

SETTING TIME DETERMINATION

AUTOMATIC APPARATUS

Standard EN 196-3, EN 480-2, EN 13279-2, ASTM C187, ASTM C191, ASTM C472.

AUTOVICAT. AUTOMATIC VICAT APPARATUS

Ref. 111-100399

The automatic AUTOVICAT apparatus is a last generation equipment, which enables automatic execution of tests according to the following standard methods:

- › Initial and final setting time in cement¹, as per EN 196-3 and ASTM C191.
- › Normal consistency as per EN 196-3 and ASTM C187.
- › Setting times in gypsum² as per EN 13279-2 and ASTM C472.
- › Setting times in additives for concretes, mortars and pastes, as per EN 480-2.
- › And, practically, any other standard or testing procedure, by means of built-in editor of standards, easily programmable by the user himself.

IBERTEST has been manufacturing automatic Vicat apparatus for more than 50 years. The AUTOVICAT is the fourth generation equipment.

IMPROVEMENTS

All movements in each of the three axes (vertical, horizontal and rotation of the plate) are made by a combination of steppers electric motors, avoiding problems caused by other mechanical transmissions and ensuring accuracy, repeatability and unprecedented reliability in this equipment.

The user can choose the number of punches, including distance, distance to edge of mould, frequency between punches, etc.

Thus, the apparatus can be adapted for any possible variation of the standards, implementation of special studies, research, etc..

CONNECTIVITY

Possibility of link practically an unlimited number of AUTOVICAT to a single PC, by means of the optional IBERTEST WinLect32 software pack, VICATEST version, running on Windows®.

NOTE 1 .- According to standard EN 196-3 and EN 480-2, the results obtained by automatic methods should be compared with results obtained by the standard manual method. This requires having a manual Vicat apparatus and make necessary adjustments to validate the results.

NOTE 2 .- For determining the plaster setting time, it is recommended to clean the cone needle after each penetration. It is also possible to use the Ø 1.13 mm diameter needle and validate the results by comparison with the standard manual method.



111-100399



4 AUTOVICAT linked to PC via WinLect32 - VICATEST software

Specifications - AUTOVICAT

Reference	111-100399
Preset methods	6 preset methods according to EN /ASTM standards procedures. 9 free methods according to user preferences.
User configurations	15 available configurations. Each configuration can be assigned to a different type of cement, according to the special features of each product.
System Intelligence	Controlled by a 32 bits last generation microprocessor.
Movements	By combination of stepper motors for positioning and rotation of the mould.
Penetration depth measurement.	By digital encoder.
Penetration depth resolution	Better than 0,1 mm
Configuration possibilities	Standard selection. Configuration selection by the user. Free falling or assisted falling of the needle. Start-up time and delaying time before first penetration. Time between penetrations can be modified by user from 1 to 250 minutes at any time during test. Distance between concentric and successive penetrations. Distance to the edge of the mould. Selecting a second pass after completing the first series of penetrations. Selection criteria of final setting time.
Calculation of number of penetrations	An algorithm calculates the maximum number of penetrations to comply with the configuration conditions imposed by the user and applies it automatically.
Data input	Frontal membrane board, with 6-keys sensitive keyboard. It protects display and allows surfing menus, select and / or configure tests, parameters, start the test, etc.
Data visualization	High resolution (128 x 64 points) LCD graphic screen, with retro – illumination.
Printer	Yes, integrated into the side of the computer.
Printing report	Date, time and test reference. Chosen standard. Measure each penetration in mm, with graphical representation of each penetration, number, time and indication of each measure in mm. Test results: Final setting time.
Paper printing direction	Selectable.
Width of paper / printing width	58 mm / 48 mm
Needle automatic cleaning device	Yes, by roller-type brushes.
Memory	FLASH memory (non volatile) that stores user different configurations and the last 100 complete tests performed, even in those cases of electrical supply failure.
Connection to computer	Via USB, with WinLect32 - VICATEST software (see accessories).
Grouping of equipment	Commanded by one sole PC (thanks to a multiport USB 2.0 hub).
Language	Spanish, English, French and Portuguese.
Dimensions	230 x 290 x 355 mm (width x length x height)
Weight	15 kg
Power supply	Single-phase 110-240 V + Ground ~ 50 / 60 Hz (< 40 W)

Standard delivery for AUTOVICAT

- › Standard weight sliding needle-holder for setting tests as per EN 196-3 or ASTM C191.
- › Needle Ø1,13 mm diameter according to EN 196-3 or Ø1 mm according to ASTM C191
- › Truncoconical mould as per EN 196-3 or ASTM C191 (to specify).
- › Immersion bath with centring ring for moulds and glass plate.
- › Circular glass plate.
- › Set of 2 brushes for the needle cleaning device.
- › Thermal printer. Pack of 5 rolls of printer paper.



Accessories and Spare parts for AUTOVICAT

Ref.	Spare part / Accessories	Standard
111-100398	WinLect32 - VICATEST Software pack	--
115-100001	Data adquisition system: PC + connector + VICATEST software pack	--
111-100376	Light alloy (100 g) sliding conical needle-holder (gypsum)	EN 13279-2
111-100411	Conical needle for gypsum (fits in 111-100376)	EN 13279-2
111-100409	Sliding probe-holder for consistence probe	EN 196-3 ASTM C187 / C191
111-100412	Consistence probe (fits in 111-100409)	EN 196-3 ASTM C187 / C191
111-100410	Heavyweight (1000 g) needle-holder with Ø1.13 mm needle	EN 480-2
111-101055	Standard needle-holder (300 g)	EN 196-3 ASTM C191
111-100258	Needle Ø1.13 mm.	EN 196-3 EN 480-2
111-101167	Needle Ø1 mm.	ASTM C191
111-100110	Vicat mould as per EN	EN 196-1 EN 480-2 EN 13279-2
111-100109	Vicat mould as per ASTM	ASTM C191
111-100311	Container for water, with centering ring	EN 196-1
111-100348	Circular glass base-plate (fits in 111-100311)	EN 196-1
111-100413	Brushes for needle cleaning device	--
210-104153	Printer paper roll (5 pcs)	--

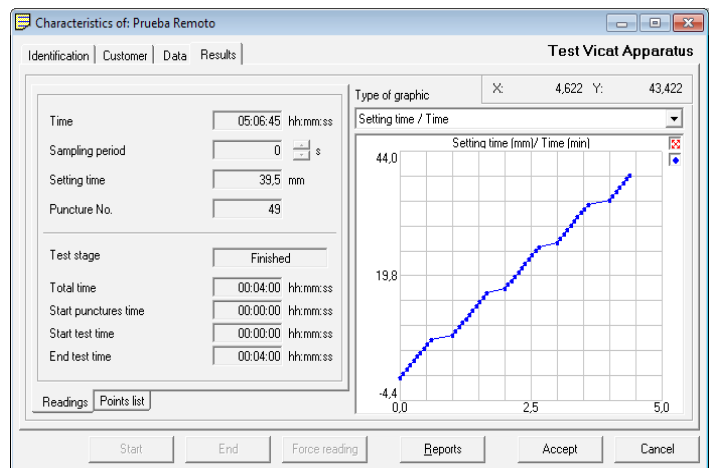
Computerized data acquisition system for AUTOVICAT

Ref. 115-100001

Possibility of forming groups of practically an unlimited number of equipment and commanded by one PC (thanks to a multiport USB 2.0 hub) and the software WinLect32 version VICATEST.

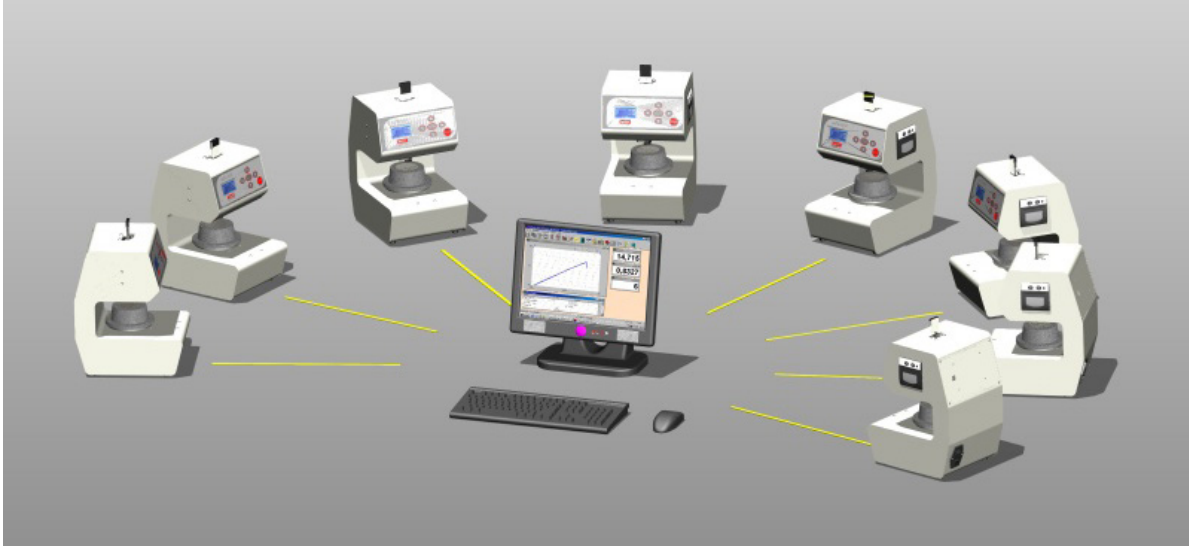
By means of this system, the equipment AUTOVICAT, can be connected to a computer, to be controlled by means of the testing software WinLec32, VICATEST version, to edit standards and configurations, execution of tests, data acquisition and statistical treatment , etc.

In case of wrong operation in one of the equipments, the user can continue working with the rest of the AUTOVICATS without any difficulty.



The multi-station system is comprised by the following elements

- › Multiport USB 2.0 hub, according to the chosen number of equipment to be connected.
- › New generation ALL in ONE PC, with keyboard, mouse, 21,5" wide-screen, Windows® operating system, with manuals and user licences.
- › 32 bits software pack WinLect32 version VICATEST, under Windows® to schedule and management of testing, data acquisition and processing.



Example of a PC connected to 8 Autovicat devices via WinLect32 - VICATEST software.

DETERMINATION OF SETTING TIME MANUAL METHOD

Standards: ASTM C91, ASTM C150, ASTM C266.

GILLMORE APPARATUS

Ref. 210-104159

Instrument used to determine the setting time of cement.

It has two types of needle, one for determining the beginning of setting and the other for determining the end of setting.

Elements of equipment:

- › Frame and vertical support.
- › Needle-holder shanks.
- › Setting needle (Ø 2.12 mm and 113 g).
- › End-setting needle (Ø 1.06 mm and 453.6 g).



210-104159

Specifications:

- › Approx. dimensions (W x H x D): 210 x 195 x 100 mm
- › Weight approx.: 2.6 kg