



AUTOMATIC VICAT NEEDLE

Automatic Vicat needle unit is to determine the initial and final setting time of cement, mortar pastes and gypsum according to DIN 1164/ EN196/ BS 4550/ ASTM C187-191/ DIN 1168. The beginning and the end of the setting process is determined by the penetration behaviour of a steel needle into a cement paste sample, under certain specified conditions.

APPLICATIONS

- **Cement Testing** – Automatically determines the initial and final setting times of cement pastes under standardized conditions.
- **Mortar and Plaster Evaluation** – Measures penetration resistance of mortar and gypsum to monitor setting behavior.
- **Construction Material Quality Control** – Ensures consistency of cementitious materials in compliance with DIN, EN, BS, and ASTM standards.
- **Research and Product Development** – Supports laboratories in studying setting properties for improved formulations.
- **Standardized Compliance Testing** – Provides automated, precise testing aligned with DIN 1164, EN 196, BS 4550, ASTM C187-191, and DIN 1168.
- **Laboratory Efficiency** – Enhances accuracy and repeatability while reducing manual intervention during testing.

THEORY & METHOD

The User can use the following program selections to set and to check the exact height of the needle:

Test + 30“Check of needle height: Vicat ring for needle length = 50 mm

Test + 1’Check of needle height: Vicat ring for needle length = 30 mm

Test + 2’Check for lower end stop Needle must be slightly above glass plate

After a maximum of 3 minutes, the drop rod is automatically returned to its starting position

Program Selection:

Feature	Program A	Program B	Program C	Program D
Applicable Standard	EN196	ASTM 191	EN196	—
Needle Cleaning	Yes	Yes	Yes	No
Needle Length	50 mm	50 mm	50 mm	30 mm
Mould Diameter	70 mm	65 mm	70 mm	70 mm
Penetration Diameter	26	37	90	22

Test Procedure:

Once the standard that applies to the test, the type of fall (free fall or damped fall), and desired time are selected, the user to press the start button to begin the test and the unit does the remaining

TECHNICAL SPECIFICATIONS

Technical data:

Dimensions : 280mm wide x 430 mm deep x 460 mm high

Weight : 16 kg

Supply voltage : 110v/60Hz

Weight (mass) of drop rod : 300g $\pm$ 1

The standard version, the Automatic Vicat Needle Apparatus is delivered with the following accessories:

- Diagram recording paper (500 sheets)
- Recording stylus with ball-pen recorder and propelling-pencil leads (leads for mechanical pencil)
- Drop rod
- Ring according to EN: diameter 70 / 80 mm
- Needle, with diameter 1.13 mm x 50 mm length
- Glass plate
- Allen wrench (socket wrench) (size no. 2)



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