



CONSTRUCTION LABORATORY EQUIPMENT EXPERT

# MegaTech Associates



**CONCRETE, CEMENT  
TESTING EQUIPMENTS**



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## Cement / Concrete Testing Equipment Products Ranges

We supply a vast range of bitumen-asphalt testing equipment that is widely used while constructing various infrastructures. These are precision made to yield accurate output. The range includes Benkelman beam, centrifuge extractors, core cutting & core drilling machines, standard penetrometer, stripping value and many more. Along with the standard orders, we can custom make equipment with the best use of our resources. Our cost competency & timeliness in order processing has made us a preferred supplier of industrial testing equipment.



# Air Entertainment Meter



As entertainment of air in limited percentage improves durability of concrete and very low percentages deteriorate it, measurement of air entrapped in freshly mixed concrete becomes important. The use of chemical additives to increase workability of concrete requires an air content check to be made. Air entertainment meters are used to determine air entertained in freshly mixed concrete by pressure method.

## Specification :

The apparatus consists of a pressure tight flanged cylindrical measuring bowl of 0.005 cubic meter capacity for maximum size of aggregate 38mm. The bowl is fitted with a removable flanged conical cover assembly with the help of a seal. The conical cover has an air valve and a pet cock for bleeding off the water. A transparent cylindrical stand pipe which is graduated in air content is fixed to the conical cover assembly. Pressure is applied to the specimen with the help of a pressure bulb and the pressure is recorded on the pressure gauge which is mounted on the stand pipe. The whole assembly is mounted on a flat base. The instrument is supplied complete with one each following accessories. Calibration cylinder with spring clamp, Trowel, Tamping rod, Straight edge, Rubber mallet and measure.

Also available with a pressure tight flanged cylindrical measuring bowl of 0.007 cubic meter capacity for maximum size of aggregate 38mm.

Also available with a pressure tight flanged cylindrical measuring bowl of 0.01 cubic meter capacity for maximum size of aggregate 75mm.

Also available with a pressure tight flanged cylindrical measuring bowl of 0.1 cubic meter capacity for maximum size of aggregate 150mm. Spaces: Rubber pressure bulb with tube & gasket for vessel



# Blaine's Air Permeability Apparatus

The apparatus is used for determining the fineness of cement in terms of specific surface expressed as total surface area in square centimeters per gram of cement. This is a variable flow type air permeameter.



## Specification :

The apparatus consists one each of permeability cell 12.5mm I.D., Manometer 'U' type mounted on stand with a built in stop cock, Perforated disc, Plunger Rubber stopper, Rubber tube 30cm long. Packet of 12 filter paper discs and a bottle of 100cc dibutyiphthalate liquid.

Spares and Accessories : Punch to cut filter paper discs. Non-perforated disc. Suction bulb.



# Camber Board



## Specification :

Used to check and maintain the slope of the road as per design. Material Aluminum section of size 24 mm x 45 mm of thick gauge.

Size 3 meters long



# Capping Set



**For correct compressive strength of concrete cylinders, the end surfaces of the specimen must be truly flat. If they are not using capping compound and a capper, the faces are plastered flat. Capping set can be used for cylindrical specimen like concrete cylinders of cores. It can be used in laboratory or in field.**



# Compaction Factor Apparatus

The apparatus is used for determining the workability of fresh concrete, provided the maximum size of the aggregate does not exceed 38mm. The test is particularly useful for concrete mixes of very low workability where true slump values are not reliable.



## Salient Features

### Specification :

It consists of two rigid conical hoppers and a cylinder mounted on a rigid metal frame. The lower openings of the hoppers are fitted with hinged trap-doors having quick release catches. A circular metal plate is provided to cover the top of the cylinder. Supplied complete with one plasterer's trowel and one tamping rod, 16mm dia x 600mm long, one end rounded.



# Compression Testing Machine



**Available in 50 Tons, 100 Tons, 150 Tons, 200 Tons, 300 Tons, 500 Tons. Available: Hand Operated & Electric cum Hand Operated in Welded & Nut Type Model**

**Principal of operation:** operation of the machines is by hydraulic transmission of load from the test specimen to separately housed load indicator. The hydraulic system is ideal since it replaces transmission of load through levers and knife edges, which are prone to wear and damage due to shock on rupture of test pieces. Load is applied by a hydro-statically lubricated ram. Main cylinder pressure is transmitted to the cylinder of the pendulum dynamo-meter system housed in the control panel. The cylinder of the dynamo-meter is also of self-lubricating design. The piston of the dynamo-meter is constantly rotated to eliminate friction. The load transmitted to the cylinder of the dynamo-meter is transferred through a lever system to a pendulum. Displacement of the pendulum actuates the rack and pinion mechanism which operates the load indicator pointer and the autographic recorder. application : fie compression testing machine is designed for test materials under compression bending, transverse and shear loads. Hardness test on metals can also be conducted.





# Concrete Permeability Apparatus - Single Cell



One of the durability tests of concrete is to determine permeability of water through specimen. Permeability apparatus is used for determining the permeability of cement mortar and concrete specimens of 15cm cubes cast in the laboratory.

## Salient Features

- **Specification :**The concrete permeability apparatus comprises of a brass/ gunmetal cell of squares cross section mounted on a stand and a pressure chamber is connected to the cell through copper tubing and T-connector mounted on the stand with sleeve packed valve and rubber hose pipe with end connections. The cell assembly consists of one base plate, one metal funnel and one top plate, and a pressure tube is supplied to develop pressure in the chamber. The apparatus is supplied with a measuring cylinder 500cc to measure percolated quantity of water. Pressure can also be applied by a pressure air line or by a compressor.
- Available for sample of size 150mm dia X 150mm high.
- Available for sample of size 100mm dia X 100mm high.



# Concrete Permeability Apparatus -Three Cell Model



Same as above but supplied with three individual cells with stand. Three pressure gauges for indicating pressure in each cell are supplied apart from the main pressure gauge which indicates pressure in chamber.

## • Salient Features

- Available for three samples of size 150mm dia X 150mm high.
- Available for three samples of size 100mm dia X 100mm high.
- **Accessories:** Compressor with pressure gauge 0-20 kg/cm sq. with automatic pressure valve and pressure rubber hose. Suitable for 440 volts A.C. three phase. Specimen casting mould C.I. for 100mm dia X 100 mm high cylinders, Specimen casting mould C.I. for 150mm dia X 10mm high cylinders, Specimen casting mould C.I. for 150mm cubes, Blow stove 1/2 litre capacity, Resin, Bees Wax, Wire brush, Chisel, Spare glass cylinder 500cc capacity



# Concrete Test Hammer

The concrete test hammer is an instrument which is easy to use, for quick and approximate measurement of the resistance to pressure of manufactured concrete products. The principles on which it works are based on the rebound impact of a hammer on a piston which rests against the surface of the concrete products. The greater the resistance of the concrete, greater is the rebounded impact. By reading this rebound impact on a scale and relating it to curves on graphs supplied with the instrument, the resistance to compression in mpa or psi can be found, with +/-20% of actual.



## Specification :

Consists of a barrel in which is housed a hammer mass attached to an impact spring which slides on a guide bar. A plunger is attached to the guide bar which is pressed against the surface to be tested. As the piston is pressed against the surface to be tested, on reaching the compressive strength, the hammer mass is released and rebounds to a certain extent (according to the strength of the surface) which is indicated by a rider on a calibrated scale. A lock button fixed on the body of the hammer locks the rider in place and the rider can be recared to zero position by using the same button. The equivalent compressive strength can be computed from the chart supplied. Each hammer is calibrated against at standard test hammer, and is suitable for specimen of compressive strengths 100 - 700 kg/cm. The instrument, complete with a grinding stone for polishing the test surface, is supplied in carrying case.



## Concrete Test Hammer- Digital



**It is similar to the above with digital display of result.**



# Curing Tank



24 Hour cycle from time of mixing. - Controlled 35°C or 100°C ±2°C Curing Temperature for concrete. - Controlled 27°C ± 2°C Curing Temperature for grey cement. The tank has been designed to accommodate 150mm/70.6mm cube moulds up to 36/72 cube mould and fully insulated, complete with a hinged lid, heater, thermostat and re-circulated pump. Provision of two removable racks allowing free circulation of water around each mould. The pump, drain valves and electrical equipment are housed in a compartment located at one end of the tank. The Tank is heated by an immersion heater under normal conditions and refrigeration system for grey cement the temperature is controlled at 35°C or 100°C ± 2°C / 27°C +2°C , expect for the 15 minutes after immersion of the freshly made specimens.

## Salient Features

Curing Tank for 6/12 moulds of 150mm / 70.6mm size

Curing Tank for 12/24 moulds of 150mm / 70.6mm size



# Flexure Testing Machine- Hand Operated



Flexural tests of concrete beam have their own importance in concrete road constructions as well as buildings constructions. Normally concrete beams of sizes 10cm x 10cm x 50cm or 15cm x 15cm x 70cm are tested for flexural strength.

## Specifications :

The machine consists of a hand operated load frame. The lower platen has two rollers, the distance between which is adjustable. For 150mm x 150mm x 700mm beam, the Centre to Centre distance between the rollers is 600mm, while it is 400mm for beams of size 100mm x 100mm x 500mm. The upper platen has also a pair of rollers whose distance is adjustable. It is 200mm Centre to Centre, for 150mm X 150mm X 700mm size beam and 133mm for 100mm 100mm X 100mm X 500mm size beam. A pressure gauge to indicate load is fixed on the load frame. A small pumping unit is attached to the load frame. Total capacity of the machine is 100 KN and a 150mm dia pressure gauge - 100 KN x 1 KN is fitted on the machine. Since this is a hand operated light weight machine, it is useful for field laboratory also.



## Flexure Testing Machine (Electrically Operated)



- Same as above but instead of a hand pumping unit, a separate electrically cum hand operated pumping unit housed in a cabinet is supplied. The pressure gauge 0-100 kn x 1 kn, on/off switch and a slow/fast level to control rate of loading are fitted on the front panel of the pumping unit. A facility for hand operation is provided. A micro switch and relay fitted inside the pressure gauge protects the unit from over loading.



## Flow Table Hand Operated



- This is used for determining the workability of building limes.
- Salient Features
- Specifications : The flow table consists of a 30cm. dia ground and polished steel plate with three inscribed annular circles. 7, 11 and 19cm. dia. The table top is arranged for a free fall of 12.5mm by a cam action. Supplied complete with one brass conical mould, 65mm I.D. at base and 40mm I.D. at top, height of the mould 90mm.





# Gauging Trowel



## Specifications :

weight approximately 210gm. Best quality with hardwood handle blade length approx. 200mm.



# Gillmore Needle Apparatus



**This instrument is used for determining the time setting of hydraulic cement.**

## **Specification :**

**A base with a vertical shaft and two horizontal arms. The lower arm is adjustable for height. 1 No. Initial Needle 1/12 inch dia 1/4 lb.wt. 1No. Final Needle 1/12 inch dia. 1lb.wt. 1No. Glass base plate. Complete as above.**



## Hydraulic Jack (Hand Operated) Remote Type



**For applying loads for various tests in the field or laboratory. Hydraulic jack hand operated with separate pumping units. These jacks are portable and available in various capacities. The pumping unit is connected to the hydraulic jack by means of a flexible connecting pipe 2 meter long. The jack is fitted with lifting handles for easy transportation. The approximate lift of the ram is 90 to 120mm. The pumping unit is a single plunger type with detachable handle. The unit is fixed on a channeled base which is fitted with lifting handles. A pressure release valve is provided on the pumping unit. The load is indicated on a 15cm dial hydraulic pressure gauge of appropriate capacity which can be detached from the pump when not in use. The least count of the calibrated dial will be according to the capacity of the gauge (normally 100 divisions for full capacity)**



# Jolting Apparatus



For making standard rectangular specimens of 40 x 40 x 160mm. Of port land and pozzolana cement mortar for determining the transverse strength.

## • Specification :

The jolting apparatus consists of a rectangular table rigidly connected by two support arms to a spindle at a horizontal distance of 800mm from the Centre of the table. There is a projecting lug with a plane face on the lower face of the table beneath which is a stop with a rounded upper surface. The table can be raised and allowed to fall freely on the stop by a cam which is connected to a motor and gear box through a V-belt and pulleys. The cam rotates at a rate of 60 rev./min. A stroke counter fitted with micro-switch is provided which stops the machine after 60 jolts. Locating pins are provided for mounting the mould compartments on the table. The mould surmounted by the hopper can be clamped rigidly to the table. Supplied complete with mould and hopper. Suitable for operation on 230 Volts, single phase. A.C.supply.

## Spares and Accessories :

- (1) Steel mould with base plate having three compartments each having 40mm x 40mm x 160mm. Internal dimensions.
- (2) Apparatus for demoulding the specimen.



# Kelley Ball Penetration Apparatus



The apparatus is used to determine the workability of Portland cement concrete. The Kelly ball test is considered to be simple and much faster than the slump test. Twice the Kelly ball reading approximately equals the slump.

## Specification :

It consists of a cylinder with a ball-shaped bottom and handle, together weighing 15 kg. A strip frame, guides the handle and serves as a reference for measuring the depth of penetration. The handle is graduated in MM. Penetration can be recorded to the nearest 0.5mm.



## Laboratory Cement Autoclave



**With stainless steel chamber (21 kg/cm.sq. Pressure) The autoclave is suitable for conducting accelerated soundness tests on cements or the autoclave expansion test requiring constant steam pressure with the correspondent constant pressure. It consists of a stainless steel cylinder with a welded heat insulated voer, mounted on a sturdy supporting frame, enclosed in a heat insulated metal housing, attractively finished. The attached control unit encloses a sensitive pressure regulator and pressure gauge, power switches and pilot lights for controlling the electric heating units. Inside chamber dimensions - 10.5 cm diameter x 40.5 cm height suitable for operation on 230 v, 50 Hz, Single Phase, A.C.Supply. Supplied complete with test bar holder, special rack to hold specimens above water level in the autoclave and in a vertical position to expose them in the same manner.**



## Laboratory Concrete Mixer (Motorized)



**Concrete mixer laboratory type, electrically operated. Designed to remove the burden- some work of hand mixing. Uniform thoroughly mixed batches can be produced. The counter balanced drum is easy to tilt 1. 1/2 to 2cu.ft.mix. The total drum volume is however 3cu.ft. Mounted on a sturdy rubber tyred stand, and the drum is mounted for end discharge and equipped with end towing pole. Equipped with 1/2H.p. electric motor. Suitable for operation on 220/230 volts A.C. single phase.**



## Laboratory Concrete Mixer (Hand Operated)



**This is a hand operated concrete mixer and is suitable to mix 1 cut to 1. 1/2 CFT material. It is mounted on two rubber tyred/stand.**





# Lateral Extensometer



This is for determining the lateral extension of 15cms dia x 30cm high cement concrete cylinders while testing them under compression.  
**Salient Features**

## **Specification :**

The unit consists of two movable frames pivoted at one end. The extensometer is fixed to the specimen with the help of tightening screws. The lateral extension is indicated on a dial gauge of 0.002mm x 12mm travel. The extension is magnified 2.5 times and the dial gauge readings are to be divided by 2.5 to get the exact readings.

A spacer strip is provided to initially set the dial gauge, and can be removed after initial setting.  
Supplied in a wooden carrying case.



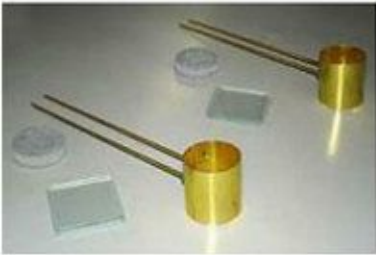
# LE Chatelier Flask



Used for finding specific gravity of hydraulic cement. Made from borosil glass. The flask is 243mm in total height, having a bulb of 90 mm dia of 250ml approximate capacity. The long neck of the flask has at top a funnel of 50mm dia in which fits a ground glass stopper. The neck has over-all 11mm i. D. Upper portion is graduated from 18 ml to 24ml with 0. 1ml graduation. Just at the bottom of the neck 1ml capacity is marked in between there is 17ml capacity bulb.



## LE Chatelier Mould



**It is used for the determination of soundness by expansion method of ordinary and rapid hardening Portland cement, low heat Portland cement and class A lines.**

### **Specification :**

**It consists of a small split cylinder forming a mould. On either side of the split cylinder, two parallel indicating arms with pointed ends are attached. Supplied complete with two glass plates and a lead weight.**



# Length Comparator



It is used to measure the drying shrinkage of concrete autoclave expansion of port land cement and potential expansive reactivity of cement aggregate combinations in mortar bars during storage, on self drying.

## Specification :

The instrument consists of a channeled base over which two vertical pillars are fixed. An adjustable cross plate is at the top. A dial gauge, reading to 0.002mm x 12mm. can be fixed to the top cross plate. The plunger end of the dial gauge can be located upon a 6.5mm. dia ball or other reference point cemented in the specimen. On the base there is a similar recessed seating in which can be placed a second ball or reference point in the specimen. Complete with a stainless steel standardization bar with insulated grip and with 6.5mm dia. balls mounted in the ends.

The unit can be supplied with a 0.0001 inch x 1/2 inch dial gauge at extra cost



# Longitudinal Compressor Meter



**It is designed for finding out the deformation and strains on 15cms. Diameter and 30 cm. High cement concrete cylinders when subjected to compressive loads.**

- **Specification :** Consists of a frame with a bottom ring and a top ring with tightening screws to firmly clamp the compress meter over the cylinder. A dial gauge 0.002mm x 12mm is mounted on the upper ring and the tip of the dial gauge rests on an anvil. The zero on the dial gauge can be set by adjusting the anvil screw. Supplied in a wooden carrying case.



# Mortar Mixer



**It is used for mixing cement pastes, mortars and pozzolanas.**

## **Specification :**

**The apparatus consists of an epicyclic type stainless steel paddle imparting both planetary and revolving motion, by means of gears. It has two speeds of  $140 + 5$  r.p.m. and  $285 + 10$  r.p.m. with planetary motions of approximately  $62$  r.p.m.  $+ 5$  r.p.m. and  $125$  r.p.m. $\pm 10$  r.p.m. respectively. The stand of the mixer has arrangement to raise or lower the bowl. Complete with stainless steel bowl of about six litres capacity. Suitable for operation on 230 volts, 50 cycles, single phase, A.C.supply.**



# Mortar Penetrometer



**It is used for finding out the rate of hardening of mortars sieved from concrete mixtures, by means of penetration needles of different cross-sectional areas.**

## **Specification :**

**The instrument consists of a barrel housing a calibrated spring and a stem graduated from 0-70 kg x 1 kg. Six interchangeable penetration needles of areas 645, 323, 65, 32 and 16mm sq. are provided. The penetration resistance is measured by the force exerted to penetrate the mortar by 25mm and is indicated by a sliding ring on the stem, which is graduated. Needle shanks are marked at every 12.5mm. Complete in a wooden carrying case.**



# Cone Penetrometer



- For determining the consistency of masonry mortar.

## Specification :

Consists of a movable bearing rod to which a cone 145mm. long and 75mm. dia at a base is fixed. The bearing rod passes freely through a bracket which is provided with release mechanism. A dial graduated in mm with rack and pinion is provided for measuring the penetration. Complete with a conical container 150mm ID X 180mm deep and a platform.





# Pocket Concrete Penetrometer



For fast evaluation of the initial setting of concrete. It can be used on light weight concrete, special roof deck mixes and concrete additives.

## Specification :

Consists of a needle having face area  $3/10$  sq. cm. and graduated at a distance of 25cm. The needles point is an integral part of barrel which houses a calibrated spring. The spring is confined in a sleeve. The resistance offered by the concrete mortar is shown on the direct reading scale with a marker ring which holds its position when released. 2 Scale range is 0-50kg/cm<sup>2</sup> when the penetration resistance reaches a 2 value of 35kg/cm<sup>2</sup> the concrete is assumed initially set. Supplied complete in carrying case.



# Cube Moulds



## Specifications :

These are available in different sizes and are made according to Indian and British Standards. For the metric size cube moulds, the faces are machined flat to  $\pm 0.02\text{mm}$  accuracy and finished to within  $0.02\text{mm}$ . For the inch size moulds, the faces are machined flat to  $\pm 0.01$  inches and finished to within  $0.01$  in. All moulds are supplied complete with base plate.

Mould Cast iron, for 50mm, Cube

Mould Gunmetal, for 50mm, Cube

Mould Steel for 7.06cms cube with loose base plate.

Mould Cast iron for 7.06cms cube with loose base plate.

Mould Cast iron, for 10cm cube 153 with "ISI" mark.

Mould Cast iron, for 20cm cube

Mould Cast iron, for 30cm cube



# Cylindrical Moulds



For testing concrete cylinders for compressive strength tests.

## Specification :

The moulds is split vertically into two parts. The mean internal diameter is within 0.2mm and height is within 1mm. The ends are machined to 0.05. The base plate and top plate are machined flat to 0.03mm.

Mould, Cylinder, Cast iron, 15cm dia x 30cm height.

Mould, Cylinder, Cast iron, 10cm dia x 20cm height.

Mould, Cylinder, Cast iron, 30cm dia x 60cm height.



# Beam Moulds



For casting, concrete specimens for flexure tests.

## Specification :

Made of cast iron. The moulds are made of 4 plates assembled together. Each mould is supplied complete with base plate. Faces are machined flat to  $\pm 0.2\text{mm}$  and finished in size to  $0.2\text{mm}$

10cm X 10cm x 50cm (IS.516-1959)

15cm X 15cm X 70cm (IS.516-1959)

15cm X 15cm X 75cm

4cm X 4cm X 16cm



# Vibratory Hammer For Cube Moulds



- **Vibratory Hammer is a specialized equipment used consistently at construction sites. The Vibratory Hammer is electrically operated. Uses - - Used for changing the soil formation with the use of its vibration. - Used for driving hammers into heavy or hard piles - Used for the compaction of concrete cubes of 150mm & 100mm**



# Needle Vibrator



An increasing number of contractual obligations call for various forms of vibro- compacted concrete for achieving a better and more consistent mixture. The needle vibrator is recommended for vibro- compaction of test cylinders and beams at site and in the laboratory. This instrument can also be used at small construction sites.

A motor fitted on a swivel base drives a flexible shaft, which in turn, vibrates the needle at about 10,000 vibrations per minute. (approx. )

## Specification :

Needle Vibrator with a 25mm. diameter x 350mm long needle, a one meter long flexible shaft and a motor drive with a swivel head and on/off switch. Wired for 230 V. Single phase, 50 Hz.



# Pozzolana Cement Mortar Permeability Apparatus



**Pozzolana Cement Mortar Permeability Apparatus (Three cell model)**  
For water proofing of concrete admixture and special water proof cements are used. Water proofing of these compounds, is established by measuring permeability of standard mortar. Specimen with or without such water proofing compounds. Permeability apparatus is used to determine permeability to water of cement mortar specimens with or without water proofing compound.

## **Specification :**

The mortar permeability apparatus comprises three brass/ gun metal cells mounted on a stand and a pressure chamber with a pressure regulator. The cell can accommodate 100mm dia x 50mm high specimen. Each cell assembly consists of one base plate. The base plate has one outlet for water and is recessed to hold the specimen in place with a ring washer in between. The top plate has an inlet for water and a suitable connector for the application of pressurized water in the cell. The mound and collar are clamped between the base plate and the top plate with the help of four tension rods and nuts. The cells are mounted on a stand.

The pressure chamber is fitted with a pressure regulator which helps in regulating the pressure from 0-7kg/sq. cm. The regulator has two pressure gauges, one for indicating the pressure in the chamber (0-10.5kg/sq.cm.) The pressure chamber is connected to the cells with pressure hoses and with couplings. This pressure chamber is fitted with Schrader valve. Pressure is applied to the pressure chamber with help of a foot pump and rubber hose which are supplied with the instrument.

## **Also available:**

**Cement Mortar Permeability Apparatus (Single Cell Model)**

**Cement Mortar Permeability Apparatus (Three Cell Model)**

**Cement Mortar Permeability Apparatus (Six Cell Model)**



# Pulveriser



The laboratory pulveriser is a disc type grinder, designed to grind virtually any material to produce a fine mesh sample in one operation. The instrument is useful for assaying, mining and for metallurgical, quarrying, aggregate processing, chemical, geological and industrial laboratories. It is a self contained grinder, with a rotary disc, having a planetary movement in a vertical plane. This feature gives added life to the moving parts and produces a sample of uniform fineness.

Grinding is done between two discs-one stationary and the other revolving eccentrically at high speed. The discs are made from heat treated mehanite metal. With the help of a convenient hand wheel, the size of the final product can be adjusted. This can be done, even while the machine is in operation. A self locking device holds the hinged grindin chamber in place and affords easy and quick access to it, for removal of ground samples and for cleaning. The Pulveriser has a capacity of reducing about half of a kg. of a quartz type sample to 100 mesh in about a minute. The Pulveriser is supplied complete with a 3 H.P. motor, a starter, a "V" belt pulley drive and mounting. Wired for 400 v, 3 Ph, 50 Hz.

Disc Diameter	175mm.
Maximum Feed size	6mm.
Yield	250 gms./min.
Size of Finished Product	100 mesh.





## Sand Absorption Cone & Tamper



Used for determining the slump of fine aggregate in the determination of bulk and apparent specific gravity and absorption of fine aggregate.

### Specification :

The equipment comprises of -A conical metal mould 1.5 inch dia at the top, 3.5 inch dia at the base and 2.7/8 inch in height. A metal tamping rod weighing 12 ounces and having a flat circular tamping face 1 inch in diameter.



# Shrinkage Bar Mould



**The mould is used for casting specimens of cement aggregate combinations for measuring the potential expansive alkali reactivity.**

## **Specification :**

**The mould, which has 25mm x 25mm x 25mm effective gauge length is made of mild steel and has accurately machined faces. The parts of the moulds are tight fitting and firmly held together when assembled. Supplied complete with base plate and four stainless steel smooth reference pins.**



## Shrinkage Bar Mould (Two Gang)



**Do as above but with two compartments assembled on a angle base plate.**



## Shrinkage Bar Mould (Three Gang)



**Do as above but with three compartments.**



## Shrinkage Bar Mould (Four Gang)



**Do as above but with four compartments.**

**Spares :**

**Stainless steel smooth or knurled and threaded reference pins as required. Supplied in packs of one dozen.**



# Slump Test Apparatus



**It is used for the determination of the consistency of freshly mixed concrete, where the maximum size of the aggregate does not exceed 38mm.**

## **Specification :**

**The Apparatus consists of one slump cone with handles and foot pieces. The slump cone has internal dimensions 20cm. dia at base 10cm. top dia. and 30cm height. Foot pieces can be fixed to the clamps on the base plate. The base plate has lifting handle for easy transportation. One graduated steel rod 16mm dia x 600mm long, rounded at one end and graduated in mms, is also supplied.**



# Standard Spatula



- This is for use while casting a cement briquette.
- Salient Features
- Specification : The standard spatula consists of a steel blade, of a special shape. A wooden handle is fixed to the stem of blade. The weight does not exceed 340gms. This is for use while casting a cement briquette.
- Salient Features
- Specification : The standard spatula consists of a steel blade, of a special shape. A wooden handle is fixed to the stem of blade. The weight does not exceed 340gms



## Straight Edge



**A straight edge approximately 3 meters in length may be used to determine lateral surface regularity of a road surface. This lightweight apparatus is made up of mild steel and is equally supported at both ends producing a set height between the road surface & the beam. Any vertical irregularity is measured using incremented wedges.**





# Tamping Rod



**A straight edge approximately 3 meters in length may be used to determine lateral surface regularity of a road surface. This lightweight apparatus is made up of mild steel and is equally supported at both ends producing a set height between the road surface & the beam. Any vertical irregularity is measured using incremented wedges.**



# Tamping Bar



**Made of steel, this is 40cm long, having a ramming face of 25mm sp. Other end has a grip, Weight approximate 2 kgs.**



# Tile Abrasion Testing Machine



**This is used for determination of resistance to wear for cement concrete flooring tiles.**

## **Specification :**

**Tiles specimen of size 7.06 cm x 7.06 cm is pressed face-wise under specific load on a grinding path and abrasive powder is evenly spread on the rotating grinding path and after specific number of revolution of the grinding disc the second parallel side of the tile is subjected to wear for similar number of rotations. The wear of the tile is measured on a thickness gauge specifically made for the purpose.**

**The machine consists of a disc rotating at a speed of 30 rpm in a circular tray. A bracket is provided to hold the specimen. A counter balance lever loads the specimen. Load applied is 30 kgf. A funnel is fitted to evenly spread abrasive powder on the grinding path. A pre-set counter automatically stops the machine after 22 revolutions. This counter is re-adjustable.**

**The machine works on 440 volts A. C. , three phase electrical supply.**



# Tile Flexure Testing Machine



Unit for finding flexural strength of clay roofing tiles and cement concrete flooring tiles.

## Specification :

Flexural load is applied on the tiles using lead shots. The machine consists of a stand on which two 40mm dia bearing rollers or 12mm dia rollers are placed at Centre distance of 150mm, 200mm, 250mm, or 270mm as the case may be. The third upper roller applies centrally flexural load by means of lever arrangement. Lead shot contained in an upper vessel starts flowing into lower container at a rate of 45 to 55 kg. Per minute or 200 kg. Per minute thereby, starting loading the specimen. Arrangement is made such that loading automatically stops when specimen breaks. Supplied without lead shots.

## Accessories :

lead shots supplied in packs of 20 kgs.



# VEE BEE Consistometer



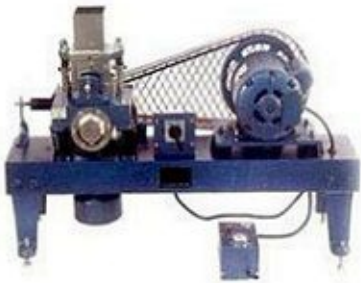
The instrument is used for workability as well as consistency for fresh concrete. A slump cone and a graduated rod supplied with the instrument helps the operator to find out slump values and Vibration Table with container and acrylic disc is used to find out workability of concrete expressed in Vee Bee degrees, which is defined as the time in seconds to complete required vibrating at which the fresh concrete flows out sufficiently to come in contact to the entire face of acrylic disc.

## Specification :

The equipment consists of : A Vibrating Table size 380mm long and 260mm wide, resting upon elastic support at a height of about 305mm above the floor, complete with start/stop switch, cord and plug. A holder is fixed to the base into which a swivel arm is telescoped with funnel and guide sleeve. The swivel arm is also detachable from the Vibrating Table. A graduated rod is fixed on a swivel arm and at its end a plastic disc is screwed. The division of scale on the rod record the slump of the concrete in millimeters, supplied complete with a sheet metal container with lifting handles which can easily be fixed to the Vibrating Table. A slump cone open at both ends with lifting handles and a Tamping rod of size 16mm dia and 600mm long, rounded at one end.



## Vibrating Machine



Also called mould vibrator or mortar cube vibrator Concrete moulds are easily cast by using a tamping bar or a vibrating table. However air trapped in cement mortar paste can not be thus removed while casting cement mortar moulds. Easy method is to impart greater vibration of lesser amplitude to the mould while casting. This is achieved in a vibrating machine. Vibration machine is used for the preparation of mortar cubes for the determination of compression strength of ordinary and rapid hardening Portland cement, low heat Portland cement, Portland blast furnace cement and high alumina cements.

### Specification :

The machine consists of a vibrating frame assembly and an electric motor mounted on a sturdy base. The complete frame assembly consists of a vice to hold a 7.06cm cube mould and two studs threaded at top and a hopper to feed the sample in the mould. This assembly is supported on four springs and has an in built rotating shaft which rotates eccentrically and thus imparts vibrations to the entire frame. A balance weight is an integral bottom part of the frame. The center of gravity of the assembly is brought to the center of the eccentric shaft or within a distance of 25mm below it.

The electric motor drives the shaft of the frame and thus imparts required vibrations to the mould.

The frequency of vibration is 12000+/-400 vibration per minute. Supplied complete with on 7.06cm cube mould with loose base plate, a time switch 0-5mins x 1min and certificate of vibration from a standard laboratory.

Spares : Set of Springs, Belt and Belt guard.



# Vibrating Table



The vibrating table is used for compacting concrete cubes and cylinders.

## Specification :

It is designed to carry a load of 140 kg. The apparatus consists of a motor fitted with a variable pitch pulley housed in a cabinet. The vibrations are imparted by means of off-balance masses rotating on a shaft of a vibrator clamped to the underside of the table top. The table top is 50cm x 50cm. and has stops along its edges to prevent moulds from walking off the table during vibration. A cross arm adjustable on a vertical rod at the center of the table is provided to hold the moulds while operating the table.

The variable pitch pulley arrangement permits the frequency to be varied steplessly between a maximum of 3600 vibrations down to 2600 vibrations per minute. A speed regulation handle is provided for increasing or decreasing the frequency.

A switch is provided for starting the motor, suitable for operation on 440 volts, 3 phase, 50 cycles, A.C.supply.

## Note:

Vibrating Tables of table top size 75cm x 75cm as well as 100cm x 100cm are also available.



# Vicat Needle Apparatus



**This instrument is used for determining the normal consistency and setting times of cement and 'A' class limes.**

## **Specification :**

**The apparatus consists of a metallic frame bearing a freely movable rod with a cap at top, one vicat mould, split type and glass base plate and one set of needles one each initial needle, final needle and consistency plunger.**





# Vicat Needle Apparatus With Dashpot



Same as above but in addition is fitted with a dash pot which facilitates gentle lowering of needles.

## Specification :

Mild steel base plate 5 inches x 5 inches. Fulcrum mould, brass, 70mm I.D base dia x 60mm I.D. top dia, 40mm height.