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VICAT APPARATUS

BE 31

The Vicat apparatus is a device used primarily for testing hydraulic cements and similar materials. Its helps determine the normal or standard consistency of these materials and is essential for assessing their initial and final setting times. The apparatus typically includes a plunger and needle, and it operates based on standardized methods such as ASTM C191. This apparatus is crucial in construction and material science for ensuring the quality and performance of cement products.

STANDARD FOLLOWING

IS 2542 (PART – 2), 2645, 1727, 5513-12, 146, 915, 1370, 4027, 4246, 4248, ASTM C-91, C-141, C-187, C-359, C-472 & AASHTO T-129, E-131

DISCRIPTION

BE 31-01	Vicat Mould
BE 31-02	Glass Base Plate
BE 31-03	Initial Needle
BE 31-04	Final Needle
BE 31-05	Consistency Plunger
BE 31-06	Mild Steel Base Plate

CEMENT SAMPLER

BE 32

You're describing a **cement sampling tube**, a tool used for collecting representative samples of cement from bags or containers for quality testing. Made of brass, with an inner diameter of 28 mm, outer diameter of 32 mm, and length of 730 mm. Features a wooden handle at one end for easy grip and a beveled edge at the other for efficient sample collection. An air hole near the handle aids in smooth operation. The tube has a volume of 300 cc and can collect approximately 750 g of cement per operation. This tool is

typically used in construction and quality control to ensure he cement meets required standards by taking consistent and accurate samples.

STANDARD FOLLOWING

IS 3535-1966, (ASTM C-183)

BLAINE AIR PERMEABILITY

BE 33

The Blaine air permeability apparatus measures the particle size of powders like Portland cement and limes by determining their specific surface area, expressed in cm^2/g or m^2/kg. It complies with EN 196-6 and ASTM C204 standards, offering greater accuracy and precision than manual methods. Calibration requires a standard reference material, such as NIST 114q, and tests should be conducted in a temperature-controlled environment for optimal results.

It’s two type available, One type is Manual and One type is fully Automatic.

STANDARD FOLLOWING

IS 1727, 4031, IS 5516, ASTM C204, BS 4359 Part 2, AASHTO T153

DISCRIPTION

BE 33-01	Permeability Cell, 12.5 mm ID
BE 33-02	'U' Tube Manometer, mounted on stand
BE 33-03	Perforated Metal Disc
BE 33-04	Plunger
BE 33-05	Rubber Stopper
BE 33-06	Rubber Tube, 20 cm long
BE 33-07	Filter Paper Discs (Twelve Nos.)
BE 33-08	Dibutylphthalate Liquid, 100 ml bottle
BE 33-09	Punch
BE 33-10	Non Perforated Disc
BE 33-11	Suction Bulb
BE 33-A	**FULLY AUTOMATIC TYPE**

BE 33-A

LE-CHATELIER MOULD (SOUNDNESS TEST)

BE 34

It is very important that the cement after setting shall not undergo any appreciable change of volume. Certain cements have been found to undergo a large expansion after setting causing disruption of the set and hardened mass. This will cause serious difficulties for the durability of structures when such cement is used. The unsoundness in cement is due to the presence of excess of free lime than that could be combined with acidic oxide at the kiln. It is also likely that too high a proportion of magnesium content or calcium sulphate content may cause unsoundness in cement. Soundness of cement may be determined by two methods, namely Le-Chatelier method and autoclave method. In the soundness test a specimen of hardened cement paste is boiled for a fixed time so that any tendency to expand is speeded up and can be detected. Soundness means the ability to resist volume expansion

STANDARD FOLLOWING

IS 5514, 1727, 2645, 4031, 6932 (Part-9), BS:890, 915, 1370, 4027, 4226 AND 4248.

DISCRIPTION

BE 34-01	Le Chatelier moulds,30 mm internal dia and 30 mm height
BE 34-02	2 Glass plates, 50 mm sq
BE 34-03	Approximately 100 g weights

CEMENT AUTOCALVE

BE 35

The Laboratory Cement Autoclave you described is designed for conducting accelerated soundness tests or autoclave expansion tests on cement, complying with IS: 4031 (Part 3) standards. It features a high-quality stainless steel pressure vessel with an insulated outer shell. The pressure is managed by a microprocessor-based PID controller, and the setup includes a spring-loaded safety valve, pressure gauge, and an RTD-controlled heater unit. This ensures precise and safe operation for testing cement properties under controlled high-pressure conditions.

STANDARD FOLLOWING

IS 4031 (Part 3)

KEY FEATURE

Working Pressure - 21 Kg / cm^2 ± 1kg / cm^2 at 215° C
Pressure Vessel - ID 150mm X Depth 500 mm
Overall Dimensions - 390 mm (L) X 390 mm (W) X 810 mm (H)
Weight - 70 Kg Approximately
Heater - 3000 Watts
Supply - 220 V, 50 Hz, 1 phase
Panel mounted PID controller with international safety Certifications.
Rust proof stainless steel pressure vessel & enclosure
Microprocessor based PID controller for accurately controlling the temperature & pressure

SHRINKAGE BAR MOULD

BE 36

ASTM C151 outlines the use of shrinkage bar moulds to assess the soundness of cement paste by measuring length changes in specimens, as determined by a Length Comparator. **Smooth Reference Points**: Equipped with stainless steel smooth reference points.

Both models are offered as single moulds or with multiple mould compartments. Each mould includes a base plate and two reference points per compartment.

STANDARD FOLLOWING

ASTM C151, IS 10086-2021

DISCRIPTION

It's Four type moulds available.

BE 36-01	BE 36-02	BE 36-03	BE 36-04
SINGLE MOULD COMPARTMENT	25 x 25 x 282 mm	75 x 75 x 285 mm	75 x 75 x 300 mm
DOUBLE MOULD COMPARTMENT	25 x 25 x 282 mm	75 x 75 x 285 mm	75 x 75 x 300 mm
THREE MOULD COMPARTMENT	25 x 25 x 282 mm	75 x 75 x 285 mm	75 x 75 x 300 mm
FOUR MOULD COMPARTMENT	25 x 25 x 282 mm	75 x 75 x 285 mm	75 x 75 x 300 mm

LE CHATELIER FLASK

BE 37

Based on your description, you're referring to a specific type of laboratory flask, likely a volumetric or round-bottom flask with a long neck, a funnel-shaped top, and a ground glass stopper. Here's a concise breakdown of the flask's specifications and some clarifications.

The flask is 243mm in total height, having a bulb of 90mm Dia of 250ml approximate capacity. The long neck of a flask has at top a funnel of 50mm Dia in which fits a ground glass stopper. The neck has overall 11mm I.D. upper portions graduated from 18, 19, 20, 21, 22, 23, 24ml with 1ml graduation.

STANDARD FOLLOWING

IS 4031 (Part 11)

LENGTH COMPARATOR

BE 38

A Length Comparator is a specialized instrument used to measure dimensional changes in materials like autoclaved aerated concrete (AAC) blocks, calcium silicate bricks, or cement concrete specimens. It is primarily employed to assess drying shrinkage in autoclaved Portland cement and the potential expansive reactivity of cement-aggregate combinations in mortar bars during self-drying storage. The device ensures precise measurements, typically using a high-resolution analogue dial gauge with a sensitivity of 0.001 mm. It comes equipped with a standardization bar to calibrate the instrument for accurate readings.

STANDARD FOLLOWING

IS 1199-1959, IS 4031 1968 BS 1881, ASTM C 151, C490

FLOW TABLE

BE 39

Flow tables are used for determining consistency (flow) and for preparing mortars of standard consistency for testing. Flow is determined as a percent increase in the diameter of a conically molded mortar.

STANDARD FOLLOWING

IS: 1199, AASHTO T126

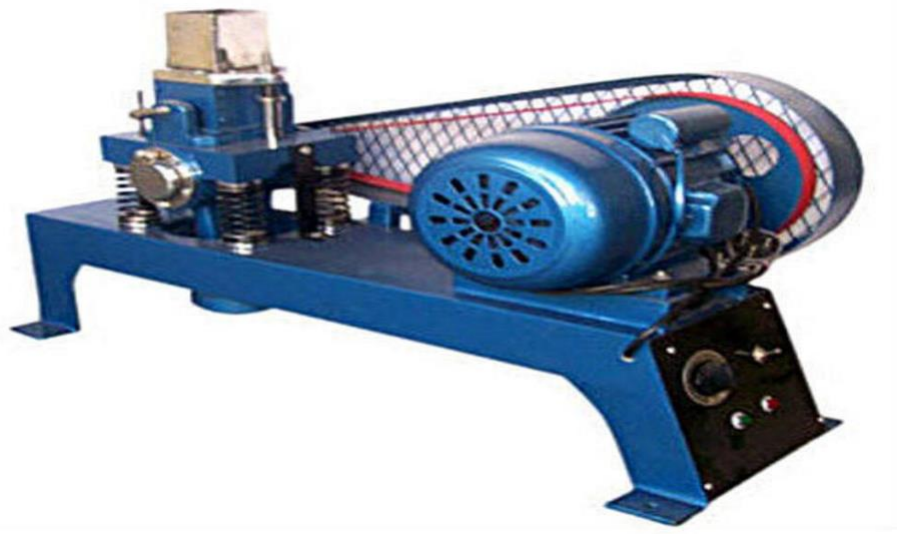
DISCRIPTION

BE 39-01	Manual Type Flow Table
BE 39-02	Motorized Type Flow Table

THE TWO TYPE FLOW TABLE AVIALABLE

Manual Flow Table is used in determining flow and consistency when preparing mortars for testing and recommended when strict compliance with standards is not required.

Motorized Flow Tables also determine consistency in the preparation of mortars for testing, but with controlled rates that comply with ASTM and AASHTO standards.



BE 40-01

VIBRATION MACHINE (MORTOR CUBE 70.6 MM)

BE 40

The description you provided outlines a standard laboratory instrument used in civil engineering and materials testing for preparing cement mortar cube specimens. This machine is essential for determining the compressive strength of hydraulic cement according to Indian Standard IS 4031 (Part 6), where mortar cubes of 70.6 mm size are compacted under controlled vibration. 12,000 ± 400 cycles (or revolutions) per minute (R.P.M.). This aligns with IS 10080 requirements for effective compaction without damaging the sample.

STANDARD FOLLOWING

IS 4031 1968, IS 10080, IS 1344, 1959, BS 4550. EN 12390-3

DISCRIPTION

BE 40-01	Mould, Steel, for 70.6 mm Cube
BE 40-02	Side Spring
BE 40-03	Supporting Springs
BE 40-04	Springs, for Fitting Mould (Set of two)
BE 40-05	Endless Belt
BE 40-06	Belt Guard
BE 40-07	Eccentric Shafts with bearing

ACCURATE JOLTING APPARATUS

BE 41

The jolting apparatus you described is a piece of equipment typically used for compacting or testing materials, such as in cement or soil testing, by subjecting a mold to controlled jolts. The apparatus has a rectangular table connected by two support arms to a spindle, located 800 mm horizontally from the table's center. A motor-driven cam rotates at 60 rpm, causing the table to rise and fall freely, producing jolts. Each rotation of the cam corresponds to one jolt. A stroke counter with a micro switch stops the machine after 60 jolts. The table includes locating pins to secure mold compartments. The mold, surrounded by a hopper, can be rigidly clamped to the table. Operates on 220 V, 50 Hz, single-phase AC power. Supplied complete with mold and hopper.

STANDARD FOLLOWING

IS 10078, EN-196-1-13454-2

CEMENT TENSILE MACHINE

BE 42

A Cement Tensile Testing Machine is designed to measure the tensile strength of cement briquette specimens and can also evaluate their flexural strength. The machine operates by applying a load to the specimen through a calibrated weight sliding on a steel yard, as opposed to older methods using lead shot. This setup ensures accurate and controlled loading to determine the material's strength properties.

STANDARD FOLLOWING

IS 269-1958, BS 12

DISCRIPTION

BE 42-01	Hand Operated Machine
BE 42-02	Electrical Operated Machine
BE 42-03	Single Gang Briquette mould with base plate
BE 42-04	Three Gang Briquette mould with base plate

BE 42-01

BE 42-02

BE 42-03

BE 42-04

CEMENT MORTOR MIXURE

BE 43

A motor-driven mixer which simultaneously imparts two motions to the mixing paddle revolving and planetary, they being opposite to one another in direction. A two speed gear

box is incorporated in the drive which makes the paddle revolve at approximately 140 and 285 r.p.m. with corresponding planetary motion of 62 and 125 r.p.m. respectively. A stainless steel mixing paddle of the specified shape and dimensions which can be attached or removed easily. A stainless steel mixing bowl of about 6 liter capacity. This can be held with the mixing apparatus and its height is adjustable. A scraper made from semi rigid rubber blade attached to a handle about 150 mm long. The blade is about 75 mm long and 50 mm wide. Suitable for operation on 220v, 50 Hz, single phase supply.

STANDARD FOLLOWING

IS 10890-1984, IS 1727-1967, IS 10890, EN 196-1 & EN 196-3

TILE FLEXURE TEST MACHINE

BE 44

The Tile Flexure Testing Machine evaluates the flexural strength of clay roofing tiles and cement concrete flooring tiles. It uses a double lever loading system, applying load through a flow of lead metal that stops automatically when the sample breaks. The sample is supported between rollers (40mm or 12mm diameter), with bearing rollers adjustable at center distances of 150, 200, or 270mm. The machine includes a 20 kg lead metal for loading.

STANDARD FOLLOWING

IS 1237-1980