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ADVANCED PAVEMENTS TESTING EQUIPMENT

Asphalt Mix
Asphalt Binder

25+ Years of Technical Leadership

Testing Forward

For almost 30 years, IPC Global has been the researcher's choice for advanced asphalt testing equipment, leading the way in the innovation, design, manufacture and supply of the world's most advanced dynamic testing equipment for pavement materials.

Today, the recognition of the importance of improving, extending and maintaining high-quality road networks worldwide has led to increasing standards of advanced testing of asphalt and pavement materials, and IPC Global continues to be recognized as the global leader.

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Asphalt Mix Testing

Asphalt mix testing is critical for increasing the lifetime of a pavement as weak asphalt mixtures can cause rutting and cracking. So pavements engineers and specialists must be able to measure all properties of the materials to avoid premature pavement failure causing expensive damage and traffic safety issues.

IPC Global offers an advanced automatic range of asphalt mix testing equipment that can perform both Quality Control and Quality Assurance tests easily, in full compliance with international Standards.

The Most Complete Range in the Industry

Flexible, accurate and reliable

From automatic specimen preparation machines to our advanced range of dynamic asphalt testing systems of Servo-Hydraulic, Servo-Pneumatic and Electromechanical Universal Testing Machines (UTMs) and all-in-one testers, IPC Global represent the researcher's choice for advanced asphalt mix testing equipment.

Smart Electromechanical Servoactuation Technology (EmS)

Our radical new approach gives access to the most common QA / QC and research asphalt mixture performance tests that were previously only available to high-end research laboratories.

EmS technology is environmentally-friendly with clean operation, requiring no hydraulic power supply. It offers excellent reliability, accurate testing, lower maintenance and is more economical compared to Servo-hydraulic and Servo-pneumatic testing solutions. The innovative design ensures it can be quickly and easily maintained.

EmS

Easy, quick, versatile and low maintenance

- Environmentally-friendly
- Silent and clean operation with no bulky HPS or associated noise
- No compressed air or hydraulic power supply
- Easy maintenance only requiring machine lubrication cycles every 500 hours
- Unparalleled value

Asphalt Mix Composition Analysis

The determination of bitumen and binder content in asphalt mixture is a critical parameter for QC/QA, design and research.

Our testing systems include both standard hot and cold solvent extractors as well as fully automatic systems such as the closed-loop extractor PAVELAB50 PRO and the ignition oven BITUMAX PRO.

Automatic Binder Extraction Systems are the most effective solution for determining binder content, thanks to their fast extraction performance. Binders can be automatically extracted by either ignition, traditional solvent or closed-loop solvent extraction methods, with PAVELAB50 PRO, our key product for separating and extracting bitumen by closed-loop extraction method.

PAVELAB50 PRO

Automatic Closed-system Asphalt Analyzer

PAVELAB50 PRO uses the innovative closed-loop asphalt extraction method to quantify the amount of bitumen present in asphalt mixtures for specification acceptance, Quality Control, Quality Assurance and research purposes.

This method not only improves the quality of the resulting binder content, but also solves the critical safety and environmental issue laboratories are facing. Fully sealed, this system eliminates the emissions of solvent vapors in the laboratory while also enabling the recycling of almost 100% of the used solvent, with obvious economic and environmental advantages.

Gyratory Compaction & Wheel Tracking

Gyratory compaction is the reference method for evaluating the compactability and volumetric properties of a mix, for volumetric mix design and compaction of cylindrical specimens.

The compacted specimens can then be used in Wheel Tracking Machines for the determination of Rutting / Permanent Deformation properties, by applying a repeated load with controlled air or water temperature.

IPC Global makes Gyratory Compactors that have a highly rigid steel frame ensuring excellent angle control. The Gyrocomp EmS is well suited to both Quality Control (QC) and Quality Assurance (QA), while our fully electro-mechanical Galileo and Galileo Research is the optimal solution for Research engineers requiring the automatic configuration of test parameters.

BITUMAX PRO

Asphalt Binder Analyzer by Ignition Method

BITUMAX PRO allows the removal of binder from an asphalt mix by ignition method. It consists of an ignition oven, burning asphalt binders at temperature between 480°C and 540°C, combined with a continuous weighing system to monitor the loss of weight of the asphalt sample and to automatically determine, at the end of the test, the binder content and percentage. Their independently controlled auxiliary after-burner chamber significantly reduces the furnace emissions to perform most QA / QC and Research tests, making them the perfect solution for both static and mobile testing.

Dynamic Asphalt Mix Testing Systems

Our range of electro-mechanical, Servo-Hydraulic and Servo-Pneumatic UTMs, AMPTs and modular testers covers all static and dynamic performance testing methods, including Stiffness / Dynamic Modulus, Fatigue Cracking, Thermal Cracking and Permanent Deformation tests covering all the applications needed by the most demanding laboratories.

Developed over 25+ years of continuous innovation, IPC Global's range of dynamic systems provides solutions to meet all customer needs, from leading research to Quality Control laboratories.

ASPHALTQUBE | ASPHALTQUBE PRO

Pioneering Asphalt Mix Testing

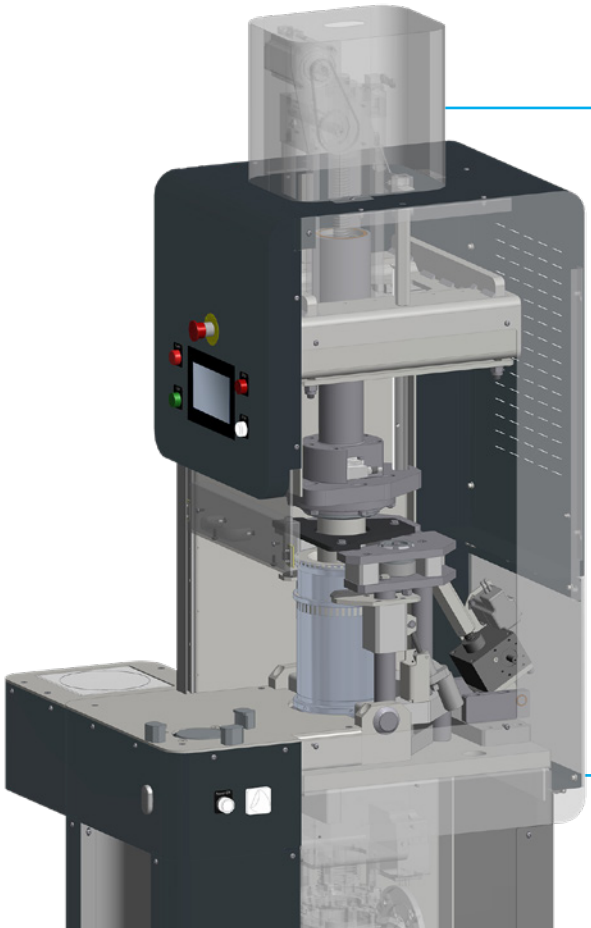
AsphaltQube and AsphaltQube Pro are the new modular Electromechanical Servoactuation (EmS) Asphalt Mix Testers from IPC Global.

Standalone and compact, both models feature a range of new technologies including the innovative EmS Actuator that can deliver up to 15kN force (AsphaltQube) and 30kN (AsphaltQube PRO) with no need for a Hydraulic Power Supply.

The AsphaltQubes' small footprint, combined with the ability to perform most QA / QC and Research tests, make them the perfect solution for both static and mobile testing.

Asphalt Mix Sample Preparation

IPC Global's range of Asphalt Compactors provides the latest in asphalt sample preparation and mix evaluation. From the PReSBOX® that can quickly produce the highest quality of asphalt prisms with minimal operator involvement to our automatic and electromechanical Slab Compactors producing compacted slabs for Wheel Tracking and Fatigue Tests, IPC Global has all your compacting needs covered.



GALILEO | GALILEO RESEARCH

A true Revolution in the world of Gyratory Compaction

The Galileo Gyratory Compactors represent the most evolved models currently available on the market worldwide. The Research version is supplied complete with a shear measurement system, PC software for data analysis and an integrated motorized extruder. Both models are also equipped with a motorized mold lifting.

In summary, Galileo and Galileo Research are resilient testing systems that incorporates the use of the Electromechanical Servo-actuation mechanism, a Smart Control Panel and unique Orbital system.

Marshall Stability, Balanced Mix Design (BMD) and Indirect Tensile

Marshall compaction and Marshall tests are still the most common tests for empirical evaluation of asphalt mixes.

IPC Global offers manual and automatic Marshall impact compactors, manual, digital or automatic Marshall testers, with fixed and adjustable speed, as well as a wide range of jigs and accessories.

Our compact and universal automatic testers provide a flexible solution to road testing laboratories as they cover a wide range of traditional tests including CBR, SCB, Unconfined and Quick Triaxial test, plus they can also perform the last generation Balanced Mix Design tests such as SCB and IDEAL-CT.

The force capacity is 50kN or 100kN. The machines can be equipped with an analogical or digital acquisition system or with an automatic control system. Load rate control is also available.

BALANCEDLOADER EmS

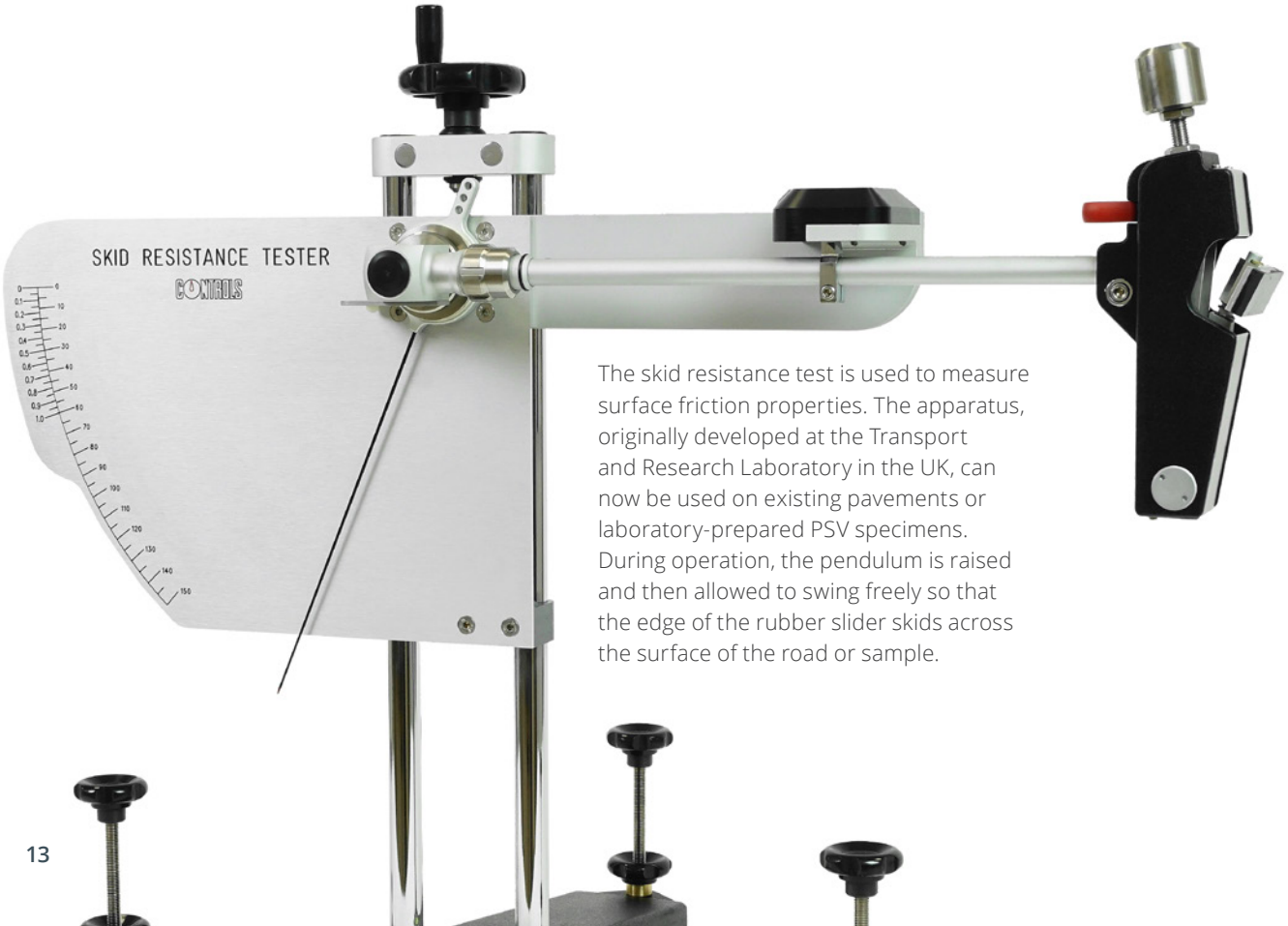
The BalancedLoader is the latest addition to the range of IPC Global universal automatic testers.

The machine can automatically perform most of the tests included into the Balanced Mix Design procedures, from the IDEAL-CT, IDEAL-RT, Indirect Tensile Strength to the Semi-Circular Bend test and many more.

Road Quality Testing

Road quality testing equipment are designed to investigate the superficial properties of pavements, including the in-situ permeability of porous asphalt, the evenness, friction and macro-texture of the wearing course layer. This range also includes testing machines that investigate the mechanical properties of pavement surface treatments, such as Slurry Seal.

An important aspect covered by the range of testing machines assessing the in-situ surface properties of pavements, includes the measurement of irregularities and rutting in road pavement, the deflection of flexible pavements under the axion of moving wheel loads, and the surface macro-texture depth by using the sand patch apparatus.



The skid resistance test is used to measure surface friction properties. The apparatus, originally developed at the Transport and Research Laboratory in the UK, can now be used on existing pavements or laboratory-prepared PSV specimens. During operation, the pendulum is raised and then allowed to swing freely so that the edge of the rubber slider skids across the surface of the road or sample.

Asphalt Binder Testing

We have applied our expertise in Advanced Asphalt Mix Testing to Advanced Bitumen and Binder Testing with the development of a complete range of dynamic and static testing equipment.

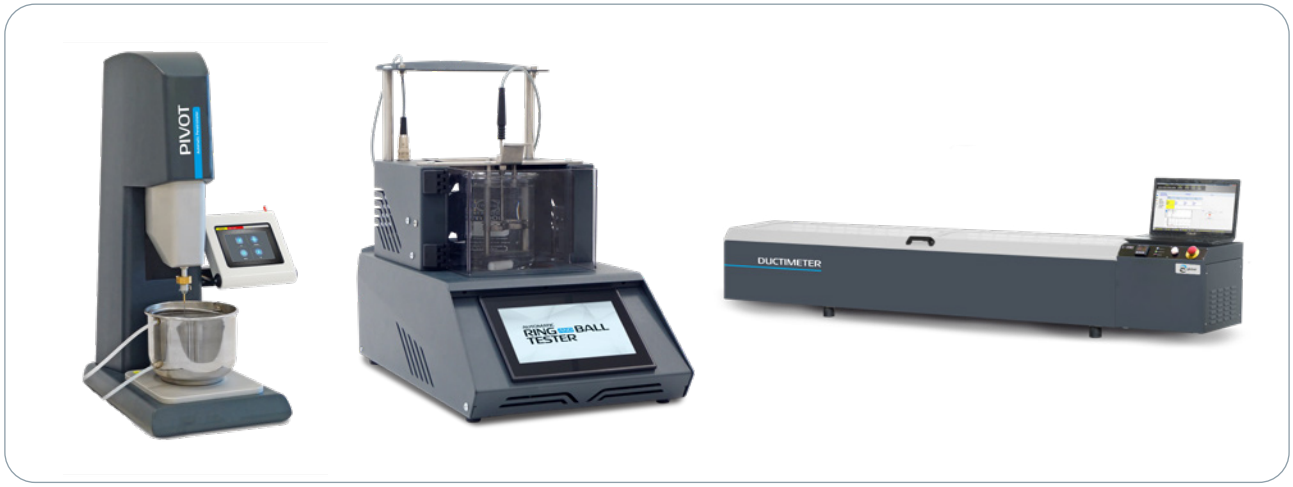
All our systems are fully automated and perform tests ranging from binder aging, workability, penetration grading to performance grading and more.

Our advanced machines and equipment are trusted by highways departments, national laboratories, universities, asphalt producers, oil companies, paving contractors and consulting engineers worldwide.

Binder Performance Testing

Bituminous materials, a by-product of the oil distillation process, look set to remain a constituent material of road paving for time to come, being able to withstand the flexural and compressive stresses caused by traffic.

Due to today's ever increasing intensity of traffic conditions, there is a strong demand for higher levels of performance from asphalt. At IPC Global, our wide range of Standards-compliant Binder Performance Testing equipment will fulfil all your needs.



Binder Empirical Testing

There are numerous tests for evaluating the bituminous specimen's grade, consistency, viscosity, temperature sensitivity and safety.

We offer a broad range of testing systems including our advanced and fully automatic penetrometer (Pivot) and our Ring and Ball apparatus that automatically determines the softening point of asphalt binders.

Other testers are available such as dynamic viscometers, breaking point apparatus, air bath, Bacon samplers and many more.

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