encloses the whole jolting table.

- Dimension (WxDxH): 1150 x 660 x 530 mm,
- Sound level measured at 1m distance: Open - 88dbA, Closed - 55dbA

Complete Base for Jolting Table

Dimensions (WxDxH): 1200 x 500 x 500 mm

Mould for the concrete base is also available having Dimension (WxDxH): 1254 x 754 x 527 mm



Curing Cabinet

CURACEM Curing Cabinet

ASTM C87; ASTM C109; ASTM C190; ASTM C191; EN196-1; ENISO 679

www.WorldofTest.com/curing-cabinet.htm

CURACEM Curing Cabinet is ideally used in commercial and on site laboratories for the standard curing of samples of concrete, cement and similar material in accordance with EN196-1 (cement) and EN 12390-2 (concrete). Frame is made of strong polypropylene structure, which is chemical resistant and particularly suitable for cement applications and the front doors are fitted with glass. The humidity inside the cabinet is maintained from 95% to saturation by water nebulizer while the temperature is maintained to $20 \pm 1^\circ\text{C}$ by an immersion heater and separated refrigerator unit. The Water refrigeration unit is to be ordered separately. The four stainless steel racks of the internal frame can support the moulds with specimens and a large number of cement prisms. It can also be used for concrete cubes and other mortar specimens. The unit can also be supplied with an air compressor (optional), located on top of the cabinet. The temperature inside the cabinet is maintained constant via water kept at a controlled temperature which is atomized in the chamber. For water atomization an external source of compressed air is required. This water is taken from an internal tank with a capacity of approx. 70 l, within which is a heating resistance, and is fed by mains water which is cooled by an external refrigeration group. In its stable condition the internal temperature is $20 \pm 1^\circ\text{C}$, and the atomization of the water keeps the humidity above 95%. There is no water consumption at this stage since the hydraulic circuit is closed. When it is necessary to cool the chamber the water circuit is opened and the mains water suitably cooled by the refrigeration group is fed into the tank. The chamber is heated via the heating resistance in the tank.



Main Features

- Strong polypropylene structure chemical resistant
- Water nebulizers and air compressor located on top
- Stainless steel racks
- High specimen capacity
- Connectable to refrigeration unit for strict temperature control

Preparation of Cement Specimens

Humidity Curing of Mortar Specimens

EN 196-1, ASTM C109

Qualitest Series of Humidity Curing of Mortar Specimens has following different models alongwith brief specifications.

Humidity Curing of Mortar Specimens in Three Gang Moulds

inside temperature range: +20°C, ±1°C

Relative humidity: 95%, ± 3%

Electronic adjustable control

Material: Stainless steel

QT-HC10321 Humidity Cabinet for 24 Three-Gang Moulds

with 6 telescopic cabinet racks

w x d x h = 1400 x 750 x 1600 mm

QT-HC10321-01 Humidity Cabinet for 32 Three-Gang Moulds

with 8 telescopic cabinet racks

w x d x h = 1400 x 750 x 1700 mm

QT-HC10321-02 Humidity Cabinet for 48 three-Gang Moulds

with 12 telescopic cabinet racks

w x d x h = 1400 x 750 x 1900 mm

QT-HC10321-03 Humidity Workbench for 12 Three-Gang Moulds

Stainless steel chassis with a sturdy worktable

1 lower cabinet for the humidity/temperature aggregate

1 lower cabinet with three telescopic racks

w x d x h = 1600 x 800 x 900 mm

QT-HC10321-04 Humidity Workbench for 24 Three-Gang Moulds

2 lower cabinets with 3 telescopic racks each

w x d x h = 2220 x 800 x 900 mm

QT-HC10321-05 Humidity Workbench for 36 Three-Gang Moulds

3 lower cabinets with 3 telescopic racks each

w x d x h = 2650 x 800 x 900 mm



General Purpose Water - Curing Bath with Cooler Unit

ASTM D6927, ASTM D1559, ASTM D5581, EN 12697-34, AASHTO T245, EN 12697-12, EN 12697-23

Main Features

- Automatically maintains the set temperature
- Two channels electronic thermo-regulator: heating/cooling with digital display
- Complete with recirculating unit
- Incorporating refrigeration compressor
- Ideal for conditioning Asphalt specimens for Marshall and Indirect tensile tests
- Ideal for cement specimens cure in water
- A multi-purpose unit usable for many other applications

This multi-purpose digital unit, fit with cooler unit and recirculating water system, is used to condition in water asphalt specimens for Marshall and Indirect tensile test. The EN 12697-23 covering the Determination of the indirect tensile strength of bituminous mixtures, prescribe a water conditioning temperature of 5°C or from 5 to 25°C which are obtainable with a cooling system. All the other standards require conditioning temperatures from 25 to 60 °C. This unit can also be used for many applications either for Asphalt or for Cement testing for curing in water cement specimens 40x40x160 mm, and for storing the hydrated samples at a temperature of 20°C (EN 196-8). Internal surfaces are polished stainless steel with a sheet steel insulated outer case. The cooler unit is located under the water bath. Complete with re-circulating unit for temperature uniformity.



Technical Specifications

- Capacity: 40 L
- Power: 2000 W
- Temperature range: +5 to +60°C
- Accuracy: ± 1%
- Inside dimensions: 550x360x200 mm
- Outside dimensions: 830x480x950 mm
- Weight approx.: 62 kg

Compression & Flexural Testing Machines

www.WorldofTest.com/compression-flexure-bending-tester.htm

QCMT-ACompFXT Cement Automatic Compression & Flexure Testing Machines

ASTM C109, C348, C349; BS 3892-1, 4551-1; EN 196-1, 459-2, 1015-11, 13454-2

QCMT-ACompFXT Cement Automatic Compression & Flexure Testing Machines for range of single testing chamber and double testing chamber machines have been designed for reliable and consistent testing of mortar samples. These compression and flexure testers are the results of continuous applications and research studies to upgrade the machines with the latest technologies and conform the current standards EN 196-1, 459-2, 1015-11, 13454-2; ASTM C 109, C348, C349 and BS 3892-1, 4551-1 in terms of its technical properties taking into account client requirements by using suitable accessories. These machines also meet the requirements of CE norms for safety and health of the operator. QCMT-ACompFXT Cement Automatic Compression & Flexure Testing Machines allow less experienced operators to perform the tests. Once the machine has been switched on and the specimen is positioned and centered by the help of centering apparatus. The only required operations are;

- Setting test parameters, including pace rate (only required when the specimen type is changed.)
- Choosing the compression or flexure frame by using the changeover valve.
- Pressing the START button on the control unit.
- The machine automatically starts the rapid approach; switches the test speed after 1% of the load capacity of the machine and stops once the specimen failure.
- Automatically saves the test parameters and test results.

Compression and flexure jigs, distance pieces and also removable transparent front-rear safety doors (should be factory installed) should be ordered separately. QCMT-ACompFXT Cement Automatic Compression & Flexure Testing Machines consist of very rigid two column single or double chamber frames, automatic hydraulic power pack with data acquisition and control system QCMTDAS.

Safety Features

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch
- Emergency stop button
- Software controlled maximum load value



Technical Specifications

Model	QCMT-AComp:250	QCMT-ACompFXT:250/15	
Test Type	Compression	Flexure	Compression
Capacity	250 KN / 56,000 lb.f	15 KN / 3,500 lb.f	250 KN / 56,000 lb.f
Class 1 Measuring Range	2.5 to 250 KN 550 to 56,000 lb.f	0.5 to 15 KN 100 to 3,500 lb.f	2.5 to 250 KN 550 to 56,000 lb.f
The roughness value for texture of loading and auxiliary platens	≤ 3.2 μm	≤ 3.2 μm	≤ 3.2 μm
Lower Platen Dimensions	165 mm	165 mm	165 mm
Upper Platen Dimensions	165 mm	165 mm	165 mm
Maximum Vertical Clearance Between Platens	263 mm	263 mm	263 mm
Piston Diameter	160 mm	80 mm	160 mm
Maximum Piston Movement	50 mm	50 mm	50 mm
Horizontal Clearance	300 mm	200 mm	300 mm
Power	750 W	750 W	
Oil Capacity	20 L	20 L	
Maximum Working Pressure	125 bar	30 bar	125 bar
Rapid Approach Rate	50 mm	80 mm	50 mm
Dimensions (WxLxH)	830x500x1650 mm	1050x500x1650 mm	
Weight	265 Kg / 600 lbs	410 Kg / 900 lbs	

Compression & Flexural Testing Machines

QCMT-SACompFXT Cement Semi-Automatic Compression & Flexure Testing Machines

ASTM C109, C348, C349;BS 3892-1, 4551-1; EN 196-1, 459-2, 1015-11, 13454-2

QCMT-SACompFXT Cement Semi-Automatic Compression & Flexure Testing Machines for Cement range of single testing chamber and double testing chamber machines have been designed for reliable and consistent testing of mortar samples. These compression and flexure testers are the results of continuous applications and research studies to upgrade the machines with the latest technologies and conform with current standards EN 196-1, 459-2, 1015-11, 13454-2; ASTM C 109,C348, C349 and BS 3892-1, 4551-1 in terms of its technical properties taking into account client requirements by using suitable accessories. These testers also meet the requirements of CE norms for safety and health of the operator. QCMT-SACompFXT Cement Semi-Automatic Compression & Flexure Testing Machines allow operators who have minimal experience to perform the tests. The Qualitest Semi-Automatic cement compression and flexure testing machines consist of a very rigid two column single or double chamber frame, hydraulic power pack and data acquisition system QCMTDAS.



Safety Features

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch

Technical Specifications			
Model	QCMT-SAComp:250	QCMT-SACompFXT:250/15	
Test Type	Compression	Flexure	Compression
Capacity	250 KN / 56,000 lb.f	15 KN / 3,500 lb.f	250 KN / 56,000 lb.f
Class 1 Measuring Range	2.5 to 250 KN	0.5 to 15 KN	2.5 to 250 KN
	550 to 56,000 lb.f	100 to 3,500 lb.f	550 to 56,000 lb.f
The roughness value for texture of loading and auxiliary platens	≤ 3.2 μm	≤ 3.2 μm	≤ 3.2 μm
Lower Platen Dimensions	165 mm	165 mm	165 mm
Upper Platen Dimensions	165 mm	165 mm	165 mm
Maximum Vertical Clearance Between Platens	263 mm	263 mm	263 mm
Piston Diameter	160 mm	80 mm	160 mm
Maximum Piston Movement	50 mm	50 mm	50 mm
Horizontal Clearance	300 mm	200 mm	300 mm
Power	550 W	550 W	
Oil Capacity	20 L	20 L	
Maximum Working Pressure	125 bar	30 bar	125 bar
Rapid Approach Rate	50 mm	80 mm	50 mm
Dimensions (WxLxH)	760x500x1650 mm	980x500x1650 mm	
Weight	265 Kg / 600 lbs	395 Kg / 870 lbs	

Compression & Flexural Testing Machines

QCMT-MCompFXT Cement Manual Compression & Flexure Testing Machines

ASTM C109, C348, C349; BS 3892-1, 4551-1; EN 196-1, 459-2, 1015-11, 13454-2

QCMT-MCompFXT Cement Manual Compression & Flexure Testing Machines for Cement range of single testing chamber and double testing chamber machines have been designed for reliable and consistent testing of mortar samples. The manual machines are especially suitable for on-site applications when electric power supply is not available. Being a low cost alternative, Qualitest manual testing series combine precision and simplicity with the unique design of the manual power pack which enables even an inexperienced operator to perform excellent compression and flexure tests on-site. These manual testing machines conform to the standards EN 196-1, 459-2, 1015-11, 13454-2; ASTM C 109, C348, C349 and BS 3892-1, 4551-1 by using suitable accessories. They also meet with the requirements of CE norms with respect to operator health and safety. The Qualitest manual cement compression and flexure testing machines consist of a very rigid two column single or double chamber frame, hydraulic power pack and data acquisition system QCMTDAS.



Technical Specifications

Model	QCMT-MComp:250	QCMT-MCompFXT:250/15	
Test Type	Compression	Flexure	Compression
Capacity	250 KN / 56,000 lb.f	15 KN / 3,500 lb.f	250 KN / 56,000 lb.f
Class 1 Measuring Range	2.5 to 250 KN 550 to 56,000 lb.f	0.5 to 15 KN 100 to 3,500 lb.f	2.5 to 250 KN 550 to 56,000 lb.f
The roughness value for texture of loading and auxiliary platens	≤ 3.2 μm	≤ 3.2 μm	≤ 3.2 μm
Lower Platen Dimensions	165 mm	165 mm	165 mm
Upper Platen Dimensions	165 mm	165 mm	165 mm
Maximum Vertical Clearance Between Platens	263 mm	263 mm	263 mm
Piston Diameter	160 mm	80 mm	160 mm
Maximum Piston Movement	50 mm	50 mm	50 mm
Horizontal Clearance	300 mm	200 mm	300 mm
Oil Capacity	13 L	13 L	
Maximum Working Pressure	125 bar	30 bar	125 bar
Rapid Approach Rate	50 mm	80 mm	50 mm
Dimensions (WxLxH)	760x500x1650 mm	980x500x1650 mm	
Weight	230 Kg / 500 lbs	375 Kg / 825 lbs	

Qualitest Locations:

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