XEEPL

Enriching Technical Education

PRODUCT CATALOGUE

BITUMEN / ASPHALT / TRANSPORTATION LAB EQUIPMENT

INDEX

XEEPL

CEMENT-CONCRETE-AGGREGATE LAB EQUIPMENT

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ENVIRONMENTAL / PUBLIC HEALTH ENGINEERING LAB EQUIPMENT

085 : RING AND BALL APPARATUS (SOFTENING POINT TEST)

AS PER IS: 1205 - 1985, IP: 58/63.

Introduction: This apparatus is used to determine softening point of bitumen. Ring and ball apparatus is used to determine softening point. It is that temperature at which a sample of bituminous material loaded by a 9.5 mm dia-steel ball, drops at a distance of 25 mm.

Specifications: The apparatus consists of steel bracket with a sliding plate support. That support has two holes of 10 mm dia on which a Ring and Ball guide can be kept. A Central hole on this plate is for inserting thermometer. Supplied with a glass beaker approximate 8.5 cm I.D., 12 cm high and a hand stirrer & 2 nos. 9.5 mm dia steel balls.

Accessories: Thermometer IP60c range-20 C to 80°C x 0.2°C, Thermometer IP 61c range 30°C to 300°C x 0.5°C, Electrical Stirrer with stand and blades to gently stir water in the beaker. Suitable for operation on 230 V A.C.

086 : AUTOMATIC STANDARD PENETROMETER

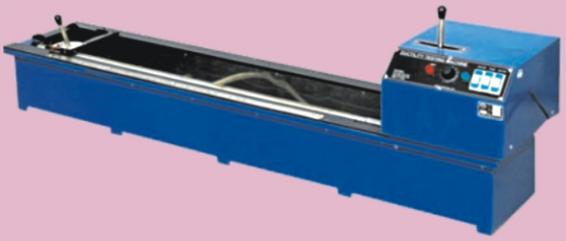
AS PER IS: 310, 1203, 1448, IP: 60, 49, 50, ASTM: D5, D217, D637.

Introduction: Used to determine grade of bitumen. The penetration tests determine consistency of bitumen for the purpose of grading. Depth in units 1/10 of millimeter to which a standard needle having a standard weight will penetrate vertically in a duration of five seconds at a temp. of 25°C determines penetration for gradation.

Specifications: It consists of a vertical pillar mounted on a base provided with leveling screws. The head, together with dial plunger rod and cone (or needle) slides on a pillar and can be clamped at any desired height. A rack and pinion and pointer assemble provides fine adjustment of needle or cone tip to sample. It incorporates a clutch mechanism which makes reading of penetration and subsequent resetting a simple and accurate operation. The dial is graduated in 400 1/10 and the millimeter subdivisions and the needle pointer against figures makes easy reading. Supplied with a bitumen penetration needle, ring weight one each 50 gms, and two sample containers. Supplied with transistorized timer and electro-magnet incorporated in the clutch mechanism to accurately control penetration time to exact five seconds.

087 : DUCTILITY TESTING APPARATUS

AS PER IS: 1028 - 1958, ASTM: D 113, IP 32, 55



Introduction: In flexible pavement construction, bitumen binders are used. It is important that bituminous material forms ductile thin film around the aggregates, which serves as a binder. The binder material not of sufficient ductility renders pervious pavement surface and leads to development of cracks. Therefore it is important to carry out the ductility tests on bituminous material. Ductility is defined as distance in cms to which a standard briquette of bitumen can be stretched before the thread breaks. The briquette is stretched at a rate of 50 mm/minute ±2.5 mm per minute at a temperature of 27°C ± 0.5°C.

Specifications: The apparatus consists of a Water bath with a thermostatic heater, and a circulating pump to maintain uniform water temperature. One half of the briquette moulds is fixed on a fixed plate in the water bath, the other half of the briquette mould is fixed to a carrier which slides over a rotating threaded shaft with a clutch. The motor and gears to rotate the shaft are housed in a cabinet fixed above the other and of the bath. A pointer fixed to the carrier moves over a scale graduated from 0-110 cm x 1mm fixed on the bath with "0" (zero) of the scale towards the fixed plate slide. The rotating shaft has 2 speeds of travel for the bracket, 5 cm/min. and 1 cm/min, selected by a clutch. Water bath inside is aluminum, it is an insulated water bath. Water bath is provided with a drain. A heater with thermostatic control is fixed inside the water bath. Control switches for motor, stirrer, heater and indicator lamps are fixed at a convenient place on the water bath. Complete with three briquette moulds and one base plate, all made of brass. Operates on 230 Volts A.C. 1-

NOTE:

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088 : BITUMEN CENTRIFUGE EXTRACTOR

AS PER ASTM D 27122, AASHO: T-58, T-164.

Introduction: The Centrifuge Extractors are used for determination of bitumen percentage in hot mixed paving mixtures and pavement samples. The mix is added with a solvent and dissolved bitumen is removed by centrifugal action..

Specifications: The motorized version is provided with a variable speed control device and a hand brake to stop rotation when switched off. The electric motor is of ¼ HP capacity coupled to a geared assembly. Suitable for operation on 230 Volts, 50 Hz, AC single phase.

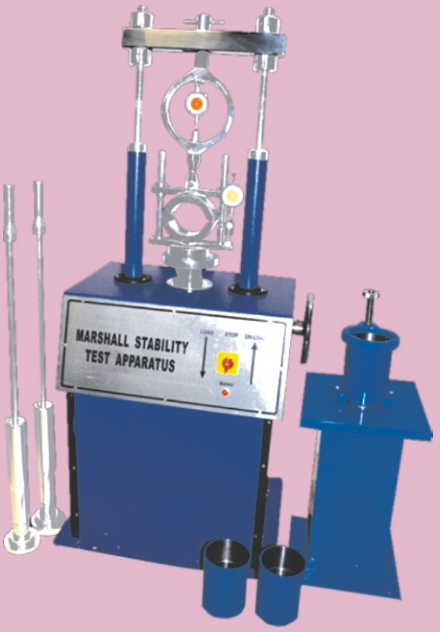
089 : BITUMINOUS / ASPHALT MIXER

AS PER ASTM D-1559.

Introduction: This mixer is suitable for mixing of hot-mix bituminous mixtures. It is designed according to the description in specification of the State of California Test Method 304B. And or uniform mixing of Bituminous and Asphalt mixing. The stainless Steel mixing bowl has the capacity of 6 Liters.

Specifications: Electrically operated, fitted with heating jacket for thorough mixing of Bitumen. The mixer is operated by 0.5 HP single phase electric motor connected to epicyclic type stainless steel paddle to impart both planetary and revolving motion for uniform mixing. Mixer blade has low speed of 140 + 5 rpm and medium speed of 285 + 10 rpm, while it also has a planetary movement of 62 + 5 rpm in low range and planetary movement of 125 + 10 rpm in medium range. A stainless steel bowl of approx. 5 ltr capacity with handle is also supplied. The 500 Watts heating jacket with energy regulator to control the temp. is fitted below the bowl for maintaining the temperature during the mixing period. Complete unit is supported on a strong iron frame. Suitable to work on 220V, 50 Hz, AC single phase.

090 : MARSHALL STABILITY TEST APPARATUS



AS PER ASTM : D 1559 - T - 62.

Introduction: .Originally developed by Bruce Marshall, a highway engineer in U.S.A. later on standardized by ASTM. Generally the test is applicable to hot mix designs using bitumen and aggregates up to a maximum size of 25mm. In this method, the resistance to plastic deformation of cylindrical specimen of bituminous mixture is measured when the same is loaded at periphery at 5cm per min. This test procedure is used in designing and evaluating bituminous paving mixes. The test procedure is extensively used in routine test programmes for paving jobs. There are two major features of the Marshall method of designing mixes namely. a) Density - voids analysis b) Stability - flow tests. The Marshall stability of mix is defined as a maximum load carried by a compacted specimen at a standard test temperature of 600C. The flow value is deformation the Marshall test specimen under goes during the loading up to the maximum load, in 0.25 mm units. In this test and attempt is made to determine optimum binder content for the type of aggregate mix and traffic intensity.

Specifications: The apparatus consist of the following.

Motorized Load Frame: A floor standing compression loading unit with two telescopic pillars and an adjustable cross head of 50 KN (5000 Kgf) capacity with motor and worm gear housed within the base unit, producing a platen speed of 50.8mm per minute. Limit switches are provided to cut off the platen A handle is provided for manual operation during calibration etc. The load frame is fitted with ON OFF, Reversing switch and power indicator lamp in front. Suitable to work on 230V, 50 Hz, AC single phase.

Compaction Pedestal: 1 No. Compaction pedal with specimen mould holder.

Compaction Hammer: 2 Nos. Compaction Rammers, 4.5 kg weight and free fall 45.7 cm.

Breaking Head Assembly: 1 No. Consisting of upper &lower cylindrical segments with provision for fixing flow meter.

Marshal Moulds: 3 Nos. Specimen mould 10.16 cm I.D. x 7.6 cm high with base plate and extension collar.

Specimen Extractor: 1 No. Kit for specimen extraction consists of one each load transfer bar, steel ball, specimen extracting plate.

Proving Ring capacity 3000 kgs. **Dial Gauge** 0.01 x 25 mm.

091 : AUTOMATIC BITUMINOUS COMPACTOR

AS PER ASTM D-1559.

Specifications: This new apparatus automatically simulates hand compaction as specified in ASTM Test D-1559 (Resistance to Plastic Flow of Bituminous Mixes) and develops uniformity in the test procedure. Supplied complete with operating frame, standard compaction hammer assembly, motor and controls, and compaction pedestal. The new Automatic Bituminous Compactor will accommodate one standard bituminous mould at a time. The moulds are held in position by a quick clamping device so that they are easily inserted and removed from the apparatus. The apparatus features a new design in the lift and release mechanism to develop uniformity in the height of the drop of the hammer. The basic design of the hammer is the same as that used for the hand compaction procedure. The hammer is free to rotate on the guide shaft for a full 3600 to eliminate friction in the drop. The unit is supplied with an automatic counter which can be preset for 50 or other specific number hammer drops after which it will automatically be shut off. Powered by a ½ Hp Motor, the Automatic Bituminous Compactor is available for 220 volts, 50 Hz, AC operation. The compactor is supplied with the standard base pedestal which consists of a 300mm x 300mm x 25mm thick steel plate mounted on an 20mm x 200mm oak block as required by the ASTM specifications.

092 : BENKELMAN BEAM

AS PER AASHTO T 256.

Introduction: It is used to determine of the rebound deflection of flexible pavement under static load.

Specifications: Lightweight Aluminum construction, Ease of Transportation Unique Telescopic Design Simplifying Field set up, Compact, Thereby reducing the amount of storage space needed. Benkelman Beam utilizes the technique of using balanced beam in conjunction with a suitable vehicle to measure road flexure The improved Benkelman Beam is a convenient, accurate device for measuring the deflection of flexible pavements under moving wheel loads. Operating on a simple lever arm principle, the unit consists. Supplied with carrying case.

NOTE : Benkelman Beam with Digital Dial Gauge also available at an extra cost .

093 : THIN FILM OVEN

Introduction: For Bitumen Testing Loss of weight, softening Paint, Penetration Loss of wt in Bitumen & Flux Oils (For Construction / Road Projects Department / Industries).

Specifications:

Precise, Hot Air Drying,
Better Mineral / Blanket Insulation for high Temperature & to avoid heat loss
Silent Hot Air Blower, Unique design of Air Circulation provide through out uniform Air movement
Oven Temperature maintained at 200°C
Polish / Hair Line 304 grade S.S. sheet interior, long operation, corrosion resistant
Kanthal A-1 Super quality coil shaped & Air heater tubular model wound on side/on the back of the Oven for better accuracy
Full feature with Digital Temperature Controller cum Indicator having Alarm facility (Optional)
Toughened Glass view window to observe /Test the material without disturbing the Temperature condition of the chamber.
Working Temperature required as per IS : ASTM is 163°C 1°C
Provide with detachable metal shaft (Both for Loss on Heating / Thin Film Oven)
Reduction gear is fitted from outside rotated by a vertical shaft having 5-6 RPM

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094 : CLEVELAND FLASH AND FIRE POINT APPARATUS

AS PER IP 36/57, IS 1448 (P:69)1969 & ASTM-D-92-67.

Specifications: The apparatus is used for determination of Flash Point & Fire Point of Petroleum products except fuel oil with open flash 800C as per specification IP 36/57, IS 1448(P:69) 1969 and ASTM-D-92-67. The apparatus consists of a cup heating plate to specific dimensions thermometer clip and test flame attachment with swivel joint for passing over liquid surface in the prescribed manner, heater is controlled by means of different types of regulators fitted to the apparatus suitable for operation on 220 Volts AC mains.

095 : PENSKY MARTENS FLASH POINT APPARATUS

AS PER IP 34, ASTM-D-93-58T, IS 1448(Pt:I) 1960 & IS 1209-1958.

Specifications: This is widely used for determination of closed cup Flash Point of Fuel Oil, cut back asphalts, other viscous material and suspension of solids having a flash point about 490C(1200F).The apparatus serve the purpose according to IP 34, ASTM-D-93-58T, IS-1448(P:I) 1960(P:21) and IS 1209/1958 method B. The apparatus consists of Brass Test cup with handle removable cup cover with spring operated rotating shutter having piolet jet, stirrer with flexible shaft. The assembly rests in Air Bath which is covered with Dome shape metal top. The cup is fitted with insulated handle and locking arrangement near cup plange. The assembly rests on a round shaped heater with different temperature regulation system suitable for operation on 220 Volts AC mains.

096 : SAYBOLT VISCOMETER

AS PER ASTM-D-88.

Specifications: Used for determining the Viscosity of fuel oil and lubricating oil both thin & thick. The apparatus consists of Stainless Steel bath with oil cup which is centrally placed in a water bath. The bath has a lid which contains a water cooling tube, two handle with two stirrer blades, thermometer socket and a straight heater, stirring is done by turntable arrangement. A thermometer can also be inserted into the cup cover. The jets one universal and one Furol can be screwed to the cup by a handle(without strainer, withdrawal tube and glasswares). can operate on 220 Volts AC mains .

097 : STANDARD TAR VISCOMETER

Introduction: For determining the viscosity of cut back bitumen and road oil. The viscometer consists of a chrome plated copper bath, with a drain valve and a central tube to receive the test cup and to position the stirrer, and is mounted on a stand with leveling feet. Stirrer has a curved shield and is provided with an insulated handle, thermometer socket and swivel support for the valve.

Specifications: Electrical Heating with Immersion Heating Elements and Dimmer stat for controlling the temperature. Suitable for operation on 230 V, 50Hz, Single Phase , A.C. supply Complete with 10mm cup and valve or 4 mm cup and ball valve.

098 : STRIPPING VALUE APPARATUS

Introduction: For determining Stripping Value of bituminous mixes having aggregate size 1.0mm to 75 microns.

Specifications: A circular tray rotates in a vertical plane at a rate of approximately 100 r.p.m. by an electrical geared motor. 4 bottles of approximately 400 cc are mounted on this circular tray at an angle of 900 to each other with their mouth towards centre of the tray. A time switch is provided. Suitable for operation on 230 Volts A.C. single phase

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OUR OTHER PRODUCT RANGE

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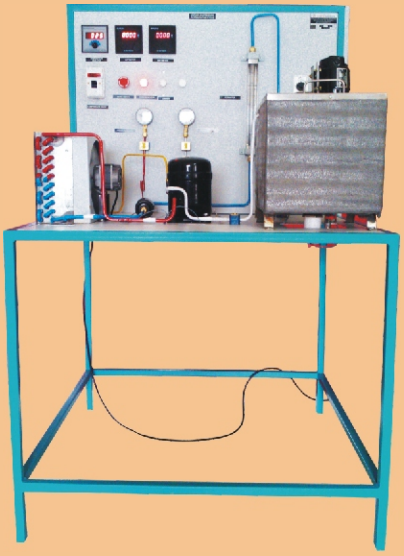
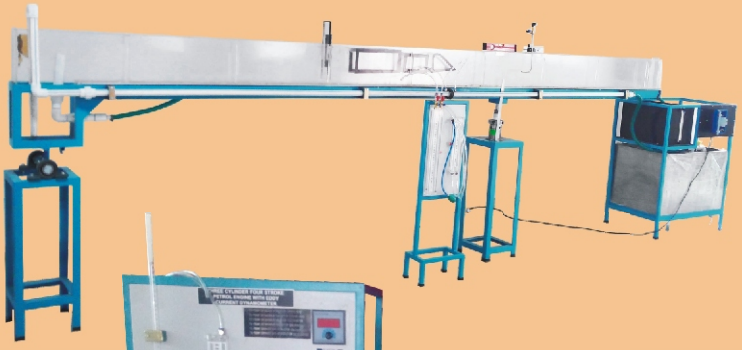
Mechanical Engineering Department

- Fluid Mechanics Lab
- Hydraulic Machinery
- Thermal Engineering Lab
- Refrigeration & Air Conditioning Lab
- Heat Transfer Lab
- Theory Of Machine Lab
- Control Engineering Lab
- Instrumentation Lab
- Mechatronics Lab
- Vibration Lab
- Metallurgy Lab
- Metrology & Quality Control
- Oil, Petroleum & Paint Testing
- Manufacturing Process Lab



Automobile Engineering Department:

- IC Engine Test Rig Lab
- Auto Electrical & Electronics System
- Automobile Engine Systems
- Automobile Transmission Systems
- Autotronics
- Automobile Air Conditioning
- Automobile Systems and Body Engineering
- Vehicle Layout and Transmission System



Electrical Engineering Department:

- Electrical AC Machine Lab
- DC Machine & Transformer Lab
- High Voltage Lab
- Test & Measuring Instruments

Electronics & Telecom. Engineering

- Analog Electronic Lab
- Digital Electronic Lab
- Microprocessor & Micro-controller Lab
- Analog Communication LAB
- Digital Communication LAB
- Fiber Optic and Laser Communication Lab
- Audio & Video Engineering Lab
- Consumer Electronics Lab
- Antennas, Microwaves and Radar Lab
- Computer Hardware Lab
- Computer Communication Network Lab
- Mobile Communication
- Wireless Communication and Networks Lab
- Satellite Communication and Network Lab
- Power Electronics Lab
- Instrumentation and Measurements Lab
- Automobile and Mechatronics Lab
- Bio-Medical Instrumentation Lab
- Robotics Lab
- Control Theory Lab

Technical Training Academy or Courses

- PLC , SCADA, HMI Automation Training
- Embedded System Training
- Robotics Automation Training

PUNE TEST HOUSE*

- Construction Material Testing Lab
- * Up-comming Project

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we are one of the pioneers in the field of Manufacturing of various Civil, Mechanical, Automobile, Electronics, Electrical, Instrumentation, Engineering equipment. We take a great pleasure to introduce ourselves as an organization in Manufacturing of sophisticated technical training test rigs/ Demonstration kits to various Diploma & Degree Engineering colleges as well as research Institutes all over India.
Also we do setup Civil material testing lab.

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