

SHRP Testing Equipment

Cannon Thermoelectric
Bending-Beam Rheometer

Rotational Viscometer

Dynamic Shear Rheometer

Rolling Thin Film Oven

Pressure Aging Vessel

Vacuum Degassing Oven



Leading Viscosity Technology



PRENTEX ALLOY
FABRICATORS, Inc.

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Supplying Testing & Monitoring Instruments Since 1946



About Hoskin

For over fifty years, Hoskin Scientific has been a supplier of testing and monitoring instrumentation to the Canadian market. With offices in Vancouver, Burlington, and Montreal our customers are able to receive local sales and technical support in our three major departments.

Our Materials Testing Department offers testing equipment for soil, asphalt, petroleum, concrete and cement. Our qualified sales associates focus on providing a sophisticated range of testing equipment complying with the various test methods, ensuring that accurate and consistent test results are always obtained.

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Thermoelectric Bending-Beam Rheometer (TE-BBR)

Meets or Exceeds ASTM D 6648, AASHTO T313, and SHRP Provisions for Flexural Creep Testing of Asphalt Binders

Precise, Repeatable Data

Environmentally-Friendly Thermoelectric Cooling (No External Refrigeration or Refrigerants Required)

Graphical Software for Windows®XP®

Cooling to -36° Celsius in most Laboratory Environments



The CANNON Thermoelectric Bending-Beam Rheometer performs low-temperature flexural creep stiffness measurements on asphalt binders as specified in current ASTM D 6648, AASHTO and SHRP methodology.

The TE-BBR achieves temperatures from ambient to -36° Celsius using the latest in Peltier technology. Bath fluid, which does not circulate outside the TE-BBR, is cooled by solid-state cooling modules surrounding the bath. Heat is dissipated from the hot side of the thermoelectric modules by circulating a mixture of water and antifreeze through an Air/Water Heat Exchanger. This arrangement facilitates rapid cooling and eliminates costly and potentially hazardous refrigerants.

The TE-BBR is capable of controlling temperature within 0.03° Celsius, a precision far exceeding the requirements of current flexural creep test methodology for asphalt binders. The instrument measures specimen beam deflection to within 0.155 microns (1550 Angstroms) and force to within 0.147 milliNewtons (0.015 grams). The TE-BBR will measure specimen beam loads from 0 to 450 grams.

Data acquisition is accomplished internally with information transferred to a host computer via a standard RS-232 interface. The software allows computer control and viewing of parameters through a graphical interface. Reports and graphs can be printed on any Windows-compatible printer. The operational firmware is upgradable – updates or changes may be downloaded via computer.

Computer Specifications

The TE-BBR controls air pressure with four pneumatic pressure regulators, permitting the operator to adjust main input line pressure, air bearing pressure, and pressure supporting the loading shaft for a “zero” condition and a “load” condition.

A magnetic stirring bar at the bottom of the bath vessel circulates bath fluid to ensure uniform temperature distribution throughout the bath. The speed of the stirring bar rotation is adjustable.

New Crack Seal Option!

Allows for flexural creep testing of 0.5” thick specimens. Excellent for characterizing crack seal “creep” under load at cold temperatures. Kit includes modified beam support, thin and thick beam for calibration, and all necessary installation hardware and documentation. Support adapter design permits testing of both 0.25” and 0.5” beams.

EVO Expert Digital Rotational Viscometer and Thermosphere Asphalt Industry Series

The New Fungilab Evo Thermosphere Asphalt Industry Series offers the latest in SHRP asphalt binder testing equipment specifically designed to meet the requirements of AASHTO T316 /ASTM D4402 high temperature test methods for asphalt binders. The precision and accuracy for controlling sample temperature up to +300°C is ideal for the asphalt industry as well as high viscosity samples.



- Compatible with Fungilab Rotational Viscometer Series
- Defined temperature up to 300°
- External device easy to use to control the temperature while measuring

Main Features

- Data displayed:
 - Selected speed r.p.m.
 - Selected spindle SP
 - Viscosity reading cP (mPa·s) or cSt
 - Percentage of full scale %
 - Sample temperature °C or °F
 - Shear Rate (with coaxial spindles) SR (s⁻¹)
 - Shear Stress (with coaxial spindles) SS (N/m²)
 - Density (introduced by the user) g/cm³
- Viscosity reading: dynamic viscosity (cP or mPa·s) or kinematics viscosity (cSt).
- Unit converter SI to CGS.
- Program features:
 - Time to torque & Time to stop
 - 9 working memories
 - Customizable speed options
 - Multistep
 - Ramp
- AUTO-TEST: automatic internal viscosimeter checking
- AUTO-RANGE: full scale range for combination spindle speed.
- Temperature reading by PT100.
- User-enabled viscosity and temperature calibration.
- 6 language options.

Pressure Aging Vessel (PAV 9300)

The PAV 9300 can provide you with dependable quality, efficient performance, and the precision results that your organization demands. Energy efficient and easy to maintain, the PAV 9300 can be shipped complete to your work site for easy set up.

The PAV 9300 offers numerous features that ensure quality results every time. Made out of precision stainless steel, this pressure vessel meets all safety standards and apparatus requirements. Space efficient and user-friendly, the PAV 9300 also comes with the best customer support should you need it.



The PAV 9300 is sure to be of great help to you in the binder aging process. Fully automated, easy to use, and efficient, the PAV 9300 is guaranteed to provide precise results. The PAV 9300 comes with a variety of features that help to get the job done right, every time.

- Sturdy and Well Designed Structure
- Energy Efficient
- Requires no special wiring
- Safe and Supported
- Meets all AASHTO and ASTM apparatus requirements

Vacuum Degassing Oven (VDO 9900)

The VDO 9900 performs under the harshest of environments, and supplies fast and accurate results. It is among the safest vacuum degassing ovens available, meeting stringent industry standards.

Designed to perform the degassing of PAV-aged asphalt paving binder samples, the Prentex VDO 9900 offers a number of features. User-friendly and space-saving, the VDO 9900 is the only vacuum degassing oven available on the market that features a completely self-contained vacuum system. Safety is never a concern, because the VDO 9900 meets both AASHTO and ASTM requirements.

- Flexibility for all industries - adjustable pressure gauges
- Optional compressed air system to ensure greater usability
- Glass viewing window, calibration kit, and numerous sample containers
- Works with any type of AC voltage
- Built-in, end-of-cycle alarm
- Automatic, two-stage timing



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Rotational Rheometer for Routine and Quality Control Testing

Kinexus lab+

The Kinexus lab+ is designed to withstand the rigors of a busy Quality Control laboratory, to provide robust and reliable rheological test capabilities. Ease of use is paramount in this environment, and the rSpace software enables Standard Operating Procedure (SOP) driven rheological testing for test protocols that can be used company wide.

The Kinexus lab+ rheometer can be easily configured to meet routine rheological test requirements for dispersions and other complex fluids and soft solids across a wide variety of industry sectors.



- Intelligent geometry recognition with full auto-configuration and user feedback on system status to guarantee robust data for all measurements
- Modular rheometer with unique 'plug and play' cartridge system
- Multifunctional accessory design
- Disposable plate option for curing materials
- Exceptional vertical travel and gapping capabilities
- Complete sample history from the point of loading onto the rheometer available in data file as standard
- Dynamic shear rheometer configuration for routine and QC testing of asphalt binders

Industry Standard Asphalt Binder Grade Testing

Dynamic Shear Rheometer (DSR)

The Malvern DSR dynamic shear rheometer has been specifically designed to satisfy the demands of high throughput grade testing of Asphalt binders (bitumen), to AASHTO (American Association of State Highway and Transportation Officials) industry standards.

The Malvern DSR asphalt rheometer is proven as the benchmark system for Quality Control testing to industry standards in regulated markets worldwide.

- Meets all instrument criteria & test protocols of AASHTO standards
- Compact, integrated unit designed specifically for ease of use
- Robustness in high throughput Asphalt binder test environments
- Air bearing & mechanical bearing options
- Excellent temperature stability & accuracy, with a resolution of $\pm 0.01^{\circ}\text{C}$
- Active thermal mode to ensure constant gap is maintained
- Plate measuring systems designed to comply with industry standards



Asphalt Rolling Thin Film Oven (RTFO)

The CS325-B precision rolling thin film oven (RTFO) is designed for the specific requirements in the State of California method 346, AASHTO T240 and ASTM D2872.

Repeatability of the test is directly related to the accuracy with the oven temperature can be maintained to the specific standard temperature of 163°C, and the reproducibility of the thermal rise time of the system. The CS325-B has been designed to perform or exceed the specification requirements as detailed by AASHTO and ASTM.



The oven temperature is sampled by a precision RTD sensor exposed to the supervised environment. The thermal mass of the sensor is extremely low having a thermal/electrical time constant measurable in seconds. The controller accepts the signal from the RTD sensor and precisely displays the process temperature while providing an accurate output control signal to maintain the process at the required control point. The controller operates in the PID mode. It has a programmable auto tune feature which automatically establishes the tuning constants. The PID constants may be fine-tuned by the operator at any time, if desired, and secured from further modification by unauthorized personnel. The controller employs a unique suppression feature which allows for the quickest response time without excessive overshoot. Dual 4 digit displays allows viewing of the process temperature and set point simultaneously.

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Key Features

- Super accurate P.I.D. controller
- Low thermal mass RTD
- Over temperature safety cut-out
- Double walled temperature cabinet
- Unique temperature control suppression

System Elements

- Long life sustainable bearings to overcome temperature fluctuation
- Integrated unique controller which allows for the quickest response time without excessive overshoot
- Testing jars (full set) supplied according to standard requirements
- Stainless steel interior
- Integral dual 4 digit LED displays allows viewing of the process temperature and set point simultaneously
- Heavy duty "flush fit" door locking system



Hoskin Scientific Limited has been supplying testing and monitoring instruments since 1946. Although our range is broad, we focus on three major markets including:

Geotechnical & Materials Testing
Test & Measurement Instrumentation
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