



H011-01

UNIVERSAL SERVO-CONTROLLED TENSILE/COMPRESSION MACHINE

- Tensile tests on steel reinforced bars, up to 500 kN max. capacity load.
- Compression tests on concrete cube and cylinder specimens up to 1500 kN max. capacity load.

STANDARDS: ASTM C39, E4 / BS 1610 / NF P 18-411 / DIN 51220 / AASHTO T22

This machine of compact design, is utilized to carry out tensile tests on steel reinforced bars from dia. 6 to 25 mm. and flat max. 25x15 mm. It can also perform compression tests on concrete cube specimens max. side 150 mm. and cylinders max. dia. 160x320 mm.

The "Servotronic" three channel servo-controlled unit, provides fully automatic tests throughout all phases: data acquisition, display, processing, pace rate adjustment. (Servotronic technical details: see pag. 117 of the catalogue)

Software (accessory mod C123-01) for managing and remote control from PC, printing and saving of the test data and certificates. It allows also load/deformation reading with graphic display both for tensile and compression tests.

The four columns loading frame is overdimensioned to assure high rigidity and stability. The loading piston, double action, is rectified and lapped. The piston is foreseen of an hydraulic maximum and minimum piston stroke's security device, by avoiding any damage risk due to wrong manipulations of the unit. A displacement device visualizes instant by instant the piston's excursions during the tests.

An hydraulic selector allows to select the tensile or the compression test. The heads holding the jaws are obtained from only one block of high tungsten steel, while the jaws are hardened over 65 HRC. The "V" autoclamping form allows a quick and practical churking of the specimen. A calibration certificate is supplied along with the machine.

The machine is supplied complete with pair of jaw-holders, but without accessoires for the tensile and compression tests, which must be ordered separately (see accessories).

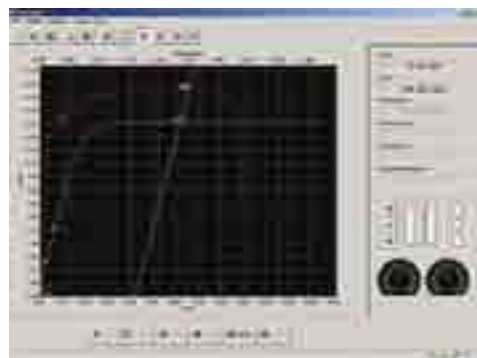
section H



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TECHNICAL SPECIFICATIONS:

- Maximum tensile load: 500 kN
- Maximum compression load: 1500 kN
- Distance between the jaws: min. 300 mm - max. 400 mm
- Distance between the compression platens: 340 mm
- Distance between the columns: 270 mm
- Piston's stroke: 100 mm
- Precision and repeatability: $\pm 1\%$ of read value
- Power supply: 230 V 1 ph 50 Hz 750 W
- Frame dimensions: 470x410xh1590 mm
- Servotronic dimensions: 580x500xh1270 mm
- Weight: 900 Kg



C123-01

Tensile test using the extensometer showing the symbols of the considered dimensions and the relative tracing in different colours selectable by the user.



H011-01 with accessories



ACCESSORIES for H011-01:

FOR TENSILE TESTS ON ROUND AND FLAT STEEL SPECIMENS:

H012-01

Set of 4 Jaws, upper and lower, for round steel specimens from dia. 6 to 15 mm., and flat specimens from 6 to 15 mm. thickness (max. width 25 mm).

H012-02

Set of 4 Jaws upper and lower for round specimens from dia. 15 to 25 mm

FOR COMPRESSION TESTS ON CONCRETE CUBE AND CYLINDER SPECIMENS:

H013-01

Upper compression platen foreseen of seat ball, fixing device, lower compression platen and distance pieces test cylinders max dia. 160x320 mm. and cubes 150 mm. max side.

The platens have dia. 216 mm. and are hardened and rectified as requested by Standards.

H013-02

Safety Guards to CE Directive, polycarbonate made, complete with hinges and a lock.



C127

Graphic printer on thermal paper

C123-01 Software UTM2* (Universal Testing Machine 2)



Developed for the management through PC of Matest testing machines.

License for tensile tests on Steel and Compression tests on Concrete (Visualisation in real time of Load/Deformation, graphic, Test Certificate etc.)

*Technical details of UTM2: see pag. 12

H009-01 Personal Computer, complete with LCD monitor 17", keyboard, mouse, connection cables. The supply of the PC includes the installation of the purchased Software.

H009-02 Software for on line technical support. It allows maintaining the software without physical intervention of an After Sale specialist. Also gives the possibility to the customer to receive programs upgrading.

SPARE PART for H011-01:

H011-12

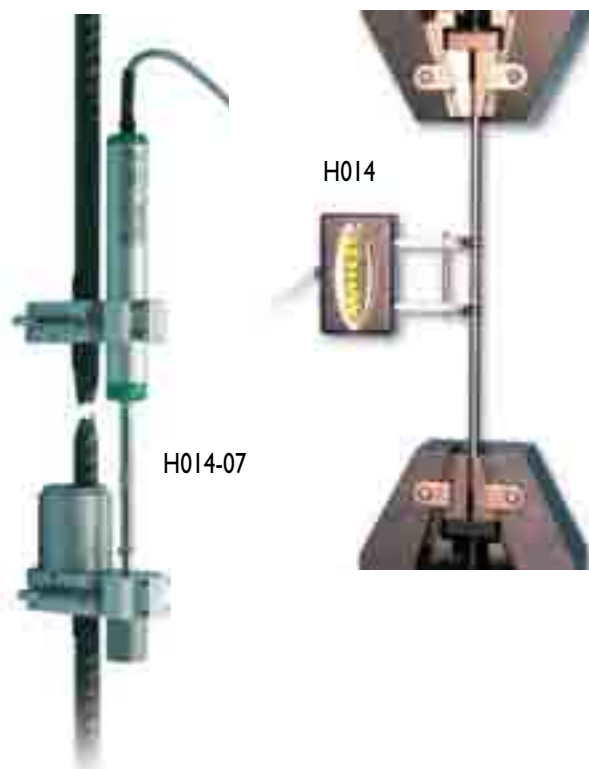
Servotronic for tensile and compression tests, complete.

H014

Electronic extensometer

Measuring base 50 mm, Deformation range +1 mm / -0.2 mm
Maximum percent measurable deformation: +2%

It gives the possibility to take the longitudinal deformations of the specimen during the tensile test. A graph load/deformation is obtained and from this graph the coefficient of elasticity together with the loads RP0.1 - RP0.2 - Rt1 can be identified even on materials that are not presenting a yield point that can be clearly identified. The appliance is delivered complete with connection cables.



Electronic Extensometer for tensile deformation strength tests until breakage

This electronic coaxial extensometer is used to measure the deformation of a specimen under tensile test until breakage.

The extensometer is directly fixed to the test specimen and it remains connected until breakage, by measuring the deformation both in the elastic and in the plastic phases. Measuring base for round specimens: 5 x specimen diameter. Supplied complete with 4 spacers for the intermediate sample diameters of the specific measuring range, connection cable, accessories, carrying case.

Models:

H014-06 Extensometer for round specimens from 4,5 to 11 mm diameter. Transducer stroke: 25 mm

H014-07 Extensometer for round specimens from 10 to 19 mm diameter. Transducer stroke: 50 mm

H014-08 Extensometer for round specimens from 18 to 25 mm diameter. Transducer stroke: 50 mm

H014-10 Extensometer for flat specimens, width max. 25 mm; thickness max. 10 mm. Transducer stroke: 50 mm
Measuring base: 25 – 50 – 60 – 790 mm.

A058-05N

Air Jet Sieving Machine

STANDARD: EN 933-10

The Air Jet Machine is suitable for sieving powder and dry grain products by obtaining sieving results between 5 to 4000 microns, by using appropriate test sieves 200 mm dia. Its working foundation is based on the use of air that tug thin particles to make them go through the sieve.

This effect is made through a vacuum machine that provokes a controlled decrease of pressure. This vacuum machine is equipped with an automatic cleaning system of the filter cartridge allowing to perform many tests (some tens) before being replaced.

The digital electronic microprocessor panel can adjust:

- The sieving time from 0 to 99 minutes
- The vacuum range from 0 to 99 bar
- The calibration function

The unit is supplied complete with aspirator device, plexiglass cover, filter cartridge, 5 collecting plastic bags, accessories.

Power supply: 230V 1ph 50Hz

Dimensions: 450 x 600 x 400 mm

Weight:

25 kg approx



section A



TABLE OF THE SIEVES 200 MM DIAMETER FOR THE AIR JET SIEVING MACHINE.

Openings from 5 to 71 microns have "nylon mesh"

Openings from 75 to 4000 microns have "stainless steel mesh"

The sieves include airproof rubber seal.

Note: sieves with stainless steel mesh from 20 to 71 microns and nylon mesh from 75 to 4000 microns are available on request.

SPARE PARTS:

A058-14 FILTER CARTRIDGE.

A058-15 PLASTIC BAGS (pack of 5 pcs).

CODE	APERTURE micron	CODE	APERTURE micron	CODE	APERTURE micron	CODE	APERTURE micron
A058-20	5	A058-37	70	A058-65	280	A058-82	1180
A058-21	10	A058-38	71	A058-66	300	A058-83	1250
A055-22	15	A058-50	75	A058-67	315	A058-84	1400
A058-23	20	A058-51	80	A058-68	355	A058-85	1600
A058-24	25	A058-52	90	A058-69	400	A058-86	1700
A058-25	28	A058-53	100	A058-70	425	A058-87	1800
A058-26	30	A058-54	106	A058-71	450	A058-88	2000
A058-27	37	A058-55	112	A058-72	500	A058-89	2240
A058-28	41	A058-56	125	A058-73	560	A058-90	2360
A058-29	48	A058-57	140	A058-74	600	A058-91	2500
A058-30	50	A058-58	150	A058-75	630	A058-92	2800
A058-31	53	A058-59	160	A058-76	710	A058-93	3150
A058-32	55	A058-60	180	A058-77	800	A058-94	3350
A058-33	58	A058-61	200	A058-78	850	A058-95	3550
A058-34	60	A058-62	212	A058-79	900	A058-96	4000
A058-35	63	A058-63	224	A058-80	1000		
A058-36	65	A058-64	250	A058-81	1120		





A061N

High capacity sieve shaker

Designed for sieving considerable quantities of any material. The screen shaker accepts up to 30 litres (60 ÷ 70 Kg) of sample. Sturdy made, the machine can hold six screen trays and dust pan. Supplied complete with dust pan, but **“without”** screen trays to be ordered separately. It cannot be sold in CE markets without protection (see accessories).
 Power supply: 230V 50 Hz 1ph 750 W
 Dimensions: 585x790x850 mm
 Weight: 180 Kg approx.



A061N
with Screen Trays

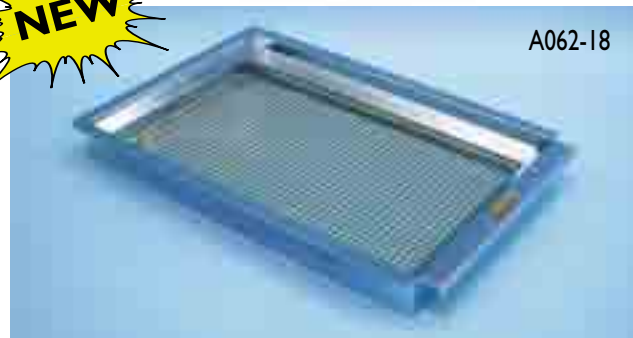
ACCESSORIES:

A061-97

SAFETY DOORS, upper and frontal, complete with micro-switch, complying to CE Safety Directive. If the door is opened while the shaker is working, it automatically stops. The door also protects from dust.

A061-98

SECURITY CABINET, steel made with microswitch, complying to CE Safety Directive, lined with sound-proofing material for noise reduction. If the door is opened while the shaker is working, it automatically stops. The cabinet also protects from dust. Overall dimensions: 900 x 900 xh 1350 mm



A062-18

SCREEN TRAYS FOR SIEVE SHAKER A061N, SIZE 457x660x75 MM, WITH “SQUARE HOLES” PERFORATED PLATE STANDARDS: EN 933-2 / ISO 3310-2 / BS 410 / DIN 4187-1

CODE	APERTURE mm
A062-11	4,00
A062-12	4,75
A062-13	5,00
A062-14	5,60
A062-15	6,30
A062-16	6,70
A062-17	7,10
A062-18	8,00
A062-19	9,00
A062-20	9,50
A062-21	10,00
A062-22	11,20
A062-23	12,50
A062-24	13,20
A062-25	14,00
A062-26	16,00
A062-27	18,00
A062-29	19,00
A062-30	20,00

CODE	APERTURE mm
A062-31	22,40
A062-32	25,00
A062-33	26,50
A062-34	28,00
A062-35	31,50
A062-36	37,50
A062-37	40,00
A062-38	45,00
A062-39	50,00
A062-40	53,00
A062-41	56,00
A062-42	63,00
A062-43	75,00
A062-44	80,00
A062-45	90,00
A062-46	100,00
A062-47	106,00
A062-48	125,00





Determination of potential reactivity of alcaI in aggregates for use in concrete

STANDARD: UNI 8529-22

A101

PRISM MOULD, 25 x 25 x 280 mm, three gang, complete with six steel inserts to determine the dimensional variations of the specimen.
Steel made, Vickers hardness HV 400 approx.
Dimensions: 120 x 300 xh 35 mm
Weight: 4,5 kg

ACCESSORIES:

A101-11

Spare steel inserts for A101 mould. Pack of 12 pieces.

E087-06

TAMPER, hard wood made, to compact the specimen.



Determination of drying shrinkage TESTS OF THERMAL AND WEATHERING PROPERTIES OF AGGREGATES

STANDARDS: EN 1367-4 / BS 812:102

A107

PRISM MOULD 50 x 50 x 200 mm, three gang, complete with steel inserts, to determine the thermal properties and the weathering of aggregates in drying shrinkage of concrete.
The test is developed on concretes of fixed mix proportions and aggregates of 20 mm max. size.
Weight: 8 kg



SPARE PART:

A107-11 Inserts for A107 mould. Pack of 12 pieces

ADDITIONAL ACCESSORIES

E077

LENGTH COMPARATOR See Catalogue section "E" pag. 255

E078-01 Reference rod for A101 mould (UNI 8520-22)

E078-06 Reference rod for A107 mould (UNI EN 1367-4)

S375 DIAL INDICATOR, 5 mm travel by 0,001 mm divisions



AS AN ALTERNATIVE:

S382-01

DIGITAL DIAL INDICATOR, 12 mm travel by 0,001 mm divisions, complete with battery and RS232 connection to PC

S382-11 CABLE to connect mod S382-01 to PC

S382-12 SOFTWARE for S382-01





B103-10
Bearing plate 600 mm dia. cast aluminium with reinforcing ribs

STANDARD: NF P94-117-1

The plate is equipped with a central device to measure the static deformation of road pavements (EV2) with the Benkelman Beam, and the bearing capacity of a soil in-situ (Standard: CNR N. 146, method A)

The plate foresees also three screwed lateral holes for three point measurements of the bearing capacity of a soil in-situ (Standards: CNR N. 146 method B / BS 1377:9 / ASTM D1195, D1196 CNR N. 92)

Supplied complete with coupling device to the hydraulic jack.
 Weight: 25 kg



B103-10

section B

USE EXAMPLES OF THE ALUMINIUM BEARING PLATE:

B103-05KIT
Plate bearing equipment, 200kN capacity

STANDARD: NF P94-117-1

To determine the static deformation of flexible road pavement (EV2) in the centre of the loading plate.

Used with the Benkelman Beam apparatus mod. B100 and B102 (see pag. 107 of the catalogue).

The equipment consists of:

B103-10 Bearing plate 600 mm dia. cast aluminium with reinforcing ribs and coupling device.

S225-01 Hydraulic loading jack 200 kN capacity, complete with hand pump, rubber pipe with fast connector; set of extension rods of different lengths, carrying case.

S225-02 Precision pressure gauge 0 - 200 kN, div. 1 kN

S226-13 Upper spherical seat.

Total weight: 70 kg approx.

Note: each item can be ordered separately



B103-05KIT



B100

ACCESSORIES:

B100 Benkelman Beam apparatus according to Standards: CNR N. 141 / AASHTO T256-77

B102 Benkelman Beam apparatus according to Standards: NF P98-200-2 / LCPC



B100

B102

Use examples of the aluminium bearing plate 600 mm dia. for bearing tests of a soil in-situ with the 200 kN plate bearing equipment mod S225KIT (see pag. 343 of the catalogue)



S225KIT + B103-10



I

DETERMINATION OF THE SECANT COMPRESSION ELASTIC MODULUS TEST ON CONCRETE AND MORTAR SPECIMENS

C134

Electronic Universal EXTENSOMETER/COMPRESSOMETER

STANDARDS: ASTM C469 / ISO 6784 / BS 1881:121 / UNI 6556 / DIN 1048:1

Made of two anodized aluminium pieces, one fixed and the other sliding and housing a displacement transducer that measures with high accuracy the movement of two conical points made of hardened steel and fixed at the two ends of the electronic sensor.

An aluminium template (optional mod C134-10) is used to regulate and to calibrate the base length.

The two conical points are coupled to the surface of the sample with a rapid and simple fixing system through two elastic adjustable straps.

The instrument is equipped of a mechanical knob to lock and unlock the displacement transducer, allowing to maintain safe the selected base length during the fixing action of the device to the sample.

Normally the test is performed on cylinders by using 3 extensometers/compressometers, and on cubes or beams by using 2 or 4 instruments.

The extensometer is suitable to test cubes, cylinders and beam specimens.

It is also possible to test mortar prisms 40x40x160 mm by using a reducing length block.

Gauge length adjustable from 50 to 160 mm

Feeding up to 10V

Travel: +/- 1,5 mm

Sensitivity less than 0,01 micron

Supplied complete with reducing block for mortar prisms, elastic straps, carrying case.

Weight: 1000 g approx.

section C



Use example



C134 with case

ACCESSORIES:

CI34-10

TEMPLATE, anodized aluminium made, used to regulate and calibrate the base length.

S337-51

CALIBRATION PROCESS of one Extensometer/ Compressometer combined with the Datatronic 7 or the Servo-Plus system.

The Electronic Universal EXTENSOMETER/ COMPRESSOMETER can be used with:

- Digital semiautomatic compression testing machines Matest made (Cybertronic models) or also of other producers, by connecting the Extensometers/Compressometers to the Datatronic mod S335 data acquisition system.

S335

DATATRONIC 7

Semiautomatic data acquisition system.

It measures both the extensometer's deformations and the applied load to the sample with graphic simultaneous display up to 3 sizes (ex.: load, deformation, time etc.) with all data storage and unlimited memory.

Technical details: see pag. 374



CI34 with Digital Machine and Datatronic S335

or:

- Automatic Servotronic Matest compression machines, equipped with ServoPlus mod CI04-10 to perform the Elastic Modulus test by connecting directly the Extensometers/Compressometers to the Servoplus system.

CI04-10

SERVOPLUS

To perform the test with fully automatic control of the load and/or the displacement and/or the deformation.

Technical details: see pag. 120



CI34 with Servotronic Machine and CI04-10 Servoplus System





C183

Vebé consistometer

STANDARDS: EN 12350-3 / BS 1881:104 / UNI 9419

The Vebé consistometer method is based on the same principle of the simple slump cone test method, for the determination of the workability of concrete, but it has the advantage of a mechanized action. After removing the slump cone, the concrete undergoes a vibration to determine its slump.

Supplied complete.

Power supply:

230V 1ph 50 Hz 250W

Dimensions:

260x380x700 mm.

Weight: 90 Kg



C183

C185

Compacting factor apparatus

STANDARDS: BS 1881:103

BS 5075

Designed to undertake a more precise and sensitive test procedure than the simple slump test.

The apparatus consists of two conical hoppers mounted on a cylinder. Each hopper has a hinged flange with quick release mechanism and everything is mounted on a rigid steel stand.

The compacting factor is the ratio between the weight of the partially compacted concrete and the weight of the fully compacted concrete.

Supplied complete with tamping rod dia. mm 16x600 long.

Dimensions: mm 500x400x1510.

Weight: 55 Kg



C185

C184

Vibrating table

(Vebé consistometer)

STANDARD: ASTM C1170-92

For determining the consistency and density of roller-compacted concrete.

Similar to mod. C183, but conforming to ASTM C1170-92 Spec. with sliding weight of 50 lbs

Power Supply:

230V 1F 50 Hz 250W

Dimensions: 280x400x900mm

Weight: 110 kg



C184



C192 KIT

Flow table

STANDARDS: EN 12350-5 / BS 1881:105 / DIN 1048 / UNI 8020

The apparatus comprises a galvanized steel conical mould, dia. 130/200 xh 200 mm, double steel flow table with galvanized top plane, guide device, wooden tamper.

Used to determine the workability of concrete. The top table has a square surface of 700x700 mm, hinged on one side.

Weight: 30 Kg

SPARES:

C192-01 Conical mould, galvanized steel made, dia. 130/200 xh 200 mm

C192-02 Wooden tamper

C184X

Vibrating Table (Vebé consistometer)

STANDARD: ASTM C1170-92

Power supply: 220V 1ph 60Hz 250W

C184Y

Vibrating Table (Vebé consistometer)

STANDARD: ASTM C1170-92

Power supply: 110V 1ph 60Hz 250W

ACCESSORY

for the C184 tables:

C184-10

SLIDING WEIGHT 20 LBS (that replaces the standard 50 lbs one) + base to fix a cylinder mould dia. 6"x12" (optional mod. C258-03) to conform the Vibrating Table to the ASTM C1176-92 Specifications.



C184-10

C258-03



C192 KIT

C192-01

C192-02

CORE DRILLING MACHINES “LIGHTWEIGHT, PORTABLE”

General description

These drilling machines are extremely practical, lightweight, easy to use.

The base is from aluminium alloy, the steel column can be tilted up to 60÷75°, the motor support is fixed on rollers and ball bearings.

The motor incorporates a water swivel to cool the diamond bit.

The machine is supplied complete “except”: diamond bit, expander coupling and spanner (see accessories at pag. 217) to be ordered separately.

section C



C318

Core drilling machine, electric motor

Electric motor at three speeds: 670, 1140, 1580 rpm, with speed reducer; provided of friction device and switch to CE Safety Directive.

The machine accepts bits dia. 50 to 150 mm

Power supply: 230 V 1 ph 50 Hz 2200 W

Dimensions: 450x290x860 mm

Weight: 35 Kg

C318-01

Core drilling machine, petrol driven

Petrol engine power 2500 W

Speed: 390 to 920 rpm

The machine accepts bits dia. 50 to 200 mm

Dimensions: 450x290x1060 mm

Weight: 40 Kg

ACCESSORIES:

C318-10

WATER COLLECTING RING, confining waste water on the surface, for machine mod. C318. It has to be connected to a suitable electric pump.

C318-11

WATER COLLECTING RING, as above, but for machine mod. C318-01



C324

Electric core drilling machine with vacuum facility

The frame and the electric motor are the same of mod. C318
The machine is supplied complete with lubricated vacuum pump of 4 m³/h, and pressure accumulation reservoir; which is very useful because it maintains for some times a valid vacuum level also with electric blackout, by avoiding the fall or disconnection of the unit from the wall.

The pump is connected to the utility by means of a ball tap to which a vacuum gage is fitted, that constantly indicates the pressure inside the tank.

Coring angle: 0 to 360° under the condition that the surface is sufficiently flat, and not too porous, to allow the vacuum attachment.

Power supply: 230V 1 ph 50Hz 2200W

Dimensions: 870x290x1100 mm

Weight: 38 kg + pump 15 kg



C318-05

Trolley

Accessory for the Core Drilling Machines mod. C318 and C318-01, it is very useful to improve the machine stability during pavement coring.

Dimensions: 800x700 mm

Weight: 25 kg approx.

E102

Three gang mould for 40,1 x 40 x 160 mm prisms

STANDARDS: EN 196-1 / EN ISO 679

Manufactured from steel with "hardness of inside walls over HV 200", it meets the dimensional tolerances to EN 196/1 Standard. All surfaces are grinded and all parts are marked with an identification number for a correct assembling. A part-number is engraved on each mould and a Certificate of Conformity is supplied along with. Weight: 8560 g.



E102

E103

Three gang verified mould for 40,1 x 40 x 160 mm prisms

STANDARDS: EN 196-1 / EN ISO 679

Identical in shape to mod. E102, but manufactured from heavy duty steel "with hardness of inside walls over HV 500" (EN 196/1 Specifications recommend hardness HV 400). This high hardness value keeps the mould within the tolerances requested by Spec. for many tests, granting very long utilisation life.

All parts are marked with an identification number for a correct assembling. Each mould is individually verified in the dimensional tolerances, hardness, squareness, flatness and roughness with instruments periodically certified by Namas Centre or equivalent. A part-number is engraved on each mould, and a Certificate of Conformity is supplied along with. Weight: 8560 g.

E103 DETAIL



E105

Three gang mould for prisms 40x40x160 mm

STANDARDS: NF P15-413 / ASTM C348 / DIN 1164, 1060

Made from steel, hardness 55 HRB, it conforms to the above mentioned Specifications. Weight: 8 Kg

E105



Determination of water absorption on grouts for floor or wall installation of ceramic tiles.

STANDARD: EN 12808-5

Equipment:



E102-11

Three gang mould for 40,1 x 40 x 160 mm prisms, identical to mod. E102, but equipped with three stainless steel partitions, positioned in the middle of the gangs, to obtain six gangs having dimensions 40,1 x 40 x 80 mm approx.

Weight: 8600 g



E102-11

ACCESSORIES:

E106 FEED HOPPER, used to fill the mould E102, E103, E105 when it is mounted on the Jolting machine E130, E131. Made from cast aluminium. Weight: 1 Kg.

E102-02 LARGE AND SMALL SCRAPER to EN 196-1-2005

S200-11 STRAIGHT EDGE 300 mm. long

E102-03 GLASS PLATE 220x190x6 mm to cover the mould

E104

Three gang verified mould for prisms 40,1 x 40 x 160 mm "Italcementi model"

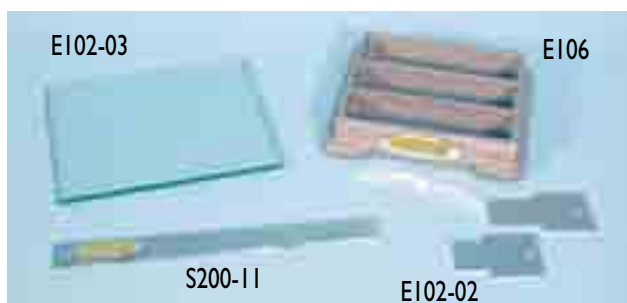
STANDARD: EN 196-1

Similar to mod. E103, but with:

- Large base mm 240 x 245
 - Weight: 11,850 Kg
- Manufactured expressly for "Italcementi Group" cement factory.



E104



E102-03

E106

S200-11

E102-02