SETTING TIME WITH AUTOMATIC APPARATUS


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 40 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 equipments.

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.
Setting time

**Standard delivery for AUTOVICAT**

- Standard weight sliding needle-holder for setting tests as per EN 196-3 or ASTM C191.
- Needle Ø 1.13 mm diameter according to ASTM C191 (to specify).
- 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.

**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 system is comprised by the following elements**

- Multiport USB 2.0 hub, according to the choosen number of equipments to be connected.
- New generation ALL in ONE PC (Dual Core or higher), with keyboard, mouse, 19.5” wide-screen, Windows® operating system, with manuals and users licences.
- 32 bits software pack WinLect32 version VICATEST, under Windows®. To schedule and management of testing, data acquisition and processing.

**Accessories and Spare parts for AUTOVICAT**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Spare part / Accessories</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>111-100398</td>
<td>WinLect32 - VICATEST Software pack</td>
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<tr>
<td>115-100001</td>
<td>Data acquisition system: PC + connector + VICATEST software pack</td>
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</tr>
<tr>
<td>111-100376</td>
<td>Light alloy (100 g) sliding conical needle-holder (gypsum)</td>
<td>EN 13279-2</td>
</tr>
<tr>
<td>111-100411</td>
<td>Conical needle for gypsum (fits in 111-100376)</td>
<td>EN 13279-2</td>
</tr>
<tr>
<td>111-100409</td>
<td>Sliding probe-holder for consistence probe (fits in 111-100409)</td>
<td>EN 196-3 ASTM C187 / C191</td>
</tr>
<tr>
<td>111-100412</td>
<td>Consistence probe (fits in 111-100409)</td>
<td>EN 196-3 ASTM C187 / C191</td>
</tr>
<tr>
<td>111-100410</td>
<td>Heavyweight (1000 g) needle-holder with Ø 1.13 mm needle</td>
<td>EN 480-2</td>
</tr>
<tr>
<td>111-101055</td>
<td>Standard needle-holder (300 g)</td>
<td>EN 196-3 ASTM C191</td>
</tr>
<tr>
<td>111-100258</td>
<td>Needle Ø 1.13 mm.</td>
<td>EN 196-3 EN 480-2</td>
</tr>
<tr>
<td>111-101167</td>
<td>Needle Ø 1.00 mm.</td>
<td>ASTM C191</td>
</tr>
<tr>
<td>111-100110</td>
<td>Vicat mould</td>
<td>EN 196-1 EN 480-2 EN 13279-2</td>
</tr>
<tr>
<td>111-100109</td>
<td>Vicat mould</td>
<td>ASTM C191</td>
</tr>
<tr>
<td>111-100311</td>
<td>Container for water, with centering ring</td>
<td>EN 196-1</td>
</tr>
<tr>
<td>111-100348</td>
<td>Circular glass base-plate (fits in 111-100311)</td>
<td>EN 196-1</td>
</tr>
<tr>
<td>111-100413</td>
<td>Brushes for needle cleaning device</td>
<td>--</td>
</tr>
<tr>
<td>210-100920</td>
<td>Printer paper roll (5 pcs)</td>
<td>--</td>
</tr>
</tbody>
</table>
**Specifications - AUTOVICAT**

<table>
<thead>
<tr>
<th>Reference</th>
<th>111-100399</th>
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</thead>
<tbody>
<tr>
<td>Preset methods</td>
<td>6 preset methods according to EN / ASTM standards procedures. 9 free methods according to user preferences.</td>
</tr>
<tr>
<td>User configurations</td>
<td>15 available configurations. Each configuration can be assigned to a different type of cement, according to the special features of each product.</td>
</tr>
<tr>
<td>System intelligence</td>
<td>Controlled by a 32 bits last generation microprocessor.</td>
</tr>
<tr>
<td>Movements</td>
<td>By combination of stepper motors for positioning and rotation of the mould.</td>
</tr>
<tr>
<td>Penetration depth measurement</td>
<td>By digital encoder.</td>
</tr>
<tr>
<td>Penetration depth resolution</td>
<td>Better than 0.1 mm</td>
</tr>
<tr>
<td>Configuration possibilities</td>
<td>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.</td>
</tr>
<tr>
<td>Calculation of number of penetrations</td>
<td>An algorithm calculates the maximum number of penetrations to comply with the configuration conditions imposed by the user and applies it automatically.</td>
</tr>
<tr>
<td>Data input</td>
<td>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.</td>
</tr>
<tr>
<td>Data visualization</td>
<td>High resolution (128 x 64 points) LCD graphic screen, with retro – illumination.</td>
</tr>
<tr>
<td>Printer</td>
<td>Yes, integrated into the side of the computer.</td>
</tr>
<tr>
<td>Printing report</td>
<td>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.</td>
</tr>
<tr>
<td>Paper printing direction</td>
<td>Selectable.</td>
</tr>
<tr>
<td>Width of paper / printing width</td>
<td>58 mm / 48 mm</td>
</tr>
<tr>
<td>Needle automatic cleaning device</td>
<td>Yes, by roller-type brushes.</td>
</tr>
<tr>
<td>Memory</td>
<td>FLASH memory (non volatile) that stores user different configurations and the last 100 complete tests performed, even in those cases of electrical supply failure.</td>
</tr>
<tr>
<td>Connection to computer</td>
<td>Via USB, with WinLect32 - VICATEST software (see accessories).</td>
</tr>
<tr>
<td>Grouping of equipment</td>
<td>Commanded by one sole PC (thanks to a multiport USB 2.0 hub).</td>
</tr>
<tr>
<td>Language</td>
<td>Spanish, English, French and Portuguese.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>230 x 290 x 355 mm (width x length x height)</td>
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<tr>
<td>Weight</td>
<td>15 kg</td>
</tr>
<tr>
<td>Power supply</td>
<td>Single-phase 110-240 V + Ground ~ 50 / 60 Hz (&lt; 40 W)</td>
</tr>
</tbody>
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