DWT UNIVERSAL AASHTO EN DOUBLE WHEEL TRACKER

The wheel tracking test is used for determining the susceptibility of Hot Mix Asphalt (HMA) to deform under load by measuring the rut depth formed by repeated passes of a loaded wheel at a fixed temperature.

This universal version complies either to AASHTO or EN standards being equipped with both stainless steel and rubber wheels, and performing the test in air or water. This solution is particularly suitable for research laboratories.
This version can be upgraded with automatic system which lift one of the wheel from the specimen that has reached the rut target continuing the test on the other specimen. See Upgrading options Automatic wheel lifting mechanism.

The **Double Wheel Tracker** can be used as part of your **Superpave performance based testing** program.

Machine body
Sheet steel, powder coated. Trasparent sliding doors.

Loaded wheel system
This Universal model is fitted with double stainless steel wheel, 203 mm dia. x 47 mm wide, and double solid rubber tyre, 203 mm dia. x 50 mm wide.
The wheel load is adjustable in 100 N steps from 700 to 1500 N (for 77-PV33D05-06 only). The system includes a motorized lifting system of the wheel assembly at the end of the test.

Wheel tracking carriage
The wheel is moved 230 mm backwards and forwards on the top of the slab, which is fixed. The speed is adjustable via the PC from 20 to 30 cycles per minute (40 to 60 passes). The longest slab dimension is oriented to the wheel's direction of travel. Special slab moulds for circular samples obtained from coring or gyratory compactors are also available. See accessories.

Temperature control system
The AASHTO Hamburg type Standard states that the test must be performed in a water bath over a range of 25 to 70°C ± 1.0°C, whilst the EN requires either air or water environment. In both systems a water level of about 20 mm above the sample has to be maintained. Where a heated air environment is specified, the specimen, during testing, must be maintained at uniform and constant specified temperature ± 1° C. All versions fully satisfy and exceed the above requirements: the temperature accuracy is ±0.5°C.

Temperature controlled cabinet
The Universal AASTHO/EN versions feature an inbuilt temperature controlled cabinet for testing in air or in water, designed to avoid condensation problem (in water testing) and prevent overtemperature which may damage the mechanical parts or alter the transducer accuracy. Furthermore the system ensure thermal stability and provides rapid test start when the conditioned temperature has been reached.

Impression measurement system
Each wheel is fitted with linear transducer measurement system for deformations 0 to 50mm ±0.01mm.

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SPECIFICATION

- **Displacement motion**: the arm is moving and the carriage is fixed
- **Wheel travel**: 230 mm
- **Wheel speed**: variable from 20 to 30 cycles/min
- **Wheel load**: 700/705 N by weigths (78-PV33B05/6 models), adjustable from 700 to 1500 N in 100 N steps (78-PV33D05/6 models)
- **Temperature range**: ambient to 80°C, ± 0.5°C
- **Rut depth transducer range**: 50 mm, 0.01 mm accuracy
- **Moulds**: not included, to be ordered separately
- **Slab thickness**: adjustable from 40 to 100 mm in 10 mm steps
- **Overall dimensions (w x d x h)**: 1540x1020x1600 mm
- **Weight approx.**: 600 kg
- **PC and software**: included

Models	**78-PV33B05 78-PV33D05 (1500 N)** **78-PV33B06 78-PV33D06 (1500 N)**
Standards	AASTHO T324 / EN 12697-22 / TEX-242-F
Testing mode	In air and water
Description	DWT, Hamburg and EN type, double wheel tracker, interchangeable wheels (steel for AASTHO and rubber for EN), wet and dry conditioning
Material and dimensions (diameter per width) of the two loaded wheels	Stainless steel 203x47 mm Rubber tyre 203x50 mm

Temperature control method (accuracy ±0.5°C for both water and air)	Air: Three 1200 W electronically controlled air blowers Water: Three 1500 W heaters, re-circulating pump, automatic feed and control level
Power rating	5500 W

STANDARDS

- EN 12697-22
- AASHTO T324

FEATURES

- Full conformity to EN, DOT methods (including TxDOT TEX-242-F) and AASHTO T324-19, including sinusoidal movement (RMSE certificate available on request) and rut depth measurement in 11 defined points
- Fully automatic test performance on two specimens or one specimen
- Variable wheel speed from 20 to 30 cycles/min
- Fixed table, mobile wheel 230 mm travel
- Wheel load of 700/705 N or adjustable from 700 to 1500 N
- Temperature range from ambient to 80°C (±0.5°C)
- Accurate temperature control (±0.5°C) for both in water and air test
- Ruth depth transducers feature 50 mm travel, 0.01 mm accuracy
- Direct rut depth measurement system, with transducers axially mounted in alignment with the wheel's centre
- Motorized wheel-assembly lifting system for easy removal of slabs
- Free access to the wide testing area
- Optional independent lifting system for double or single wheel testing
- Slab mould size of 400x300 mm, 360x300 mm (for 320x260 mm slabs), double 150 mm gyratory compactor cylinders, 200 mm/8"/10" diameter cores
- Slab thickness adjustable from 40 to 100 mm (in 10 mm steps)
- Extensive use of stainless steel in the machine's construction; not limited to the parts in contact with water
- Laptop PC control with dedicated software including results performance, test database management and multiple test elaborationAutomatic water filling and leveling system, no need to adjust or control the water level above the specimen during test
- The software includes the possibility to program pre-heating and machine start (without operator intervention) and to measure the rut depth measurement in user-defined positions for research purposes or local specifications

ACCESSORIES

78-PV3/001

Set of two moulds 400x300 mm for PAVELAB DWT Double wheel tracker

78-PV3UP10

System for the independent lifting of the loading wheel at the rut target, continuing the test, without interruption, with the other wheel.

78-PV3UP20

Couple of additional temperature probes for monitoring the two samples temperatures.

78-PV3UP40

Upper closing panel made from transparent plastic for DWT machine

78-PV3/002

Set of two moulds 360 x 300 mm (suitable for 320x260 mm slabs) for PAVELAB DWT Double wheel tracker

78-PV3/003

Set of two mould adaptors for 150mm dia. cylindrical sample, to be used with 360 x 300 mm, 400 x 300 mm moulds or with trays

78-PV3/005

Set of trays with handles for 150 mm diameter cylindrical samples, conforming to AASHTO T324. Adaptors for 150 mm dia. cylindrical sample to be ordered separately (see accessory 77-PV3/003)

78-PV3/011

Set of two moulds 400x300 mm for PAVELAB DWT Double wheel tracker model 77-PV33D05 and 77-PV33D06, maximum sample height 120mm

78-PV3/012

Set of two moulds 360x300 mm for PAVELAB DWT Double wheel tracker model 77-PV33D05 and 77-PV33D06, maximum sample height 120mm

78-PV33B00/CAL

Set of traceable calibration certificates for 78-PV33xxx air and water conditioning wheel tracker (including load, two displacement transducers, wheel speed/frequency, tyre hardness - if applicable, air temperature and water temperature).

ORDERING CODE

78-PV33B05

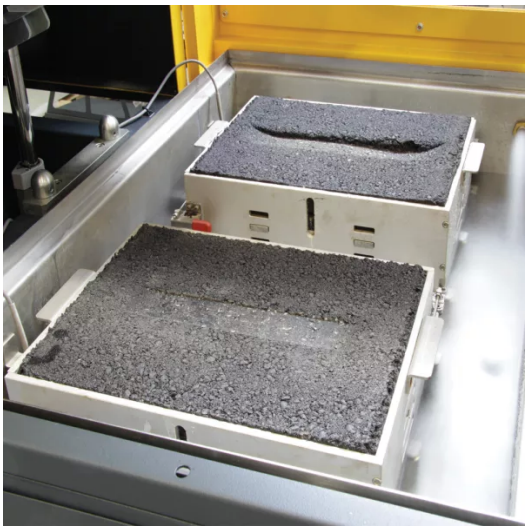
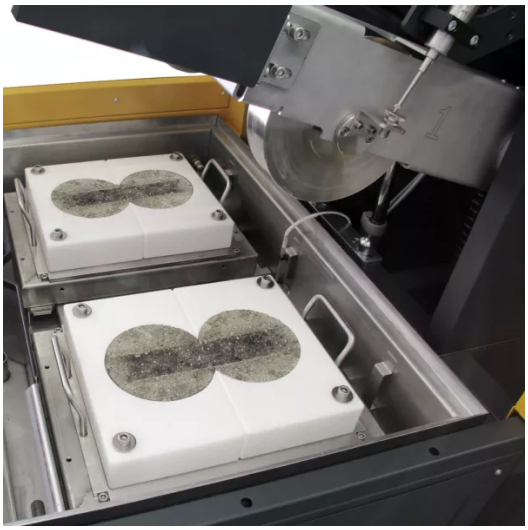
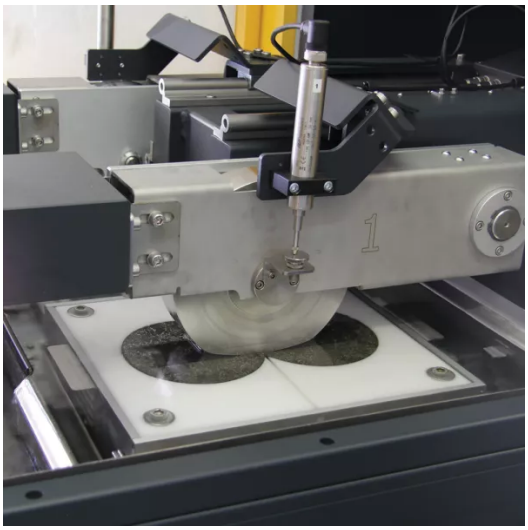
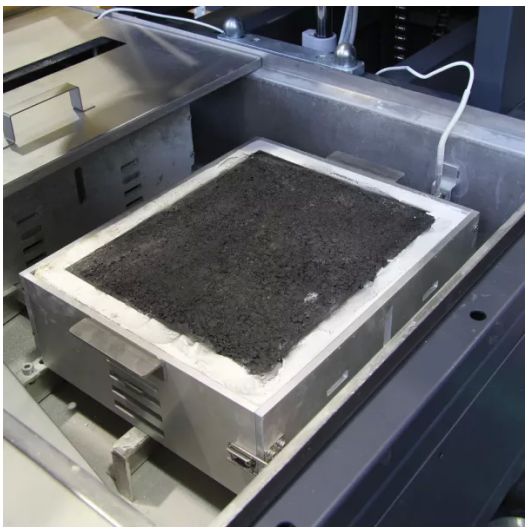
DWT Wet and Dry double wheel tracker. Conforming to AASHTO T324 and EN 12697-22 Small Size Device, air and water conditioning. Complete with both stainless steel and rubber wheels, PC, software and transparent sliding doors. 380V/50Hz/3ph+N

78-PV33B06

DWT Wet and Dry double wheel tracker. Conforming to AASHTO T324 and EN 12697-22 Small Size Device, air and water conditioning. Complete with both stainless steel and rubber wheels, PC, software and transparent sliding doors. 220V/60Hz/3ph

78-PV33D05

DWT Wet and Dry double wheel tracker, to AASHTO T324 and EN 12697-22, air and water conditioning. Wheel load adjustable up to 1500 N. Complete with stainless steel and rubber wheels, PC, software and transparent sliding doors. 380V/50Hz/3ph+N

78-PV33D06

DWT Wet and Dry double wheel tracker, to AASHTO T324 and EN 12697-22, air and water conditioning. Wheel load adjustable up to 1500 N. Complete with stainless steel and rubber wheels, PC, software and transparent sliding doors. 220V/60Hz/3ph