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ADVANCED
PAVEMENTS
TESTING

PReSBOX

Asphalt Prism Shearbox Compactor

www.controls-group.com

Unique Solution for Specimen Preparation

The PReSBOX provides the latest in asphalt specimen preparation and mix evaluation technology.

PReSBOX produces high quality asphalt prisms from which beams and cylinders with excellent air voids distribution, homogeneity and particle orientation can be cut.

Simplicity

- Reduced working time
- Three simple steps
- Minimal maintenance

Efficiency

- Single large prism
- Designed to produce multiple beams or cores
- Measures workability

Control

- Control compressive stress
- Monitor changes in air voids
- Measure shear stress

Quality

- Excellent air void distribution compared to gyratory and roller compactors
- Consistent samples with exceptional repeatability
- Excellent particle orientation and distribution

Specimen preparation is paramount regardless of what material you are testing or the sophistication of your testing systems. Precise and accurate materials analysis can only be achieved with high quality specimens. Testing poor quality specimens will produce misleading results and therefore waste valuable time and resources.

Great Benefits

Real Life Replication

- Unique shearing action produces prisms that closely replicate asphalt paved in the field.
- Produces specimens with excellent homogeneity, air voids distribution and particle orientation.

Superior Design

- User friendly, quick and easy test set-up.
- Easy and clean material insertion.
- Ergonomic design with ideal height and horizontal reach for safe material handling and optimal operator well-being.

Value for Money

- Refined system that is robust and reliable.
- Produces large uniform prisms that can be cut into multiple beams or cores.
- Only requires air and power to operate..

PReSBOX allows rapid and repeatable production of asphalt specimens in the laboratory with minimal operator involvement.

A United Effort

Asphalt technologists had long sought to replicate the field properties of asphalt under controlled conditions in the laboratory.

IPC Global's PReSBOX was designed and engineered in collaboration with the technical team from Pioneer Road Services (Ian Rickards & Tom Gabrawy), to create the highest quality laboratory specimens.

Measured Workability

Workability is a critical performance-related mix characteristic. In addition to producing high quality specimens, the PReSBOX also provides an accurate measure of the workability (relative compactive effort) of a hot mix asphalt (HMA) needed in the field to achieve a target void content.

Good workability does not necessarily mean poor deformation resistance, however good workability is required for optimum compaction.

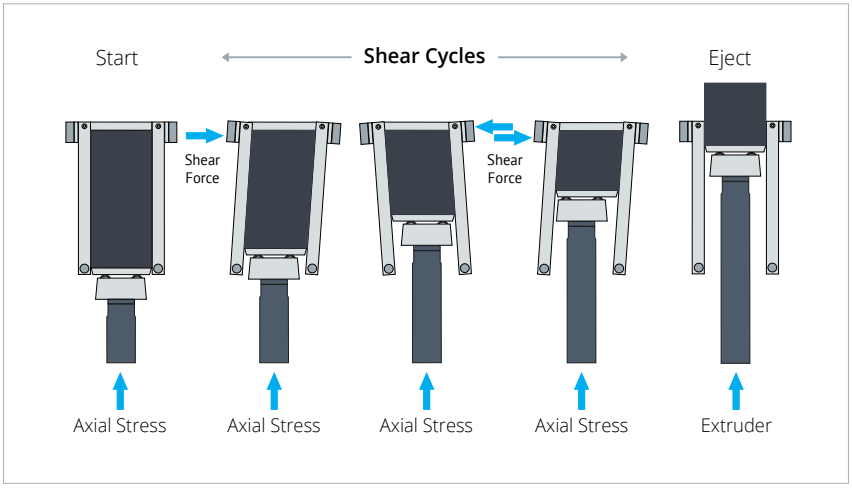
PC Integration

The PReSBOX Shearbox Compactor features a PC interface for user entry of compaction parameters, and provides a real-time graphic display of data, e.g. specimen height, vertical stress, shear stress and air voids per cycle.

Unique Shearing Action

The unique shearing action of the PReSBOX closely replicates the conditions under which asphalt is placed in the field and gives a good measure of workability.

The PReSBOX produces prisms with excellent homogeneity, air voids distribution and particle orientation.



"PReSBOX controls air voids variation between samples greater than conventional sample preparation methods, which guarantees a minimal variation in performance tests such as fatigue or permanent deformation"

Dr. J. Qiu, Delft University of Technology

Three Simple Steps

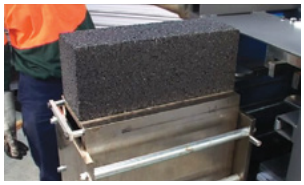
PReSBOX has been designed to replicate the field properties of asphalt, in a simple and efficient manner. No other shearbox compactor available on the market is designed for minimal heavy lifting and minimal specimen disturbance. PReSBOX can be operated by a single person at a safe height. Three main steps make set up, operation and sample extraction fast, easy and safe:

1. Charging the compaction mould with loose asphalt

Using the distribution chute provided, pour HMA into the compaction mould. Slots in the distribution chute ensure the material is tipped uniformly into the PReSBOX. Discharge gates at the bottom allow the material to fall freely into the mould avoiding segregation.

2. Commencing the test

The mould is then pushed into the PReSBOX and automatically locked into place. Using IPC Global's world renowned UTS Software the user can set the required compaction parameters. The PC controlled compaction process can then be commenced.



3. Removing the sample

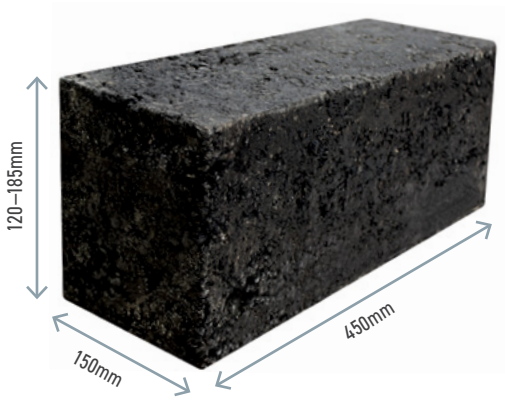
The compaction mould is then unlocked, pulled into the ejection position and the sample is elevated to a safe height to allow for removal and cooling.

Perfectly Uniform Specimens

The PReSBOX produces a prismatic specimen with nominal dimensions of 450mm (length) x 150mm (width) x 120 to 185mm (height).

Asphalt prisms prepared in the PReSBOX compactor can be sawn using IPC Global's Automated Asphalt Saw (Autosaw II or Multisaw) or cored using the Multi Core-Drill or KOR-BIT to produce prismatic beams or cylindrical specimens suitable for testing in IPC Global's Asphalt Mixture Performance Tester (AMPT Pro), DynaQube, Four Point Bend Apparatus, UTM Systems, AsphaltQube, AST Pro or TSRSTplus.

Specimens cut from PReSBOX prisms have identical properties with uniform air voids distribution and particle orientation ensuring consistent and repeatable test results.



Up to four 70mm wide prismatic specimens

Up to six 50mm wide prismatic specimens

Up to two 150mm diameter cylindrical specimens for Texas Overlay Test

Up to four 100mm diameter cylindrical specimens

Mould Heater

IPC Global's PReSBOX Mould Heater has been designed to efficiently and uniformly heat PReSBOX Asphalt Moulds to closely match the temperature of the hot mix asphalt. Heating the mould improves asphalt sample homogeneity by reducing the cooling rate of the HMA.

The integrated electrical heater and circulation fan provide high temperatures and continuous air flow to ensure that the mould is uniformly heated.

For more information see separate PReSBOX Mould Heater Datasheet.

PReSBOX Mould Heater

Accessories Kit

Sample uniformity is affected by the way in which the asphalt mixture is fed into the equipment. The PReSBOX distribution chute with discharge gate is designed such that segregation in the asphalt mixture is minimized, ensuring that the final samples are of the highest quality and consistency.

All HMA loading accessories are included with the PReSBOX as standard.

PReSBOX Accessories Kit

Specifications

Shearing Motion: Electromechanically driven at 4°	**Loading Platen Finish:** Smoother than 1.6µm
Vertical Stress: Pneumatic. User defined up to 2MPa* *Axial stress achievable with 10 bar compressed air supply	**Number of Cycles:** User definable (unlimited)
Shear Force: 50kN maximum	**Specimen Extruder:** Integrated
Sample Size: 450 x 150mm (WxD)	**Material Insertion/Removal Height:** 1,055mm
Compaction Frequency: 20 seconds per cycle +/-0.2 seconds	**Material Insertion/Removal Horizontal Reach:** 60mm
Mould Hardness: 50 Rockwell C (minimum)	**Material Insertion/Removal Horizontal Reach:** 60mm
Platen Hardness: 50 Rockwell C (minimum)	**Ergonomic Material Insertion/Removal:** Convenient height and short reach for safe operation
Mould Surface Finish: Smoother than 1.6µm	**Accessory Kit:** Includes distribution chute, levelling tool & comb
Loading Platen Size: 448 x 149mm (WxD)	

Standards

ASTM D7981—Compaction of Prismatic Asphalt Specimens by Means of the Shearbox Compactor

Dimensions & Weight

Footprint: 1,765mm x 1,540mm x 1,050mm (W x H x D)

Weight: 1,100kg

Services

Power: 220V-240V, 50/60Hz, 1ph, 5A

Air: Clean dry air at minimum 600kPa

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IPC Global Customer Care

IPC Global is the Advanced Pavement Testing Division of CONTROLS. As one of the longest established manufacturing companies in the world of Construction Materials Testing solutions, we are dedicated to supplying high quality, accurate, affordable, easy to use systems.

As a valued customer of CONTROLS, you will receive continuous, expert support and advice for your equipment. Furthermore, we can offer full installation and training in the correct operation of your CONTROLS equipment.

For support from our expert Customer Care Team, contact your local CONTROLS office / distributor or email **customercare@controls-group.com.**

For more information, please visit **www.controls-group.com.**

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