TESTING, MEASUREMENT & RESEARCH
INSTRUMENTS

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(An ISO 9001 : 2015 Certified Company)



# BITUMEN TESTING EQUIPMENT

*Reliable Laboratory Solutions for Quality Evaluation of Bitumen & Bituminous Materials*






- Standards Compliant
- Accurate & Reliable
- Rugged & Durable
- Trusted by Laboratories & Industry

# Lab Equipment for Bitumen Testing

Established since 1977, We are one of the major Manufacturers and Suppliers of Lab Equipments for Bitumen Testing as per BIS/ASTM/ISO/DIN and other international standards.

**Approved Vendors to:**

NABL Accredited Testing Labs, IITs, NITs, Research Institute.

**Our Strength:**

- Experience of Over 45 Years.
- Original Equipments Manufacturer (OEM)
- Large Scale Manufacturing Facility built on enormous 150,000 square feet factory area.
- NABL accredited Calibration Lab.
- Strong team of 300+ experienced and dedicated professionals.
- Committed to provide after sales services to customers.
- Product List and few catalogs enclosed.

**Please Contact Us for:**

- Laboratory Testing Instruments Requirement.
- Laboratory Instruments Service and AMC.
- Annual Calibration and Validation Services.



# BITUMEN TESTING EQUIPMENT

| Sr. No. | Bitumen Testing Equipment Catalogue |
|---|---|
| * | **Bitumen (Binder) Testing Instruments** |
| 1 | Standard Penetrometer For Bitumen |
| 2 | Ring And Ball Apparatus Softening Point Apparatus |
| 3 | Ductility Testing Machine |
| 4 | Kinematic Viscometer |
| 5 | Absolute And Kinematic Viscosity Testing Equipment |
| 6 | Cleveland Open Cup Flash & Fire Point Apparatus |
| 7 | Pensky-martens Flash Point Apparatus Closed Cup |
| 8 | Specific Gravity Bottle For Bitumen |
| 9 | Thin Film Oven Test-loss On Heating Oven |
| 10 | Dean And Stark Apparatus For Bitumen |
| 11 | Absolute (Vacuum Capillary) Viscometer |
| * | **Modified Bitumen (PMB/CRMB) Testing Instruments** |
| 1 | Elastic Recovery Mould |
| 2 | Separation Test Apparatus - For Pmb Crmb |
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| 4 | Rotational Viscometer |
| 5 | Rolling Thin Film Oven |
| 6 | Pressure Aging Vessel (Pav) |
| 7 | Bending Beam Rheometer |
| 8 | Asphaltness Extraction Test Apparatus |

# BITUMEN TESTING EQUIPMENT

| Sr. No. | Bitumen Testing Equipment Catalogue |
|---|---|
| * | **Bituminous Mix Testing Instruments** |
| 1 | Marshall Stability Testing Machine (Manual/Automatic) |
| 2 | Marshal Mould |
| 3 | Bitumen Extractor (Centrifuge) |
| 4 | Asphalt Content Oven |
| 5 | Superpave Gyratory Compactor |
| 6 | Automatic Wheel Track Tester |
| 7 | Indirect Tensile Strength |
| 8 | Rotating Beam Fatigue Testing Machine |
| 9 | Permeability Test Apparatus |
| 10 | Asphalt Mixture Theoretical Density Meter |
| 11 | Semi Circular Bend (SCB) Test Fixture |
| * | **Aggregate Testing for Bituminous Mix** |
| 1 | Los Angeles Abrasion Machine |
| 2 | Aggregate Impact Testing Machine |
| 3 | Aggregate Crushing Value Apparatus |
| 4 | Flakiness & Elongation Gauge |
| 5 | Polished Stone Value Apparatus |
| 6 | Sand Equivalent Test Set |
| 7 | Specific Gravity & Water Absorption Set |
| 8 | Sieve Shaker |

# BITUMEN TESTING EQUIPMENT

| Sr. No. | Bitumen Testing Equipment Catalogue |
|---|---|
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| 11 | Sample Divider (Riffle Box) |
| 12 | Pycnometer Bottle |
| * | **Emulsion & Cutback Bitumen Testing** |
| 1 | Apparatus For Determination Of Residue |
| 2 | Apparatus For Distillation Of Cut Back Bitumen |
| 3 | Hydrodynamic Sieve Test Apparatus |
| 4 | Pavement Settlement Point |
| 5 | Particle Charge Test Apparatus |
| 6 | Cement Mixing Test Apparatus |
| 7 | Storage Stability Test |
| 8 | Demulsibility Test Apparatus |
| * | **Laboratory Support Equipment** |
| 1 | Hot Air Oven |
| 2 | Vacuum Oven |
| 3 | Muffle Furnace |
| 4 | Double Walled Waterbath Rectangular |
| 5 | Digital Constant Temperature Waterbath |
| 6 | Hot Plates |
| 7 | Magnetic Stirrer With Hot Plate |

# BITUMEN TESTING EQUIPMENT

| Sr. No. | Bitumen Testing Equipment Catalogue |
|---|---|
| 7 | Magnetic Stirrer With Hot Plate |
| 8 | Precision Balance |
| 9 | Asphalt Mixer |
| 10 | Fume Hood |
| 11 | Desiccator |
| 12 | Deep Freezer-horizontal |
| 13 | Primary Distillation Unit |
| 14 | Pyrolytic Oven |
| 15 | Ice Flake Machine |

# 1. STANDARD PENETROMETER FOR BITUMEN

**Compliance Standards**: ASTM D5, IS 1203, EN 1426, AASHTO T49

## Description:

The Standard Bitumen Penetrometer is a precision testing instrument designed to determine the penetration value of bituminous materials, providing an accurate measure of their consistency and hardness. Available in Manual, Semi-automatic, and Fully automatic models, it ensures reliable, repeatable results for quality control, research, and laboratory testing.



## Standard Penetrometer:

- Manual operation with fine mechanism
- Precision dial gauge for accurate readings
- Sturdy and durable construction
- Easy-to-use needle positioning system
- Supplied with an adjustable needle holder and standard testing accessories.



## Digital Penetrometer:

- Automatic 5-second penetration timing
- Precision micrometer fine adjustment
- Free-fall plunger with automatic locking
- Built-in sturdy cast iron base.
- Stable base with leveling screws
- Accurate and repeatable test results
- Integrated bottom lifting jack for smooth adjustment
- With push-button magnetic clutch with built in timer



## Fully Automatic Penetrometer:

- Fully automatic operation with touch-screen control
- Digital penetration depth measurement (0.1 mm resolution)
- Programmable penetration timing
- Opto-electronic depth sensing technology
- Stores multiple test readings for easy analysis

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# 2. RING AND BALL SOFTENING POINT APPARATUS

**Compliance Standards**: EN 1427, ASTM D36, AASHTO T53, IP 58, IS 1205

## Description:

The Ring & Ball Softening Point Apparatus is designed for the accurate determination of the softening point of bituminous materials in accordance with international testing standards. Available in Programmable Digital and Fully Automatic models, the instrument provides precise temperature control and uniform heating to ensure reliable and repeatable test results. It features a heat-resistant glass beaker, magnetic stirring system, and controlled heating rate, making it ideal for quality control, research laboratories, and testing of bituminous materials.




**Programmable Digital Model**

## Programmable Digital Model:

- Programmable Digital Auto-Tune PID Temperature Controller.
- Controlled heating rate of 5 °C/min
- DC magnetic stirring for uniform temperature distribution.
- Heat-resistant glass beaker with concealed heating system.
- Complete with ring & ball stand, brass rings, steel balls, ball guides, and glass beaker.



**Fully Automatic Model**

## Fully Automatic Model:

- Fully automatic test sequence with one-touch operation.
- Automatic temperature rise at 5°C/min.
- Automatic detection and display of softening point when the ball reaches the bottom.
- Temperature resolution of 0.01°C.
- Displays both ring readings and their average.
- Magnetic stirrer for uniform bath temperature.
- Lead screw mechanism for automatic sample positioning.

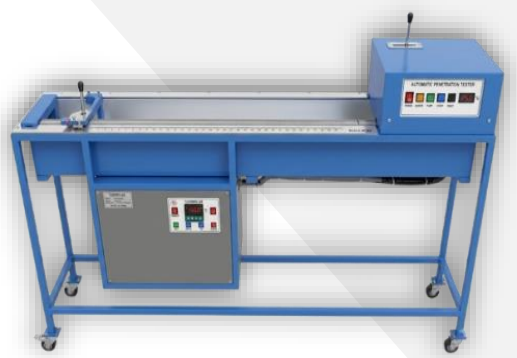
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# 3. DUCTILITY TESTING MACHINE

**Compliance Standards**: IS 1208, ASTM D113

## Description:

The Ductility Testing Machine is designed to determine the ductility and elastic recovery of bituminous materials by measuring the elongation of a standard briquette specimen before rupture under controlled temperature conditions. The instrument is available in Refrigerated and Semi-Automatic models. It features a stainless steel water bath, an integrated refrigeration system, precise digital temperature control, and a motorized pulling mechanism to ensure accurate, reliable, and repeatable test results. It is suitable for quality control, research, and laboratory testing applications and complies with major international testing standards.



## Refrigerated Model:

- Built-in refrigeration system for testing down to 4°C.
- Temperature control accuracy of ±0.5°C.
- Microprocessor-based Auto-Tune PID Digital Temperature Controller.
- Direct-drive motor ensuring a constant pulling speed.
- Two selectable pulling speeds: 1 cm/min and 5 cm/min.
- Stainless steel SS304 insulated water bath with circulating pump.



## Semi-Automatic Model:

- Built-in refrigeration system for testing down to 10°C.
- Temperature control accuracy of ±0.1°C.
- Touch Screen Graphic Controller for complete instrument operation.
- Stepper motor with variable speed range of 10–100 mm/min.
- One-touch digital measurement and recording of elongation.
- Microprocessor-based Auto-Tune PID Temperature Controller.

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# 4. ABSOLUTE AND KINEMATIC VISCOSITY TESTING EQUIPMENT

**Compliance Standards**: ASTM D445, ASTM D446



## Description:

The Absolute & Kinematic Viscosity Testing Equipment is a complete laboratory system designed for determining both kinematic viscosity and absolute (dynamic) viscosity of petroleum products, bitumen, asphalt binders, lubricants, fuels, polymers, and other viscous materials. The system incorporates a precision constant-temperature bath together with accessories required for vacuum capillary viscosity measurements, enabling accurate testing over a wide viscosity range. Designed for research laboratories, refineries, petroleum testing laboratories, and quality control applications, the equipment delivers reliable and repeatable viscosity measurements in accordance with international testing standards.

## Key Features:

- Complete system for both kinematic and absolute viscosity determination.
- Precision constant-temperature bath with excellent temperature stability.
- Suitable for vacuum capillary and standard glass capillary viscometers.
- Digital PID temperature controller with high accuracy.
- Uniform heat distribution through an efficient circulation system.
- Compatible with high-viscosity petroleum and bituminous materials.
- Clear observation window with internal illumination.
- Rugged stainless steel construction for long-term laboratory use.

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# 5. CLEVELAND OPEN CUP FLASH & FIRE POINT APPARATUS

**Compliance Standards**: ASTM D92, IP 36/57, IS 1448 (Part 69), and ISO 2592:2017




## Description:

The Cleveland Open Cup Flash and Fire Point Tester is designed for the accurate determination of the flash point and fire point of petroleum products, lubricating oils, bitumen, asphalt binders, fuel oils, and other combustible liquids in accordance with international test standards. The instrument features a precision test cup, controlled heating system, and digital temperature indication to ensure accurate and reliable test results. Available with a combined wick system using either a gas jet or oil wick arrangement, it is ideally suited for petroleum testing laboratories, quality control, and research applications.

## Key Features:

- Microprocessor-based PID temperature controller.
- Digital Temperature Indicator for accurate temperature monitoring.
- Combined Gas Jet/Oil Wick flame application system.
- Brass or stainless steel construction.
- Energy regulator for controlled heating.
- Suitable for flash and fire point determination of petroleum products.
- Operates on 220V, 50Hz AC supply.
- Compact, robust, and user-friendly design.
- Available in a basic model with adjustable heating control.

# 6. PENSKY-MARTENS CLOSED CUP FLASH POINT APPARATUS

**Compliance Standards**: ASTM D93, ISO 2719, IP 34, IS 1209, IS 1448 (Part 21 & Part 66), and JIS K2265-3



## Description:

The Pensky-Martens Closed Cup Flash Point Tester is designed for the accurate determination of the flash point of petroleum products, fuel oils, lubricating oils, biodiesel, solvents, and other combustible liquids using the closed cup method in accordance with international standards. Equipped with an in-built PC, touch screen interface, automatic heating, stirring, ignition, and flash detection systems, the instrument delivers precise, repeatable, and user-friendly operation. It is ideally suited for petroleum testing laboratories, research institutes, and quality control applications requiring high accuracy and compliance with international standards. The closed cup method is particularly suitable for products having lower flash points and for samples where vapor retention during testing is essential.

## Key Features:

- Ensures highly accurate flash point determination with excellent repeatability.
- Uniform heating and controlled stirring provide reliable and consistent test conditions.
- Designed to reduce operator intervention while improving testing efficiency.
- Precision-engineered components deliver long-term accuracy with minimal maintenance.
- Built for continuous laboratory use with durable, corrosion-resistant construction.
- Compatible with internationally accepted Pensky-Martens testing procedures.

**Note:** Also available in various size and ranges

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# 7. SPECIFIC GRAVITY BOTTLE FOR BITUMEN

**Compliance Standards**: ASTM D70 and AASHTO T228




## Description:

The Specific Gravity Bottle for Bitumen is designed for the accurate determination of the specific gravity and density of bituminous materials and other viscous petroleum products. Manufactured from high-quality materials with precision-machined components, the bottle ensures reliable, repeatable, and accurate measurements in accordance with internationally accepted test methods. It is widely used in petroleum laboratories, highway laboratories, research institutes, and quality control facilities.. The bottle is available in 25 ml, 50 ml, and 100 ml capacities to suit different testing requirements.

## Key Features:

- Available in 25 ml, 50 ml, and 100 ml capacities.
- Wide-mouth design for easy sample filling and cleaning.
- Suitable for determining the specific gravity of bitumen binders.
- 50 ml model also complies with ASTM D70 and AASHTO T228.
- Precision-manufactured for accurate and repeatable test results.
- Ideal for quality control, research, and bitumen testing laboratories.

**Note:** Also available in various size and ranges

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# 8. THIN FILM OVEN TEST-LOSS ON HEATING OVEN

**Compliance Standards**: ASTM D1754, IS 1212




## Description:

The Loss on Heating Oven is designed to determine the loss in mass of bituminous materials due to heating and to evaluate the presence of volatile matter or moisture. The oven features a stainless steel working chamber, precision digital temperature control, forced air circulation, and a motorized rotating shelf to ensure uniform heating and accurate, repeatable test results. It is ideally suited for bitumen testing laboratories, research institutes, and quality control applications.

## Key Features:

- Microprocessor-based Auto-Tune PID Digital Temperature Controller.
- SS-304 mirror-polished inner chamber with powder-coated outer body.
- 65 mm high-density glass wool insulation for efficient heat retention.
- Motorized rotating shelf (5–6 rpm) for uniform sample heating.
- Forced air circulation for excellent temperature uniformity.
- Heating elements on three sides for even heat distribution.
- Toughened glass observation window in the door.
- Adjustable stainless steel wire mesh shelves.
- Operates on 220/230V, 50 Hz, single-phase AC supply.

**Note:** Also available in various size and ranges

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# 9. DEAN AND STARK APPARATUS FOR BITUMEN

**Compliance Standards**: IS 1211, ASTM D2448 and IP 291

## Description:

The Dean & Stark Apparatus is designed for the accurate determination of moisture content in coal tar and other bituminous materials. The apparatus comprises a heat-resistant glass flask, condenser, graduated receiver, and electric heater, ensuring precise moisture separation and reliable test results. It is ideal for quality control laboratories, research institutes, and industrial testing applications.



## Key Features:

- Designed for accurate determination of moisture content.
- Heat-resistant, well-annealed glass construction.
- 500 ml flask with ground-glass socket.
- Precision graduated receiver (10 ml) with fine graduations.
- Ground-glass joints for leak-proof assembly.
- Includes glass condenser for efficient condensation.
- Supplied with electric heater for controlled heating.
- Suitable for laboratory quality control and research applications

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# 1. ELASTIC RECOVERY MOULD

**Compliance Standards**: IS 15462:2004, ASTM D6084, EN 13398 and EN 13589



**Model No.:** TM-40.2E6084



**Model No.:** TM-40.2E13589

## Description:

The Elastic Recovery Mould with Base Plate is designed for preparing standard briquette specimens used in the determination of the elastic recovery properties of bituminous binders and modified bitumen. Manufactured from high-quality brass/gunmetal, the mould ensures dimensional accuracy, durability, and repeatable specimen preparation in accordance with various international testing standards. It is supplied with a matching base plate and is suitable for quality control, research, and laboratory testing applications

## Key Features:

- Manufactured from high-quality brass/gunmetal.
- Supplied complete with base plate.
- Precision machined for accurate briquette specimen preparation.
- Manufactured to the specified dimensions and tolerances of the respective test standards.
- Robust, corrosion-resistant construction for long service life.
- Suitable for elastic recovery testing of bituminous binders and modified bitumen.

**Note:** Also available in various size and ranges

# 2. SEPARATION TEST APPARATUS - FOR PMB CRMB

**Compliance Standards**: ASTM D:7173 – 14, EN 13399





## Description:

The Separation Test Oven is designed to evaluate the storage stability and separation characteristics of polymer modified and rubber modified bituminous binders under controlled heating conditions. The system is used to assess the separation of polymer modifier from the bitumen by comparing the softening point of the top and bottom portions of the conditioned sample. It is ideal for quality control and research laboratories involved in bituminous material testing.

## Key Features:

- Designed for Storage Stability (Separation) Test of Polymer Modified Bitumen.
- Oven capable of maintaining 163 ± 5°C.
- Freezer capable of maintaining 6.7 ± 5°C.
- Supplied with vertical sample rack for aluminium tubes.
- Includes 6 aluminium sample tubes.
- Complete with glass funnel, spatula, glass rod, tweezers, hammer, fine sieve, and asbestos gloves.
- Suitable for evaluating modifier separation under hot and cold conditioning.

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# 3. ROTATIONAL RHEOMETER

**Compliance Standards**: JTG E20-2011 T0628, ASTM P246 & AASHTO T315




## Description:

The Dynamic Shear Rheometer (DSR) is designed to evaluate the rheological and viscoelastic properties of asphalt binders over a controlled temperature range. It measures the complex shear modulus (G*) and phase angle (δ) to assess rutting resistance, fatigue cracking, and performance grading of unaged, aged, and modified asphalt in accordance with international standards. The system is ideal for research laboratories, quality control, and pavement material testing.

## Key Features:

- Suitable for unaged, aged, polymer-modified, and rubber-modified asphalt.
- Temperature testing range of 5°C to 90°C.
- Includes 8 mm and 25 mm asphalt testing fixtures.
- Microprocessor-controlled testing with dedicated analysis software.
- Supports stress and strain-controlled measurements.
- Supplied with temperature control system, notebook computer, and testing software.
- Ideal for SHRP performance grading (PG) and advanced asphalt rheology studies.

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# 4. ROTATIONAL VISCOMETER

**Compliance Standards**: JTG E20-2011 T0628, ASTM P246 & AASHTO T315



## Description:

The Rotational Viscometer is a high-precision instrument designed for measuring the viscosity and rheological properties of liquids, semi-solids, and asphalt binders. Equipped with a 7-inch touch screen, integrated temperature sensing, and advanced rotational technology, it provides accurate viscosity, shear rate, shear stress, and torque measurements. Suitable for quality control, research, and product development, it complies with laboratory requirements across industries including asphalt, polymers, coatings, pharmaceuticals, cosmetics, food, and chemicals.

## Key Features:

- Built-in temperature probe for real-time temperature monitoring.
- Wide speed range up to 250 rpm.
- Spring-less technology with robust ball-bearing suspension.
- SS316 spindles with quick bayonet coupling system.
- Supports constant, step, and ramp measurement methods.
- Displays real-time graphs and data analysis with regression.
- USB & RS232 connectivity for data transfer and printer connection.
- Built-in user management, method programming, and data storage.
- Auto-ranging viscosity measurement with multiple spindle configurations.

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# 5. ROLLING THIN FILM OVEN

**Compliance Standards**: ASTM D2872, AASHTO T240, CNR N.54, EN 12607 - 1, IS 15799-2008



## Description:

The Rolling Thin Film Oven (RTFO) is designed to evaluate the short-term ageing characteristics of bituminous binders by simulating the effects of heat and air encountered during asphalt mixing and paving operations. It determines the resistance of bitumen to hardening and provides conditioned samples for subsequent performance testing. The instrument complies with major international standards, making it ideal for quality control, research, and pavement material testing laboratories.

## Key Features:

- Double-walled oven with SS-304 inner chamber and insulated powder-coated outer body.
- Microprocessor-based PID digital temperature controller for precise temperature regulation.
- Motorized rotating carriage operating at 15 ± 0.2 RPM.
- Accommodates 8 heat-resistant glass sample containers.
- Integrated airflow regulator with rotameter for controlled air circulation.
- Safety features include over-temperature protection, door interlock, and door-open alarm.
- Observation window with heat-resistant glass for continuous monitoring.
- Ideal for bitumen quality control, research, and performance grading laboratories.

# 6. PRESSURE AGING VESSEL (PAV)

**Compliance Standards**: ASTM D6521, AASHTO R28, EN 14769




## Description:

The Pressure Aging Vessel (PAV) is designed to simulate the long-term ageing of asphalt binders by subjecting RTFO-aged samples to controlled heat and pressure conditions. It reproduces the in-service ageing effects of bitumen over several years, providing conditioned samples for subsequent rheological and physical property testing. Equipped with a touch screen HMI, PLC-based control system, and precise temperature and pressure regulation, the PAV is ideal for advanced asphalt research and quality control laboratories.

## Key Features:

- Simulates long-term ageing of RTFO-aged asphalt binders.
- HMI touch screen with PLC-based automatic control.
- Stainless steel pressure vessel with efficient band heaters.
- Precise temperature range: 80–120°C with 0.1°C resolution.
- Operates at 300 psi (2.07 MPa) for standard ageing conditions.
- Programmable test duration up to 99.9 hours.
- Supplied with sample containers, sample rack, and air compressor with storage tank

# 7. BENDING BEAM RHEOMETER

**Compliance Standards**: ASTM D6648, BS EN 14771, AASHTO T313.



## Description:

The Bending Beam Rheometer (BBR) is designed to evaluate the low-temperature creep stiffness and stress relaxation properties of PAV-aged asphalt binders. The system measures the deflection of a simply supported asphalt beam under a constant load at controlled low temperatures, enabling accurate assessment of binder performance and resistance to thermal cracking. Complete with an integrated fluid bath, three-point bending apparatus, external cooling unit, PC, and testing software, the BBR provides precise, repeatable, and fully automated testing for research, quality control, and highway engineering laboratories.

## Key Features:

- Precision three-point bending system with high-resolution LVDT displacement measurement.
- Temperature-controlled fluid bath with external cooling unit for testing down to −40°C.
- PC-based software with real-time display of load, displacement, temperature, and test graphs.
- High-accuracy load control with temperature-compensated load cell and adjustable test parameters.

# 8. ASPHALTNES EXTRACTION TEST APPARATUS

**Compliance Standards**: ASTM D6560, IP 143 & BS 2000



## Description:

The Asphaltenes Extraction Test Apparatus is designed for the determination of wax-free material that is insoluble in n-heptane but soluble in hot toluene in petroleum products. The apparatus is suitable for testing gas oil, diesel fuel, fuel oil, lubricating oil, bitumen, and crude petroleum. The system comprises an evaporation bath, condenser, extractor, stirrer, funnel, and other essential accessories, providing reliable and accurate results for quality control and laboratory analysis.

## Key Features:

- Suitable for bitumen, crude petroleum, gas oil, diesel fuel, fuel oil, and lubricating oil.
- Evaporation bath temperature range: Ambient to 100°C.
- 6-litre tank capacity for efficient operation.
- Operates on 220 V, 50 Hz, Single Phase AC supply.
- 1.5 kW heating power for consistent performance.
- Compact design with an approximate weight of 10 kg.

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# BITUMINOUS MIX TESTING INSTRUMENTS

## 1. MARSHAL STABILITY TESTING MACHINE

**Compliance Standards**: ASTM D6927, AASHTO T245 & EN 12697-34

### Description:

The Marshall Stability Testing Machine is designed to determine the Marshall Stability and Flow Value of bituminous paving mixtures, making it an essential instrument for asphalt mix design and quality control. Suitable for highway laboratories, research institutions, construction companies, and quality control laboratories, the machine applies a constant loading rate to accurately evaluate the load-bearing capacity and deformation characteristics of asphalt specimens. Built with a robust construction and precision loading mechanism, it ensures reliable, repeatable, and standards-compliant test results.



### Mannual Testing Machine:

- Heavy-duty and rugged construction.
- Suitable for determining Marshall Stability and Flow Value.
- Easy to operate with reliable mechanical performance.
- Supplied with complete testing accessories.
- Ideal for laboratory and field quality control applications.

### Digital Testing Machine:

- 4-line alphanumeric digital display for load, displacement, peak load, and flow.
- 50 KN (5000 kg) load capacity with 0.1 kg / 0.001 KN resolution.
- 0.01 mm displacement resolution.
- Simultaneous display of load and displacement.
- Peak hold, auto cut-off, and auto reverse functions.
- Internal auto calibration with external calibration support.
- Measures in kg and KN.

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# BITUMINOUS MIX TESTING INSTRUMENTS

## 2. MARSHAL MOULD

**Compliance Standards**: ASTM D6927, ASTM D1559



### Description:

The Marshall Mould is designed for the preparation of standard cylindrical bituminous specimens used in Marshall Stability and Flow Tests. Manufactured from high-quality steel with precision machining, it ensures accurate specimen dimensions and long service life. The mould consists of a mould body, base plate, and extension collar, providing easy specimen preparation and demoulding. It is widely used in highway laboratories, research institutions, and quality control laboratories for asphalt mix design and testing.

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# 3. CENTRIFUGE BITUMEN EXTRACTOR

**Compliance Standards**: ASTM D2172, AASHTO T58, AASHTO T164, and EN 12697-1



## Description:

The Centrifuge Bitumen Extractor is designed for the accurate determination of binder (bitumen) content in bituminous mixtures using the centrifuge separation method. It is suitable for testing asphalt mixtures prepared with viscous petroleum bitumen and is widely used in highway laboratories, pavement construction organizations, quality control laboratories, research institutes, and educational institutions. The unit incorporates a microprocessor-based control system with an intuitive LCD interface, providing reliable, repeatable, and efficient testing while simplifying operation and minimizing solvent handling.

## Key Features:

- Microprocessor-based automatic operation.
- User-friendly LCD display with parameter monitoring.
- Integrated bitumen extraction and solvent recovery.
- High–Low–High speed extraction for efficient separation.
- Accurate, reliable, and repeatable test results.

# 4. ASPHALT CONTENT (IGNITION) OVEN

**Compliance Standards**: ASTM D6307 and AASHTO T308



## Description:

The Asphalt Content Oven (Asphalt Ignition Oven) is designed for the accurate determination of asphalt binder content in hot mix asphalt using the ignition method. Asphalt Binder once provides a fast, environmentally friendly, and asphalt cost-effective alternative to solvent extraction methods. The oven features an integrated automatic balance that continuously monitors specimen weight throughout the test, ensuring accurate and repeatable results. Its simple operation and automated test cycle improve laboratory productivity while minimizing operator intervention.

## Key Features:

- Accurate determination of asphalt binder content using the ignition method.
- Integrated automatic balance for continuous weight monitoring.
- Faster and environmentally friendly alternative to solvent extraction.
- Simple operation with automated test cycle.
- Reduces operator involvement and improves laboratory efficiency.
- Suitable for quality control and asphalt mix design applications.
- Supports the use of Aggregate Correction Factor (ACF).
- PLC-based control with 7" color touchscreen HMI.
- Stainless steel chamber with 75 mm high-temperature ceramic wool insulation.
- Standard operating temperature of 538°C with temperature compensation.
- Heavy-duty construction with a 42L chamber, 4.5 kg specimen capacity, and complete accessory kit for reliable laboratory operation.

# 5. SUPERPAVE GYRATORY COMPACTOR

**Compliance Standards**: ASTM D6925 and AASHTO T312



## Description:

The Superpave Gyratory Compactor is designed for the preparation of cylindrical asphalt specimens using the electro-pneumatic rotary compaction method. It is ideal for compacting hot mix asphalt(HMA), emulsified asphalt, and cold recycled mixtures for laboratory evaluation of physical and mechanical properties. The system features precision angle control, servo-controlled compaction, real-time parameter monitoring, and a user-friendly touch screen interface, ensuring accurate, repeatable, and standards-compliant specimen preparation.

## Key Features:

- Suitable for 150 mm and optional 100 mm diameter moulds.
- Electro-pneumatic servo-controlled rotary compaction.
- High-strength steel frame for precise angle control.
- Adjustable compaction angle (standard 1.16°), pressure, speed, and number of gyrations.
- Two compaction modes: preset gyration count or preset specimen height.
- Test data saving, graph plotting, and report printing capability.
- Integrated specimen stripper for easy sample removal.
- USB and RS232 communication ports.

# 6. AUTOMATIC WHEEL TRACK TESTER

**Compliance Standards**: T0719-2011



## Description:

The Automatic Wheel Track Tester is designed to evaluate the rutting resistance and capable of conducting three wheel tracking test simultaneously, deformation characteristics of bituminous mixtures in accordance with Standard Test Methods for Bitumen and Bituminous Mixtures for Highway Engineering. Capable of conducting three wheel tracking tests simultaneously, it is ideal for laboratory research, quality control, and pavement performance evaluation. The system features automated test control, independent wheel loading, real-time data acquisition, and an integrated touch screen interface with built-in printer, delivering accurate, reliable, and repeatable test results.

## Key Features:

- Suitable for immersed and non-immersed rutting tests.
- Touch screen interface with user-friendly operation.
- Built-in A4 laser printer for direct test report printing.
- External circulation heating system for uniform temperature distribution.
- Overheat and motor protection for safe operation.
- Four-point data acquisition system for improved accuracy.
- Supplied complete with a separate moulding machine for specimen preparation.

# 7. INDIRECT TENSILE STRENGTH TEST ATTACHMENT

**Compliance Standards**: ASTM D6931 or AASHTO T283




## Description:

The Indirect Tensile Strength (ITS) Attachment is designed to determine the tensile strength and cracking resistance of compacted bituminous Marshall specimens by applying a diametral compressive load. It enables accurate evaluation of the mechanical performance of asphalt mixtures and is widely used in highway laboratories, research institutions, and quality control laboratories. Manufactured from high-quality, precision-machined steel, the attachment ensures uniform load distribution, reliable test results, and long service life. It is compatible with Marshall Stability Testing Machines and other suitable loading frames, making it an ideal accessory for asphalt mix design and performance evaluation.

# 8. ROTATING BEAM FATIGUE TESTING MACHINE



## Description:

The Rotating Beam Fatigue Testing Machine is designed to determine the fatigue strength and endurance limit of metallic materials under reversed bending stress. It operates on the rotating beam principle, where a standard test specimen is subjected to a constant bending moment while rotating at high speed, producing a complete cycle of reversed stress during each revolution. The machine features a compact tabletop design, a simple lever-operated loading mechanism for easy load adjustment, and precise calibration to ensure reliable and repeatable test results. Its lightweight construction and ease of operation make it suitable for educational institutions, research laboratories, and industrial material testing applications. Standard 8 mm diameter.

# 9. CO2 PERMEABILITY TEST APPARATUS

**Compliance Standards**: EN 1062-6



## Description:

The $CO_2$ Permeability Test Apparatus is designed to determine the carbon dioxide permeability of coatings and protective systems. The apparatus employs the cup method, where the test specimen is sealed over a test cell and exposed to a controlled carbon dioxide atmosphere under specified temperature and humidity conditions. The permeability is determined by measuring the mass gain of the test assembly at regular intervals until a steady state is achieved. The system comprises precision test cells, a controlled environment chamber, and a high-accuracy weighing balance, ensuring reliable and repeatable test results for research, quality control, and material performance evaluation.

## Key Features:

- Precise $CO_2$ permeability measurement.
- PLC-based control with digital display.
- Controlled environmental chamber for stable test conditions.
- High-accuracy weighing system.
- Suitable for laboratory quality control and research applications.

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# 10. ASPHALT MIXTURE THEORETICAL DENSITY METER

**Compliance Standards**: ASTM D2041




## Description:

The Asphalt Mixture Theoretical Density Meter is used in asphalt mix design and quality control for determining the maximum theoretical specific gravity of uncompacted asphalt mixtures, which is subsequently used in the calculation of air voids and related volumetric properties. It is widely used for asphalt mix design, road condition evaluation, and the determination of air voids, porosity, and compaction characteristics in quality control laboratories. The system features a vacuum pump, precision vacuum measuring system, and dual sample testing capability, providing accurate, reliable, and repeatable test results for asphalt mixture analysis.

## Standard Model:

- All features of the standard model.
- Integrated vibrating table to remove entrapped air from the asphalt sample during testing.
- Supplied with metal vacuum containers.
- Improved test accuracy and repeatability through efficient air removal.
- Ideal for high-precision laboratory testing and research applications.
- High-accuracy vacuum control for repeatable test results.

## Advanced Model:

- Determines maximum theoretical density of asphalt mixtures.
- Supplied with vacuum pump and vacuum measuring system.
- Dual metal containers for testing two specimens simultaneously.
- Suitable for asphalt mix design and quality control applications.
- Operates on 230 V AC, 50 Hz, Single Phase.

# AGGREGATE TESTING FOR BITUMINOUS MIX

## 1. LOS ANGELES ABRASION TESTING MACHINE

**Compliance Standards**: IS 2386 (Part IV), ASTM C131, and IS 10070.



### Description:

The Los Angeles Abrasion Testing Machine is designed to determine the resistance of coarse aggregates to abrasion and impact. The test evaluates the percentage wear of aggregates by rotating them with a specified charge of hardened steel spheres inside a steel drum, providing the Los Angeles Abrasion Value. The machine features a robust steel drum, precision drive mechanism, electronic revolution counter, and heavy-duty construction, making it ideal for aggregate quality assessment in highway, construction, and research laboratories.

### Key Features:

- Determines the Los Angeles Abrasion Value of coarse aggregates.
- Heavy-duty 700 mm diameter × 500 mm long steel drum.
- Rotates at 30–33 rpm through a reduction gear drive.
- Precision electronic preset revolution counter.
- Push-button start for convenient operation.
- Dust-tight removable cover for safe testing.
- Internal steel shelf for uniform abrasion action.
- Supplied with 12 hardened steel/cast iron abrasive charges.
- Includes galvanized collection tray.

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# 2. AGGREGATE IMPACT TESTING MACHINE

**Compliance Standards**: IS 2386 (Part IV)



## Description:

The Aggregate Impact Testing Machine is designed to determine the Aggregate Impact Value (AIV) of coarse aggregates in accordance with IS 2386 (Part IV). The test evaluates the toughness of aggregates by measuring their resistance to sudden impact under standardized conditions. The machine features a heavy-duty rigid frame, precision-guided hammer with adjustable free fall, and an integrated blow counter for accurate and repeatable testing. Its robust construction and complete set of standard accessories make it suitable for construction material testing laboratories, research institutions, and quality control applications.

## Key Features:

- Determines the Aggregate Impact Value (AIV) of coarse aggregates
- 13.5–14.0 kg hammer with an adjustable free-fall height of 380 ± 5 mm.
- Integrated blow counter for accurate impact count.
- Supplied complete with cylindrical cup, measure, and tamping rod.
- Ideal for highway, construction, and quality control laboratories.
- Hardened steel hammer and anvil for long service life.

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# 3. AGGREGATE CRUSHING VALUE APPARATUS

**Compliance Standards**: IS 2386 (Part IV)



## Description:

The Aggregate Crushing Value (ACV) Apparatus is designed to determine the resistance of coarse aggregates to crushing under a gradually applied compressive load. The test measures the percentage of fines generated after crushing a standard aggregate sample, providing an indication of the aggregate's strength and suitability for road construction and other civil engineering applications. The apparatus is manufactured with precision and durability to ensure reliable and repeatable test results and is available in various variants to suit different testing requirements.

## Key Features:

- Measures resistance of aggregates to compressive crushing loads .
- Provides accurate and repeatable test results.
- Rugged and durable construction for long service life.
- Precision-manufactured components for reliable performance.
- Suitable for highway, construction, and material testing laboratories.
- Available in various variants to meet different testing requirements

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# AGGREGATE TESTING FOR BITUMINOUS MIX

## 4. FLAKINESS GAUGE

**Compliance Standards**: IS 2386 (Part I)




### Description:

The Flakiness Gauge is designed to determine the Flakiness Index of coarse aggregates. manufactured in accordance with IS 2386(Part I), it features a heavy-duty CRC sheet frame with a precision-machined M.S. sliding panel incorporating accurately cut slots for rapid and reliable particle measurement. The gauge includes seven labelled slots covering standard aperture sizes from 6.3 mm to 63 mm, ensuring accurate and repeatable testing for construction material laboratories, quality control, and research applications.

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## 5. ELONGATION GAUGE



### Description:

The Elongation Gauge is designed to determine the Elongation Index of coarse aggregates. It is used to identify elongated particles by measuring their length relative to the specified sieve fraction size. The gauge features a sturdy hardwood base with precision-mounted metal studs, ensuring accurate and reliable measurement of aggregate particles. It is suitable for testing aggregate sizes ranging from 6.3 mm to 63 mm and is ideal for construction material testing, quality control, and research laboratories..

## 6. SAND EQUIVALENT VALUE TEST APPARATUS

**Compliance Standards**: IS 2720 (Part 37), ASTM D2419, AASHTO T176, and EN 933-8



### Description:

The Sand Equivalent Test Apparatus is designed to determine the relative proportions of clay-like fines and granular particles in fine aggregates. The apparatus is supplied as a complete test kit comprising graduated transparent acrylic cylinders, irrigator tube, siphon assembly, weighted foot assembly, measuring can, test sieve, solution containers, funnel, enamel tray, stopwatch, and the required consumable chemicals. It provides accurate and reliable evaluation of aggregate cleanliness for quality control in highway, construction, and geotechnical laboratories.

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## 7. SPECIFIC GRAVITY & WATER ABSORPTION TEST APPARATUS

**Compliance Standards**: ASTM C127, ASTHO T85, ISO 17892-2, BS 812-2



### Description:

The Specific Gravity and Water Absorption Test Apparatus is designed to determine the specific gravity and water absorption of aggregates accurately and efficiently. The apparatus comprises a density basket, watertight container, and an electronic balance with undertook weighing arrangement for precise measurements in air and water. The watertight container is mounted on a mechanical jack to facilitate smooth vertical movement during testing, ensuring ease of operation and reliable test results. It is ideally suited for construction material testing laboratories, quality control, and research applications.

# 8. SIEVE SHAKER

**Compliance Standards**: ASTM E11, ASTM C136/C136M, AASHTO T27, IS 460 (Part 1)

## Description:

The Sieve Shaker is designed for accurate and efficient particle size analysis of aggregates, soils, sand, cement, minerals, and other granular materials using standard laboratory test sieves. Engineered for reliable and repeatable performance, EIE Sieve Shakers ensure uniform sieving action, precise particle separation, and consistent test results. Available in Gyratory, Rotary, and Electromagnetic models, the range meets diverse laboratory requirements from routine quality control to advanced research applications.



## Gyratory Sieve Shaker

- Gentle gyratory motion for accurate particle size analysis.
- Suitable for standard laboratory test sieves.
- Rugged construction for continuous laboratory use.
- Ideal for aggregates, soils, sand, and granular materials.



## Rotap Sieve Shaker

- Electromechanical drive for consistent sieving action.
- Uniform vibration ensures repeatable test results.
- Low-noise operation with minimal maintenance.
- Suitable for routine quality control and industrial laboratories.



## Electromagnetic Sieve Shaker:

- Electromagnetic vibration with adjustable amplitude.
- High-precision particle separation and repeatable results.
- Suitable for both dry and wet sieve analysis.
- Ideal for research laboratories and advanced quality control.

# 9. TEST SIEVES

**Compliance Standards**: ASTM C136/C136M, AASHTO T27



## Fine Test Sieves:

The Fine Test Sieves are designed for accurate particle size analysis of fine aggregates, cement, soils, fillers, powders, and other granular materials in accordance with applicable national and international standards. Manufactured from high-quality brass or stainless steel with precision-woven wire mesh, the sieves ensure accurate aperture sizes, excellent durability, and reliable, repeatable test results. Available in a wide range of mesh sizes and frame diameters, they are ideal for quality control, research, educational, and construction material testing laboratories.



## Coarse Test Sieves:

The Coarse Test Sieves are designed for precise grading and particle size analysis of coarse aggregates and other granular materials used in construction and civil engineering applications. Manufactured from heavy-duty brass or stainless steel with perforated plate or woven wire mesh as applicable, the sieves provide accurate separation, long service life, and consistent test results. Available in a comprehensive range of aperture sizes and frame diameters, they are suitable for routine quality control, research, highway engineering, and material testing laboratories.

## 10. RIFFLE SAMPLE DIVIDER



### Description:

The Riffle Sample Divider is designed to obtain representative and uniform samples from bulk materials such as aggregates, sand, soil, minerals, coal, and powders. It divides the sample into two equal portions through a series of precision-engineered chutes, ensuring unbiased and repeatable sampling while minimizing segregation. Manufactured from high-quality materials, the divider provides accurate sample reduction and is widely used in construction material testing laboratories, mining, research, and quality control applications.

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## 11. PYCNOMETER BOTTLE



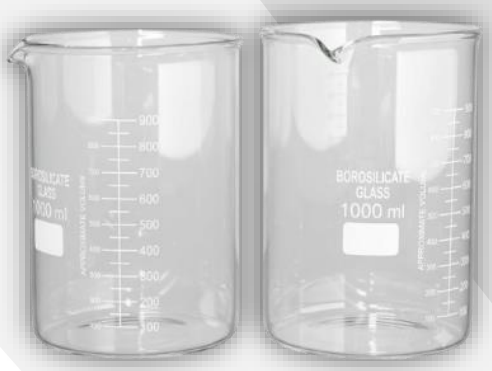
### Description:

The Pycnometer Bottle is designed for the accurate determination of the specific gravity and density of fine aggregates and other suitable laboratory materials and other materials in accordance with applicable testing standards. Manufactured from high-quality glass with a precision-ground stopper, it provides reliable and repeatable measurements by minimizing air entrapment and sample loss. The pycnometer is widely used in construction material testing, research laboratories, educational institutions, and quality control applications for precise density and specific gravity determination.

# EMULSION & CUTBACK BITUMEN TESTING

## 1. APPARATUS FOR DETERMINATION OF RESIDUE

**Compliance Standards**: IS 8887




### Description:

The Apparatus for Determination of Residue on Evaporation is designed to determine the residue remaining after evaporation of bituminous emulsions in accordance with IS 8887. The apparatus comprises heat-resistant glass beakers and glass stirring rods to facilitate accurate sample preparation and evaporation under controlled laboratory conditions. It provides a reliable and standardized method for determining the non-volatile residue of bituminous emulsions for evaluating the non-volatile residue content of bituminous emulsions, making it suitable for quality control, research, and construction material testing laboratories.

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## 2. APPARATUS FOR DISTILLATION OF CUT BACK BITUMEN

**Compliance Standards**: IS 1213



### Description:

The Distillation Apparatus is designed for the distillation of bituminous emulsions and petroleum products under controlled laboratory conditions. The apparatus consists of a heavy-gauge insulated shield with a two-piece asbestos cover, wire gauze support, and a chimney-mounted platform for efficient heat distribution. It is supplied with a complete set of heat-resistant glassware, including a distillation flask, condenser, and receiver. The flask is heated using a hot plate with an energy regulator, enabling precise control of the heating rate for accurate and repeatable test results. The apparatus is widely used in quality control, research, and construction material testing laboratories.

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# 3. HYDRODYNAMIC SIEVE TEST APPARATUS



## Description:

The Hydrodynamic Sieving Apparatus is designed to determine the filtration opening size and permeability characteristics of geotextiles using the hydrodynamic sieving method. The system continuously rotates geotextile specimens in a water bath, allowing calibrated glass beads to pass through the fabric under controlled conditions. It is widely used in geotechnical, civil engineering, and quality control laboratories for evaluating the filtration performance of geotextile materials.

## Key Features :

- Twin rotating test drums with variable speed drive (5–30 rpm).
- Precision-engineered water troughs for uniform testing conditions.
- Heavy-duty motor and gear assembly for smooth, reliable operation.
- Suitable for evaluating geotextile permeability and filtration opening size.
- Robust construction for long service life.

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# 4. PAVEMENT SETTLEMENT POINT

**Compliance Standards**:

## Description:

The Pavement Settlement Point is designed to establish a permanent reference point for monitoring pavement settlement and vertical movement on concrete, tiled, and asphalt surfaces. It consists of a durable plastic tapered disc and a special retaining nail for secure installation. Initial settlement readings are taken using a digital tilt meter and leveling staff (available separately), and subsequent measurements are compared with the initial reference reading to accurately determine pavement settlement over time. It is widely used in road construction, pavement monitoring, geotechnical investigations, and infrastructure maintenance applications.

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# 5. PARTICLE CHARGE TEST APPARATUS

**Compliance Standards**: BIS 8887




## Description:

The Particle Charge Test Apparatus is designed to determine the electrical charge (cationic or anionic nature) of bitumen emulsions in accordance with BIS 8887. The apparatus comprises a digital milliammeter with 0.1 mA resolution, stainless steel electrodes, rheostat, glass rod, and 500 ml beaker, providing accurate and reliable measurement of particle charge. Designed for ease of operation and repeatable performance, it is suitable for quality control, research, and construction material testing laboratories. The apparatus operates on 230 V, single-phase AC supply and features a compact, robust design for long service life.

## 6. CEMENT MIXING TEST APPARATUS

**Compliance Standards**: AASHTO T59, ASTM D6935, and ASTM D244

### Description:

The Cement Mixing Test Apparatus is designed to evaluate the compatibility and mixing stability of slow-setting emulsified asphalt with Portland cement in accordance with AASHTO T59, ASTM D6935, and ASTM D244. The apparatus comprises all essential components required for conducting the test, including sieves, mixing bowl, stirring rod, graduated cylinder, and pan, ensuring reliable and standardized assessment of emulsion performance for quality control, research and laboratory testing.

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## 7. STORAGE STABILITY TEST

**Compliance Standards**: IS 8887 (Annex D) and ASTM D6930



### Description:

The Storage Stability Test Apparatus is designed to determine the storage stability of bitumen emulsions. The test evaluates the tendency of bitumen emulsion to separate during storage by comparing the properties of samples taken from different levels after a specified storage period. The apparatus is supplied as a complete test kit comprising precision glass measuring cylinders with stoppers, siphon pipettes, glass beakers, and glass stirring rods, ensuring accurate sample preparation and testing. It is widely used in quality control, research, and construction material testing laboratories for evaluating the storage performance and stability of bituminous emulsions.

# 8. DEMULSIBILITY CHARACTERISTICS TEST APPARATUS

**Compliance Standards**: ASTM D6936, ASTM D244, IS 8887




## Description:

The Demulsibility Characteristics Test Apparatus is designed to determine the demulsibility characteristics of lubricating oils. The system evaluates the ability of lubricating oils to separate from water after emulsification under controlled laboratory conditions. It features a precision temperature-controlled heating bath, multiple test positions, stainless steel stirring paddles, and graduated separatory funnels to ensure accurate, reliable, and repeatable test results for quality control and research laboratories.

## Key Features:

- Precision PID digital temperature controller with ±0.2°C accuracy.
- Stainless steel double-walled insulated heating bath.
- Accommodates up to four test positions simultaneously.
- Digital RPM indication with adjustable speed control.
- Supplied with heat-resistant borosilicate glass separatory funnels.
- Stainless steel stirring paddles for uniform agitation.
- Built-in over-temperature safety protection.
- Rugged construction for reliable laboratory operation.

# 9. SAYBOLT VISCOMETER

**Compliance Standards**: ASTM D88, IP 70




## Description:

The Saybolt Viscometer is designed to determine the viscosity of petroleum products and other liquid materials by measuring the time required for a specified volume of sample to flow through a standardized orifice under controlled temperature conditions. Widely used in petroleum, lubricant, refinery, and quality control laboratories, the instrument provides reliable and accurate viscosity measurements in accordance with applicable test standards. Available in various configurations to suit different testing requirements.

## Note:

Available in various sizes and configurations.

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# LABORATORY SUPPORT EQUIPMENT

## 1. HOT AIR OVEN




### Description:

The Hot Air Oven is designed for uniform heating, drying, and conditioning of samples in laboratory applications. It features a double-walled construction with high-density insulation and forced air circulation to ensure precise and uniform temperature distribution. Equipped with durable heating elements and a digital temperature control system, the oven delivers reliable and consistent performance for various testing requirements.

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## 2. VACUUM OVEN



### Description:

The Vacuum Oven is designed for drying, heating, curing, and degassing heat-sensitive materials under reduced pressure. It features a mirror-polished SS 316 inner chamber, SS 304 outer body, and an Auto-Tuning PID Digital Temperature Controller with a temperature range of 50°C to 200°C for accurate temperature control. The oven is equipped with a vacuum gauge, vacuum release valve, removable shelf, and toughened glass viewing window for safe and convenient operation. Its gasket-sealed door and over-temperature safety cut-off ensure reliable performance, making it ideal for laboratory and industrial applications. The unit is supplied without a vacuum pump, which is available separately.

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## 3. MUFFLE FURNACE



### Description:

The Muffle Furnace is designed for high-temperature laboratory applications such as ashing, heat treatment, and material testing. It features a lightweight ceramic wool insulated chamber for excellent thermal efficiency, grooved refractory brick heating elements for uniform heating and easy maintenance, and a Dual Display Microprocessor-based PID Digital Temperature Controller with K-type sensor for precise temperature control. The furnace operates up to 1200°C (maximum) with a working temperature of 1150°C and is suitable for operation on 230 V AC, Single Phase.

## 4. DOUBLE WALLED WATERBATH RECTANGULAR



### Description:

The Water Bath is designed for accurate and uniform heating of laboratory samples across a wide range of testing applications. It features a double-walled construction with a SS 304 inner chamber, powder-coated CRC steel outer body, and Rockwool insulation for efficient heat retention. The bath is controlled by an Auto-Tuning Dual Display PID Digital Temperature Controller, offering a temperature range from 5°C above ambient to 99°C. It is equipped with a stainless steel lid with concentric rings, a drain plug for easy cleaning, and operates on 230 V AC, Single Phase, ensuring reliable and maintenance-friendly performance.

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# 5. DIGITAL CONSTANT TEMPERATURE WATERBATH



## Description:

The Circulating Water Bath is designed for precise temperature-controlled laboratory applications requiring excellent temperature uniformity. It features a double-walled SS 304 construction with 50 mm glass wool insulation for efficient heat retention and durability. A special immersion heater with a built-in boost heater ensures rapid heating, while the motorized stirrer with a corrosion-resistant stainless steel shaft and propeller provides uniform temperature distribution throughout the bath. The bath offers a temperature range from ambient +5°C to 99.9°C, with an accuracy of ±0.1°C at 37°C and uniformity of ±0.2°C at 37°C. Its compact, easy-to-clean design and obstruction-free working area make it ideal for routine laboratory testing. Operates on 230 V AC, Single Phase.

# 6. HOT PLATES




## Description:

Hot Plate is designed for uniform heating of laboratory samples and is widely used in research, quality control, educational, petroleum, chemical, pharmaceutical, construction material, and coal testing laboratories for drying, evaporation, and general heating applications.

## Available Variants:

- Round Hot Plate
- Rectangular Hot Plate
- Digital Hot Plate
- PID Controlled Hot Plate
- Energy Regulator Hot Plate

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# 7. MAGNETIC STIRRER WITH HOT PLATE

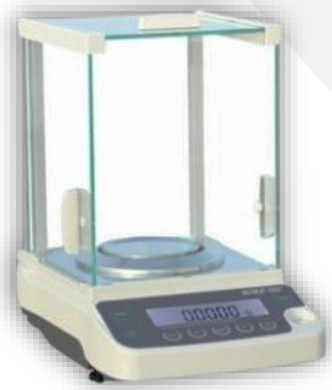



## Description:

The Magnetic Stirrer with Hot Plate is designed for efficient stirring and simultaneous heating of liquid samples in laboratory applications. It utilizes a rotating magnetic field to ensure smooth, uniform mixing while minimizing contamination, as the stirring bar is easy to clean and sterilize. Equipped with independent controls for stirring speed and heating, the unit provides precise operation for sample preparation, chemical mixing, reagent dissolution, and routine laboratory testing. Its compact, durable design makes it suitable for research, quality control, educational, and industrial laboratories.

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# 8. PRECISION BALANCE



## Description :

The is designed for high-precision weighing applications in research, quality control, pharmaceutical, chemical, and educational laboratories. Featuring Incorporates high-resolution load cell technology for precise and stable weighing performance. It delivers fast, accurate, and reliable measurements for routine and analytical applications. The balance is equipped with a user-friendly interface, a durable draft shield, and multiple weighing modes to enhance productivity, ensuring consistent performance and ease of operation.

## Key Features :

- High-resolution load cell technology for accurate and stable weighing.
- Multiple weighing modes including dynamic, counting, percentage, and totalization.
- Easy-to-use 7" touchscreen LCD display.
- External calibration for quick and reliable accuracy.
- USB & RS232 connectivity for data transfer and printer interface.

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# 9. ASPHALT MIXER



## Description:

The Asphalt Mixer – Vertical Type is designed for efficient and uniform mixing of asphalt mixtures in laboratory applications. It features a variable speed mixing system with a vertical curved blade to ensure consistent blending of materials. The unit is equipped with a motorized lifting mechanism for smooth vertical movement of the mixing pot, along with an electrically heated double-walled mixing pot for controlled heating during the mixing process. Its robust construction, user-friendly operation, and reliable performance make it suitable for asphalt mix design, quality control, and research laboratories. Operates on 230 V, 50 Hz, single-phase AC power supply.

## Key Features:

- Variable speed mixing for uniform asphalt blending.
- Electrically heated double-wall mixing pot.
- Motorized lifting mechanism for safe operation.
- Heavy-duty construction for long service life.
- Ideal for asphalt mix design and quality control laboratories.

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# 10. FUME HOOD




## Description:

The Fume Hood is designed to provide a safe working environment by effectively exhausting hazardous fumes, vapors, gases, and airborne particles generated during laboratory operations. It creates negative pressure within the working chamber using a high-performance exhaust system, preventing contaminants from escaping into the laboratory and protecting personnel as well as sensitive equipment. Suitable for chemical, pharmaceutical, research, quality control, and industrial laboratories, the fume hood is available in multiple working sizes to meet diverse application requirements.

## Key Features:

- Efficient removal of hazardous fumes, vapors, and gases.
- Negative pressure exhaust system for enhanced operator safety.
- Low-noise, high-performance blower system.
- Chemical-resistant construction for long service life.
- Available in multiple working sizes to suit laboratory requirements.

# 11. DESICCATOR



## Description:

The Desiccator is designed for the safe storage and cooling of moisture-sensitive materials in a controlled, low-humidity environment. It protects samples from atmospheric moisture, ensuring their integrity during weighing, drying, and laboratory analysis. Widely used in chemical, pharmaceutical, research, educational, and quality control laboratories, the desiccator is manufactured from high-quality materials for durability and reliable performance.

## Key Features:

- Provides a moisture-free environment for sample storage.
- Ideal for cooling heated specimens before weighing.
- High-quality glass construction with airtight sealing.
- Supplied with a perforated porcelain plate.
- Suitable for use with silica gel or other desiccants.

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# 12. DEEP FREEZER-HORIZONTAL





## Description:

The Deep Freezer is designed for reliable low-temperature storage of laboratory samples, pharmaceuticals, biological specimens, research materials, and other temperature-sensitive products. It features a corrosion-resistant SS 304 inner chamber, heavy-duty insulated cabinet, and microprocessor-based digital temperature controller to ensure precise temperature control and uniform cooling performance. With an energy-efficient, CFC-free refrigeration system and robust construction, the freezer is ideal for laboratories, hospitals, research institutions, and industrial applications.

## Deep Freezer Vertical :

- Temperature range up to -26°C with microprocessor-based digital controller.
- SS 304 inner chamber with adjustable shelves for organized sample storage.

## Deep Freezer Horizontal:

- Horizontal design with large storage capacity for bulk sample storage.
- Uniform cooling with energy-efficient CFC-free refrigeration system.

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# 13. PRIMARY DISTILLATION UNIT



## Description:

The Primary Distillation Unit is designed for the efficient recovery of asphalt binder (bitumen) from the extraction solvent.. It enables the recovery of bitumen while preserving the properties of the original binder for subsequent laboratory testing, making it suitable for further laboratory testing and evaluation. The unit comprises a complete distillation assembly including an extraction flask, glass tubing, inlet aeration tube, electric heating mantle, water-jacketed condenser, thermometer, gas flowmeter, and supporting stands and clamps, ensuring reliable and accurate performance in asphalt testing laboratories.

## Key Features:

- Designed for efficient recovery of asphalt binder from extraction solvent.
- Preserves binder properties for further laboratory testing.
- Complete distillation assembly with heating mantle and water-jacketed condenser.
- Accurate temperature and gas flow control for reliable operation.
- Rugged laboratory construction with high-quality glass components.

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# 14. PYROLYTIC OVEN



## Description:

The Pyrolytic Oven is designed for the safe, efficient, and solvent-free cleaning of asphalt, bitumen, and other organic residues from laboratory glassware and accessories. It uses high-temperature pyrolysis to thermally decomposes asphalt, bitumen, and other organic residues through high-temperature pyrolysis, leaving only a small amount of carbonized residue that can be easily removed. This automatic cleaning process minimizes manual effort, reduces the risk of glass breakage and hazardous waste generation, and provides a cleaner, safer, and more efficient laboratory environment. Ideal for asphalt, materials testing, and research laboratories.

## Key Features:

- Automatic solvent-free cleaning of asphalt, bitumen, and other organic residues.
- High-temperature operation up to **482°C** for effective cleaning.
- User-friendly HMI controller for simple operation.
- Built-in blower with SS304 exhaust pipe for smoke extraction.
- Durable powder-coated steel construction for long service life.

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# 15. ICE FLAKE MACHINE



## Description:

The Ice Flake Machine is designed to produce high-quality flake ice for laboratory, medical, pharmaceutical, food processing, and industrial applications. It delivers continuous, efficient ice production with user-friendly touch screen controls for convenient operation. The machine features a large ice storage bin, touch screen controller with timer and operating status functions, and uses eco-friendly R290A refrigerant for reliable and energy-efficient performance.

## Key Features:

- Ice production capacity of 200 kg/24 hours.
- 60 kg built-in ice storage capacity.
- Touch screen display with timer and temperature functions.
- Eco-friendly R290A refrigerant.
- Reliable, energy-efficient, and easy to operate.

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# 16. APPARATUS FOR SOLUBILITY IN TRI-CHLORO ETHYLENE

**Compliance Standards**: IS 1216



## Description:

The Solubility Test Apparatus is designed to determine the solubility of bituminous materials in trichloroethylene. The apparatus consists of a Gooch crucible and conical flask, providing a simple and reliable setup for routine laboratory testing of bitumen and asphalt samples. It is widely used in highway, construction, research, and quality control laboratories to evaluate the purity and quality of bituminous binders by determining the percentage of soluble material. Manufactured using quality laboratory components, and dependable test results.

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