



CONSTRUCTION LABORATORY EQUIPMENT EXPERT

MegaTech Associates



MATERIAL TESTING EQUIPMENTS



No.66, Devi Karumari Amman Nagar, Thalapahy St, Thandalam, Chennai - 600128.

+91-86673 13318 / 73959 68719



Material Testing Equipment

We supply an extensive range of material testing equipment that is fabricated as per the industry defined quality standards and they deliver consistently accurate results. Our range of material testing equipment encompasses equipment for testing & determining deval attrition, dorry abrasion, pendulum impact, tensile strength, thickness, etc. All our tools for material testing are available at industry leading prices and we can execute bulk orders within less lead-time.



Aggregate Crushing Value Apparatus



For measuring of resistance of aggregate to crushing Specification: Consists of M.S. Cylindrical container 150 mm \pm 0.5mm dia x 130mm to 140mm high with base plate 200 to 230 mm./sqr x 6mm thick. A plinger of 148mm \pm 0.5mm dia x 100 to 115mm high. Supplied complete with tamping rod, 16mm dia x 600mm long, one end rounded. And 1 no. Metal measure 115 \pm 0.5mm dia x 180 0.5mm high.



Aggregate Impact Tester



For determining the aggregate impact value.

Salient Features

Specification

The instrument consists of a circular base with two vertical guides. The hammer of weight 13.75 ± 0.25 kg can be raised to fall freely down the vertical guides. The height of fall can be adjusted through 380 ± 5 mm. The hammer is provided with a locking arrangement. The hammer falls freely to the base and is removable for emptying. Supplied complete with metal measures 75mm dia x 50mm high (for specimen preparation) and tamping rod 230mm long x 10mm dia.



Aggregate Jaw Crusher



The laboratory jaw crusher is designed for fast crushing of aggregates, ores, minerals, coal, coke, chemicals and other similar materials. It is compact and of rugged construction for general laboratory or small pilot plant operations. Two jaws of manganese steel are provided in this laboratory jaw crusher. The moveable jaw produces two blows for every revolution, thus reducing over sizing to a minimum. A combination of forward and downward strokes with a rocking action exerts pressure on the coarser material, yet permits the finished material to pass through the jaws.



Ball Mill For Grinding Lime Mortar



It is of welded steel construction, having an internal diameter of 12 inch x 13.5 inch long (volume 1 cu.ft.) and is made of 5/16 inch thick steel plate. The drum is supported on heavy duty ball bearings on the two ends. It has an opening of 4 inch width along the full length of the drum. An air and water tight cover is provided to close the opening after the specimen has been put inside the drum. The speed of rotation is 28-30 r.p.m. The pug mill has an arrangement for being held in any position. A revolution counter for recording the revolutions of the mill is fixed on the machine. Twelve 3/4 inch dia steel balls are also supplied with the unit. It is fitted with a 1/2 H.P. electric motor to operate on single phase, 220/230 volts A.C. supply



Buoyancy Balance



Buoyancy Balance helps in determining the specific gravity and for the water absorption of the aggregate. It is fitted with the 15 kg capacity x 0.5 gm of the electronic balance. The frame is supplied with:

Water tank,

Suspension hook

Lever for lifting the water tank manually



Cylindrical/ Bulk Density Measures



Determines bulk density or unit weight of aggregates.

Salient Features

Specification

Calibrated cylindrical measures of sheet iron with handles. Consists of 3 measures one each 3 litres capacity, 15 liter's capacity and 30 liter's capacity. Complete with one tamping rod, round, 16mm dia and 600mm long, one end rounded.



Density Basket



For density tests on aggregates as per procedure laid down.

Salient Features

Specification

Made of brass with stainless steel wire mesh 6.3mm size ruggedly constructed, approximately 20cm dia x 20cm high.
Complete with handle.



Deval Attrition Tester



For determination of resistance of aggregates to wear by abrasion.

Salient Features

Specification

It consists of two hollow cylinders closed at one end and provided with tight fitting covers at the either end. These cylinders are mounted on a shaft at an angle of 30 degrees with the axis of rotation of the shaft. The shaft rotates at 30-33 r.p.m. through a reduction gear operated by a motor and is provided with a revolution counter. Complete with abrasive charges consisting of 12 Nos. Hardened steel ball of 48mm dia. Suitable for operation on 440 volts, 3 phases, 50 cycles.

A.C supply.



Dorry Abrasion Testing Machine



For testing aggregates for resistance to abrasion.

Salient Features

Specification

It consists of a disc rotating about a shaft connected to a reduction gear box coupled to a motor. The disc rotates at 28-30 r.p.m. Under the rotating disc is a tray with an outlet to facilitate the removal of sand. Two conical hoppers are mounted on a bracket fixed to the circular tray. An arrangement is made for start and stop the flow of sand. Two holes are provided for mounting two specimens simultaneously. Two containers with weights are supplied to keep the specimens pressed against the rotating disc. Suitable for operation on 220 volts, 50 cycles, A.C. supply.



Fatigue Testing Machine



This machine is used to test the fatigue strength of materials and to draw S-N diagram by research institute, laboratories, material manufacturers and various industries. This is rotating beam type machine in which load is applied in reversed bending fashion. The standard 8 mm dia specimen is held in special holders at its ends and located such that it experiences a uniform bending moment. The specimen is rotated at 4200 rpm by a motor. A complete cycle of reversed stresses in all fibres of the specimen is produced during each revolution. The bending moment is applied with the lever system and can be easily changed by moving a weight over the lever. Total number of revolution at which the specimen fails are recorded by a mechanical counter. An interlocking system puts off the motor at specimen failure. Machine meets requirement of IS 5075-1969.

Salient Features : Max. bending moment (Kg. cm)-200, Bending moment adjustable(Kg.cm) -25 - 200
Ranges : 1 - Kg.cm II -Kg.cm 25- 125 125-200 , Gripping dia of specimen(mm)-12, Testing dia of specimen(mm)-8
Rotating speed in RPM -4200 , Accuracy of applied bending moment - $\pm 1\%$, Power required in HP -0.5
Mechanical Counter: No. of digits Multiplying factor - 63 , Main Supply -3ph 440v 50hz
Overall size(mm)-1000LX500WX600H, Weight (Kg)- 120



Thickness Gauge



Used for determining the flakiness index of aggregates.

Salient Features

Specifications

It consists of a frame with a sliding panel. The panel has slots of different standard lengths and widths accurately cut.



Length Gauge



For determination of the elongation index of aggregates.

Salient Features

Specifications

Consists of a hard wood base with vertically mounted metal studs as specified in the IS 2386 (Part-I)



Los Angeles Abrasion Testing Machine



Used for testing crushed rock, crushed slag, crushed and uncrushed gravel for resistance to abrasion.

Salient Features

Specifications

The machine consists of a hollow cylinder mounted horizontally on a sturdy frame on ball bearings. There is an opening which can be closed with a dust tight cover to facilitate charging and discharging the drum with the material under test. A detachable shelf which extends throughout the inside length of the drum which catches the abrasive charge and does not allow it to fall on the cover. The drum is rotated by an electric motor through a heavy reduction gear at a speed of 30-33 r.p.m. A revolution counter is fitted to the frame. A tray is supplied for collection of the material at the end of the test. Complete with abrasive charges consisting of a set of twelve hardened steel balls, approximately 48mm dia. Suitable for operation on 440 volts, 3 phase, 50 cycles, A.C. supply



Pendulum Impact Tester



The Pendulum Impact Tester is designed for conduction Izod & Charpy Test. The Pendulum is mounted on anti friction bearings. It has two starting positions, the upper one for Charpy and the lower one for Izod testing. On release, the Pendulum swing down to break the specimen and the energy absorbed in doing so is measured as the difference between the height of drop before rupture & height of raise after rapture of the test specimen and is read from the maximum pointer on the dial scale.

Charpy Test

The Charpy test piece rests on alloy steel supports anvils fitted on the base of the machine rigidly held in position by alien screws. End stopper is provided for quickly & accurately locating the test piece centrally between the supports.

Izod Test The Izod test piece is clamped vertically in Izod support anvils, fitted on the base of the machine. The support is provided with a machined vertical groove to suit the test piece size. The front clamp piece & alien screw enable clamping of the test piece in correct height with the help of Izod setting gauge supplied.

Controls of Pendulum: The Pendulum supported in the starting positions is by a self resetting latch. The release mechanism is operated by lever. The Pendulum release latch is operated only when this lever is operated



Polishing Machine Single Disc



Single Disc Polishing Machines are attached with speed change arrangement, swan neck tap, guard, cover and ON/OFF switch, independent driving motor and drain pot. Compact sized these Single Disc Polishing machines are very easy to operate and are very easy to maintain. Apart from all, these are also attached with Portable table top model with one piece fiber glass molded top with fixed sink area and drain pot and are also straightened with neck tap, which make these highly efficient. Drive os of a 1/4 HP single phase 220 volts A.C.T.E.F.C. motor, make these machines able for speedy performance with 400 to 1100 RPM speed. Machines offered by us are very sturdy in construction and accurate in dimension. Features: 1)Highly efficient 2)Exact result 3)Optimum performance.



Riffle Sample Divider



Used for sampling aggregates ores refractory materials, pigments powdered coal, soap, cement etc.

Salient Features

Specifications

It consists of a sheet metal box mounted on legs and fitted with a series of chutes of equal width which discharge the material alternatively in opposite directions into separate pans. The chutes of the riffle are steep enough to allow rapid flowing of the material. 13 mm 14 Chutes

25 mm 16 Chutes

38 mm 12 Chutes

50 mm 12 Chutes

63 mm 12 Chutes



Spring Testing Machine (Hand-Cum-Electric Operated)



Spring testing machine enable load deflection tests of tension and compression springs to be carried out accurately and quickly. The Cabinet contains the hydraulic unit the hand wheel of the pump and the release valve handle are outside the cabinet for easy operation. This compact base carrier two fixed upright and four horizontal plates. The first and the third plates with two small uprights from an adjustable frame. The second and the fourth plates are fixed. A square threaded wheel arrangements provided for adjusting the height of the springs. A Bourdon type gauge is fixed for direct load measurements. One fixed upright is graduated to denote the deflections or tension of the springs for direct readings. A thimble with on arrow mark is provided to facilitate the readings. The machine is capable of accommodating 8" length 1/2" dia. rod up to 4" dia. springs for tension, 6" length 1/2" dia. rod, 4" springs for compression. Scale graduations are made up to 15 cms.



Tensile Testing Machine



Tensile Testing Machines for universal application, in substantial two column construction, especially designed for metallurgical and research laboratories.

The machines are capable of giving accurate data on the physical properties of materials in a rapid and simple manner.

Suitable for conducting tensile tests on materials aluminum, rubber, plastic, leather, asbestos, PVC, etc., as per various standards like IS, BS, DIN, ASTM etc. The specimens in shapes of wires, cables, dumbbell, and strips can be tested by selection of appropriate grips.



Universal Testing Machine - Mechanical - (UTM-01)

Universal Testing Machine is designed for testing metals and other materials under tension, compression bending, transverse and shear loads. Hardness test on metals can also be conducted. 1000KN, is designed to perform tensile, compression, bending and shear tests on most widely varying materials, both in form of test pieces and as finished products. Hardness test on metals can also be performed. The equipment is calibrated in accordance with B.S. 1610 and I.S. 1828-1993. UTM comply with grade 'A' of B.S. 1610: 1964 and grade 1.0 of I.S. 1928-1993.



Salient Features

- Loading Accuracy as high as $\pm 1\%$
- Straining rate to cover a wide range of materials
- Continuous roll type load elongation recorder
- High reading accuracy due to large size and design of dial
- Simple controls to facilitate ease of operation
- Fully enclosed and protected load measuring system
- Wide range of standard and special accessories including load stabilizer
- Robust straining frame
- Suitable for standard specimen and also structures.
- Motorized UP / DOWN movement of lower crosshead to enable easy and rapid fixing of test specimen.
- Auto load selection facility
- The machine consists of Straining Unit, Control panel (Power pack, complete with drive motor and an oil tank, control valve, a pendulum dynamometer, a load indicator system and an autographic recorder.



Universal Testing Machine Hydraulic Computerized Version



Universal Testing Machine is designed for testing metals and other materials under tension, compression bending, transverse and shear loads. Hardness test on metals can also be conducted. 1000KN, is designed to perform tensile, compression, bending and shear tests on most widely varying materials, both in form of test pieces and as finished products. Hardness test on metals can also be performed. The equipment is calibrated in accordance with B.S. 1610 and I.S. 1828-1993. UTM comply with grade 'A' of B.S. 1610: 1964 and grade 1.0 of I.S. 1928-1993.



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.



Torsion Testing Machine



Suitable for Torsion and Twist test on various metal rods and flats. Torque Measurement by pendulum dynamometer system. Auto torque selector to adjust torque ranges. Geared motor to apply torque to specimen through gearbox. Autographic recorder for relation between torque and angle of twist. Accuracy + 1 % of the true torque