



**ACME-501 CEMENT SAMPLER**  
**IS: 7535: 1986**

This is a brass tube approximately 53 cm long and 2.8 cm I-D- with a wooden handle Total length approximately 73 cm. The tube has the sharp angular edge which conveniently pierces cement bags. An air hole of approximately 3 mm diameter is drilled on the tube near handle. Total sample collected at one time is 300 cm<sup>3</sup> approximately.

ACME-501

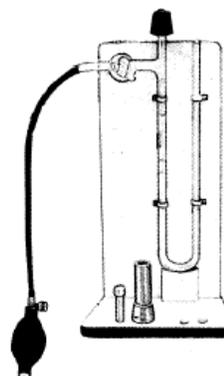
**ACME-502 BLAINE'S AIR PERMEABILITY APPARATUS**  
**IS: 4031:5516, 1727 & 4828, ASTM C204, BS: 4359 Part II.**

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.

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

**Spares and Accessories :**

- 1) Punch to cut filter Paper discs.
- 2) Non-perforated disc.



ACME-502

**ACME-503 AIR PERMEABILITY APPARATUS (RIGDEN TYPE)**  
**IS: 8425, BS: 4352 (Part II), BS: 12, 146, 915, 1 370, 4027, 4246 & 4248**

It comprises one air permeability cell for range 500 to 10000sq.cm/gm. The cell is complete with a perforated disc and a compacting plunger. The instrument is supplied with 'U' Tube manometer having an isolation tap assembly and a suction bulb. This apparatus is mounted in a wooden cabinet'



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Cement  
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## ACME-504 VICAT NEEDLE APPARATUS

IS : 4031, 2645, 2542 (Part I), 1727, 5513 & 712, BS : 12,

146, 915, 1370, 4027, 4246, 4248. AASHO -T129, E131

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

Specifications; 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.



ACME-504

## ACME-505 VICAT NEEDLE APPARATUS WITH DASHPOT

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

Accessories : Mild steel base plate 5 inches x 5 inches. Fulcrum mould, brass, 70 mm Ld base diameter x 60 mm ID top diameter, 40 mm height.

### Note :

- 1) Normally set of needles and mould which meet IS requirements as per IS.5513 are supplied. While ordering please specify the specification code of the instrument required.
- 2) Vicat needle apparatus for determining consistency of Hydraulic cement, gypsum plaster, lime etc. as per ASTM C 187-58: C 191-58: C 472-62. C 110-58. 15.2542 (Part I) can also be supplied.



ACME-505

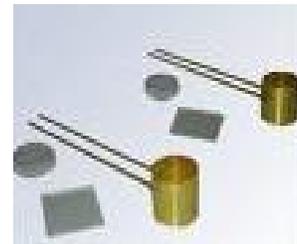
## ACME-506 LE CHATELIER MOULD

IS : 269, 712, 5514, 1727, 2645, 4031, 6932 (Part IX)

BS: 890, 915, 1370, 027, 4226 & 4248

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.

Specifications : 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.



ACME-506



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**ACME-508 RING MOULD**  
**IS : 712 :1956.**

Consists of mould 10 cm diameter x 0.5 cm. deep and a glass base plate.

**ACME-509 LE CHATELIER FLASK**  
**IS: 4031:1968**

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



**ACME-509**



**ACME-510**

**ACME-510 GILLMORE NEEDLE APPARATUS**  
**ASTM C191**

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

Specifications : 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 lb. wt. 1 No. Final Needle 1/12 inch dia. 1 lb. wt. 1 No. Glass base plate. Complete as above.

**ACME-511 KELLEY BALL PENETRATION APPARATUS**  
**ASTM C-360**

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

Specifications :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.



**ACME-511**

## **ACME-513 VEE BEE CONSISTOMETER IS: 1199.**



**ACME-513**

The instrument is used for workability as well as consistency of 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 of the entire face of acrylic disc.

**Specifications:** The equipment consists of : A Vibrating Table size 380 mm long and 260 mm wide resting upon elastic support at a height of about 305 mm above the floor, complete with star /slop Switch, Chord 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 divisions 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 16 mm diameter and 600 mm long rounded at one end.

## **ACME-514 SLUMP TEST APPARATUS IS: 7320**

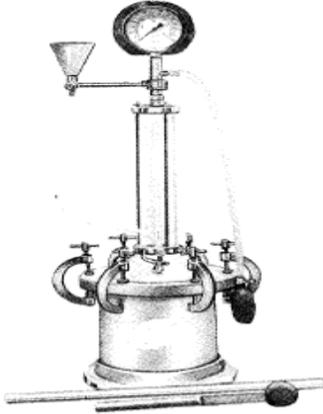
It is used for the determination of the consistency of freshly mixed concrete, where the maximum size of the aggregate does not exceed 38 mm.

**specifications:** The apparatus consists of one slump cone with handles and foot pieces. The Slump cone has internal dimensions 20 cm diameter at base 10 cm top diameter and 30 cm 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 16 mm diameter x 600 mm long, rounded at one end graduated in mms, is also supplied.



**ACME-514**

## **ACME-515 AIR ENTRAINMENT METER** **IS: 1199 – 1959**



**ACME-515**

As Entrainment of air in limited percentage in proves 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 often requires an air content check to be made. Air Entrainment meters are used to determine air entrained in freshly mixed concrete by pressure method.

**Specifications:** The apparatus consists of a pressure tight flanged cylindrical measuring bowl of 0.005 cubic meter capacity for maximum size of aggregate 38 mm. 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.

## **ACME-516 AIR ENTRAINMENT METER**

Same as above but 0.007 cubic meter capacity for maximum size of aggregate 38 mm

## **ACME-517 AIR ENTRAINMENT METER**

Same as above but 0.01 cubic meter capacity for maximum size of aggregate 75 mm.

## **ACME-518 AIR ENTRAINMENT METER**

Same as above but 0.1 cubic meter capacity for maximum size of aggregate 150 mm.

Spares : Rubber pressure bulb with tube & Gasket for vessel.



**ACME-519**

## **ACME-519 COMPACTION FACTOR APPARATUS** **IS: 1199, 5515.**

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

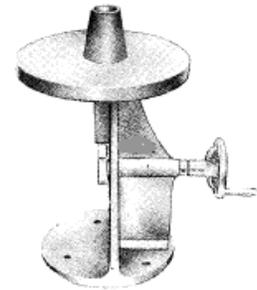
**Specifications:** It consists of two rigid conical hoppers and a cylinder mounted on a rigid metal frame. The lower openings of the hoppers are fitted with hinged trap-doors having quick release catches. A circular metal plate is provided to cover the top of the cylinder.

Supplied complete with one plasterer's trowel and one tamping rod, 16mm diameter x 600 mm long, one end rounded.

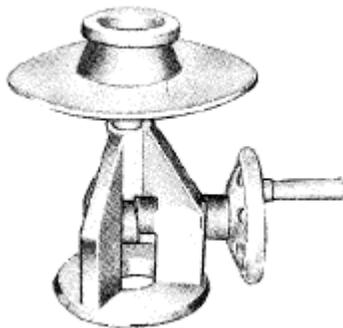
**ACME-520 FLOW TABLE**  
**IS: 6932 (Part VIII)**

This is used for determining the workability of building limes .

**Specifications:** The flow table consists of a 30 cm diameter ground and polished steel plate with three inscribed annular circles. 7, 11 and 19 cm. diameter. The table top is arranged for a free fall of 12.5 mm by a cam action. Supplied complete with one brass conical mould, 65 mm ID at base and 40 mm ID at top, height of the mould 90 mm.



ACME-520



ACME-521

**ACME-521 FLOW TABLE**  
**IS: 1199-1959, ASTM C - 124. AASHTO T'120**

It is used for determining the flow of cement concrete.

**Specifications :** Consists of a steel table top 76.2 cm (30 inch dia.), finely machined. The integral cast ribs are designed for support and strength" The stand is fabricated out of cast iron and is of sturdy construction. Holes for mounting in foundations are drilled in the base plate. The ground and hardened steel cam is designed to lift and drop the table by 12.5 mm. The hand wheel makes it simple to operate the table. Supplied with one conical mould with handles, 12 cm height having 17 cm. top internal diameter and 25 cm ID at the base. Complete with a tamping rod 16 mm.dia x 600 mm long one end rounded.

**ACME-522 FLOW TABLE (MOTORISED)**  
**IS: 1199, ASTM C-124, AASHTO T-120**

**Specifications ;** Same as above but electrically operated, to raise and drop the table top, approx. 15 times in 15 seconds. Suitable for operation on 230 Volts, 50 cycles, AC supply.



ACME-522



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ACME-523

## ACME-523 MORTAR MIXER

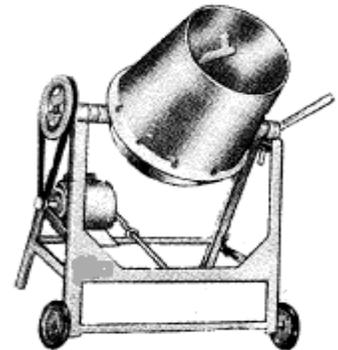
IS: 4031, 1727

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

**Specifications :** The apparatus consists of an epicyclical type stainless steel paddle imparting both planetary and revolving motion, by means of gears. it has two speeds of 140 + 5 rpm and 285 + 10 rpm. with planetary motions of approximately 62 rpm + 5 rpm and 125 rpm +/- 10 rpm respectively. The stand of the mixer has arrangement to raise or lower the bowl. Complete with stainless steel bowl of about six liters capacity. Suitable for operation on 230 volts, 50 cycles, single phase, AC supply.

## ACME-526 LABORATORY CONCRETE MIXER (MOTORISED)

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 1.112 to 2 cu. ft. mix. The total drum volume is however 3 cu. 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.



ACME-526



ACME-527

## ACME-527 LABORATORY CEMENT AUTOCLAVE WITH STAINLESS STEEL CHAMBER 21 Kg/cm. sq. pressure as per IS: 403 -1968, IS: 1624-1960

The Autoclave is suitable for conducting accelerated soundness tests on cements or the autoclave expansion test requiring constant steam pressure with the correspondent

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 finis hed. 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 diameterx40.5 cm height suitable for operation on 230 V, 50 Hz, Single Phase, AC 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.

**Note:** Ordinary Laboratory Cement Autoclave with Mild Steel Chambers are also available.



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## **ACME-529 SHRINKAGE BAR MOULD (SINGLE GANG)** **IS: 4031, 10086, ASTM C 227**

The mould is used for casting specimens of cement aggregate combinations for measuring the potential expansive alkali reactivity. Specifications: The mould, which has 25 mm x 25 mm x 250 mm. 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.



**ACME-529**



**ACME-530**

## **ACME-530 SHRINKAGE BAR MOULD (TWO GANG)**

As above but with two compartments assembled on a angle base

## **ACME-531 SHRINKAGE BAR MOULD (THREE GANG)**

As above but three compartments



**ACME-531**



**ACME-533**

## **ACME-533 STANDARD SPATULA** **IS: 4031, 269, BS: 12**

This is for use while casting a cement briquette.

Specifications: 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 340 gm.

## **ACME-GT534 GAUGING TROWEL** **BS: 12. IS:4031**

Specifications : Weight approximately 210 gm. Best quality with hardwood handle Blade length approx.200 mm.

## **ACME-535 TROWEL** **ASTM : C 190, IS :4031**

Specifications : 100 to 150 mm long steel blade with straight edges.



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## ACME-536 DEMOUNTABLE MECHANICAL STRAIN GAUGE

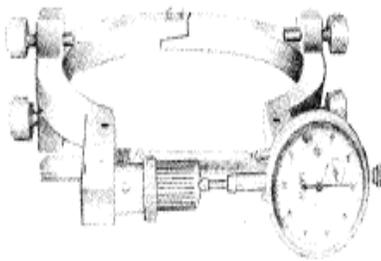
It is used for finding out the linear deformation caused on two reference points fixed on a loading member.

**Specifications:** This portable gauge is designed for a gauge length of 20 cm. of the reference pins. The deformation is indicated by a 0.002 x 10 mm dial gauge attached to the instrument. Complete with two standard bars for 20 cm gauge length supplied in a wooden case.

**Accessories:** Reference pins in packet of 100 Nos.



ACME-536



ACME-537

## ACME-537 LATERAL EXTENSOMETER

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

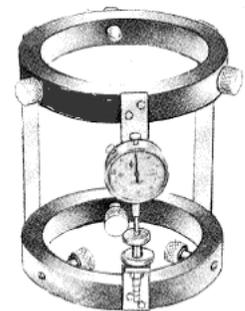
**Specifications:** The unit consists of two movable frames pivoted at one end. The extensometer is fixed to the specimen with the help of tightening screws. The lateral extension is indicated on a dial gauge of .002 mm x 12 mm travel. The extension is magnified 2.5 times and the dial gauge readings 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 remained after initial setting. Supplied in a wooden carrying case.

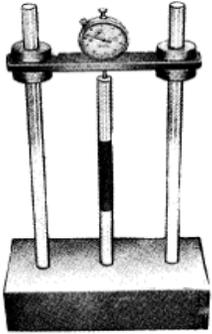
## ACME-538 LONGITUDINAL COMPRESSOMETER

It is designed for finding out the deformation and strains on 15 cm diameter and 30 Cm high cement concrete cylinders when subjected to compressive loads.

**Specifications :** Consists of a frame with a bottom ring and a top ring with tightening screws to firmly clamp the compressometer over the cylinder. A dial gauge .002 mm x 12 mm is mounted on the upper ring and the tip of the dial gauge rests on an anvil. The zero of the dial gauge can be set by adjusting the anvil screw. Supplied in a wooden carrying case.



ACME-538



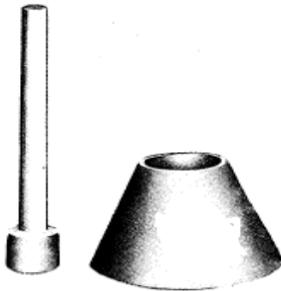
ACME-539

**ACME-539 LENGTH COMPARATOR**  
**IS: 1199-1959, IS: 4031-1968.**

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

**Specifications :** 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 .002 mm x 12 mm. can be fixed to the top cross plate. The plunger end of the dial gauge can be located upon a 6.5 mm diameter 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 standard bar with insulated grip and with 6.5 mm diameter balls mounted in the ends. The unit can be supplied with a .0001 inch x 1/2 inch dial gauge at extra cost if indicated at the time of placing the order.



ACME-541

**ACME-541 SAND ABSORPTION CONE AND TAMPER**  
**ASTM: C128, AASHO: T84**

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

**Specifications:** The equipment comprises of -A conical metal mould 1 .5 inch diameter at the top, 3.5 inch diameter at the base and 2.718 inch in height. A metal tamping rod weighing 12 ounces and having a flat circular tamping face 1 inch in diameter.

**ACME-542 FLEXURE TESTING MACHINE (MOTORISED) RILEM CEMBUREAU TEST**  
**IS: 1727, IS: 403 -1968, ASTM: G109**

It is used for testing 40 mm x 40 mm x 160 mm mortar specimens for flexural strength (Rilem Cembureau Test) by single point loading.

**Specifications :** It is a motorized mechanical unit. The speed is adjusted so that the load increase on the specimen is between 4 to 6 kg/sec. A flexure test attachment for keeping the specimen in position is also supplied. This consists of two rollers 10 mm. in diameter and spaced 100 mm apart, and a third roller of the same diameter equidistant from the first two and for transmitting the applied load to the opposite face of the prism. The unit is for operation on 230 Volts, single phase, 50 cycles AC supply.

Loads are measured on a proving ring fitted with a sensitive dial gauge. Supplied without proving Ring.  
**Accessory: Proving Ring, capacity 500 KN.**



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**ACME-543**

## **ACME-543 JOLTING APPARATUS**

**IS : 1 727-1 967, IS: 4031 -1 968, ASTM C 349-64**

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

**Specifications :** The jolting apparatus consists of a rectangular table rigidly connected by two support arms to a spindle at a horizontal distance of 800 mm 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 pips 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, AC supply.**

**Spares and Accessories: (1) Steel mould with base plate having three compartments each having 40 mm x 40 mm x 160 mm. internal dimensions. (2) Apparatus for demoulding the specimen.**

## **ACME-544 TAMPING ROD**

**IS: 516, ASTM C-29, C-31, C39, C57, C138, C192, AASTHO T29 & T23.**

**This is used for compacting concrete into Cube Moulds. This rod is made of steel. It is 16 mm diameter 60 cm in length and rounded or bullet shaped at one end.**

## **ACME-545 TAMPING BAR**

**IS : 516**

**Made of steel This is 40 cm long, having a ramming face of 25 mm square Other end has a grip. Weight approximate 2 kg.**



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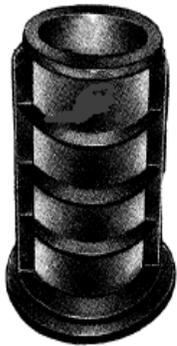
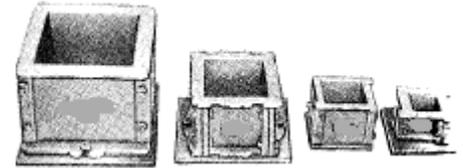
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## CUBE MOULDS, CYLINDRICAL MOULDS AND BEAM MOULDS IS.: 4031, 51 6, 1 0082 10086.

### 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 +/-0.02mm accuracy and finished to within 0.2mm. For the inch size moulds, the faces are machined flat to +/-0.01 inches and finished to within 0.01 in. All moulds are supplied complete with base plate.

- ACME-546 Mould cast iron, for 50 mm cube
- ACME-547 Mould, gunmetal, for 50 mm cube
- ACME-548 Mould, steel for 7.06 cm cube with loose base plate.
- ACME-549 Mould, Cast Iron for 7.06 cm cube with loose base plate.
- ACME-550 Mould. Cast Iron. for 10 cm cube.
- ACME-551 Mould, Cast Iron, for 15 cm cube
- ACME-553 Mould, Cast Iron, for 20 cm cube.
- ACME-554 Mould, Cast Iron, for 30 cm cube.



### CYLINDRICAL MOULDS

For testing concrete cylinders for compressive strength tests.

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

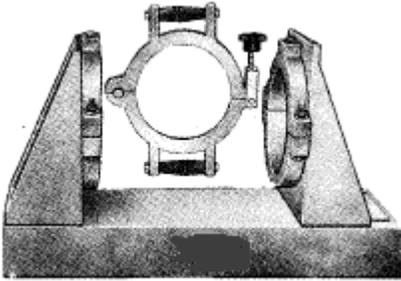
- ACME-554 Mould Cylinder Cast Iron 15 cm diameter x 30 cm height.
- ACME-555 Mould Cylinder Cast Iron 10 cm diameter x 20cm height. -
- ACME-556 Mould Cylinder Cast Iron 30 cm diameter x 60 cm height.

### BEAM MOULDS

For casting, concrete specimens for flexure tests.

**Specifications :** Made of cast iron. 1-he moulds are made of 4 plates assembled together. Each mould is supplied complete with base plate. Faces are machined flat to + 0.2 mm. and finished in size to 0.2 mm.

- ACME-557 10 cm x 10 cm x 50 cm (IS.516-1959)
- ACME-558 15cm x 15 cm x 70 cm (IS.516-1959)
- ACME-559 15 cm x 15 cm x 75 cm .
- ACME-560 4 cm x 4 cm x 16 cm



## 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 or cores. They can be used in Laboratory or in field.

### **ACME-561 CAPPING SET (HORIZONTAL)** **IS: 516-1959, BS 1881, ASTM C31, C617**

For 15 cm diameter x 30 cm length cylinders.

**Specifications:** The set comprises of a cylinder capper, a cylinder carrier and a ladle. The cylinder capper consists of a base on which two accurately machined plates are mounted vertically. One plate is firmly fixed and the other one is adjustable horizontally. Two plates are provided with holders for holding the cylinder in position. The holders are split and the bottom half of each holder is fixed firmly and the top half of each is removable and bolted down to the lower half. On the upper part of the vertical plates 'V's are provided for pouring the capping compound. Two spacers are also provided, Complete with cylinder carrier and ladle for molten compound.

### **ACME-562 CAPPING SET (HORIZONTAL)**

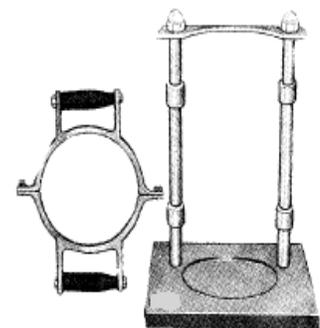
For 100 mm diameter x 200 mm length cylinder

**Specifications:** Same as above but for use with specimens 100 mm diameter x 200 mm long.

### **ACME-563 CAPPING SET (VERTICAL)** **IS : 516 - 1959**

For capping compression cylinder specimens. This apparatus can be used both in the laboratory and in the field. The specimens capped in this apparatus have plane parallel faces.

**Specifications:** For cylinders 150 mm diameter x 300 mm long. Consists of a base with an upright. The upright serves as a guide for positioning the capping plate and the cylinder. The 19 mm thick capping plate is machined accurately. There is a recess in the plate for keeping the molten capping compound and to position cylinder. Complete with cylinder carrier and ladle.



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## **ACME-564 CAPPING SET (VERTICAL)**

For cylinders 100 mm diameter x 200 mm long.

Specifications: Same as above but for cylinders 100mm diameter x 200mm long.

### **CYLINDER CARRIER**

Specifications : For carrying the concrete cylinders in the laboratory and in the field. Double handles make it easy to hold the cylinder during capping operations. Complete with snap clamp and cushioning lining. Can be used both for 15 cm diameter and 10 cm diameter cylinders.

**CAPPING MOULD** : For capping the concrete cylinders, it consists of an accurately machined plate with a recess for 150 mm diameter specimen.

**WARMER** : An electrically heated and thermostatically controlled bath for melting the capping compound. Supplied with cover and handle. Suitable for operation on 230 Volts A.C. single phase.

**CAPPING COMPOUND** : Used for Capping the ends of concrete cylinders to be tested. Available in packs of 5 kg. **BOWL & LADLE**: Metallic bowl is used to carry the capping compound and ladle is used to pour molten capping compound into the groves between specimen and capping plate. Supplied as a set.

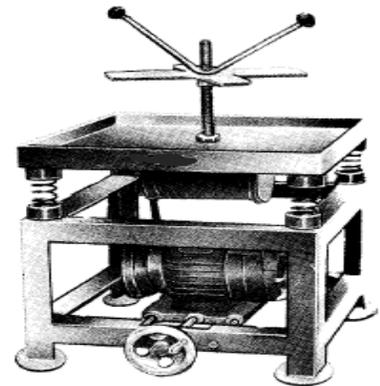
## **ACME-565 VIBRATING TABLE**

The Vibrating Table is used for compacting concrete cubes and cylinders.

Specifications : 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 to P. The table top is 50 cm x 50 cm. 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 centre of the table is provided to hold the moulds while operating the table' The variable pitch pulley arrangement permits the frequency to be varied step lessly between a maximum of 3000 vibrations down to 260 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, AC supply.

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



ACME-565



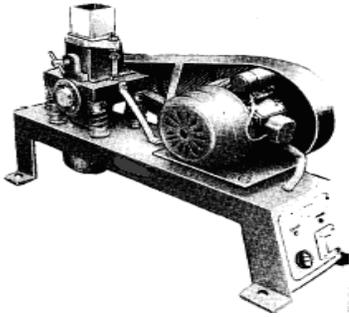
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ACME-566

**ACME-566 VIBRATING MACHINE  
(AISO CALLED MOULD VIBRATOR OR MORTAR CUBE VIBRATOR)  
IS: 4031-1968, IS: 1344 -1959, BS: 12**

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'

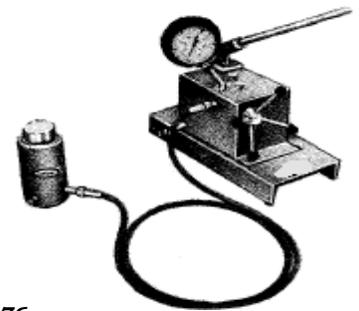
Vibrating Machine is used for the preparation of mortar cubes for the determination of compression strength of ordinary and rapid hardening Portland cement, low heat Portland cement, Portland blast furnace cement and high alumina cements'

**Specifications :** 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 7.06 cm 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 inbuilt 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 centre of gravity of the assembly is brought to the centre of the eccentric shaft or within a distance of 25 mm 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  $\pm$  4% vibration per minute. supplied complete with on 7.06 cm cube mould with loose base plate, a time switch 0- 5 min x 1 min and certificate of vibration from a standard laboratory. Suitable for operation on 230 Volts AC

**ACME-567 HYDRAULIC JACK (HAND OPERATED) REMOTE TYPE**

For applying loads for various tests in 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 120 mm. 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 15 cm dial 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)



ACME-567

MODEL	MSI568	MSI569	MSI570	MSI571	MSI572	MSI573	MSI574	MSI575	MSI576
Capacity	50	100	150	250	300	500	1000	1500	2000
Approx lift in mm	150	150	150	150	150	150	150	150	150
Piston Dia in mm	60	60	75	90	90	116	165	216	216
Pressure Gauge Dia (mm)	150	150	150	150	150	150	150/200	150/200	150/200
Minimum Division on Pressure Gauge in KN	0.5	1.0	1.5	2.5	3.0	5.0	10	15	20
Pumping Unit Type	Single Plunger	Single Plunger	Single Plunger	Single Plunger	Single/Double Plunger	Double Plunger	Double Plunger	Double Plunger	Double Plunger

\*Specifications and Design are subjected to change



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## **ACME-577 INTEGRAL TYPE HYDRAUTIC JACKS CAPACITY 30, 50 & 100 KN**

These are hydraulic jacks with integral pumping unit. The hydraulic pressure gauge is of 15 cm dial mounted on the sides of hydraulic jack. A detachable lever is provided to operate the pump. Lift of the ram is 95 to 100 mm. Face of the ram is flat.

Note: Hydraulic jacks of 1000 KN & 5000 KN capacity can be supplied with two speed pumping units. These jacks have lift of approximately 200 mm.

## **ACME-578 HYDRAULIC JACK CENTRAL HOLE TYPE CAPACITY 50 TONNES.**

Specifications : The hydraulic jack has a 25 mm diameter hole going through the centre. It is designed for dual direction and has a working stroke of approximately 22 cm. A specially designed hand operated pumping unit is supplied for operation in both directions. A detachable handle is provided for operating the pump. The load is indicated on a 15 cm dial hydraulic pressure gauge calibrated 0 - 50000 x 500 kg.

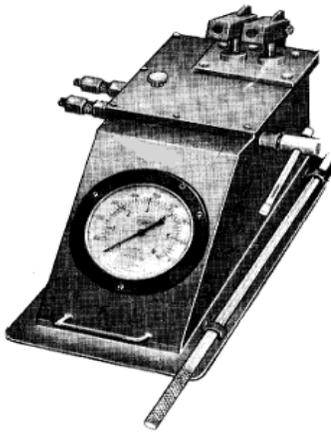
Note :- Central hole jacks of other capacities can also be supplied on special request.

## **ACME-579 HYDRAUTIC JACK ASSEMBLY**

Consisting of upto eight jacks connected through a manifold to an electrically operated pumping unit with single/multiple pressure gauges - price on request.

Flexible pipes : High pressure hoses for the hydraulic jacks can be supplied at extra cost. These pipes are available in 1 meter length with end connections. Set of platens for self aligning action.

### **PUMPING UNITS**



"Multitech" manufactures a wide range of hydraulic pumping units. These are hand operated or electrically operated. The pumping units are suitable for applying loads in a load frame or applying pressure to hydraulic jacks. The special feature of "Multitech" pumping units is that the plungers of the pump have tolerances and no seals are used in the units and special type of non return valves as against traditional ball valves are used, which gives much longer trouble free service. Electrical Pumping Units work on 230 Volts AC or 440 volts AC 3 phase depending upon their capacity and these can be operated by hand in case of power failure. The front panel accommodates pressure gauge, on/off switch, slow fast lever to control the rate of loading and indicator lamps. Further in electrical units a micro-switch fitted in the pressure gauge and a connected to a relay automatically cuts off the power supply to the unit when gauge capacity is reached. A dummy pointer to record maximum load applied is fitted on the cover glass.

In hand operated pumping units, two plungers of different diameter are used. The plunger with larger diameter pumps oil at faster rate and is used for initial loading. Further load is easily applied by the second pump which has a smaller diameter plunger. The lever for hand operation of the pump is sufficiently long to minimize efforts and these units are suitable for site use.



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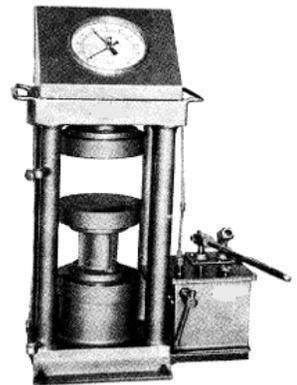
## Electrically Operated and Manually Operated Pumping Units.

Model No.	Capacity	Gauge In KN	Oil Tank Capacity	Operation	Electrical Details
ACME-580	250	20 cm dia 0-2500 KN X 2KN	App. 7 Liters	Electrical cum hand	0.5 HP Motor, 230 V, AC
ACME-581	250	15cm dia 0-250KN X 2KN	-do-	Hand Operated	
ACME-582	500	20cm dia 0-500KN X 2.5KN	-do-	Electrical cum hand	0.5 HP Motor, 230 V, AC
ACME-583	500	15 cm dia 0-500KN x 2.5KN	-do-	Hand Operated	
ACME-584	1000	20cm dia 0-1000KN x 5KN	-do-	Electrical cum hand	1 HP Motor, 230 V, AC
ACME-585	1000	150cm dia 0-1000KN x 5KN	-do-	Hand Operated	
ACME-586	2000	20cm dia 0-2000KN x 10 KN	App. 10 Liters	Electrical cum hand	2 HP Motor, 230 V, AC
ACME-587	2000	15 cm dia 0-2000KN x 10 KN	-do-	Hand Operated	

**Note :** On electrically operated Pumping Units additional gauge of lower capacity with an isolation valve can be fitted at extra cost. 2. We can also supply and Electrical Pumping Unit of capacity 100 tones or more with a manifold to connect to a number of jacks, maximum upto six jacks. This is useful to structural loading at different points.

## COMPRESSION TESTING MACHINE

Strength of Concrete is a very important aspect during construction. Strength of concrete is obtained by crushing the specimen in form of cubes or cylinders. Concrete is carefully designed for a particular compressive strength by Engineers and specimen is tested by applying load in a compression Testing Machine. "Multitech" manufactures a range of Compression Testing Machines from 10 Tones to 200 Tones in different models. Portable models are very convenient and useful for site use where carrying frequently the specimens for testing in a standard laboratory is inconvenient and uneconomical. With special attachments, the machines can also be used for bricks, hollow or solid concrete blocks, using appropriate capacity machine. In general Compression Testing Machine consists of a Load Frame with suitable platens and a Pumping Unit with Pressure Gauge, either hand operated or electrically-cum-hand operated. Load Frame and Pumping unit are connected by pressure pipes.





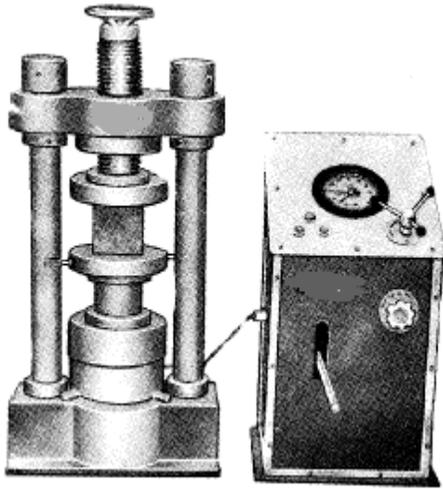
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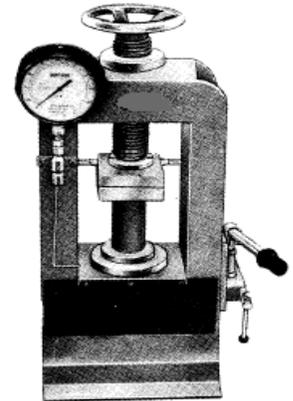
## ACME- PILLAR TYPE LOAD FRAME

These are two pillar type load frames. Two solid pillars are vertically fixed to a sturdy base and at other end is fixed a cross-head. The height of the cross head is also slightly adjustable. A lead screw passes through the centre of cross-head. To the lower end of this lead screw is fixed upper platen with a spherical seat for self alignment. At the centre of the base plate is fixed a jack, on the top of which the lower platen with the help of a centering pin is kept. The distance between the upper and lower platen is variable by means of the lead screw. A spacer block is also supplied with the load frame. This spacer block which can be fitted on the top of the jack and below the lower platen by means of centering pins helps reduce the distance between the two platens. The platens are well machined, polished and hardened. The lower platen has concentric grooves to centrally place the specimen. A dust cover for jack is supplied to prevent any grit going in the jack.

## ACME- CHANNEL TYPE LOAD FRAME

In these load frames "C" channels are used, they are welded at the top as well as bottom and withstand high loads. A Hydraulic jack is fitted at the centre of the base of the load frame, over which can be fitted lower platen and spacer block with the help of centering pin. A lead screw passes through the top of the frame. To the lower end of this lead screw is fixed the upper platen with spherical seat for self alignment. The platens are accurately machined, hardened and polished. The lower platen has concentric grooves to correctly place the specimen.

**Note :** The platens are normally circular in shape, but on special request square platens or rectangular platens can be supplied.



## HAND OPERATED PUMPING UNIT

This is a pumping unit double acting type with two plungers of different diameters. The plunger having larger diameter pumps larger quantities of oil into the jack. Whereas the plunger having smaller diameter pumps oil in smaller quantities but effortlessly. These plungers are very accurately machined and fit in their respective cylinders with zero clearance, no seals are used. Special non-return valves are fitted in the pumping unit for trouble free long and effective service. A dip stick is provided on the pumping unit to ensure correct level of Hydraulic oil. On the front is fitted a release valve, which is to be tightened while applying pressure and loosened to release it. Provision is also made to fix a pressure gauge on the pumping unit. These pumping units are connected to load frame by means of pressure pipes.



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## ***ELECTRICALLY CUM HAND OPERATED PUMPING UNIT***

This is a separate console housing an oil tank, electric motor, relay etc. Inside the oil tank are mounted two pumps which are worked with the help of a cam rotating inside the tank. The cam is rotated by the electrical motor and belt. Above the tank is fitted a hand pump. All plungers are accurately machined and no oil seals are used. Special non-return valves are fitted in the pumping system for trouble free long service. A dip stick is provided to know the oil level in the tank. A drain to remove oil is fitted at the base of the tank. The pumping unit has on its front panel a slow-fast lever to control the rate of loading, a release valve and a slit to enable a rod to be inserted in the hand pump to operate the pumping unit manually. A pressure gauge is fitted in front at a convenient angle. The pressure gauge has 200 divisions for its full capacity. Inside the pressure gauge is fitted a micro switch. This micro switch automatically cuts off electrical supply to the pumping unit on reaching full capacity of the pressure gauge. A red dummy pointer is fixed on the cover glass of the pressure gauge to record maximum load at the failure of the specimen. The pumping unit works on 230 volts A.C. or 415 volts, 3 phase supply. This pumping unit is connected to the load frame by means of pressure pipes. Additional pressure gauges (Maximum 2 Nos.) of lower capacities with isolation valves can be fitted on the pumping unit.

Note : Digital versions of electrically operated Compression Testing Machines can also be supplied. The digital versions have 0.5% accuracy. Various Models of Compression Testing Machines available are listed in the following table.



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Model	Cap. In KN	Readable to in KN	Load Frame Type	Pumping Unit	Ram Diameter	Maximum Clearance between platens	Platen Size	Elect. Motor HP
ACME-588	100	0.5	Channel	Hand				
ACME-589	100	0.5	Pillar	Electric cum hand				
ACME-590	150	0.75	Channel	Hand				
ACME-591	150	0.75	Pillar	Electric cum hand				
ACME-592	200	1	Channel	Hand				
ACME-593	200	1	Pillar	Electric cum hand				
ACME-594	250	1.25	Channel	Hand				
ACME-595	250	1.25	Pillar	Electric cum hand				
ACME-596	500	2.5	Channel	Hand				
ACME-597	500	2.5	Pillar	Electric cum hand				
ACME-598	1000	5	Channel	Hand				
ACME-599	1000	5	Pillar	Electric cum hand				
ACME-600	1000	5		Hand				

\*Specifications and Design are subjected to change



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ACME-601	1500	5	Channel	Electric cum hand				
ACME-602	1500	5	Pillar	Hand				
ACME-603	2000	10	Channel	Electric cum hand				
ACME-604	2000	10	Pillar	Hand				

### ACME-605 CONCRETE TEST HAMMER (REBOUND 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.

**Specifications:** 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 a 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.



ACME-605

\*Specifications and Design are subjected to change

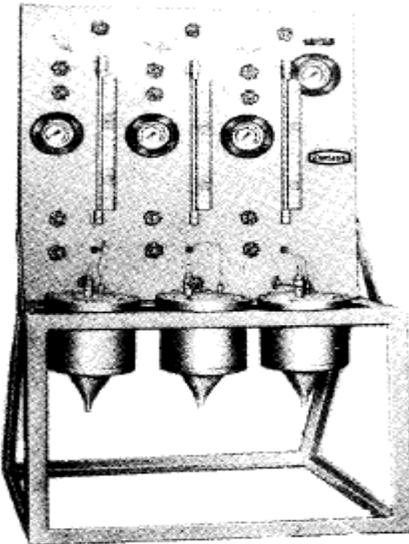
## **ACME-606 PERMEABILITY APPARATUS (SINGLE CELL)**

**IS : 3085**

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 15 cm cubes cast in the laboratory.

**Specifications** ..The concrete permeability apparatus comprises of a brass/gunmetal cell of square 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.

The pressure chamber is fitted with a pressure regulator which helps in regulating the pressure from 0 - 15 kg/cm sq. The regulator has two pressure gauges, one 0 - 20 kg/cm sq. gauge is for indicating the pressure in the chamber and the other 0 - 15 kg/cm sq. gauge is for indicating the pressure in the cell. A foot pump and a pressure tube is supplied to develop pressure in the chamber. The apparatus is supplied with a measuring cylinder 500 cc to measure percolated quantity of water. Pressure can also be applied by a pressure air line or by a compressor.



## **ACME-607 PERMEABILITY APPARATUS (THREE CELLS)**

**IS : 3085**

## **ACME-600 CONCRETE PERMEABILITY APPARATUS (SINGLE CELL)**

**IS : 3085**

Same as above but suitable for 150 mm diameter x 150 mm high sample.

## **ACME-601 CONCRETE PERMEABILITY APPARATUS (THREE CELLS)**

**IS : 3085**

Same as above but suitable three cells for sample size 150 mm diameter x 150 mm high.

## **ACME-602 CONCRETE PERMEABILITY APPARATUS (SINGLE CELL)**

**IS : 3085**

Same as above but suitable for sample size 100 mm diameter x 100 mm high.

## **ACME-607**

## **ACME-608 CONCRETE PERMEABILITY APPARATUS (THREE CELLS)**

**IS : 3085**

Same as above but suitable for three samples of size 100 mm x 100 mm 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 CI for 100mm diameter x 100 mm high cylinders.

Specimen casting mould CI for 150 mm diameter x 150 mm high cylinders.

Specimen casting mould CI for 150 mm cubes.

Blow stove 12litre capacity

Resin

Bees Wax

Wire brush

Chisel

Spare glass cylinder 500 cc capacity.

\*

Same as above but suitable for sample size 100 mm diameter x 100 mm high



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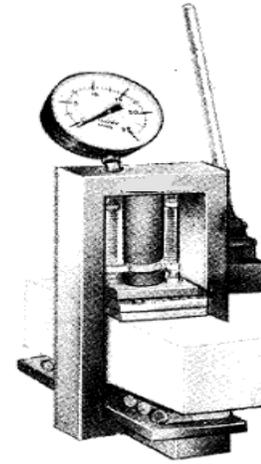
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## **ACME-609 FLEXURE TESTING MACHINE (HAND OPERATED)** **IS: 516 BS 1881, ASTM C78**

Flexural tests of concrete beam have their own importance in concrete Road constructions as well as Buildings constructions. Normally concrete beams of sizes 10 cm x 10 cm x 50 cm or 15 cm x 15 cm x 70 cm 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 600 mm, while it is 400mm 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 centre to centre, 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. 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 1 00 KN and a 150 mm diameter pressure gauge 0 - 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.



ACME-609

## **ACME-610 TILE FLEXURE TESTING MACHINE** **IS: 654, IS: 1237 & IS: 1706.**

Used for finding flexural strength of clay roofing tiles and Cement Concrete flooring tiles.

Flexural load is applied on the tiles using lead shots. Machine consists of a stand on which two 40 mm diameter bearing rollers or 12 mm diameter rollers are placed at centre distance of 150 mm, 200 mm, 250 mm or 270 mm 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 start flowing into lower container at a rate of 45 to 55 kg per minute or 200 kg per minute there by, starting loading the specimen. Arrangement is made such that loading automatically stops when specimen breaks. Supplied without lead shots.

**Accessory :** Lead shots supplied in packs of 20 kg.

## **ACME-611 TILE FLEXURE TESTING MACHINE** **IS: 654, IS: 1237 & IS: 1706.**

Used for finding flexural strength of clay roofing tiles and Cement Concrete flooring tiles.

Flexural load is applied on the tiles using lead shots. Machine consists of a stand on which two 40 mm diameter bearing rollers or 12 mm diameter rollers are placed at centre distance of 150 mm, 200 mm, 250 mm or 270 mm 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 start flowing into lower container at a rate of 45 to 55 kg per minute or 200 kg per minute there by, starting loading the specimen. Arrangement is made such that loading automatically stops when specimen breaks. Supplied without lead shots.

**Accessory :** Lead shots supplied in packs of 20 kg.



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## **ACME-612 TILE ABRASION TESTING MACHINE** **IS: 1237, IS: 1706**

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

**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 revolutions 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 440volts AC, three phase electrical supply. On request machine to operate on 230V AC. supply can also be supplied**



**ACME-612**

## **ACME-613 THICKNESS GAUGE**

**A specially designed unit comprises of a plane plate with "L" shaped border and an adjustable stand with a Dial Gauge 0.01 x 25 mm to check the thickness of abraded tile specimen of size 7.06 x 7.06 cm.**

## **ACME-614 MORTAR PENETROMETER** **ASTM : C 403**

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

**Specifications : 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 area 645,323, 161,65,32 and 16mm sq. are provided. The penetration resistance is measured by the force exerted to penetrate the mortar by 25 mm and is indicated by a sliding ring on the stem, which is graduated. Needle shanks are marked at every 12.5 mm.**



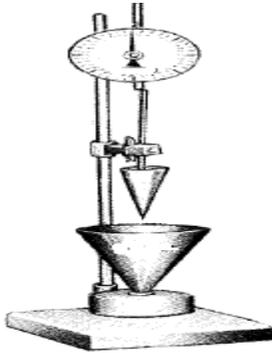
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ACME-615

## **ACME-615 CONE PENETROMETER FOR MORTAR IS: 2250- 1965**

**For determining the consistency of masonry mortar.**

**Specifications :** Consists of a movable bearing rod to which a cone 145 mm. long and 75 mm diameter 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 150 mm ID x 180 mm deep and a platform.

## **ACME-616 POCKET CONCRETE PENETROMETER ASTM: C 403**

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

**Specifications :** Consists of a needle having face area 3/10 sq.cm. and graduated at a distance of 25mm. 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. Scale range is 0 -50 kg/cm<sup>2</sup> when the penetration resistance reaches a value of 35 kg/cm<sup>2</sup> the concrete is assumed initially set.

**Supplied complete in wooden carrying case.**