



Concretes

GROUP I&S







ROLL-A-METER KIT

Standard test method for determining air content of fresh concrete by the volumetric method

ASTM C173 / AASHTO T 196

C022 The accuracy of Roll-a-Meter results is not dependent on the correctness of all these factors, but gives directly the percent air in the sample. It is unnecessary to know anything about the weight or physical characteristics of the ingredients which are supposed to be in the mix.

In contrast to other methods commonly used to determine the percentage of entrained air, this method is unaffected by changes in water cement ratio, sand cement ratio, sand to gravel ratios, inaccuracies of specific gravity determinations, and uncertainties as to absorbed or free water content of the aggregates used in the mix.

The use of the Roll-a-Meter has eliminated practically all of the above listed work, together with the arduous computations and uncertainties involved.

Even the extremely accurate measurement of the sample to be tested is not as important with this new meter, as the resulting error would be only about 1/20 as great in using the meter as the same error would be when using other methods or meters. Only a small percentage of the original error is involved in the air-meter result.

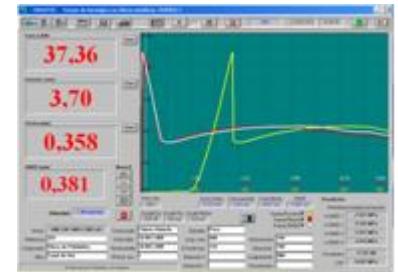
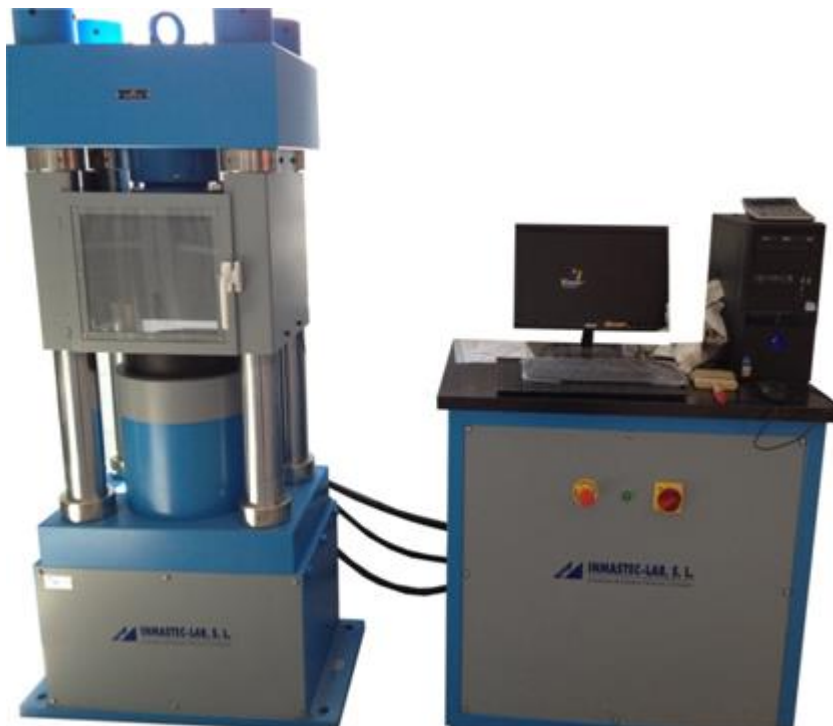
Used as a pycnometer, the Roll-a-Meter has been found to be excellent for other tests, such as determination of specific gravities of cement, sand, gravel and admixtures, and for quickly obtaining the percentage of free water in damp sand and gravel.

Manufactured entirely of aluminum with transparent window graduate 0-9%. Supplied complete with screw cap, funnel to pour water, tamping rod, measuring container, screed and carrying case.

Container capacity: 2,125 ml

GROUP I&S





SLUMP CONE TEST SET

EN-12350-2/ UNE-83.313/ ASTM C143/ BS 1881:102/ NF P18-305, P18-451

C001.01 Slump cone built in chromed steel. Base diameter 200 mm, height 100 mm and above 300 mm. Weight: 1.8 Kg

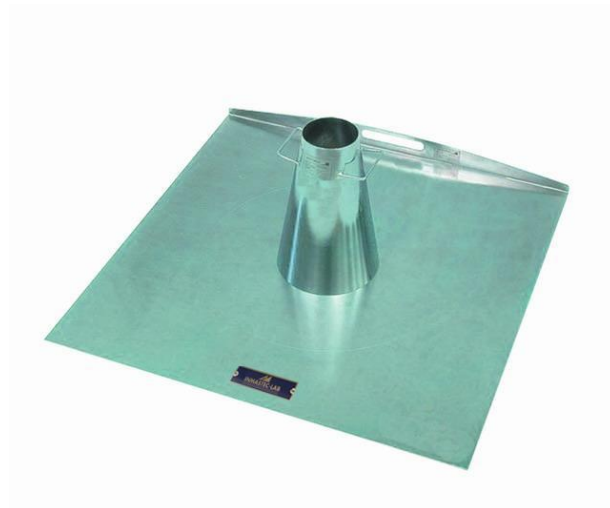
C001.02 Slump cone funnel for easy filling, of aluminum

C001.03 Tamping rod galvanized Steel, dia 16x600 mm

C001.04 Galvanized steel base plate 500x500 mm. with handle

C001.05 Stainless steel Scoop curved

C001.06 Stainless Steel rule, 500 mm long



FLOW TEST

EN 12350-2

C003 Plate, galvanized steel made, dimensions 905 x 905 mm, with engraved two circles having 200 and 500 mm diameter and centrale X cross.

C001.01 Slump cone made of galvanized steel. No lugs (props).

Dimensions:

Base diameter: 200 ± 3 mm.

Top diameter: 100 ± 3 mm.

Height: 300 ± 3 mm.

V-FUNNEL TEST

EN 12350-9

C005 V-FUNNEL, "stainless steel" made, having 10 litres capacity, stand mounted.

The upper edge of the funnel is smooth and reinforced, and the outflow orifice is equipped of an openable seal valve.

Dimensions: 510x400x1000 mm

Weight: 20 kg approx.

V435 digital Timer

C005.01 Rigid rule of 1000 mm.

C005.02 Polyethylene container capacity 15 l. approx.

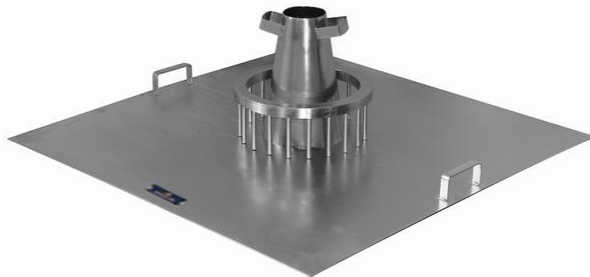


**SELF-COMPACTING CONCRETE****Self-Compacting Concrete. Description of fluidity in the presence of bars****EN 12350-10**

C006 "L"Box test, manufactured in stainless steel, applicable to concrete with aggregates of 25 mm max. size. Consisting of:

- Container with inside rigid surfaces,
 - Obstacle of two different interchangeable set of grids:
 - One set of 3 vertical bars having dia 12 mm and free light of 41 mm.
 - One set of 3 vertical bars having dia 12 mm and free light of 59 mm.
 - Gate in guillotine form.
- Two marks far 200 and 400 mm are engraved on the horizontal bottom position.
Dimensions: 700 x 300 x 650 mm
Weight : 40 kg approx.

C006.01 Metal bar of 300 mm to level the concrete

**Expansion test table****Drainage test Japanese ring (J. Ring)****EN 12350-12 / BS 1881-105 / DIN 1048**

C008 Plate, galvanized steel made, dimensions 905 x 905 mm, with engraved two circles having 200 and 500 mm diameter and centrale X cross.

C001.01 Slump cone made of galvanized steel. No lugs (props).

Dimensions:

Base diameter: 200 ± 3 mm.

Top diameter: 100 ± 3 mm.

Height: 300 ± 3 mm.

C010 J. Ring for the types of tests depending on the size of the aggregates. Manufactured in stainless with diameter 300 ± 1 mm. Have a number of flat bars perpendiculars equidistant to each of 100 ± 1 mm length. the machine has 16 bars $\varnothing 12$ mm maximum aggregate size less than or equal to 16 mm and the other side has 12 bars $\varnothing 16$ mm maximum aggregate size greater than 16 mm.

EN-12350-3, UNE-83.314, BS-1881:104

C012 Consistometer Vebe to determine the extent or degree of consistency Vebe after subjecting the concrete to vibration. The table has a vibratory movement amplitude and fixed frequency.

The team consists of a vibrating table, cylindrical, cone, funnel, compacting rod, clear plastic disc and steel rod compaction.

Power: 220 V, 50 Hz

Dimensions: 280 x 400 x 700 mm.

Weight: 85 Kg Approx.





WALZ CONSISTOMETER **EN 12350-4/ DIN 1048**

C013 To measure the consistency of fresh concrete. It consists of a metal box with handles 200x200 mm by height 400 mm, painted for rust protection.

Weight: 6 Kg

KELLY BALL PENETROMETER **ASTM C360**

C015 Consisting of a hemispherically ended cylinder with guiding frame and a handle graduated in inch, it is used to determine the workability of fresh concrete. The ball is lowered into the concrete and the penetration measured. It can be used on site or in laboratory. Cadmium plated for rust protection.

Weight: 15 Kg



K-SLUMP TEST **ASTM C1362**

C016 To determine the degree of compaction and the workability of fresh concrete. Used for in-situ measurements or inside test moulds. Test results can be correlated against the slump values.

Weight: 500 g

LCL PLASTICIMETER NF P18-452

C018 The concrete workability meter (also known as plastometer) is designed to test concrete for dynamic workability. It is suitable for field and laboratory tests to check:

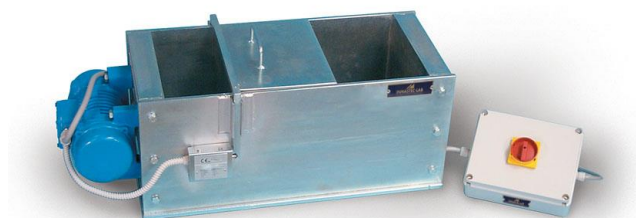
- Concrete mix for consistency, especially water content
- Optimum proportioning of concrete constituents (sand, gravel, water, cement)
- Possible improvement when admixing a plastifier
- Comparing two concrete types

The unit consists of a prismatic receiver divided into two unequal volumes by a removable partition, and an electric vibrator. The fresh concrete is poured into the large volume space, the separating partition is removed, and the vibrator starts automatically. The test consists in measuring the time required for the concrete to reach a uniform distribution in the receivers.

Power supply: 220-240 V 1ph 50 Hz 300 W

Dimensions: 820x420x410 mm

Weight: 80 Kg





CONCRETE POCKET PENETROMETER

C020 Used for the evaluation of the initial set of the concrete mortar.

The penetration plunger has a tip area of 32 sq/mm. It is plunged into the mortar to a depth of 25,4 mm, indicated on the plunger. The resistance expressed in Kpa and Lbf/sq.in. is shown on the marked direct-reading scale.

Dimensions: dia. 25x210 mm

Weight 400 g.



TIEMPO DE FRAGUADO POR PENETRACIÓN ASTM C403/ AASHTO T197/ UNE 83.311

C021 Concrete penetrometer to used to determine the setting time of the mortar fraction in concrete mixes with slump greater than zero, by testing mortar sieved from mix. The apparatus consists of a spring penetrometer (capacity 100 Kgf, precision 1 Kgf) and six interchangeable stainless steel needle pointers of 16-32-65-160-325-650 mm² area. A sliding ring indicates the reached load on the handle of the penetrometer. Supplied complete with carrying case.

Dimensions: 450x160x70 mm.

Weight: 5 Kg.

EN 1097-3/ UNE 7286/ ASTM C29/ C138/ BS 812, 1881/ AASHTO T19

Watertight container to determine the weight per cubic meter of fresh concrete. Made of painted steel.

C024 3 l container Capacity with handles

C025 5 l container Capacity with handles

C026 10 l container Capacity with handles

C027 14 l container Capacity with handles

C028 28 l container Capacity with handles



UNE-67.032, UNE-EN ISO 10545-5, UNE 127.007

C030 Apparatus for determining the impact resistance of concrete tiles and slabs. The apparatus consists of a heavy platform, a magnetic device that fights a ball field 1 Kg, graduated bar to adjust the height of fall and a box where you put the proper arena for settlement of the tile.

Dimensions: 800x850x1325 mm.

Weight: 60 kg approx.

Accessories:

C030.01 Steel ball 1Kg.

C030.02 Steel ball 250g.

AIR CONTENT IN FRESH CONCRETE UNE-EN 12350-7/ ASTM C231/ BS 1881:106/ DIN 1048

C031 Air entrainment-meter, manometer method for determining the amount of air in the fresh concrete. Sealed by hooks. Consisting of 8 l tank. Capacity. Comes complete with analog gauge, manual air pump spray bottle of 1 l. Capacity.
Air content range: 0 to 10%, Div. 0.1%
Dimension: Ø250 x 450 mm.
Pressure: 2 bar
Weight: 15,300 g.



C031

C032 Air entrainment-meter 8 l. similar capacity to model C031, but with digital manometer
C033 Air entrainment-meter 5 litres capacity, water column type. Made from cast aluminium alloy. It records directly the percentage of air enclosed in freshly mixed concrete by operating according to the air pressure principle. The instrument is supplied complete with pressure gauge tamping rod and hand pump.
Air content range 0÷8% - div. 0,1%.
Dimensions: dia. 250x700 mm.
Weight: 13 Kg.

Accessories:

C033.01 Calibration cylinder to check and calibrate the air meter Mod. C033



C033

C034 Air entrainment meter 8 litres, electric, pressure gauge type, automatic electric air compressor giving air pressure, and keeping it constant all along the test.. This device is designed to determine the amount of air contained in the concrete. It consists of an 8 L tank, sealed with a lid with three hooks. The compression chamber inside the lid is connected to an electric mini-compressor and a loading electrovalve used to increase the pressure. Each of these components is activated by its corresponding push button. The electric mini-compressor generates pressure quickly and keeps it constant.
Volume: 8 litres.
Air content range: 0-10% Div. 0,1% up to 8% and 0,5% over.
Power supply: 230 V. 50/60 Hz. 1 ph
Weight: 14 Kg.

C034.01 Filing hopper for the air entrainment meters C034





TURBO FORCED MIXERS SPECIMEN PREPARATION EN 12390-2

Laboratory Mixers perfectly designed to homogenize concrete mixes and get a good result. The machine is built with a solid structure which is seated the engine and all the mechanical and transport carriage (from 50 l. Capacity). On a plate of appropriate dimensions, Cuba is engaged which is easily removable, even when loaded.

. Because the dimensions of Cuba, models exceeding 50 l. capacity supplied with trolley security and protection.

Power supply: 220/380 V, 50 Hz

C035 Laboratory mixer 150 liter capacity with trolley

Dimensions: 1700x950x1180 mm, Weight: 280 Kg

C036 Laboratory mixer 100 liter capacity with trolley

Dimensions: 830x800x900 mm, Weight: 200 Kg.

C037 Laboratory mixer 50 liter capacity

Dimensions: 780x870x800 mm, Weight: 160 Kg.

S052 Laboratory mixer 14 liter capacity

Dimensions: 700x600x650 mm, Weight:: 80 Kg.





SPLIT CYLINDER MOULDS

EN 12390-1/ EN 12390-2/ ASTM C31/ BS 1881:108/ NF 18-401

C040 Dimensions Ø50x100 mm cylindrical mould stamped steel, hinged and open

C041 Dimensions Ø75x150 mm cylindrical mould stamped steel, hinged and open

C042 Dimensions Ø100x200 mm cylindrical mould stamped steel, hinged and open

C043 Dimensions Ø150x300 mm cylindrical mould stamped steel, hinged and open

C044 Dimensions Ø160x320 mm cylindrical mould stamped steel, hinged and open

Accessories:

C001.03 Compacting rod Ø 16 x 600 mm.

Cube moulds one gang steel for concrete samples preparation, internal grinding, open and hinged, fully removable

C045 Dimensions Cube mould of 100 x 100 x 100 mm. Weight: 10 Kg

C046 Dimensions Cube mould of 150 x 150 x 150 mm. Weight: 14 Kg

C047 Dimensions Cube mould of 200 x 200 x 200 mm. Weight: 18 Kg



Beam moulds steel for concrete samples preparation, internal grinding, fully removable

C048 Beam mould 100 x 100 x 400 mm. Weight: 20 Kg

C049 Beam mould 150 x 150 x 600 mm. Weight: 33 Kg

C050 Beam mould 150 x 150 x 750 mm. Weight: 45 Kg

C051 Beam mould 200 x 200 x 600 mm. Weight: 40 Kg



Cube mould standard, reinforced band 150 mm side for preparation of concrete specimens

C055 Cubic mould 150x150x150 mm



C057 Cube mould, 100 mm side, TWO GANGS, with "X" reinforced band on the base. The inside surfaces are very smoothed getting easier the specimen's ejection. Weight: 1030 g approx.





EN 12390-2/ BS 1881:108

Vibrating tables for compaction of concrete specimens in laboratory. Equipped with motor-vibrator having 3000 vibrations-minute.

Power supply: 230 V. 50 Hz 1 ph

C060 Dimensions 600 x 400 x 410 mmh.

C061 Dimensions 800 x 400 x 410 mmh.

C062 Dimensions 800 x 800 x 410 mmh.

C063 Clamping device to fix moulds

C064 Separate control panel, complete with On/Off switch and timer, getting also the tables to CE Safety Directive. It can be connected only to the Laboratory Vibrating Table



C065 Poker Vibrator portable electric motor. Ideal for compacting concrete specimens. Supplied with 25mm diameter needle. and transmission hose 3 or 4 m.

Power supply: 220V, 50 Hz

Weight: 5 kg approx.

TEMPERATURE CONTROL EQUIPMENT AND MOISTURE CURED CONCRETE SPECIMENS SPECIMEN CURRING

UNE-EN 12390-2/ EN 196/ ASTM C31, C192, C511

C068 Teams of cold / heat and humidity to achieve a temperature of $20^{\circ} \pm 2^{\circ} \text{C}$. and 99% humidity until H.R

The installation involves placing two separate equipment for achieving optimal regulation inside the humid chamber. To this place a heat pump (air conditioning) and the cooling unit. The visual record humidity and temperature is done by the camera control box wet with two digital displays humidity and temperature, switch, solid state relays to cold, heat and humidity.

The humidity and temperature recording is performed by a team DATTA logger (optional) placed inside the control box.

Technical equipment:

Cooling capacity: 5,200

Heat capacity: 3,000 to 6,000 W (depending on the capacity of the chamber).

Power supply: 220/380 V50 Hz

C068.04 Software to control humidity chamber



Control panel humidity chamber



Control panel in cooler



C070 Combined PT100 Probe electronic transmitters for measuring relative humidity and temperature. Heat protection IP54.
Humidity: 0 to 100% R.H.
Temperature: 0 ° to +100 ° C,
Probe length: 205 mm.
The sensor element is a PT100 temperature according to DIN 43760 of high response speed



C071 Data Logger, the humidity and temperature within the chamber and see the chart of the measurement. RS 232. The apparatus is placed inside the control box. The equipment is supplied complete with software to install on your computer.



C071 Centrifugal curing room vaporizer. Used to humidify curing rooms for concrete and mortar specimens. Robust and easy to maintain. Simple installation, just an outlet and a connection to the water network or a deposit. Ideal for cold curing specimens. Produces a fine mist that facilitates rapid absorption by air, free of droplets.

Technical Features:

Spraying capacity: 1.5 l / h.
Water supply pressure: <5 K / cm²
Power: 90 W
Power: 220V, 50 Hz
Dimensions: Ø380x500 mm.



C072 Centrifugal curing room vaporizer. Used to humidify curing rooms for concrete and mortar specimens., Robust and easy to maintain. Simple installation, just an outlet and a connection to the water network or a deposit. Ideal for cold curing specimens. Produces a fine mist that facilitates rapid absorption by air, free of droplets.

Technical Features:

Sprayability: 3 to 5 l / h.
Water supply pressure: <5 K / cm²
Absorption Power: 90 W
Power: 220V, 50 Hz
Dimensions: Ø450x600 mm.



ELECTRONIC DATA LOGGER THERMOHYGROGRAPHS

V225 This is a "data logger" with integrated sensor and memory capacity to store up to 20,000 measured values. Built in rugged anodized aluminum housing.

Windows Software. Comes complete with integrated probe humidity / temperature, battery, magnet, instruction manual and calibration.

Humidity range: 5-100% RH
Temperature range: -10 +50 ° C.
Accuracy: ± 3% RH / ± 0.6 ° C.
Resolution: 0.1 ° RH / 0.1 ° C.
Dimensions: 131 x 68 x 72 mm.
Lithium
Weight: 320 g.

Accessories:

V225.05 Comfort software interface.

V225.01 Carrying case



ENVIRONMENTAL CHAMBER FOR THE FREEZE/THAW TEST

Frosting Test Chamber (freeze / thaw)

Construction materials installed outdoors for years bear strong climate action (in winter moisture absorption during the day and cold at night, rain, sun ...) which cause a significant degradation. With Chambers of freezing / thawing cycles manufacturers of building materials can simulate the most severe weather conditions and can afford, with precision, the severe demands placed on materials testing, optimize their products and make them more competitive.

Oscillating temperature range of -25°C to 30°C .

The team submitted complies with the technical conditions and specifications necessary to perform testing cycles of the following materials:

Bricks.
Large format bricks.
Ceramic tiles.
Tiles and fittings cement or concrete.
Ceramic tiles.
Corrugated or ribbed and fiber cement roofing complementary pieces.
Platelets and fiber cement roofing complementary pieces.
Granites.
Marble and limestone.
Slates.

Teams are composed of two independent modules; House Bunker, bath, and control desk.

Joint structure built on a Steel Tube Sheet Stainless Steel AISI 304 (18/8), polished, satin, completely sealed and seamless, painted with acrylic paint dried in the oven. Flexible silicone seal high and low temperature for the perfect interior seal door trim. The opening system is equipped with gas shocks and offset hinges (allow easy removal of the door in case of maintenance). Protection Grille Stainless Steel fans.
Automaton fault management in the indicator display system messages.
Pushbutton / Pilot unlock reset alarm equipment.
Test Requirements - Bibliography of Standards
UNE EN ISO 10545 "Ceramic Tiles"
UNE 67048 "Ceramic Blocks"
UNE 22174 "Ornamental Granites"
UNE 22184 "Marble and Limestone" ↗



UNE 67028 "Bricks"
UNE 67034 "Ceramic Tiles"
UNE EN 491 "Concrete Tiles"
UNE EN 539-2, Method C "Clay roofing tiles"
UNE EN 494 "corrugated or ribbed and complementary pieces Slate Roofing"
UNE 7070 "stone pavers"

Optional elements
Pneumatic opening of the gate.
Insertion mobile probe on samples.
RS-232 output.
Defrost System.
Grommets made of PVC.
Control Software and Programming Windows ® environment.

C075 Freeze-thaw chamber of 525 l. capacity
Useful dimensions Bunker: 750x1000x700 mm
External dimensions Bunker: 1250x2800x925 mm.
External dimensions thermostatic deposit: 1980x1260x1150 mm.
Temperature range: -25° to $+30^{\circ}\text{C}$.

C078 Electric Core Drilling Machine lightweight portable, aluminum double column of 580 mm. of stroke, feed per spindle Endless Column foot balance and bolts and bearings for drilling at angles. Equipped with electric geared motor three speeds, drill from 50-200 mm diameter. Power: 220-240V, 50 Hz Weight: 100 kg approx.

Accessories:

- C078.01** Diamond Crown Ø 50 mm.
- C078.02** Diamond Crown Ø 75 mm.
- C078.03** Diamond Crown Ø 100 mm.
- C078.04** Diamond Crown Ø 150 mm.



SPECIMEN CUTTING MACHINE

C080 Cutting concrete specimens, witnesses and construction materials. It has a screw to vary the height of the head. Comes complete with submersible pump water for cooling and blade guard.

Specifications:

- Motor: 3 Hp
- Power: 230/380V. 50 Hz
- Cutter: Supports 300/350 - 25.4 mm ..
- Carriage Dimension: 498 x 648 mm.
- Maximum cutting length: 645/630

Accessories:

- C080.01** Cutting Disc Ø350 mm
- C080.02** Cutting Disc Ø300 mm
- C081** High capacity Cutting concrete specimens for highest production, cutting block, curbs and specimens. Height adjustable head. Ability to Ø 600 mm disc.
- Motor: 220/380V three phase
- Power Supply: 7.5 C.V.
- C081.01** Diamond disc Ø 600 mm. old concrete.

TEST ABRASION BÖHME

EN 1338 / EN 1339 / EN 1340 / 13892-3 / 14157 / DIN 52108

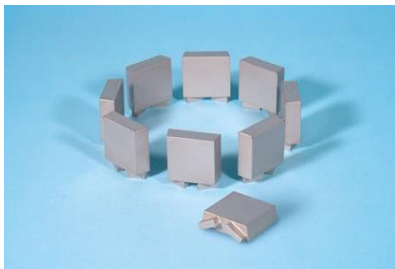
A168 The instrument measures a volume loss in a specimen under abrasion test and it's used in tests such as: Paving stones, concrete slabs, slabs made of natural rocks and natural stone slabs. The test is performed by positioning a specimen to be verified in a abrasion tester Böhme apparatus on the test track on which has been spread normalized abrasive; the grinding wheel it's made rotate and the specimen submitted to the abrasive load of 294 N for a certain number of cycles. Before doing a test, establish the specimen's bulk density by measuring weight and thickness. Perform the test for 16 cycles composed of 22 turn each, calculating at the end a worn as a average loss in volume and weight. The apparatus is basically composed of: Cast iron horizontal disc with a speed of 30 rpm and a diameter of 750mm furnished of a 200mm test track to position a specimen. Separate control panel with digital revolutions counter with



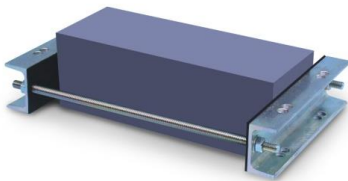
automatic stop after preset revolutions, specimen's holder and adjustable charger used to produce a force of 294 N ± 3 N on a specimen Power supply: 230V 50Hz 1PH 800 W Dimension: 1500 x 1000 xh 850 mm Weight: 250 kg **A168.01** Abrasive material, box of 25 kg



C083



C083.01



C083.04

C083.03 Set mounting brackets diameter specimens 100, 110, 150, 160 mm. can only be used in conjunction with C083.02

C083.04 Mounting set for different sized blocks to 390x250 mm.

UNE EN 12390-3/ ASTM C617, C31, C192/ NF P18-416/ BS 1881/ AASHTO T23, T126

C085 Electric melting pot, capacity 5 l. double security camera with built-in thermostat, double resistance located around the perimeter of the inner pot, designed to prepare the paste of sulfur used in the facing concrete specimens.

Temperature control: from 50 ° to 300 ° C.

Supply 220 V., 50 Hz

Weight: 15 kg Approx.

Accessories:

C086 Micronized sulfur powder, 25 kg pack.

C087 Carbon black, pack of 12 kg Approx.

C085.01 Stainless steel ladle to transfer sulphur

SPECIMEN GRINDING MACHINE EN 12390-3/ ASTM D4543

C083 Specimens automatic grinding, designed to grind and polish concrete cube and cylinder specimens, blocks, natural stones, rocks, ceramic materials etc. The specimens are easily fixed to the table by proper locking stirrups (see accessories) allowing to grind at a time:

- N° 3 cube specimens 100mm side, or
- N° 3 cube specimens 150mm side, or
- N° 2 cube specimens 200mm side, or
- N° 2 cylinder specimens dia. 100x200, 110x220, 150x300, 160x320mm, or
- N° 1 block with max. dimensions 390x250mm

The revolving abrasive head is radially and alternatively moved in both directions through an electric motor actuated by a pushbutton.

The column is completely protected against the abrasive dust.

The vertical lowering of the grinding head is achieved with infinitesimal adjustments by operating on the top handwheel having 0,05mm graduations.

The machine, made from rugged plate, is supplied complete with control panel, coolant/decantation tank (by water and emulsifying oil), motor pump, set of abrasive sectors, safety chip guard that when removed, stops automatically the machine.

The standard supply “**does not include**”:

- The locking stirrups,
 - The diamond sectors (8 pieces)
- that must be ordered separately (see accessories).

Technical specifications:

Table dimensions: 775x280mm (useful: 750x235mm)

Grinding wheel dia.: 330mm

Vertical span width: min. 175mm (95mm with the distance piece) max. 380mm

Grinding height range: 95 ÷ 380mm

Grinding head stroke: 215mm

Grinding wheel speed: 1400 rpm.

Power supply: 400V 3ph 50Hz 4500W

Dimensions: 1220x1080x (h) 1730mm

Weight: 410 kg approx.

Accessories:

C083.01 Diamond polishing sections (8 units required), especially effective due to their long working life and good grinding action.

C083.02 Set cubic specimen mounting brackets 100, 150, 200 mm.



C088 Cylinder capping equipment EN 12390-3/ ASTM C617, C31, C192/ AASHTO T23/ for dia.

150 x 300 mm. With chrome plate.

C089 Refrentador for cylindrical specimens

Ø 100 x 200 mm. With chrome plate.

C090 Refrentador for cylindrical specimens

Ø 75 x 150 mm. With chrome plate.

C091 Cylinder capping for specimens Ø 150 x 300 mm with rectified plate and cemented.

C092 Cylinder capping for specimens Ø 100 x 200 mm with rectified plate and cemented.

C093 Cylinder capping for specimens Ø 75 x 150 mm with rectified plate and cemented.

C094 Cylinder capping two columns with height-adjustable rollers for cylindrical specimens Ø 150 x 300 mm.

C095 Cylinder capping two columns with height-adjustable rollers for cylindrical specimens Ø 100 x 200 mm.

C096 Cylinder capping r two columns with height-adjustable rollers for cylindrical specimens Ø 75 x 150 mm.



H088/89/90/91/92/93



WATER IMPERMEABILITY TESTER AND ABSORPTION IN CONCRETE

UNE EN 12390-8/ EN 12364/ ISO 7031/ DIN 1048

Equipment for determining depth of penetration of the water under pressure according to the standard specifications, by the surface application of water at a controlled pressure on specimens of known dimensions, then measuring the water penetrated into the specimen. The test rig consists of stainless steel devices for placing Ø100 cylindrical specimens, 75 and 150 mm. or 100 and 150 cubic mm side, with the following design characteristics:

- Clamping plate made of stainless steel
- Gasket, to maintain tightness test positions
- Fixing system of the specimen height adjustable by threaded rods in stainless steel to ensure a perfect fit of the specimen in the test bench.
- Water collector, built in stainless steel.
- Remote control for each test unit
- Check valve 2 position
- Circuits for test positions by means of adjustment of a regulating valve and a pressure gauge accuracy.

Supplied complete as described, with seal for cylindrical specimens Ø 150, 100 and 75 mm. The compressor must be ordered separately.

C100 Air compressor maximum 10 bar and 8 bar constant pressure

Power supply: 220V, 50 Hz

Weight: 25 kg approx.



C098 Equipment for the water penetration test of three positions.

Dimensions: 1300 x 900 x 600 mm.

Power supply 220 V, 50 Hz`

Weight: 100 kg approx.

C099 Equipment for water penetration test of 6 posts.

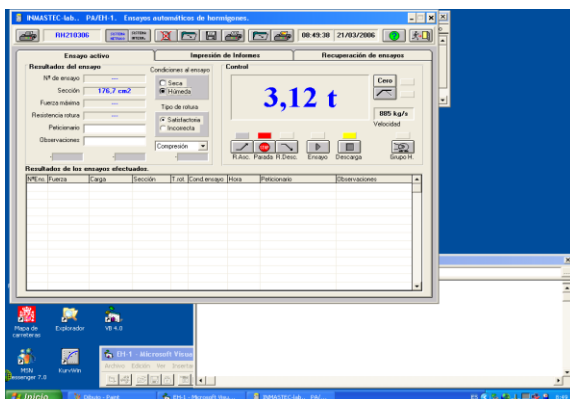
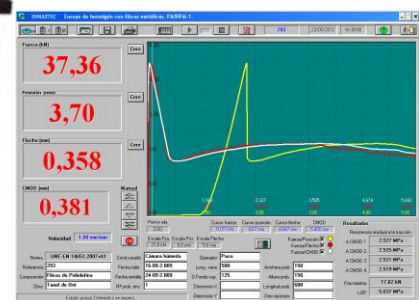
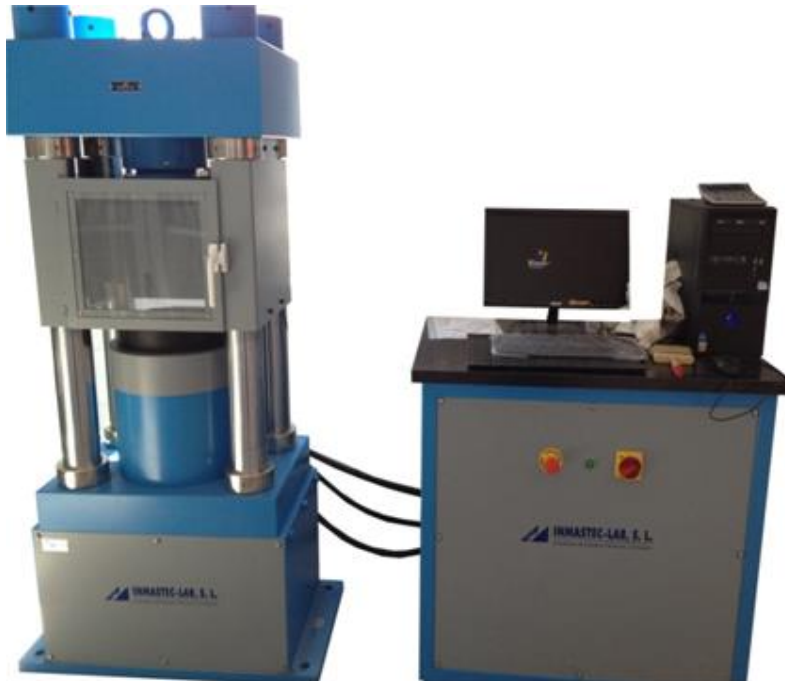
Dimensions: 1800 x 900 x 1000 mm

Power supply: 220V, 50 Hz

Weight: 150 kg approx.



COMPRESSION TESTING MACHINES AND BENDING CONCRETE SPECIMENS
UNE EN 12390-3, 12390-4/ BS 1881:115/ DIN 51220, 51223, 51302/ ASTM C39, E4/ AASHTO T22, T71



COMPRESSION TESTING, AUTOMATIC COMPACT SERVO-CONTROLLED COMPRESSION TESTS MANAGED TO MICROPROCESSOR AND GOVERNED BY LAST COMPUTER GENERATION, STANDARD EN 12390/ EN 772-1/ UNE 67037/99/ EN 1340/ ASTM C42/ BS 1881/ NF P18-407/ ASSHTO T97

Compact presses, hydraulic built in class 0.5 designed to meet the demands of any compression test on concrete specimens, with accuracy better than $\pm 1\%$ in compliance with European and international standards.

The features of this series are: robustness, measurement accuracy, easy handling, comfort to carry, and compliance with current regulations.

A rigid structure, through the four columns chrome frame, ensures a perfect repeatability and accuracy of the test results.

The set consists of: Area frame compression tests and where you install the hydraulic and the measurement and control system.

TESTING AREA

Comprised of a compact set of four columns of high mechanical stability and great aesthetics.

The lower bed receives the assembly formed by the sleeve with its piston, the upper bridge serves as closure of the test frame. The compression plates are hardened and ground and built in high strength steel, the bottom is marked concentric, very helpful for correct positioning of the samples, while the upper ball joint includes a system that allows for perfect fitting.

The team can perform tests on the following types of samples:

- * Concrete specimens: cylindrical, cubic, prismatic, indirect tensile, etc.
- * Drive-Brazilian indirect (Optional device)
- * Paving stone and concrete.
- * Rocks and granites.



C111/114/117/120

CENTRAL HYDRAULIC SERVO

Mounted on anti-vibration system, houses the high pressure hydraulic power, with tight fitting, pollution control, and very low noise. Powered by a microprocessor hydraulic operated and governed by computer.

The servo is controlled by the module with RS 232.

The hydraulic cylinder with an O-ring in the groove and piston are made of special steel rectified.

MEASUREMENT AND CONTROL SYSTEM USING MODULE (Automatic)

The control module is a microprocessor-operated electronic device that performs servo control of the test machine closed-loop digital form via an external personal computer. The high speed of the computer, allows you to make very precise control of the actuator of the testing machine and digital filtering allows maintaining high resolution and stability in the signs of the variables of reading.

The module is mounted in a metal housing of reduced dimensions located within the frame of the testing machine. All necessary control and display is performed via a computer program working under Windows interface.

The personal computer required for such monitoring must meet the requirements under Windows, so in general, will be a last generation computer.

Servo-controlled compression machines for compression tests on cylindrical specimens $\varnothing 15 \times 30$, 16×32 cms. And up to 200 cubic mm. hand, prismatic (optional supplementary dishes) and indirect tensile test (Brazilian Device option). Ruled by computer.

Supplied with the latest computer flat screen, computer table (optional), safety shield with auto door opener for test area Software CD overall test program and instruction manual in English.



C108N DIGITEC **C098N AUTOTEC**

Two-channels computerised graphic display system to control and manage all sorts of automatic (Autotec C108N) and semi-automatic (Gigitec C108N) testing machines, for acquisition, display, processing, printing and saving the test data and certificates, with software for remote control from PC.

TO UPGRADE OR COMPLETE YOUR CONCRETE OR MORTAR COMPRESSION AND FLEXURE TESTING MACHINE (also from other manufacturers).

The system can manage and process the data in compliance with EN 12390 Specification and the different International Standards, for the following tests:

- Compression on concrete
- Flexure on concrete
- Splitting on concrete cubes and cylinders
- Compression and flexure on mortar
- C127N On board graphic printer
- RS232 connection with remote control to PC



Specifications: Digitec / Autotec

- 2 analogue-digital channels connectable to two different compression/flexure frames.
- Simple and immediate set up of the parameters and test execution, menu driven. The use does not require specialised staff.
- Continue load display.
- Breaking load detection.
- Automatic elaboration of the specific resistance value.
- Permanent file up to 1000 tests and file of 100 different types of specimens.
- Graphic display with high resolution: 192x64 pixels.
- Selectable measuring force: kN, lb
- Languages: English, French, German, Spanish, Italian, Polish, Czech, Turkish.
- Class: 0,5% starting from 10% of maximum value, on request from 1% of maximum value.



Test Setup



Test execution with pace rate controller

Technical structure

- Acquisition and data processing system at 24 bit, effective resolution: 17 bit
- Operator interface composed by 5 multi-functions pushbuttons; function icons shown on the display.
- The two analogue-digital channels accept sensors, transducers or load cells at 2mV/V
- Automatic linearity guided algorithm with very high granted accuracy (Class 0,5)
- Different programmable safety devices for the machine or the specimen as the possibility to introduce a percentage of the maximum value reached during the text execution, thermal protection of the motor and different other settable alarms.
- The firmware contains a memory of the most used specimens: area, weight, specific weight.
- Possibility of personalisation for special sized samples.
- RS232 interface: it allows transferring the data during the test or the test results directly to PC (via Microsoft Hyperterminal) or the remote control of the system by the UTM2 software (accessory)

Menu

The display shows date and time, currently applied load and single load, latest effected tests, pace rate control, rapid commands functions, configuration in use, analogue channel and activated alarm.

Power supply: 230V 1ph 50/60Hz

Dimensions: 230x145x240mm

Weight: 4 kg



Max load alarm setting



Channel configuration/calibration



Functions icons (test selection, file, alarms visualisation)



C112N CYBER-PLUS

C124N SERVO-PLUS

Designed with the latest technology, an innovative PC-like Touch Screen system employed to control and manages all sorts of automatic testing machines.

To update or complete your compression and flexural testing machine on concrete and mortar (also from other manufacturers).

The system can manage and process the following tests:



C124N Servo-Plus Evolution

8 channel servo controlled unit for a fully automatic execution of the test. The machine comprises.

- Cyber-Plus Evolution C 112N data acquisition system
- Multi-piston electric pump with variable flow (see mod 124N) driven by a microprocessor (reliable and noiseless system, also for intensive and extended use)
- Power supply: 230V 1 ph 50 Hz 750W
- Dimensions: 420x290x1120 mm Weight: 60 Kg.

C112N Ciber-Plus Evolution

Cyber-Plus Evolution

8 channel unit for data acquisition and elaboration.

Power Supply: 230V 1F 50/60Hz 70W

Dimensions: 245x55x260mm

Weight: 5 kg

Main features:

The control unit Cyber/Servo Plus Evolution runs like a standard PC based on Windows operating system.

The touch-screen graphical icon interface allows easy set up of the parameters and immediate execution of the test.

High resolution color display $\frac{1}{4}$ VGA, offers all the functions of a PC for the management and analysis of the data, test results, and graphs.



Direct connection of the Cyber/Servo Plus Evolution to the intranet (direct connection to a LAN network) and internet to establish a remote communication and receive a diagnostic analysis of a potential problem, the ability to execute the test from distance, and to provide updates on the software.

Group Inmastec technicians will check the unit located abroad to guarantee a prompt and professional assistance.



Acceso directo a Internet para conexión de asistencia a distancia

Sistema operativo Windows parecido a un ordenador estándar.
Pantalla táctil a color, 1/4 VGA

Windows Embedded

...continúa...

Pantalla táctil con teclado virtual alfanumérico (qwerty), fácil de utilizar

Opciones internacionales e ilimitadas de selección del idioma

Panel direccional tradicional con 5 teclas para un uso estándar o con guantes

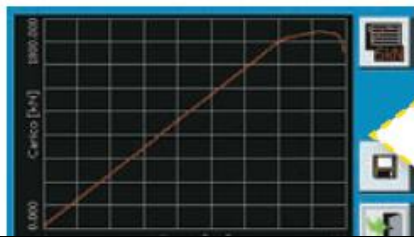
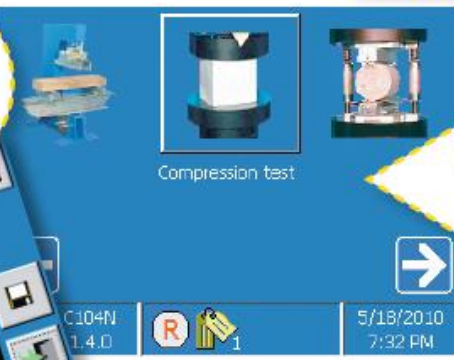
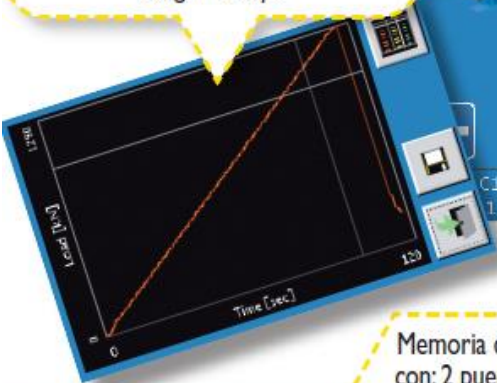
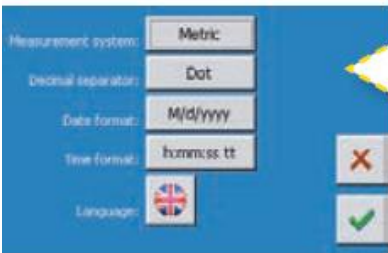
Ensayo de Compresión. Visualización en tiempo real del gráfico de carga / tiempo

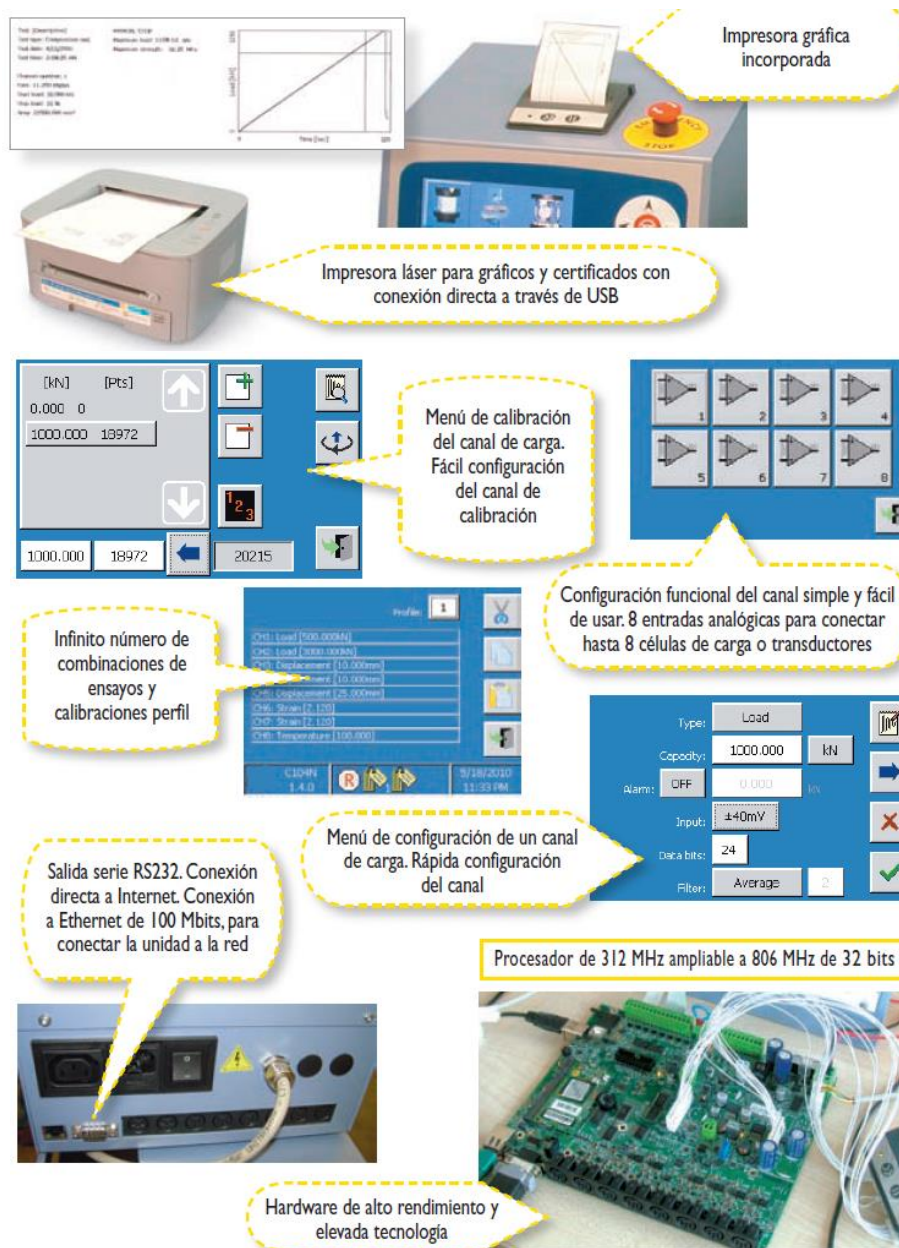
Fácil y sencilla selección de los ensayos (compresión)

Selección de ejemplos, Módulo de Elasticidad

Memoria de almacenamiento ilimitado con: 2 puertos USB* para ordenador, 1 ranura para tarjetas SD* (* memorias no incluidas)

Control del gradiente automático para evitar el desmoronamiento de la muestra conforme a la Norma ASTM C39.





Main functions

- More intuitive interface which simplifies the use of the machine (test begins after a few simple inputs)
- Greater calculation ability and data visualization (on board charts and graphic print-outs)
- High management capacity for the multilingual framework and international settings (date and time, decimal units, unit of measure).
- Elastic software which allows the installation of new tests when desired.
- Profile configuration manager
- Configuration and calibration supervision of the analog channel
- Alarms manager
- Ethernet parameters configuration

- International settings configuration
 - Hardware diagnosis functions
 - Functions for the software update and licenses-Execution of tests through parameters set up customization
 - Several levels of protection (passwords) to prevent the accessibility to the configuration menus by unauthorized staff.
- Cyber-Plus Evolution C109N and Servo-Plus Evolution C104N are supplied complete with licenses for the execution of the following tests:
- Compression and Flexural on Concrete
 - Splitting test on cylinders and concrete cubes
 - Compression and Flexural on mortar

In accordance to the following standards:
UNI EN, ASTM, BS, NF, UNE, DIN etc.

Compression machine 2000 kN motorized, to test blocks max. 500x300 mm, cubes up to 300 mm side and cylinders up to dia. 160x320 mm.
Standards: EN 772-1 / UNI 6686, parte 1 e 2 / ASTM C39, E447 / AASHTO T22 NF P18-411 / BS 1610, 6073 / UNE 83304

ESPECIFICACIONES TÉCNICAS:

- Max. vertical daylight : 336 mm
- Compression platens : 510x320x55 mm
- Gauges dia. 250 mm with specific resistance Scales for cubes 150 mm and cylinders dia 150 and 160 mm.
- Gages divisions: 2000 KN div. 5 Kn, 600 KN div. 2 KN.
- Hydraulic device to stop the piston's stroke at its max excursion to avoid pumping the piston out of the cylinder
- Calibration accuracy: Grade 1.0
- Max. Ram travel 55 mm approx..
- Power supply (motorized models): 230 V I ph 50 Hz 750 W
- Dimensions: 870x600x1400 mm
- Wight: 8504900 Kg.



C109+C111-05+C121-01

ACCESSORIES:

C104-04 The pump assembly and the digital system are encased to enhance the design and look of the machine.

C098N Two-channels computerised graphic display system to control and manage all sorts of automatic testing machines.

C108N Two-channels computerised graphic display system to control and manage all sorts of semi-automatic testing machines, for acquisition, display, processing, printing and saving the test data and certificates, with software for remote control from PC.

C105 Very practical to adjust the light between the compression platens of a machine, according to the height of the specimen to be tested.

Recommended solution for machines equipped with big sized platens.

C109-10 Software UTM2 (Universal Testing Machine 2). Developed for the managing.

C111-05 Distance pieces, 126+50 mm high for cubes 200 and 150 mm side.

C111-12 Distance piece, 126 mm high for cubes 200 mm side.

C111-22 Distance piece 50mm high.

NOTE: The cylinders Ø160x320 mm do not require any distance piece.

C111-23 Slotted distance piece, 50 mm high for central screw.

C111-27 Slotted distance piece, 20 mm high for central screw.

C111-28 Slotted distance piece, 76 mm high for central screw.

C111-08 Slotted distance piece, 126 mm high for central screw.

C121-01 Safety guards, polycarbonate, with hinges and lock, to CE Directive.

C123 Software "servonet" for remote control through PC of Autote machine.

C114-03 Compression testing machine 3000 KN capacity, but with gauges

Compression testing machine with automatic control system 2000 KN capacity



C111A+C127N+C105+C111-08+C121-01

Compression testing machine with semi-automatic control system 2000 KN capacity



C111D+ C127N+C105+C111-08+C121-01

CONCRETE COMPRESSION MACHINE 2000 KN MOTORIZED, SERVO-PLUS EVOLUTION

Compression testing machine, motorized with Servo-Plus evolution control unit (fully automatic model), to test blocks max. 500x300 mm, cubes up to 300 mm side and cylinders up to dia. 160x320 mm.

Standards : EN 772-1 / ASTM C39, E447 / AASHTO T22 / NF P18-411 /

BS 1610, 6073 / UNE 83304

TECHNICAL SPECIFICATIONS:

- Max. vertical daylight : 336 mm
- Compression platens : 510x320x55 mm
- Hydraulic device to stop the piston's stroke at its max excursion to avoid pumping the piston out of the cylinder
- Calibration accuracy: Grade 1.0
- Max. Ram travel 55 mm approx..
- Power supply (motorized models): 230 V I ph 50 Hz 750 W
- Dimensions: 870x600x1400 mm
- Weight: 8504900 Kg.



C112N+C127N+C105+C111-08+C121-01



C113N+C104-04+C105+C111-08+C121-01+C127N



C113N+C127N+C105+C111-08+C121-01



CONCRETE COMPRESSION MACHINE 3000 KN MOTORIZED, AUTOTEC

Compression machine, motorized with Autotec control unit, to test blocks max. 500x300 mm, cubes up to 300 mm side and cylinders up to dia. 160x320 mm

Standards: EN 772-1 / UNI 6686, parte 1 e 2 / ASTM C39, E447 AASHTO T22 / NF P18-411 / BS 1610, 6073 / UNE

ESPECIFICACIONES TÉCNICAS:

- Max. vertical daylight : 336 mm
- Compression platens : 510x320x55 mm
- Gauges dia. 250 mm with specific resistance Scales for cubes 150 mm and cylinders dia 150 and 160 mm.
- Gages divisions: 3000 KN div. 10 Kn, 600 KN div. 2 KN.
- Hydraulic device to stop the piston's stroke at its max excursion to avoid pumping the piston out of the cylinder
- Calibration accuracy: Grade 1.0
- Max. Ram travel 55 mm approx..
- Power supply (motorized models): 230 V I ph 50 Hz 750 W
- Dimensions: 900x600x1500 mm
- Weight: 1150/1220 Kg.



C109+C111-05+C121-01

ACCESSORIES:

C104-04 The pump assembly and the digital system are encased to enhance the design and look of the machine.

C105 Very practical to adjust the light between the compression platens of a machine, according to the height of the specimen to be tested.

Recommended solution for machines equipped with big sized platens.

C109-10 Software UTM2 (Universal Testing Machine 2). Developed for the managing.

C111-05 Distance pieces, 126+50 mm high for cubes 200 and 150 mm side.

C111-08 Slotted distance piece, 126 mm high for central screw.

C111-12 Distance piece, 126 mm high for cubes 200 mm side.

C111-22 Distance piece 50mm high.

NOTE: The cylinders Ø160x320 mm do not require any distance piece.

C111-23 Slotted distance piece, 50 mm high for central screw.

C111-27 Slotted distance piece, 20 mm high for central screw.

C111-28 Slotted distance piece, 76 mm high for central screw.

C121-01 Safety guards, polycarbonate, with hinges and lock, to CE Directive.

C123 Software "servonet" for remote control through PC of Autotec machine.

H009.01 Personal computer, complete with LCD monitor, keyboard, mouse, connection cables

C114-03 Compression testing machine 3000 KN capacity, but with 2 gauges

COMPRESSION TESTING MACHINE 3000 KN CAPACITY MOTORIZED SERVOPLUS



C114-06A+C127N+C111-22

COMPRESSION TESTING MACHINE 3000 KN CAPACITY MOTORIZED DIGITEC



C114-05D+C127N+C111-22

CONCRETE COMPRESSION MACHINE 3000 KN MOTORIZED, SERVO-PLUS EVOLUTION

Compression testing machine, motorized with Cyber-Plus or Servo-Plus evolution Touch Screen Digital System, to test blocks max. 500x300 mm, cubes up to 200 mm side and cylinders up to dia. 160x320 mm.

Standrds : EN ASTM C39 / AASHTO T22 / UNI 6686 part 1 and 2 / NF P18-411 / BS 1610 / UNE 83304

TECHNICAL SPECIFICATIONS:

- Max. vertical daylight : 336 mm
- Compression platens dia 287 mm
- Compression platens : 510x320x55 mm
- Hydraulic device to stop the piston's stroke at its max excursion to avoid pumping the piston out of the cylinder
- Calibration accuracy: Grade 1.0
- Max. Ram travel 55 mm approx..
- Power supply (motorized models): 230 V I ph 50 Hz 750 W
- Dimensions: 900x600x1500 mm
- Wight: 115041220 Kg.



C124-10N+C104-04+C127N+C111-12+C121-07

COMPRESSION TESTING MACHINE 3000 KN CAPACITY MOTORIZED SERVOPLUS



C124-10N+C127N+C111-12+C121-07

ACCESSORIES:

C104-04 The pump assembly and the digital system are encased to enhance the design and look of the machine.

C109-10 Software UTM2 (Universal Testing Machine 2). Developed for the managing.

C111-05 Distance pieces, 126+50 mm high for cubes 200 and 150 mm side.

C111-08 Slotted distance piece, 126 mm high for central screw.

C111-12 Distance piece, 126 mm high for cubes 200 mm side.

C111-22 Distance piece 50mm high.

NOTE: The cylinders Ø160x320 mm do not require any distance piece.

C111-23 Slotted distance piece, 50 mm high for central screw.

C111-27 Slotted distance piece, 20 mm high for central screw.

C111-28 Slotted distance piece, 76 mm high for central screw.

C121-01 Safety guards, polycarbonate, with hinges and lock, to CE Directive.

C123 Software "servonet" for remote control through PC of Autotec machine.

C127N Graphic printer on thermopaper on board.

C114.03 Compression testing machine 3000 KN capacity, but with gauges

C124-19A Compression testing machine 3000 KN capacity same to the model C124.19N, but with Autotec operating system (non-touch).

C124-17D Compression testing machine 3000 KN capacity same to the model C124.17N, but with Digitec operating system (non-touch).

COMPRESSION TESTING MACHINE 3000 KN CAPACITY MOTORIZED DIGITEC



C124-08N+C127N+C111-13+C121-07+C121-51

**CONCRETE COMPRESSION MACHINE 3000 KN
MOTORIZED, SERVO-PLUS EVOLUTION**
Compression testing machine, motorized with Servo-Plus evolution control unit (fully automatic model), to test blocks max. 500x300 mm, cubes up to 300 mm side and cylinders up to dia. 160x320 mm.

Standards : EN 772-1 / ASTM C39, E447 / AASHTO T22 / NF P18-411 /

BS 1610, 6073 / UNE 83304

TECHNICAL SPECIFICATIONS:

- Max. vertical daylight : 336 mm
- Compression platens : 510x320x55 mm
- Hydraulic device to stop the piston's stroke at its max excursion to avoid pumping the piston out of the cylinder
- Calibration accuracy: Grade 1.0
- Max. Ram travel 55 mm approx..
- Power supply (motorized models): 230 V I ph 50 Hz 750 W
- Dimensions: 900x600x1500 mm
- Wight: 115041220 Kg.



C124-19N+C104-04+C127N

COMPRESSION TESTING MACHINE 3000 KN CAPACITY MOTORIZED SERVOPLUS



C124-19N+C127N

ACCESSORIES:

C104-04 The pump assembly and the digital system are encased to enhance the design and look of the machine.

C105 Very practical to adjust the light between the compression platens of a machine, according to the height of the specimen to be tested.

Recommended solution for machines equipped with big sized platens.

C109-10 Software UTM2 (Universal Testing Machine 2). Developed for the managing.

C111-05 Distance pieces, 126+50 mm high for cubes 200 and 150 mm side.

C111-08 Slotted distance piece, 126 mm high for central screw.

C111-12 Distance piece, 126 mm gigh for cubes 200 mm side.

C111-22 Distance piece 50mm high.

NOTE: The cylinders Ø160x320 mm do not require any distance piece.

C111-23 Slotted distance piece, 50 mm high for central screw.

C111-27 Slotted distance piece, 20 mm high for central screw.

C111-28 Slotted distance piece, 76 mm high for central screw.

C121-01Safety guards, polycarbonate, with hinges and lock, to CE Directive.

C123 Software “servonet” for remote control through PC of Autote machine.

C127N Graphic printer on thermos-ppaer on board.

C114.03 Compression testing machine 3000 KN capacity, but with gauges

C124-19A Compression testing machine 3000 KN capacity same to the model C124.19N, but with Autotec operating system (non-touch).

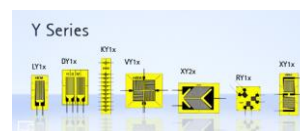
C124-17D Compression testing machine 3000 KN capacity same to the model C124.17N, but with Digitec operating system (non-touch).

**COMPRESSION TESTING MACHINE 3000 KN CAPACITY
MOTORIZED DIGITEC**



C124-17N+C127N

- | | |
|-------------|-----------------------|
| C125 | Strain gauge of 60 mm |
| C126 | Strain gauge of 30 mm |
| C127 | Strain gauge of 20 mm |
| C128 | Strain gauge of 10 mm |



**EN 12390-5 / NF P18-407/ ASTM C78, C293/
AASHTO T97/ BS 1881:118**

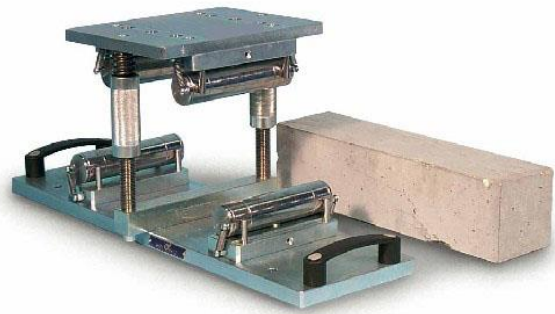
C130 Flexural device for two point and centre point tests on concrete beams 100x100x400/500 and 150x150x600/750 mm.

Equipped with two lower rollers, one of them articulated, and two upper rollers for third point tests.

It is possible to place in the centre only one upper roller for centre point tests. To perform the flexural test, this device has to be used with a concrete compression machine foreseen of low capacity measuring range

Dimension: 610x200xh320 mm.

Weight: 27 Kg



C131 Splitting tensile test device for cylinders EN 12390-6 / ASTM C496 Traction device indirect Brazilian test for specimens Ø 150 x 300 mm. comprises a lower support plate with auto-centering and higher supports compression.

C133 Distance piece (extension) plate of Ø360x50 mm thickness with handles

C134 Reducer (extension) plate of Ø320x50 mm thickness with handles

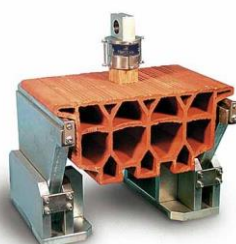
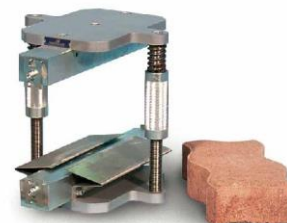


C135 Splitting tensile test device to perform tests on concrete cube specimens 100 and 150 mm and on concrete block pavers.

Dimensions: 350x250x264 mm.

Weight: 17 kg

Note: to perform the test, these devices have to be used with a concrete compression machine equipped with a low capacity measuring range or with a flexural frame.



C136 Device for flexural tests on clay blocks for flooring. It consists of two lower bearers dia.20x300 mm and upper square wooden pressure punch.



CONCRETE FLEXURAL MACHINE 150 KN, "OPEN SIDED FRAME", MOTORIZED, CYBER-PLUS EVOLUTION
EN 12390-5/ EN 1340:4/ ASTM C78, C293/ ASSHOT T97/ BS 1881:118, BS 6073-1, BS 7263/ NF P18-407, P98-302/ DIN 51227

C140 Concrete flexural machine 150 kN " open sided frame, motorized withCyber-Plus evolution control unit (semi-automatic model) to perform flexural tests on concrete beam specimens max. dimensions 200x200x800mm, flat blocks, flagstones, kerbs, tiles, slabs, masonry units, and any type of material having max. size 600x250 mm (lower rollers max. length 1325 mm)

The frame is supplied **"Without"** upper/lower rollers group, to be ordered separately

CONCRETE FLEXURAL MACHINE 150 KN, "OPEN SIDED FRAME", MOTORIZED, DIGITEC



C140.02

CONCRETE FLEXURAL MACHINE 150 KN, "OPEN SIDED FRAME", MOTORIZED, SERVO-PLUS EVOLUTION



C140.03

Accessories:

C141.10 Roller group, lower adjustable from 75 to 525 mm, and **"only one"** upper central roller for single point method

C141.11 Rollers group, lower adjustable from 75 to 525 mm, and upper adjustable from 75 to 180 mm for two points method.

C141.12 Rollers group, lower adjustable from 75 to 1325 mm, and upper adjustable from 75 to 575 mm for two points method.

C141.14 Rollers group, lower adjustable from 75 to 1325 mm, and **"only one"** upper central roller for single point method.

C141.13 Concrete kerbs and slabs device

FLEXURAL STRENGTH MEASUREMENTS

The equipment consists of a steel tamper is mounted on a rotating coupling which is fixed to the upper part of the flexural strength on three points on the kerb, without any torsional stress. Standard: En 1340, 1339.



C140.13

REBOUND CONCRETE TEST HAMMERS

EN 12504-2/ ASTM C805/ DIN 1048/ BS 1881:202/ NF P18-417

C145 Concrete Test Hammer to determine the compressive strength of concrete in various parts of a structure.

The test consists of pressing the hammer piston against the concrete surface which compresses the spring and automatically releases percussion mass strikes the piston and the concrete surface.

Impact energy: 2.207 Nm. (0225 Kgm)

Compressive strength: 10-70 N / mm²

Dimensions: 340x100x100 mm.

Weight: 2 kg approx.

C150 Anvil used for verification and calibration of the Hammers



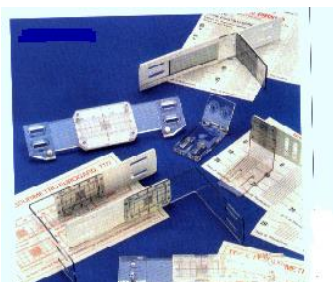
C150



C146 Concrete Test Hammer designed to perform nondestructive testing on concrete and rapid response of compressive strength of concrete, providing the calibration curve.

TECHNICAL CARACTRISTICAS

- Percussion Energy: 2207 Joule
 - Measuring range: 10 - 120 N / mm² • USB Output
 - Digital microprocessor
- Supplied complete with software, USB cable, rechargeable battery, grinding wheel and carrying case



CRACK WIDTH GAUGE FOR WALLS

C148 Fisurómetro to control, measure and record the width of the cracks in a structure.

Internal or external use, made of durable polycarbonate, complete with a seamless registration card for each indicator that facilitates easy tracking. Suitable for measuring horizontal and vertical movements on a flat surface. Supplied in pack of 5.

C149 Similar to C148 Fisurómetro Suitable for controlling cracks in corners with bidirectional movements even simultaneously. Supplied in pack of 5.

Mechanical strain gauges

Standards: ASTM C426 / BS 1881:206

Use to determine the strain (length changes) in concrete specimens and structures, rock strata, different parts of a structure, in remote areas and under adverse conditions, using a single instrument. Different models are available with analogic or digital gauge, 100, 200, 300 mm measuring length, depending on the standard length to be measured. The instrument can also be used for other structures like steel and wood.

The standard equipment comprises:

- Strain gauge (extensometer) complete with analogic or digital indicator
- 0,001 mm graduations (see available models).
- Calibration bar used also to fix the datum disc on the structure.
- 50 datum discs.
- Adhesive compound for datum discs.

The whole contained in carrying case.

Models with "analogic gauge! 0,001 mm graduations

C149 Strain gauge, 100 mm measuring length, complete

C149.01 Strain gauge, 200 mm measuring length, complete

C149.02 Strain gauge, 300 mm measuring length, complete

Modls with "digital gauge" battery feeded, with reading values in mm (sens. 0,001 mm) and inch.

Complete with battery, but without RS232 port.

C150 Strain gauge, 300 mm measuring length, complete

C150.01 Strain gauge, 200 mm measuring length, complete

C150.02 Strain gauge, 100 mm measuring length, complete



C149



C150



→ Battery rechargeable pack NiMh 4,8V > 2000mA with low battery condition alarm.
 - Anti shock case holding the unit and the accessories.
 - External feeder 230V and battery charger 12V 500mA.
 Case dimensions: 400x340x110mm
 Weight: 2 kg approx

ULTRASONIC PULSE VELOCITY TESTER

EN 12504-3/ ASTM C597/ BS 1881:203/ NF P18-418

C151 Determine the presence of faults, voids, cracks etc. in "in situ" or precast concrete and for longterm monitoring of structures subject to environmental conditions.

- Measuring range: 0 - 3000 μ s - accuracy +/- 0,1 μ s
- Selection of the ultrasonic pulse amplitude adjustable from 250 to 1000 V
- Measurement of the required time by the ultrasonic pulse to go through the tested material.
- Single or continuous acquisition mode with automatic or manual saving.
- Zero calibration with depuration of the time for the pulse to go through the probes.
- Calibration of a defined time value.
- Capacity of data acquisition, processing and filing of the test data up to 30.000 samples.
- Interface mini USB for PC connection.
- Two outlets for connection to the oscilloscope.

The standard appliance includes:

- The instrument in basic configuration in a practical palmer container.
- Two 55kHz probes with connection cables.
- Calibrating cylinder and contact paste. ☺

EN 12504-4/ ASTM C597/ BS 1881:203/ NF P18-418

C152 Ultrasonic pulse velocity tester, high performance with microprocessor for combined ultrasonic and rebound hammer data acquisition and processing. Appliance allows measuring the ultrasonic impulse speed inside the material (by knowing the distance between the probes). It measures the distance between the probes/by knowing the speed of the ultrasonic impulse to go through the tested material). Young's modulus is also measured (by knowing the distance between the probe and the density of the tested material). Selection of the impulse amplitude. Selection of the transmission frequency of the impulse.

Infinite filing capacity of the test data and the graph tracing of the tests on SD card or Compact Flash extractable and expandable, RS232 or RS485 or USB interface for PC or printer connection.
 Time measuring: 0 to 9999.9 μ s.

Resolution: 0.1 μ s.

Standard instrument is supplied with basic configuration (X-Scale 400 MHz, 64 MB flash memory, 64 MB Ram), Two 55 kHz probes with connecting cables, Calibrating cylinder and contact paste, Battery pack Li-Ion 11.1 V, 3000 mA h, External feeder 230V, 24V and battery charger and carrying case.

Dimensions: 400x300x180 mm

Weight: 3 Kg approx.



C152

Deep Scanning metal detector

C153 Deep scanning metal detector up to 150mm.

This locator finds and scans, through solid concrete, steel rebars and metallic materials like pipes, electric cables, junction boxes, metal studs and frames up to 150mm deep.

It differentiates magnetic metals from non magnetic ones.

Accuracy: rebars or pipes 14mm dia. with minimum grid space of 152mm are scanned within 13mm tolerance.

Depth: 152 +/- 25mm

Alkaline battery 9V (not included) for one year use.

Dimensions: 250x110x62mm

Weight: 300g approx.



COVERMETER

C158 provides rebar location, sizing and cover measurement in a single weather-resistant instrument. For immediate results on-site, the onscreen gauge and audio feedback rapidly pin-point rebar location and orientation.

Cover is easy to read on the back-lit display and time-stamped readings can be logged instantly with a simple button press on the probe.

Bar size can be preset if known, or detected automatically for survey and investigation tasks. For non-standard bar sizes, large diameter pipes or other pre-fabricated items, the MC8022 can also show absolute measurements that can be used to look up cover using custom tables.



C158

Technical Specification

Cover range	5mm – 185 mm
Accuracy	± 1mm up to 60mm cover ± 2mm up to 120mm ± 3mm up to 160mm ± 4mm over 160mm
Resolution	0,1 mm
Operating Weight	800 g. (instrument+probe+cable)
Operating Temp	-10 ° C - + 50 ° C
Battery Operation	20 hrs
Battery Charger	110 – 240V AC
Ingress Protection	IP65

C159 Covermeter same model C158, but with executive hard case in place of equipment bag - Protective dust-cover and wrist strap.



C159

COVER TO REINFORCEMENT

For determining the presence position, direction, dept and diameter of steel reinforcement bars in concrete structures. Standards: BS 1881:204 / DIN 1045

C161 Versatile, fully-integrated rebar detector and cover meter with a unique real-time rebar visualization allowing the user to actually “SEE” the location of the rebar beneath the concrete surface to a maximum deep of 180 mm.

This is coupled with rebar-proximity indicators and optical and acoustical locating aids.

Rebar diameter can also be estimated within the specified testing range.

The Profoscope combines these unique features in a compact, light device that allows the user to operate this rebar detector with one hand making the task of locating rebars a simple and efficient process.

In addition the unit convinces through its intuitive user interface making rebar detection easy.

C162 Profoscope+ (plus). Same features of mod. C161, but additionally offers the innovative memory function for automatic data acquisition, by eliminating the manual measurements of a test series, saving time and unnecessary source of errors.



FEATURES:

- Visual indication of rebars in close proximity.
- Ability to identify the mid-point between rebars as well as the orientation of rebars.
- Optical and acoustical indication of rebar location and minimum cover alert.
- Neighboring bar correction.
- Cordless and single handed operation.
- Icon-based language independent menus.
- Start-up test kit allows user to familiarize with all functions in a comfortable environment, wasting no time on site.



GROUP I&S