INDEX

COMPRESSION TESTING MACHINE

BE 45

Compression Testing Machines are designed for rugged durability and user-friendly operation, allowing even non-technical personnel to use them reliably. Portable units, being compact, sturdy, and lightweight, enable quality control testing in areas lacking commercial facilities, where transporting larger, heavier machines is challenging.

Compression Testing Machines conforming to IS 14858 (2000) meet the calibration accuracy of ±1% as per IS 1828 (Class A). They can also comply with BS 1881 and other international standards. Available capacities include 50kN, 100kN, 500kN, 1000kN, 2000kN, 3000kN, 5000kN0kN. For further details or specific applications, please provide additional context or requirements.

Below is a detailed breakdown of the key classifications, including the ones you mentioned. This is based on standard engineering practices and manufacturer specifications.

Classification	Description	Key Features	Typical Applications	Capacity Range
Portable Models **BE 45-01**	Compact, lightweight machines designed for on-site testing where lab access is limited. Often hand-operated with a manual pump	Sturdy, small dimensions (e.g., horizontal clearance ~220 mm, platen size ~165 mm). - Integral double-acting pumping unit. - Easy to transport; no power supply needed. - Basic load gauge for readings.	Field quality control in remote construction sites; testing small samples like cubes or cylinders.	50 kN to 3000 kN (10 - 1000 kN hand-operated)
Analogue Models **BE 45-02**	Traditional machines using mechanical gauges and dials for load display. Can be hand-operated or electrically operated.	Manual or electric pumping unit. - Calibrated load gauge (in kN or N/mm²). - Requires skilled operator for pace control. - Rugged welded frame for stability.	Routine lab testing of concrete, bricks, and cement; cost-effective for basic needs.	50 kN to 5000 kN (manual or electric)
Digital Models with Pace Rate Indicators **BE 45-03**	Electronically controlled machines with digital displays for load and rate of loading. Includes manual pace control with auto-stop on failure.	Digital readout for load (kN, N/mm²) and pace rate. - Auto calculation of stress. - Thermal printer for results in some models. - Limitations in precise pace control; semi-automatic.	Accurate lab testing requiring digital precision; concrete cube/cylinder compression.	100 kN to 5000 kN (electrically operated).
Fully Automatic Models **BE 45-04**	Advanced, closed-loop systems with full automation, including servo or micro-controller based pace rate control.	Touch screen or LCD interface for data acquisition. - Automatic test cycle (enter parameters, press start). - Real-time graphing (load vs. time/stress). - High stiffness frame; complies with international	High-volume, precise testing in labs; automated for repeatability and minimal operator intervention.	1000 kN to 5000 kN (e.g., 2000 kN servo-controlled).

ADDITIONAL NOTES

- **Other Variants**: Some classifications extend to micro-controller based models (with automatic pace controllers), servo-controlled (for stress/strain precision), and touch-screen hybrids.
- **Common Capacities**: Machines range from low (50 kN for small samples) to high (5000 kN for large structures).
- **Advantages across Classes**: All models feature high-stability frames (4-pillar welded construction) and safety features like piston limits and relief valves. Automation levels reduce human error and improve throughput.
- **Selection Criteria**: Choose based on site needs (portable for field), budget (analogue for basic), or precision (digital/automatic for labs).

FOLLOWING STANDARD

IS : 14858 (2000), IS:516 EN 12390-4, ASTM C39, AASHTO T22, EN 12390-5, EN 12390-6, EN 1338, EN 1340, EN 196, BS 1881

PORTABLE COMPRESSION TESTING MACHINE

BE 45-01

A portable compression testing machine is a compact, hand-operated hydraulic device primarily used in civil engineering and materials testing to determine the compressive strength of concrete cubes, cylinders, or other specimens. It is designed for field or laboratory use, offering mobility without sacrificing accuracy. The machine applies controlled hydraulic pressure to the specimen via a loading frame, with load readings captured on a calibrated gauge. It complies with standards like IS 14858 (India) or ASTM C39 (international), ensuring reliable results for quality control in construction.

Your description aligns closely with a standard hand-operated model (often rated at 1000 kN or 1500 kN capacity), such as the "Deluxe Model". These machines emphasize ease of operation, with features that reduce effort during high-load testing.

Component	Description	Function
Loading Unit	A sturdy frame (often four-column or two-column design) with base, platens (upper and lower), and side supports. The lower platen is fixed to the base, and the upper platen features self-aligning spherical seating for even load distribution.	Houses the specimen and applies compressive force. Ensures stability and prevents misalignment during testing.
Integral Double-Acting Manually Operated Pumping Unit	A hand-operated hydraulic pump (e.g., multi-plunger type with booster arrangement) fitted directly to the base of the loading unit. It includes an oil tank (typically 7 liters capacity) and is powered by manual effort. The double-acting design allows pressure buildup in both directions.	Generates hydraulic pressure to raise the ram/jack. The "double-acting" feature enables efficient filling of gaps without load and automatic disconnection once contact is made, making pumping lighter as load increases.

Calibrated Load Gauge	A Bourdon tube-type pressure gauge (often angled for easy reading) mounted on top of the loading unit. Calibrated against certified standards (NPL or NCCBM dynamometers) with accuracy of ±1%. It includes a maximum red pointer alongside the live pointer, marked in 5 kN divisions.	Measures and displays applied load in kN or lbf. Provides real-time monitoring and peak load recording for calculating compressive strength (load/area).
Detachable Hydraulic Jack	A precision-ground hydraulic cylinder (ram) that can be detached for maintenance or portability. Placed on the base of the loading unit, it connects to the pumping unit via hoses.	Delivers the compressive force to the specimen. Detachability enhances portability and allows for quick replacement or use in confined spaces.

SPECIFICATIONS (TYPICAL FOR 1000 KN MODEL)

- **Capacity**: 1000–1500 kN (250, 500, 1000 kN available & also adjustable for different models).
- **Specimen Sizes**: Supports 70.6 mm, 100 mm, 150 mm cubes or cylinders.
- **Weight**: 200–300 kg (portable via wheels or handles).
- **Oil**: Supplied with hydraulic oil tank capacity 7 liters or sufficient required Oil capacity.
- **Accessories**: Often includes spacer blocks, test platens, and carrying case.

These machines are cost-effective for on-site testing, with hand operation eliminating the need for electricity. For electric variant also available. If you need calibration details, a diagram, or supplier contacts, provides more specifics!

ANALOGUE MODELS

BE 45-02

An analogue compression testing machine (CTM) is a specialized piece of laboratory equipment used primarily in civil engineering and materials science to measure the compressive strength of materials like concrete, bricks, cement mortar, rocks, and other building components. Unlike digital versions, it relies on mechanical gauges (such as Bourdon tube pressure gauges) to display load readings, providing a direct analog readout of the applied force. These machines are typically hydraulic or electro-hydraulic in operation, applying a controlled compressive load to a specimen until failure.

KEY COMPONENTS AND WORKING PRINCIPLE

An analogue CTM generally consists of:-

- **Load Frame**: A rigid, four-column welded structure for stability, with upper and lower platens (hardened and polished) to hold the specimen. The vertical space is adjustable (often via an electric screw) to accommodate different sample sizes.
- **Hydraulic Pumping Unit**: Electrically or hand-operated pump that generates pressure. It includes a micro-switch to auto-stop the motor near the rated capacity for safety.
- **Analogue Gauge**: A large-diameter (e.g., 8-inch) pressure gauge with a maximum red pointer for peak load indication. Accuracy is typically ±1%.
- **Accessories**: Spacers with centering pins for small specimens, and optional attachments for bending, shear, or Brinell hardness tests.

COMMON SPECIFICATIONS AND CAPACITIES

Analogue CTMs are available in various capacities and configurations. Here's a comparison of typical models based on manufacturer data

Capacity (kN)	Specimen Types Supported	Vertical Clearance (mm)	Piston Travel (mm)	Pump Type
100–300	Small cubes (up to 50 mm), mortar	150–200	50–80	Hand-operated
250–1000	Cubes (up to 150 mm), cylinders (up to 160x320 mm)	300–350	100–150	Electric
1000–2000	Standard cubes (150–200 mm), cylinders (150x300 mm)	350–400	150–200	Electro-hydraulic
2000–3000	Large cubes/cylinders, structures	400–500	200–250	Electric
Up to 5000	Heavy-duty specimens, rocks	500+	250+	Electro-hydraulic

DIGITAL MODELS WITH PACE RATE INDICATORS

BE 45-03

Digital Compression Testing Machines (CTM), often abbreviated as "CTM" in the query, are specialized equipment used primarily in civil engineering and construction to measure the compressive strength of concrete cubes, cylinders, or other materials. These machines apply a controlled load to a test specimen until failure, recording key metrics like peak load, stress (in N/mm² or kg/cm²), and deformation. The "digital models" refer to versions with microprocessor-based displays for precise readings, data logging, and automated calculations, unlike traditional analog gauges.

A **pace rate indicator** is a critical feature in these machines. It monitors and displays the rate of load application (typically in kN/sec or N/mm² per minute) to ensure compliance with standards like IS 516 (Indian Standards) or ASTM C39, which mandate uniform loading (e.g., 0.2–0.4 MPa/sec for concrete). This prevents inaccurate test results due to overly rapid or slow loading. Digital models often include manual or automatic pace rate controllers for better precision.

These machines are available in capacities from 50 kN to 5000 kN, suitable for lab or field use. They feature rugged, welded plate-type frames for stability, hydraulic pumping systems, and safety features like auto-stop on specimen failure.

Key Features of Digital CTM Models with Pace Rate Indicators

- **Load Application**: Hydraulic ram applies axial load; digital display shows real-time load (kN), stress (N/mm²), and peak values.
- **Pace Rate Control**: Manual (user-adjustable via knob, 1–40 kN/sec) or automatic (servo-motor based PID control for ±2% accuracy).
- **Data Handling**: USB/Ethernet connectivity for data transfer; storage for multiple tests; optional software for analysis.
- **Automation Levels**:
  - **Semi-Automatic**: Manual pace control with digital indication.
  - **Fully Automatic**: Auto pace rate, data logging, printing, and release on failure.
- **Safety & Usability**: Overload protection, emergency stop, and simple operation for non-technical users.
- **Standards Compliance**: Designed per international norms (e.g., EN 12390-4, BS 1881) for repeatability.

Capacity (kN)	Pace Rate Control	Key Features
100–300	Automatic (Servo PID)	Data logging, load hold, silent pump; stress auto-calculation.
Up to 2000	Manual (1–40 kN/sec)	Pace indication in kN/sec; auto-stop on failure; plate frame for stability.
1000–2000	Manual with microprocessor	Peak load storage; USB data transfer at 1-sec intervals; Ethernet option.
3000	Manual/Automatic	Selectable test types (e.g., flexural); pace rate in kN/sec; requires 3 kVA stabilizer.
3000	Manual/Automatic	Economic design; constant loading rate; results in kN and N/mm².

AUTOMATIC MODELS

BE 45-04

A Fully Automatic Compression Testing Machine (CTM) is an advanced piece of laboratory equipment used primarily in civil engineering and construction to measure the compressive strength of concrete cubes, cylinders, and other materials. Unlike manual or semi-automatic models, fully automatic CTMs feature closed-loop control systems, servo motors, and software integration for precise pace rate control, automatic test cycling (start, load application, failure detection, and reset), data acquisition, and reporting. They ensure compliance with standards like ASTM C39, EN 12390-4, BS 1881, and IS 516, with capacities typically ranging from 50 kN to 5000 kN. These machines minimize human error, enhance repeatability, and often include features like overload protection, thermal printers, and PC connectivity.

COMMON SPECIFICATIONS AND CAPACITIES

Model(s)	Capacity Range (kN)	Key Features
Servo Controlled Fully Automatic CTM	50–5000	Servo motor control, PID feedback for pace rate, EDI/software integration, auto reset, load resolution 0.002–0.2 kN, silent hydraulic pump
Servo Controlled Fully Automatic CTM	50–5000	High-precision servo hydraulics, auto stop/release on failure, flexural frame compatibility, touch screen display
Fully Automatic Digital CTM	100–2000	Closed-loop digital readout, auto test cycle, LCD graphics, removable safety doors, measures cubes/cylinders up to 160 mm dia.
Fully Automatic Pace Rate Controlled CTM	Up to 2000	Servo-driven hydraulics, touch screen for real-time data/graphs, manual/auto modes, overload/over travel protection

FLEXURAL TEST MACHINE

BE 46

A flexure testing machine (also known as a flexural testing machine or bend testing machine) is a specialized piece of equipment used to evaluate the flexural strength, modulus of elasticity, and other mechanical properties of materials under bending loads. It applies controlled force to a specimen (typically a beam or bar) supported at two points while loading it at one or more points, simulating real-world bending stresses. These machines are commonly used in materials science, civil

engineering, and quality control for testing concrete, metals, plastics, composites, wood, and ceramics.

FOLLOWING STANDARD

IS 516, ASTM C78, EN 12390-5, BS 1881, and ISO 679.

KEY COMPONENTS INCLUDE:-

- A rigid frame with hydraulic or electromechanical loading system.
- Load cells for precise force measurement (often Class 1 accuracy from 2% of capacity).
- Fixtures for 3-point or 4-point bending configurations.
- Digital controls for automated testing cycles, data logging, and reporting.
- For 150 mm x 150 mm x 700 mm beam, the center distance between the rollers is 600 mm, while it is 400 mm for beams of size 100 mm x 100 mm x 500 mm.
- The upper platen has also a pair of rollers whose distance is adjustable.
- It is 200 mm center to center, for 150 mm x 150 mm x 700 mm size beam and 133 mm for 100 mm x 100 mm x 500 mm size beam.
- Total capacity of the machine is 100 kn.

Flexural Strength Testing Machines are Two Models available

BE 46-01	Flexural Test Manual Type or Hand Operating
BE 46-02	Flexural Test Digital Type or Electrical Operating

BE 46-01

BE 46-02

SPECIFIC GRAVITY & BUOYANCY BALANCE

BE 47

The Buoyancy Balance or Specific Gravity Frame is a specialized setup for determining the specific gravity of fresh and hardened concrete and aggregates. It includes a sturdy support frame with a water tank on a platform. A mechanical lifting device raises the tank to immerse the specimen, which is suspended below an electronic balance. This balance can also function as a standard weighing device, offering a versatile laboratory solution for accurate specific gravity measurements.

For Water absorption and specific gravity test of aggregates. With Density basket, water tight cylinder and electronic balance of 10 kg x 0.5 gm sensitivity. (Optionally 15 kg X 0.1 gm or 20 kg X 1 gm or 30kg X 1 gm also available) The balance will be with under hook weighing arrangement and will be mounted on suitable table to facilitate the test. The Water tight container will be mounted on a mechanical jack, which will facilitate the up - down movement of the container for weight in air and water.

FOLLOWING STANDARD

EN 12390-7, BS 1881:114, IS 2386 (Part III)

Basket Body	Wire mesh for drainage	Stainless steel, 6.3 mm mesh
Frame/Handle	For suspension	Galvanized steel, rugged construction
Capacity	Volume for testing	3 L, 15 L, or 30 L variants
Weight	Overall apparatus	25–30 kg (including frame)

BULK DENSITY BASKET

BE 48

A bulk density basket (also commonly referred to as a density basket or aggregate density basket) is a specialized laboratory apparatus used in materials testing, particularly in civil engineering and construction, to measure the bulk density, specific gravity, and water absorption of coarse aggregates, concrete, or bituminous mixtures. It helps determine the mass per unit volume of materials, which is essential for calculating yield, cement content, air content, and overall mix proportions in concrete production.

FOLLOWING STANDARD

ASTM C127 or IS 2386.

Design and Specifications

Typical features of a bulk density basket include:

- **Material**: Constructed from brass or galvanized iron (GI) frame with stainless steel wire mesh (e.g., No. 8 mesh size, 6.3 mm or 4.75 mm openings) to allow water drainage while retaining aggregates.
- **Dimensions**: Approximately 20 cm diameter x 20 cm height (capacity around 3–30 liters depending on model).
- **Handle**: Bail-type or suspension handle for easy immersion in water and attachment to a balance or frame.
- **Accessories**: Often used with a specific gravity frame, electronic balance, and watertight tank for submerged weighing.

Component	Description	Typical Specs

AGGREGATE IMPACT VALUE

BE 49

Is a standard piece of laboratory equipment used in civil engineering and materials testing to evaluate the toughness and impact resistance of coarse aggregates. This test helps determine the suitability of aggregates for use in concrete, road construction, and other applications where aggregates must withstand sudden impacts without excessive breakage.

FOLLOWING STANDARD

IS 2386 (PART IV) 9377 & BS 812-112

KEY FEATURES

Model	Component/Feature	Component/Feature
BE 49-01	Overall Design	Sturdy, rigid framework consisting of a heavy base and support columns. This ensures stability during operation and minimizes vibrations.
BE 49-02	Hammer	Includes a cylindrical steel hammer (typically 13.5–14 kg) with a quick-release trigger mechanism for precise control. The hammer features a locking arrangement to secure it in position before release.
BE 49-03	Free Fall Adjustment	Adjustable height for the hammer's free fall of 380 ± 5 mm, allowing for consistent impact energy delivery as per IS standards.
BE 49-04	Test Cylinder	Accommodates a metal measure (75 mm diameter, 50 mm depth) filled with aggregates for tamping and impact application.

BE 49-05	Temping Rod	Often includes a tamping rod (16 mm diameter, 45–60 cm long),

BE 50-2-B	Plunger	Diameter: ~73 mm (to fit cylinder snugly) Height: ~70-90 mm
BE 50-2-C	Base Plate	Diameter: 75-100 mm Thickness: 10-15 mm
BE 50-2-D	Tamping rod	Diameter: 8 mm Length: 300 mm Rounded ends
BE 50-2-E	Metal measure	Diameter: 57 mm Depth/Height: 90 mm

AGGREGATE CRUSHING VALUE

BE 50

The Aggregate Crushing Value (ACV) Apparatus is a standard testing device used in civil engineering and materials science to evaluate the resistance of coarse aggregates to crushing under a gradually applied compressive load. This test helps determine the suitability of aggregates for use in concrete, asphalt, and road construction by providing a relative measure of their strength and durability. Aggregates with a lower crushing value indicate better quality for load-bearing applications.

FOLLOWING STANDARD

IS 2386 (Part IV) or ASTM equivalents. BS 812 or IS 9376 1979.

It's two type available Big size and Small size.

DISCRIPTION

MODEL	COMPONENT	DETAIL
BE 50-1-A	Cylindrical Cell	150 ± 0.5 mm ID x 130 to 140 mm height
BE 50-1-B	Plunger	148 ± 0.5 mm dia x 100 to 115 mm height
BE 50-1-C	Base Plate	200 to 230 mm square x 6 mm thickness
BE 50-1-D	Tamping rod	16 mm dia x 450 to 600 mm length
BE 50-1-E	Metal measure	110 ± 0.5 mm ID x 180 ± 0.5mm height
SMALL SIZE CRUSHING VALUE		
BE 50-2-A	Cylindrical Cell	75 mm Height: ~90-100 mm

LOS ANGELES ABRASION TEST MACHINE

BE 51

The Los Angeles Abrasion Machine is designed to test the wear resistance of small coarse aggregates and crushed rock. It features a hollow cylinder mounted on a robust frame with ball bearings, ensuring smooth rotation. A detachable internal shelf holds the abrasive charge, preventing it from falling onto the cover. The drum rotates at 30-33 rpm, driven by an electric motor connected to a heavy-duty reduction gear. The motor operates on a 415 V, 3-phase, 50 Hz AC supply. This setup is used to simulate the abrasion and impact aggregates experience in real-world conditions, helping assess their durability for construction purposes.

FOLLOWING STANDARD

IS 10070, ASTM - C131

DISCRIPTION

This machine are two type one type manual or counter meter and self stop and second type digital counter meter and auto stop. we are supplied also Tray and surcharged ball.

BE 51-01	Manual type with counter meter self stop
BE 51-02	Digital counter meter auto stop
BE 51-03	Tray

BE 51-04	12 Surcharge Ball

FOLLOWING STANDARD

IS 1237-1980, IS 1706 – 1972

TILE ABRASION TEST MACHINE

BE 52

This description outlines the specifications and components of an abrasion testing machine used to evaluate the wear resistance of tile samples. The machine tests tile samples by pressing them under a specified load against a grinding path sprinkled with abrasive powder. Sample of 7.06 cm x 7.06 cm is pressed under a specified load against a grinding path strewn evenly with an abrasive powder revolving at the rate of 30 ± 1 r.p.m. At the end of 100 revolutions of the disc. The grinding path, mounted on a disc, rotates at 30 ± 1 rpm. Each tile sample undergoes 100 revolutions on one side, followed by 100 revolutions on the second parallel side. It operates on a 415 V, 50 Hz, 3-phase AC supply but does not include abrasive powder or a thickness-measuring device.

The machine includes:

- A replaceable grinding path on a rotating disc, enclosed in a circular tray.
- A bracket to hold the tile specimen.
- A counter-balanced lever for applying the load.
- A funnel for evenly distributing abrasive powder.
- An automatic pre-set revolution counter.
- A 7.5 kg weight for loading.

FLAKINESS & ELONGATION APPARATUS

BE 53

Flakiness and elongation are properties used to describe the shape of aggregate particles in construction materials, particularly in civil engineering for concrete, asphalt, and road base applications. These properties are critical because they affect the workability, strength, and durability of the final material.

FOLLOWING STANDARD

IS: 2386 (Part 1), IS: 2386 (Part 1)

DISCRIPTION

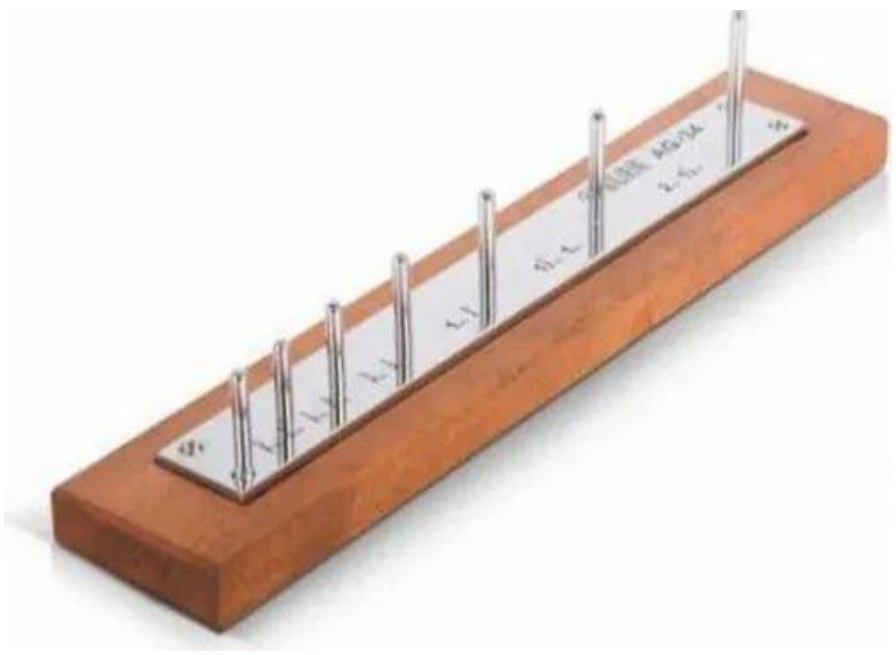
BE 53-01	Flakiness/ **Thickness Gauge**
BE 53-02	ELONGATION/LENGTH GAUGE

FLAKINESS/THICKNESS GAUGE

Definition: Flakiness refers to the tendency of an aggregate particle to be flat or thin, where one dimension (usually thickness) is significantly smaller than the other two dimensions (length and width).

ELONGATION/LENGTH GAUGE

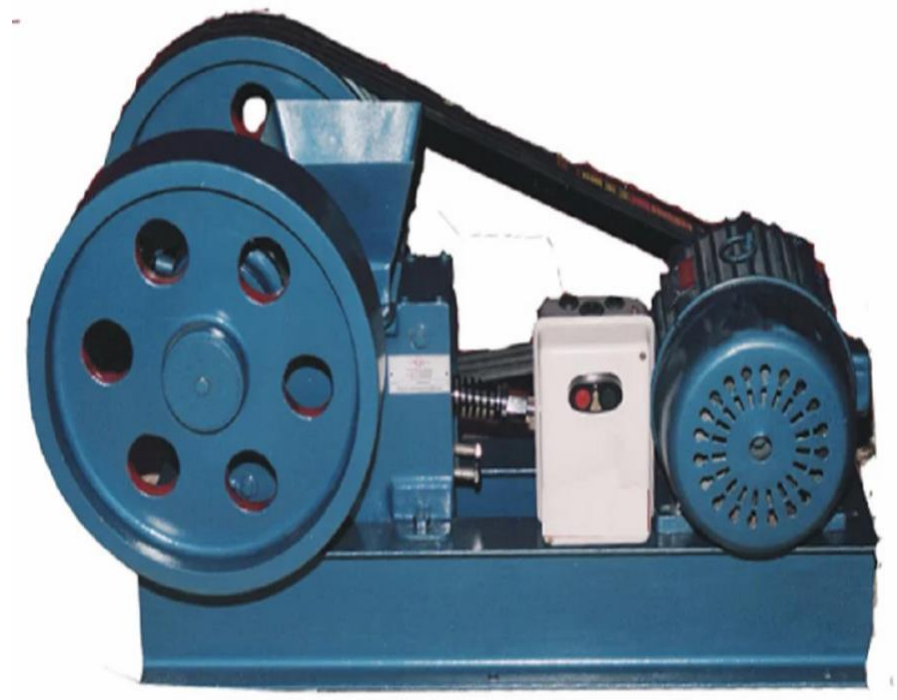
Definition: Elongation refers to the tendency of an aggregate particle to be long and slender, where one dimension (usually length) is significantly larger than the other two (width and thickness).



JAW CRUSHER

BE 54

A jaw crusher is a heavy-duty machine used primarily for primary crushing in industries like mining, quarrying, construction, demolition recycling, and aggregate production. It breaks down large, hard, and abrasive materials—such as rocks, ores, concrete, or gravel—into smaller, more manageable sizes through mechanical compression. Jaw crushers are versatile, reliable, and often the first stage in multi-stage crushing systems, with some models also suitable for secondary crushing.



VIBRATION TABLE

BE 55

Proper compaction of cement concrete is critical for achieving a uniform and consistent mixture in specimens prepared for compression testing. The BALAJI Vibrating Table is well-suited for this task, featuring a 500 mm x 500 mm tabletop with edge stops to secure moulds during operation. It has a maximum load capacity of 140 kg and a variable pitch pulley system, allowing step less frequency adjustment between 43 and 60 cycles per second. The table operates on a 415 V, 3-phase, 50 Hz AC power supply. This setup ensures effective compaction, minimizing voids and enhancing the quality of concrete specimens for reliable test results.

FOLLOWING STANDARD

EN 12350-6, 7, 12390-2, 13286-50

This many size available and you order behalf customize it’s a Table

MODEL	SIZE
BE 55-01	50 × 50 cm
BE 55-01	60 × 60 cm
BE 55-01	75 × 75 cm
BE 55-01	100 × 100 cm

LONGITUDINAL COMPRESSO METER

BE 57

Longitudinal Compressometer The described apparatus is a **Compressometer**, used for determining the strain and deformation characteristics of cement concrete cylindrical specimens (150 mm diameter x 300 mm length). Consists of two frames clamped to the specimen using five tightening screws with hardened, tapered ends. Two spacers maintain the frames' alignment. An adjustable pivot rod rests on pivot screws, kept in contact by a spring. A ball chain adjusts the spring's tension. A dial gauge (0.002 mm sensitivity, 10 mm range) is mounted on a bracket attached to the top frame to measure deformation. Supplied complete with the dial gauge in a wooden carrying case. This setup allows precise measurement of axial deformation under compressive loads, enabling the calculation of strain and other mechanical properties of the concrete specimen.

FOLLOWING STANDARD

ASTM-C469

AIR ENTRAINMENT METER

BE 56

You're absolutely correct that air entrainment in concrete is a critical factor affecting its durability and workability. Entrained air, when controlled within an optimal range (typically 4-7% for most concrete mixes exposed to freeze-thaw cycles), enhances durability by providing space for water to expand during freezing, reducing cracking and spalling. However, too little air entrainment (below 3%) can compromise this durability, while excessive air can reduce concrete strength.

Air-entraining admixtures are often used to improve workability and achieve the desired air content, but precise measurement is essential to ensure the mix meets specifications. Air entrainment meters, using the pressure method, are standard tools for this purpose. These devices work by applying pressure to a sample of freshly mixed concrete in a sealed chamber and measuring the volume change, which correlates to the air content. The method is based on Boyle's Law, where the reduction in volume under pressure indicates the air content.

FOLLOWING STANDARD

IS 1199, IS:10079, BS:1881 , EN 12350-7

DEMOUNTABLE MECHANICAL STRAIN GAUGE

BE 58

The text you provided appears to be a product description for a Demountable Mechanical Strain Gauge, a precision instrument used in civil engineering and materials testing to measure strain (deformation) in structures like concrete, masonry, or steel components. These gauges are mechanical (non-electrical) and designed to be easily attached and removed without permanent installation, making them ideal for field inspections, crack monitoring, or load testing. Available in 100 mm, 150 mm, or 200 mm, measured between the reference pins. This allows for flexible application on different surface sizes. dial gauge Resolution of 0.002 mm over a 5 mm range. Digital dial gauge Resolution of 0.001 mm over a 25 mm range (higher precision and extended range).

LATERAL EXTENSO METER

BE 59

It sounds like you're describing a lateral extensometer used for measuring the lateral extension (or strain) of a 150 mm diameter x 300 mm high cement concrete cylinder during compression testing. Designed for 150 mm diameter x 300 mm high cement concrete cylinders. Two Movable Frames Pivoted at one end to allow precise measurement of lateral deformation. Dial Gauge Measures lateral extension with a resolution of 0.002 mm and a range of 10 mm. Removable Spacer Strip Used for initial calibration/setting of the dial gauge. Mounting Mechanism Secured to the specimen using screws. Packaging Supplied complete with the dial gauge in a wooden case for storage and protection.

FOLLOWING STANDARD

ASTM-C469

LENGTH COMPARATOR

BE 60

A Length Comparator is a specialized instrument used to measure dimensional changes, such as drying shrinkage or expansion, in materials like autoclaved aerated concrete (AAC) blocks, calcium silicate bricks, or cement concrete specimens. It is particularly useful for assessing the drying shrinkage of autoclaved Portland cement and the potential expansive reactivity of cement-aggregate combinations in mortar bars during self-drying storage. A micrometer (often an analogue dial gauge with a resolution of 0.001 mm) for precise length measurements. A standardization bar to calibrate the instrument and ensure measurement accuracy.

FOLLOWING STANDARD

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

POKER VIBRATOR OR NIDDLE VIBRATIOR

BE 61

A poker vibrator (also known as a concrete poker, immersion vibrator or needle vibrator) is a handheld tool used in construction to compact wet concrete internally. It removes air bubbles, excess water, and voids, ensuring a denser, stronger, and more uniform final structure—essential for applications like slabs, foundations, walls, bridges, and precast elements.

FOLLOWING STANDARD

EN 12390-2; ASTM C31, C192; AASHTO T23, T126

It’s equipment are two type one is Petrol Engine and one is Electric engine.

BE 61-01	Petrol Engine Type
BE 61-02	Electric Engine Type

BE 61-01

BE 61-02

WHELL BARROW

BE 62

That's a solid description of a wheelbarrow! It's a simple yet effective tool, typically with one or two wheels, pushed by a person using rear handles. The name breaks down into "wheel" and "barrow," the latter coming from the Old English "bearer," meaning a load-carrying device. If you have any specific questions about wheelbarrows—like their history, design variations, or uses—let me know!

FOLLOWING STANDARD

AS PER IS STANDARD

CAPPING SET (VERTICAL)

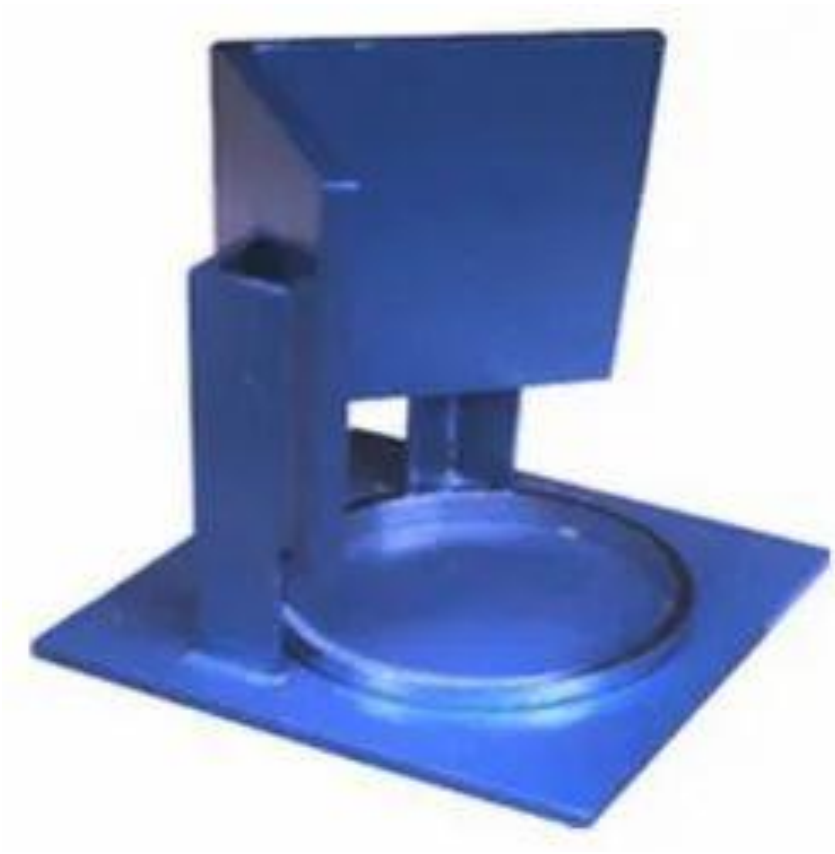
BE 63

A **capping set (vertical)** is used to ensure that the ends of concrete cylinder specimens are flat and parallel for compressive strength testing. This is critical because uneven or non-parallel surfaces can lead to inaccurate test results, as the load applied during the test may not be uniformly distributed.

The capping process typically involves applying a thin layer of capping material (such as sulfur-based compounds or high-strength gypsum) to the ends of the cylinder using a capping set. The vertical capping set ensures precise alignment and a smooth, level surface. This preparation allows for reliable and repeatable compressive strength test results, which are vital for assessing the quality and performance of concrete in construction projects.

FOLLOWING STANDARD

IS:516, BS:1881, ASTM C31, ASTM C617



CONCRETE PERMEABILITY TEST

BE 64

The High Pressure Permeability Test setup you described is used to evaluate the permeability of concrete specimens under controlled pressure conditions. Here's a concise summary of the setup and process based on your description. It consists of three sets mounted on a single control panel for testing independently three specimens of 150 mm dia x 150 mm high.

Specimen and Cell Design: The test uses concrete specimens of varying sizes, sealed within steel cells to prevent side-wall leakage. Each cell is equipped with a top plate and a bottom funnel, secured with gasket seals, bolts, and nuts. Permeated water is collected in glass bottles attached to the bottom of the funnel.

Test Stall Configuration: Each test stall operates independently with its own control system, including pressure gauges (chamber pressure: 0-20 kg/cm², test pressure: 0-15 kg/cm²) and valves. This allows simultaneous testing of multiple specimens under the same or different head pressures, as each stall has its own pressure regulator.

Multi-Unit Design: Multi-unit permeameters are mounted on a sturdy welded structural stand, with end pressure gauges for monitoring. The system is designed to conduct multiple tests

concurrently, ensuring efficiency and flexibility in pressure application.

Pressure Application: Pressure is supplied via an on-site pressure line or a compressor, enabling precise control over test conditions.

FOLLOWING STANDARD

IS 3085-1965, DIN 1048.

DISCRIPTION

BE 64-01	3 MOULD
BE 64-02	6 MOULD
BE 64-03	9 MOULD
BE 64-04	12 MOULD
BE 64-05	18 MOULD

CONCRETE MIXURE

BE 65

A laboratory concrete mixer machine is a specialized piece of equipment designed for preparing small batches of concrete, mortar, cement, grout, or asphalt in controlled environments like research labs or quality control facilities. Unlike large-scale construction mixers, these are compact, precise tools used for mix design testing, specimen preparation, and evaluating material properties (e.g., strength, consistency, and additives) to ensure compliance with standards such as ASTM C109, C227, C305, AASHTO T 106, EN, and ISO. They provide uniform mixing for reproducible results, often with features like adjustable speeds, digital controls, and easy discharge mechanisms.

FOLLOWING STANDARD

ISO 18650-1:2004 (Part 1)

DISCRIPTION

Laboratory mixers come in various designs, each suited to specific batch sizes and materials. Here's a comparison table of common types based on popular models:-

MODEL	TYPE	CAPACITY (BATCH/MIXING)	KEY FEATURES	TYPICAL USE CASES
BE 65-01	Pan Mixer	5-130 L Mixing	Planetary gearing for quiet operation; interchangeable paddles; wheels for portability.	Mortar/cement testing; low-slump concrete.
BE 65-02	Drum Mixer	40-125 L Yield	Tilting drum with blades; manual rotation option; galvanized steel for durability.	Mix design trials; small asphalt batches.
BE 65-03	Twin-Shaft Batch Mixer	60 L scaled-down	High-shear mixing for uniform blends; emulates production-scale results.	Research on demanding concretes; quality control.
BE 65-04	Portable/Bucket Mixer	5-38	LRugged metal build; 1/6-1/2 HP motor; adjustable speeds (140-285 RPM)	Field/lab portability; soil/cement mixing.
BE 65-05	Intensive/Ring-Pan Mixer	Varies 60 L	Whirling system for homogenizing tough mixes; digital controls.	High-performance concrete R&D.

SLUM CONE TEST APPARATUS

BE 66

The Slump Test Apparatus is a standard tool used in civil engineering and construction to measure the consistency and workability of fresh concrete mixes. It helps assess how easily the concrete flows and indicates the water-cement ratio indirectly, ensuring the mix is suitable before pouring. The test is simple, quick, and commonly performed on-site.

FOLLOWING STANDARD

IS 7320, BS 1881, ASTM C 143, AASHTO T119

This equipment are three parts divided

1. Slum cone (100×200×300 mm)
2. Base plate
3. Graduate temping rod (16 mm diameter & 600 mm Long)
4.

MODEL	PARTS NAME	DETAIL
BE 67-01	Vibrating table	A flat platform (380 mm length × 260 mm width) mounted on elastic rubber supports at a height of about 305 mm above the base, powered by an electric vibrator to simulate compaction.
BE 67-02	Cylindrical container	Transparent acrylic or plastic tube (205 mm height × 100 mm diameter) to hold the concrete sample.
BE 67-03	Slump cone	Standard metal cone (100 mm top diameter × 200 mm bottom diameter × 300 mm height) filled with concrete.
BE 67-04	Transparent disc and rod	A clear plastic disc (155 mm diameter) attached to a graduated rod for observing and measuring the remolding process
BE 67-05	Base	Rigid horizontal platform with rubber shock absorbers to minimize external vibrations. The entire setup rests on a stable base free from shocks, ensuring accurate results.

VEE BEE CONSISTOMETER

BE 67

The Vee Bee Consistometer (also known as the Vebe Consistometer or Vee-Bee test apparatus) is a laboratory device used in civil engineering to measure the workability of freshly mixed concrete, particularly for stiff or dry mixes where traditional slump tests are less effective. Workability refers to the ease with which concrete can be mixed, placed, compacted, and finished without segregation. The test quantifies the remolding effort required to change the concrete's shape from a slump cone form to a cylindrical one under vibration, providing insights into the concrete's mobility and compactibility.

This test is especially useful for concrete with low water-cement ratios or high aggregate content, where slump values are too low (typically below 50 mm) for accurate slump cone measurements.

FOLLOWING STANDARD

IS 10510, IS 1199, BS 1881(Part104), AASHTO T126

The standard Vee Bee Consistometer consists of the following components:-

DISCRIPTION

COMPACTION FACTOR APPARATUS

BE 68

The Compaction Factor Apparatus is a laboratory testing device used in civil engineering to measure the workability of fresh concrete mixes, particularly those with low workability (e.g., stiff mixes that are compacted by vibration rather than free fall). It determines the compaction factor, which is the ratio of the weight of partially compacted concrete to the weight of fully compacted concrete in a standard container. This test is more precise and sensitive than the slump test for low-workability concrete and is applicable both in labs and the field.

FOLLOWING STANDARD

IS 5515-1983

These hoppers Size Detail:-

Upper Hoppers	Top diameter: 25.4 cm; Bottom diameter: 10.2 cm; Height: 27.9 cm

Lower Hoppers	Top diameter: 12.7 cm; Bottom diameter: 7.6 cm; Height: 22.9 cm
Cylinder	Diameter: 15.2 cm; Height: 30.5 cm (volume: ~10 liters)
Distance between hoppers	Fixed at ~23 cm vertically

J-RING TEST

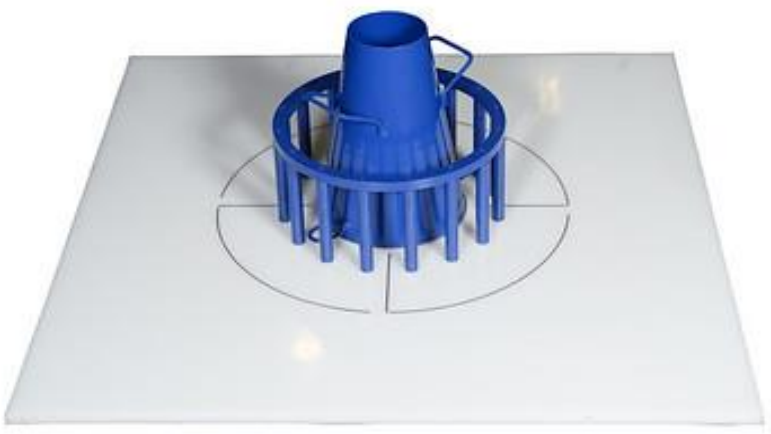
BE 69

The J-Ring test is a standardized method used in civil engineering and materials science to evaluate the passing ability and stability of self-consolidating concrete (SCC), also known as self-compacting concrete. SCC is a highly flow able type of concrete designed to fill formwork and encircle reinforcement bars without the need for vibration or mechanical compaction. This test is particularly important for ensuring the concrete can navigate around obstacles like rebar in complex structures, preventing blockages or segregation.

FOLLOWING STANDARD

ASTM C1621

BE 69-01	Base plate	1000mm X 1000mm
BE 69-02	Slump cone	100mm ID at a top X 200mm at a bottom X 300mm height
BE 69-03	straight rod	straight rod of at least one flat side with a flexure less than 1 mm



U-BOX TEST

BE 70

The U-Box Test is a standardized laboratory method used to evaluate the **filling ability** and **passing ability** (or flowability through obstructions) of fresh self-compacting concrete (SCC). SCC is a highly fluid concrete that consolidates under its own weight without vibration, making it ideal for areas with dense reinforcement. Traditional tests like the slump test are unsuitable for SCC due to its high fluidity, so specialized tests like the U-Box are employed instead.

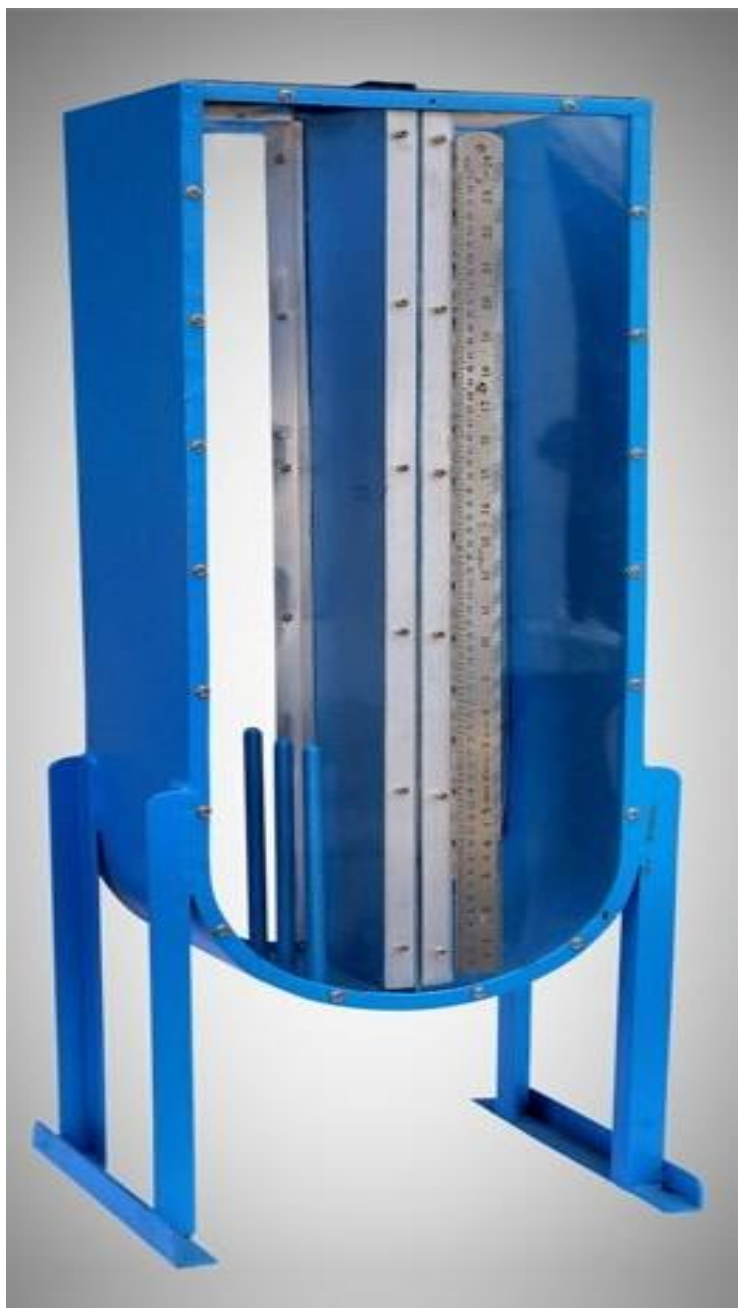
This test simulates the concrete's ability to flow horizontally through confined spaces, such as around reinforcing bars, providing a direct measure of its performance in real-world applications like congested formwork.

FOLLOWING STANDARD

ASTM C1621

THE U-BOX APPARATUS CONSISTS OF:-

- A U-shaped stainless steel vessel divided into two compartments by a middle wall with a sliding gate (guillotine-style) at the base.
- A horizontal section with an obstacle: typically 3–4 vertical reinforcing bars (Ø10–12 mm) spaced 35–50 mm apart to mimic rebar congestion.
- The vertical compartment is filled to a height of about 600–800 mm, and the horizontal trough extends ~500–600 mm.
- Total concrete volume required: Approximately 20 liters.



V-FUNNEL TEST

BE 71

The V-Funnel Test Apparatus is a specialized testing device used in civil engineering and materials science to assess the properties of self-compacting concrete (SCC), a type of concrete that flows and consolidates under its own weight without the need for vibration. This test primarily measures the filling ability (flow ability) and segregation resistance of freshly mixed SCC by determining the time it takes for the concrete to flow out of a V-shaped funnel.

FOLLOWING STANDARD

EN 12350

THE APPARATUS TYPICALLY CONSISTS OF:-

- A V-shaped stainless steel funnel with a capacity of approximately 10–12 liters, featuring a smooth, reinforced upper edge for leveling the concrete.
- A watertight sliding gate or sealable valve at the narrow outflow orifice (usually 75 mm wide) to control the release of concrete.
- A supporting frame or stand (often mild steel or rigid metal) to hold the funnel vertically and ensure the top remains horizontal.
- Accessories: A straight edge (e.g., 36 inches long) for leveling the concrete surface, a stopwatch for timing, and a collection bucket or polyethylene box to catch the discharged concrete.
- Overall dimensions are around 570 x 300 x 920 mm (height)

L-BOX TEST

BE 72

The L-Box Test is a standardized method used to evaluate the workability and passing ability of self-compacting concrete (SCC), also known as self-consolidating concrete. SCC is a highly flowable type of concrete designed to fill formwork under its own weight without the need for vibration, making it ideal for complex structures with dense reinforcement. This test specifically assesses how well the concrete can flow through tight spaces and obstructions (like reinforcement bars) without segregating or blocking

FOLLOWING STANDARD

BS EN 12350-10

THE L-BOX APPARATUS CONSISTS OF:-

- A vertical rectangular reservoir (typically 600 mm high × 200 mm wide × 200 mm deep) to hold the concrete sample.
- A horizontal trough (typically 600 mm long × 200 mm wide × 150 mm deep) extending at a right angle, forming an "L" shape.
- A sliding gate separating the vertical and horizontal sections.
- Vertical reinforcement bars (usually 3 bars, 16 mm diameter, spaced 38 mm apart) welded to the gate to simulate obstacles.
- Overall dimensions: Approximately 800 mm × 600 mm × 900 mm.

CONCRETE FLOW TABLE

BE 73

A concrete flow table is a specialized testing apparatus used in civil engineering and materials science to assess the workability (or consistency) of fresh, high-fluidity concrete mixes. It is particularly useful for concretes that are too fluid to be reliably measured with the standard slump test, such as those with a slump exceeding 175 mm. This test helps ensure the concrete can be properly placed, compacted, and finished without issues like segregation, bleeding, or reduced strength.

FOLLOWING STANDARD

IS 9103-1999, BS EN 12350-5, ASTM C 230

FLOW TABLE CONSISTS OF:-

- A **square metal table top** (typically 700 mm × 700 mm), hinged on one side to a rigid base.
- A **stop mechanism** that raises the free end of the table by exactly 40 mm.
- An **inscribed surface** on the table for easy measurement of spread diameter.
- A **truncated cone mold** made of stainless steel: top diameter 130 ± 2 mm, base diameter 200 ± 2 mm, height 200 ± 2 mm, thickness 1.5 mm.
- A **tamping rod** (wooden, about 340 mm long × 25 mm diameter) for compacting the sample.

BE 74

The Accelerated Aggregate (Road stone) Polishing Machine, often abbreviated as the Accelerated Polishing Machine (APM), is a specialized laboratory testing device used in civil engineering and materials science to evaluate the skid resistance of road aggregates. It simulates the polishing action of vehicle tires on road surfaces to determine the Polished Stone Value (PSV) of aggregates, such as road stone or chippings. This value measures how quickly the aggregate's surface becomes smooth (polished) under traffic, which is critical for assessing long-term road safety, especially in high-traffic or wet conditions where skid resistance is essential.

FOLLOWING STANDARD

IS 2386 (Part IV), BS 812-114, EN 1097-8, ASTM D3319

KEY SPECIFICATIONS (BASED ON COMMON MODELS)

FEATURE	TYPICAL DETAILS
Wheel Speed	320 rpm (adjustable in some models)
Tire Load	785 N (173 lbf)
Abrasive Feed	Automatic hoppers (1.5–0.25 kg/h stages)
Test Duration	3 hours (divided into 3 phases)
Capacity	14 specimens per run
Dimensions	800 x 800 x 1200 mm (W x D x H)
Power	750–1500 W, 220V/50Hz single-phase

ACCELERATED AGGREGATE POLISHING MACHINE

DEVEL ATTRITAION TESTER

BE 75

The Devel Attrition Tester (also commonly spelled as Deval Attrition Tester) is a laboratory testing apparatus used in civil engineering and materials science to evaluate the abrasion resistance and durability of coarse aggregates, such as stones or gravel used in road construction. It simulates the wear that aggregates experience under traffic loads by subjecting them to mechanical grinding in a rotating cylinder. This test helps determine the aggregate's suitability for applications like pavements, where resistance to breakdown is crucial.

FOLLOWING STANDARD

ASTM D2-33 & IS 2386 (PART IV), BS 812

KEY SPECIFICATIONS (BASED ON COMMON MODELS)

COMPONENT	DETAILS
Cylinder Dimensions	Internal diameter 200 mm Length 200 mm & fitted to 30° angle to the horizontal.
Rotation Speed	30 rpm (adjustable in some models)
Power Supply	220V AC, single phase

DENSITY BASKET

BE 76

A density basket is a specialized laboratory apparatus used in civil engineering and materials testing, primarily for determining the specific gravity (relative density) and water absorption of coarse aggregates, such as those used in concrete and asphalt mixes. It operates on the principle of buoyancy (Archimedes' principle) to measure the weight of aggregates in air and submerged in water.

FOLLOWING STANDARD

IS 2386 (Part 3), ASTM C127

KEY FEATURES AND SPECIFICATIONS

Density baskets are typically constructed for durability and precision:

- **Material**: Brass or galvanized iron frame with stainless steel wire mesh (to allow water flow while retaining aggregates).
- **Dimensions**: Approximately 20 cm diameter × 20 cm height (standard size); larger variants (e.g., 18" × 18") are available for bulk testing.
- **Mesh Size**: 6.3 mm or 4.75 mm openings, compliant with standards like ASTM C127 or IS 2386.
- **Handle**: Bail-type or hook for suspending from a balance or frame.
- **Weight**: Around 1-2 kg, depending on construction.

DIGITAL POINT LOAD TESTER

BE 77

A Digital Point Load Tester is a specialized geotechnical testing instrument used primarily in rock mechanics to measure the point load strength index (I_s) of rock specimens. This non-destructive or semi-destructive test helps evaluate the tensile and shear strength of rocks quickly, both in the field (e.g., on core samples from drilling) and in laboratory settings. It's widely applied in mining, civil engineering, and geological assessments to classify rock quality and predict material behavior under stress.

FOLLOWING STANDARD

IS 8764, ASTM D5731

KEY FEATURES OF DIGITAL MODELS

Digital versions offer higher precision compared to analog (hydraulic gauge) testers, with features like

- **Load Measurement**: High-precision electric load cells or pressure transducers with digital displays (resolution as fine as 0.001 kN).
- **Capacity**: Typically 55–100 kN, suitable for specimens up to 4 inches (101.6 mm) in diameter.
- **Portability**: Often supplied in a carrying case with an integrated hydraulic jack, frame, and scale for measuring specimen dimensions.
- **Readout**: Real-time digital monitoring of load and distance, with low linearity error (e.g., 0.05%) and repeatability (e.g., 0.02%).

ELECTRICAL CORE CUTTING DRILLING MACHINE

BE 78

An electrical core cutting drilling machine, often simply called an electric core drill or coring machine is a specialized power tool designed for precision drilling into hard materials like concrete, rock, masonry, brick, asphalt, tiles, or marble. It uses a rotating diamond-tipped core bit to extract cylindrical "cores" (samples) or create clean, circular holes for applications such as plumbing, electrical conduits, HVAC installations, or material testing in construction and engineering projects. Unlike standard drills, these machines provide high torque and stability, often mounted on rigs for accuracy, and are powered by electricity for indoor or controlled environments where portability and low emissions are key.

These machines are compact, mobile, and versatile, typically handling hole diameters from small (25mm) to large (up to 600mm or more), with depths varying by model. They excel in wet or dry drilling modes, using water for cooling and dust suppression.

It’s equipment to as per order we are Imported.

KEY FEATURES

- **Power Source**: Electric motor (corded or battery-powered), offering consistent performance without fumes—ideal for indoor use.
- **Motor Specs**: Common ratings include 2,500W to 4,000W, with variable speeds (300–1,800 RPM) for different materials.
- **Mounting Options**: Handheld for small jobs, or rig-based (with stands, vacuum/anchor bases) for stability in larger cuts.
- **Safety & Efficiency**: Features like soft-start motors, overload protection, and auto-feed systems reduce operator fatigue and ensure precise cuts.
- **Accessories**: Compatible with diamond core bits, water Pipe.

CUBE MOULD

BE 79

A **cube mould** (also spelled "cube mold" in American English) is a specialized tool used in construction materials testing, particularly for casting cubic specimens of concrete, cement, mortar, or grout. These specimens are then tested for compressive strength, which is a critical measure of material durability and quality in building projects. The molds come in standard sizes like 2 inches (50mm), 6 inches (150mm), or metric equivalents, and are designed to produce precise, uniform cubes for reliable lab or field testing.

Cube moulds adhere to standards from organizations like ASTM (American Society for Testing and Materials) and AASHTO, ensuring consistency in testing procedures. They are typically reusable and made from durable materials to withstand repeated use with abrasive materials like cement.

COMMON TYPES AND MATERIALS

MODEL	TYPE	MATERIAL	SIZE OPTIONS	KEY FEATURES	TYPICAL USE
BE 79-01	Plastic Cube Mould	Reinforced plastic (heavy-duty engineered plastic)	150x150mm (6x6in), single-cavity	One-piece design with ribs for strength; lightweight and corrosion-resistant; easy to clean.	General concrete compressive strength testing; mortar penetration tests.
BE 79-02	Steel Cube Mould	Heavy-duty steel with base plate	50mm, 100mm, 150mm (2in, 4in, 6in); single or multi-cavity	Two-part construction; rugged for high-volume use; includes base for stability.	Compression testing of cement, mortar, and grout; field or lab environments.
BE 79-03	Brass Cube Mould	Forged brass with guide pins and wing nuts	50mm (2in); 3-gang (three cavities)	Screened upper surface; diagonal or parallel arrangement; detachable base.	Screened upper surface; diagonal or parallel arrangement; detachable base.
BE 79-04	Stainless Steel Cube Mould	Stainless steel with angles and studs	50mm (2in); 3-gang parallel	Resistant to acids and mild corrosives; secure clamping.	Mortar and cement tensile/compressive tests; high-precision applications.
BE 79-05	Econ-O-Cube (Multi-Gang)	Engineered plastic	150mm; 3-gang diagonal	Casts three cubes at once; includes covers and base; resists cement buildup.	Efficient batch testing for concrete or grout quality control.

CYLINDRICAL MOULD

BE 80

A cylindrical mould (or mold, depending on regional spelling) is a tool used to shape materials into a cylindrical form. It's commonly employed in construction, testing, manufacturing, and baking. The design typically features a hollow cylinder, often split vertically for easy removal of the solidified material, with precise internal dimensions to ensure uniformity. Many comply with ISI (Indian Standards Institute) or ASTM for testing equipment

PRIMARY USES AND TYPES

Cylindrical moulds serve various purposes across industries.

MODEL	Type	Description	Common Applications	Materials	Sizes
BE 80-01	Concrete Testing Moulds	eusable or disposable forms for casting concrete specimens to test compressive strength, curing, and durability. Often made with precision-ground interiors to prevent leakage.	Civil engineering labs, quality control in construction	Steel (reusable, heavy-duty), plastic (disposable).	150x300 mm, 50×100 mm, 75×150 mm, 100×200 mm
BE 80-02	Foundry and Manufacturing Moulds	Durable casts for metals or composites, often custom-sized for industrial production	Metal casting, core cutters, slump tests in foundries	Cast iron or steel.	50x100 mm, 150x300 mm.

BEAM MOULD

BE 81

A beam mould (often spelled "beam mold" in American English) is a specialized tool used in concrete testing to create standardized beam-shaped specimens. These specimens are essential for evaluating the flexural strength (bending resistance) of concrete, which helps assess its durability and performance in structural applications like beams, slabs, and bridges.

KEY USES

- **Flexural Strength Testing**: Beams are tested under center-point or third-point loading to measure how much load the concrete can withstand before cracking.
- **Compliance with Standards**: Moulds are designed to meet ASTM (C78, C31) and AASHTO specifications for accurate, repeatable results.
- **Applications**: Common in construction labs, quality control for ready-mix concrete, and research on cement mixtures.

TYPES OF BEAM MOULDS

Beam moulds come in various materials, sizes, and designs.

Model	Type	Material	Common Sizes	Features
BE 81-01	Steel Moulds	Heavy-gauge steel	150×150×500 MM, 150×150×550 MM, 150×150×700 MM	Hinged or hinge-free; disassembles for easy specimen removal; machined for precision
BE 81-02	Plastic Moulds	Engineered ABS plastic	100×100×400 MM, 150×150×500 MM	Thumb screws for tool-free assembly; lightweight (under 10 lbs); interlocking joints
BE 81-03	Lightweight Steel	Stamped steel	150×150×550 MM	Collapsible, hinge-free design

POCKET CONCRETE PENETROMETER

BE 82

A Pocket Concrete Penetrometer is a compact, lightweight, spring-loaded testing tool designed for quick field or laboratory evaluation of the initial set (hardening) of concrete mortar or grout. It measures the resistance to penetration, providing an estimate of compressive strength in psi (pounds per square inch). It's particularly useful for on-site assessments during construction to determine when mortar has reached a semi-hardened state where it can no longer be easily worked.

FOLLOWING STANDARD

ASTM C-403, ASTM C780, AASHTO T 197

THE DEVICE OPERATES ON A SPRING-REACTION PRINCIPLE

1. **Preparation**: A sample of fresh mortar is sieved from the concrete mix and placed in a suitable container.
2. **Insertion**: The plunger (with a 1/20 square inch tip area) is steadily pushed into the mortar sample to a depth of 1 inch, as marked on the shaft.
3. **Reading**: The scale on the device directly indicates the penetration resistance in psi, typically ranging from 0 to 700 psi. A friction ring or dial captures the maximum reading.
4. **Interpretation**: Higher resistance values indicate greater hardness. This helps identify the "initial set" point, beyond which the mix is no longer workable.