

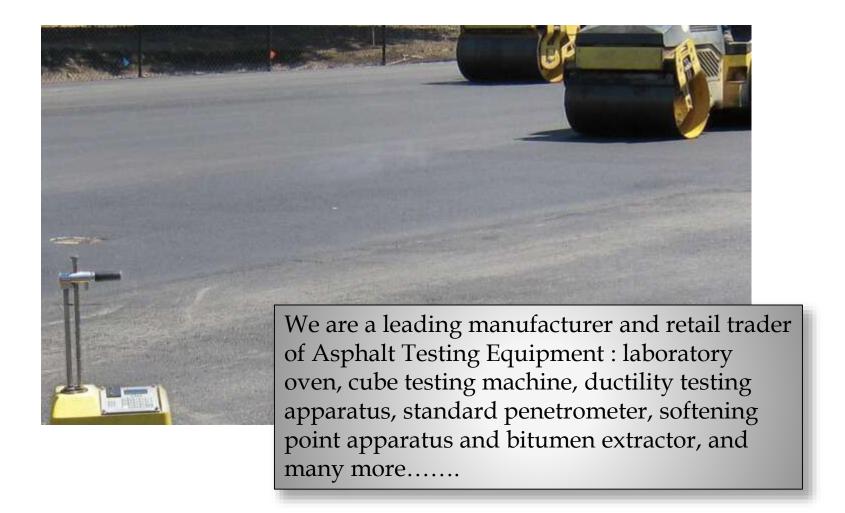


# Asphalt Quality Control

**Testing Equipment** 

### **Asphalt Testing Range**





### List of Bitumen and Asphalt Testing Equipment



S No.	Name of the Equipment	Ref. Standards
		IS:1448 - Part 20, IS:101, IP
1	Abel Flash Point Apparatus (AIM 507)	170, IP 33, BS:3900
2	Aimil Visco 2000 (AIM 534)	ASTM 04402 & BIS 73
3	Asphalt Content Tester (AIM 590 )	ASTM 06307 & EN 12697 39
4	Asphalt Extraction Apparatus Automatic (AIM 588)	
5	Asphalt Mixer	EN 12697-35
6	Asphalt Mixer Theoretical Density Meter with Vacuum Pump (AIM 582)	ASTM 02041-03
7	Automatic Compactor	EN 12697-10-30
8	Benkelman Beam (AIM 566-3) & (AIM 566-3-AN)	
9	Bitumen Penetration Kit ((AIM 518)	IS 1203,ASTM D-5, EN-1426, 13179-2
10	Bump Integrator	(AIM-9903-1) & (AIM-9905-1)



S No.	Name of the Equipment	Ref. Standards
11	Cannon Manning cum Cannon Fenske Viscometer (AIM-532-3)	
12	Carbon Residue, Conradson (AIM 501)	
13	Centrifuge Extractor, Capacity 1500g Electrically Operated (AIM 563-1)	IS1206 (II) & IS 1206 (III)
14	Cloud and Pour Point Apparatus (AIM 503)	IS:1448(Part10), IP15, BS:4452, ISO 3016
15	Ductility Testing Machine	IS:1208, ASTM D113, AASHTO T 51
16	Engler Viscometer (AIM 535)	ASTM D 1665, IP212, BS:434
17	Film Stripping Device (AIM 581)	
18	Flash Point (Open) and Fire Point Cleveland (AIM 505)	
19	Flash Point Pensky-Martens Apparatus (AIM 509) and (AIM 511)	
20	Marsh Cone (Funnel) Viscometer (AIM 536-1)	



S No.	Name of the Equipment	Ref. Standards
		ASTM D1559 BS:598-197, EN-
21	Marshall Apparatus	12697-34
22	Mastic Asphalt Tester (AIM 592)	BS 5284 & IS 1195
23	Mobile Laboratories	
	Modified Roughness indication Machine -	
24	Merlin (AIM 570 )	
25	Pave Frame (AIM-583-1 & AIM-584-1)	
	Pavement Core Drilling Machine (AIM 551-	
26	1)	EN 12504-1
07	Pavement Dynamic Cone Penetrometer (AIM	
27	567)	
28	Pavement Intensity Test Apparatus	
		IS:1448 (Part 60), ASTM D 937,
		IP 179, BS:4698, ASTM 0217,
29	Penetration Cone (AIM 515)	IP50, IS02137.
30	Redwood Viscometer	IP 70



S No.	Name of the Equipment	Ref. Standards
31	Ring and Ball Apparatus (AIM 561-1) and (AIM 561-2)	
32	Saybolt Viscometer (AIM 529-1)	ASTM 088, D 244, AASHTO T 72
33	Skid Resistance Tester (AIM 580)	BS 812-114
34	Standard Tar Viscometers (AIM 531) and (AIM 533)	IS:1206, IP72, STPTC. RT2, RT3, BS:2000, (Part72)
35	Trichloroethylene Recycler (AIM 589)	ASTM 05616-04
36	Universal Penetrometer (AIM 512-1)	
37	Water proofing test apparatus for Asphalt - Hydraulic (AIM 586)	
38	Wheel Rut Shaper (AIM 578)	EN 12697 - 33
39	Wheel Rut Tester (AIM 579)	

## **Abel Flash Point Apparatus**





For determining closed cup flash point of petroleum products, their mixtures, other liquid and paints, having flash points between 19°C and 49°C

#### Aimil Visco 2000





- For testing of asphalt binders
- Viscosity measurement for High Temperature Testing of Asphalt Binders
- The Aimil Visco 2000 Viscometer is specially designed to perform ASTM D4402 & BIS 73 high temperature testing of asphalt binders.

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## **Asphalt Content Tester**





To determine the asphalt content of hot mix asphalt (HMA), paving mixtures and pavement samples by Used for removing the asphalt in an ignition furnace by means of sample heating not by means of solvents.

# Asphalt Extraction Apparatus Automatic Aimil Ltd.



For performing reliable analysis on asphalt mixtures using noninflammable solvent as trichloroethylene and dichloromethane.

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## **Asphalt Mixer**





Used for laboratory mixing of bituminous materials to prepare the specimens to be used for various asphalt tests

#### Models available:

- Asphalt Mixer 5 It (AIM 575)
- Asphalt Mixer Vertical, 20 It (AIM 577)

## Asphalt Mixer Theoretical Density Meter with Vacuum Pump



For determination of theoretical density of asphalt mixer by vacuum method for applications such as asphalt mixer design, road condition investigation, calculation of porosity and compactness in the road construction quality management.

### **Automatic Compactor**





For compaction & preparation of Asphalt samples

#### Models available:

- Automatic Compactor for Bituminous Mixes (AIM 553-1)
- Automatic Compactor for Bituminous mixes using Modified Marshall Mould (AIM 553-2)
- Automatic Compactor for Bituminous Mixes for 4" & 6" moulds (<u>AIM-553-1-51</u>)

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#### **Benkelman Beam**





Suitable for measuring road flexure

#### Models available:

- Benkelman Beam with Digital dial gauge 0.001x25mm Travel (AIM 566-3)
- Benkelman Beam with Analog dial gauge 0.01x25mm Travel (AIM 566-3-AN)

#### **Bitumen Penetration Kit**





It is used with Aimil
Penetrometer

#### **Optional Accessories:**

- Penetration Cone
- Penetration Needle
- Penetration Test Cone
- Penetration Test Cup

Used with
Universal
Penetrometer

AIM 512-1

#### **Bump Integrator**





For measuring un-evenness or roughness / evaluation of surface condition of roads.

#### Models available:

- Bump Integrator with preset facility with transportation wheel (AIM-9903-1)
- Bump Integrator with Unevenness Index with transportation wheel (AIM-9905-1)

## Cannon Manning cum Cannon Fenske Viscometer



For the determination of the absolute viscosity & Kinematic viscosity of bitumen & cut - backs by a vacuum capillary method at specified temperatures

#### Carbon Residue, Conradson





For determining the amount of carbon residue after evaporation, pyrolysis of oil, and to provide some indication of relative coke forming propensity.

Conradson carbon residue, commonly known as "Concarbon" or "CCR" is a laboratory test used to provide an indication of the coke-forming tendencies of an oil.

## Centrifuge Extractor, Capacity 1500g Electrically Operated





For determining bitumen percentage in Bituminous paving mixtures.

#### **Cloud and Pour Point Apparatus**





For determining bitumen percentage in Bituminous paving mixtures.

### **Ductility Testing Machine**





For determining the degree of ductility of bituminous surfaces

#### Models available:

- Ductility Testing Machine (AIM 565-1)
- Ductility Testing Machine with digital display (AIM 565-DG)
- Ductility Testing Machine with digital display & cooling (AIM 565-DG-C)

### Film Stripping Device





For measuring the resistance of bituminous mixtures to stripping of asphalt from aggregate particles.

## Flash Point (Open) and Fire Point Cleveland





For determining the flash and fire points of petroleum products, except for fuel oil and those products which have open cup flash point below 79° C (175° F).

## Flash Point Pensky-Martens Apparatus





For determining the flash point of fuel oils and lubricating oil, bitumen other than cutback bitumen and suspension of solids in liquids, having a flash point above 49°C.

#### Models available:

- Flash Point (Closed) Pensky-Martens Apparatus (AIM 509)
- Flash Point (Open) and Fire Point Pensky-Martens Apparatus (AIM 511)

## Flow Cup





For the measurements of apparent viscosity for control of consistency during manufacture and use of paints, lacquers and viscous products

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### Marsh Cone (Funnel) Viscometer





For quick measurements of fluid viscosity

#### Marshall Apparatus





For the measurement of the resistance to plastic flow of cylindrical specimens of bituminous paving mixture loaded on the lateral surface.

#### **Mastic Asphalt Tester**





For determining the hardness of asphalt material

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## Modified Roughness indication Machine - Merlin Merlin



For determining the hardness of asphalt material

#### Pave Frame





Used for applications such as CBR, UCS, Marshall both standard and modified indirect Tensile, Triaxial and other routine tests.

#### Models available:

- PaveFrame, Digital, 50 kN capacity with load cells LVDT with Digital Indicator (AIM-583-1)
- PaveFrame, Analog, 50 kN Capacity with Proving Ring & Dial Gauge (AIM-584-1)

### **Pavement Core Drilling Machine**





For the purpose of drilling test cores from or holes in roads, airport runways, bridges

## Pavement Dynamic Cone Penetrometer Aimil Ltd.



For in-situ measurement of the structural properties of road pavements.

#### **Pavement Intensity Test Apparatus**





Used for testing the material of road base and pavement

#### Models available:

- Pavement Intensity Test Apparatus Digital type with load cells LVDT with digital indicator (AIM 583)
- Pavement Intensity Test Apparatus Manual type with proving ring & dial gauge (AIM 584)

#### **Penetration Cone**





For empirical estimation of the consistency of lubricating grease and petroleum.

#### Ring and Ball Apparatus





For determining the temperature at which a sample of bituminous material loaded by a 9.5 mm dia steel ball, drops a specified distance when heated under specified conditions.

#### Models available:

- Ring and Ball Apparatus Digital (AIM 561-1)
- Ring and Ball Apparatus Semi Automatic (AIM 561-2)

### Saybolt Viscometer





For the empirical measurement of Saybolt Viscosity of petroleum products at specified temperatures between 70°F and 210°F.

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#### **Skid Resistance Tester**





For measuring antiskid performance of high grade roads ad airport pavement both in the lab ad in-situ.

#### **Standard Tar Viscometers**





For determining the viscosity of cut back bitumen and road oil

#### Models available:

- Standard Tar Viscometer with 10mm cup and ball valve (AIM 531)
- Standard Tar Viscometer with 4mm cup and ball valve (AIM 533)

#### Trichloroethylene Recycler





Used for asphalt extraction to recover the Trichloroethylene or dichloromethane from the bituminous mixtures.

#### **Universal Penetrometer**





Measurement of penetration or the depression made in the sample which is measured in tenths of a millimeter & expressed as a penetration number

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## Nater proofing test apparatus for Asphalt - Hydraulic



For determining the water proofing of the petroleum bitumen felt and the roofing sheet.

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### Wheel Rut Shaper





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For preparing the bitumen specimen for wheel rut testing used in research and road construction

#### Wheel Rut Tester





For determining the resistance ability to wheel tracking at high temperature of bituminous combined material.

#### **Thank You**



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