GILLMORE NEEDLE APPARATUS AZA0790

The AZA0790 Gillmore Needle Apparatus is a precision laboratory instrument used to determine the initial and final setting times of cement and gypsum-based materials. Designed in accordance with international standards, it provides reliable and repeatable results for evaluating the setting characteristics of hydraulic cement.

This apparatus is widely used in cement testing laboratories, research institutions, and quality control environments to ensure material performance and compliance.

Key Features

- Dual-needle system for initial and final setting time determination
- Fixed weights for standardized and repeatable testing
- Precision-machined needle tips for accurate penetration
- Corrosion-resistant brass and stainless steel construction
- Stable frame with smooth vertical needle movement
- High durability for long-term laboratory use
- Simple operation with minimal maintenance

Applications

- Cement manufacturing quality control laboratories
- Civil engineering and material testing labs
- Academic and research institutions
- Construction industry R&D departments
- Testing of cement and gypsum-based materials

Working Principle

The apparatus determines setting time by measuring the resistance of cement paste to needle penetration:

- Cement paste is placed in a standard mould
- The needle is allowed to descend vertically onto the sample
- Observations are taken at regular intervals

Initial Setting Time:

When the initial needle fails to penetrate the cement paste

Final Setting Time:

When the final needle no longer leaves a visible impression

Needle Specifications

- Initial Setting Needle:Weight: 113.4 g (1/4 lb)
- Tip Diameter: 2.12 mm (1/12 inch)
- Final Setting Needle:Weight: 453.6 g (1 lb)
- Tip Diameter: 1.06 mm (1/24 inch)

Standards & Compliance

- ASTM C266 – Standard test method for time of setting of hydraulic cement by Gillmore needles

Safety & Handling

- Stable base ensures safe operation
- Smooth needle movement prevents sudden impact
- Easy cleaning and maintenance
- Non-reactive materials prevent contamination

Performance & Benefits

- High Accuracy: Fixed weights ensure standardized testing conditions
- Repeatability: Consistent results across multiple tests
- Durability: Corrosion-resistant materials for extended service life
- Ease of Use: Simple operation suitable for technicians and students
- Reliable Testing: Critical for determining cement workability and performance

Operating Capability

- Determines both initial and final setting times
- Suitable for cement and gypsum materials
- Ideal for routine laboratory and research applications
- Supports compliance with ASTM testing procedures

TECHNICAL SPECIFICATION

Parameter	Specification
Model	AZA0790
Standard Compliance	ASTM C266
Needle Type	Initial & Final setting needles
Needle Weights	113.4 g & 453.6 g
Needle Tip Diameter	2.12 mm & 1.06 mm
Material	Brass & Stainless Steel
Weight Accuracy	±0.1 g
Application	Cement & gypsum setting time testing
Operation	Manual, gravity-based
Frame	Stable, corrosion-resistant structure