VICAT NEEDLE APPARATUS WITH DASHPOT AZA0788

The AZA0788 Vicat Needle Apparatus with Dashpot is a precision-engineered laboratory instrument used for determining the standard consistency, initial setting time, and final setting time of cement.

Designed for high accuracy and repeatability, this apparatus is widely used in cement testing laboratories, construction quality control, and academic institutions to ensure compliance with international standards and reliable cement performance.

Key Features

- Integrated dashpot mechanism for smooth and controlled needle descent
- Accurate measurement of penetration depth using graduated scale (0–50 mm)
- Heavy-duty metallic frame for stability and durability
- Corrosion-resistant, powder-coated finish
- Precision-guided vertical movement for repeatable results
- Complete set with mould, plunger, needle, and accessories
- Easy operation and low maintenance

Applications

- Cement manufacturing plants (quality assurance)
- Construction site testing and inspection
- Civil engineering laboratories
- Academic and research institutions
- Third-party material testing laboratories

Working Principle

The Vicat apparatus determines cement properties by measuring the penetration of a needle or plunger into a cement paste under controlled conditions:

- Standard Consistency: Determined using a plunger penetration test
- Initial Setting Time: Time when the needle penetration reaches a defined limit
- Final Setting Time: Time when the needle no longer penetrates the paste

The dashpot mechanism ensures uniform and vibration-free needle movement, improving test accuracy.

Scope of Supply

- Vicat frame with integrated dashpot
- Standard plunger and needle assembly
- Brass Vicat consistency mould
- Polished glass base plate
- Graduated scale (0–50 mm)
- Locking and release mechanism
- Standard weight set

Standards & Compliance

- IS 4031 (Part 4 & 5) – Methods of physical tests for hydraulic cement
- IS 5513 – Specification for Vicat apparatus
- ASTM C187 & ASTM C191 – Standard test methods
- BS 4550 – British standards for cement testing

TECHNICAL SPECIFICATION

Parameter	Specification
Model	AZA0788
Brand	Aza Lab
Application	Cement consistency & setting time testing
Standards Compliance	IS 4031, IS 5513, ASTM C187, ASTM C191, BS 4550
Frame Material	Heavy-duty cast iron / steel
Needle Assembly	Standard Vicat plunger & needle
Plunger Diameter	10 mm ± 0.05 mm
Dashpot Mechanism	Integrated (controlled descent)
Graduated Scale	0 – 50 mm (least count: 1 mm)
Release Mechanism	Manual with locking pin

TECHNICAL SPECIFICATION

Consistency Mould	Brass, conical
Base Plate	Polished glass
Weight Set	Standard weights included
Finish	Powder-coated, corrosion-resistant
Dimensions (Approx.)	220 × 150 × 300 mm
Weight (Approx.)	5 – 6 kg
Country of Origin	India

Performance & Benefits

- High Accuracy: Controlled needle descent eliminates operator errors
- Repeatability: Consistent results across multiple tests
- Durability: Strong construction for long-term lab use
- Ease of Use: Simple setup suitable for technicians and students
- Versatility: Applicable in both research and industrial labs

Safety & Handling

- Stable base design prevents tipping
- Smooth operation reduces mechanical shock
- Corrosion-resistant finish ensures safe long-term usage
- Easy cleaning and maintenance