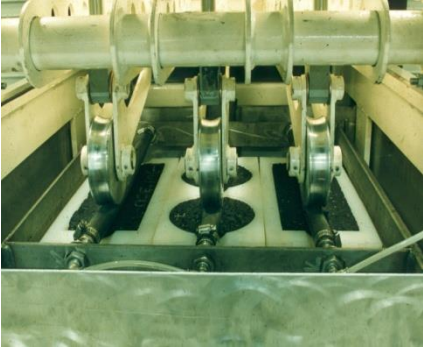
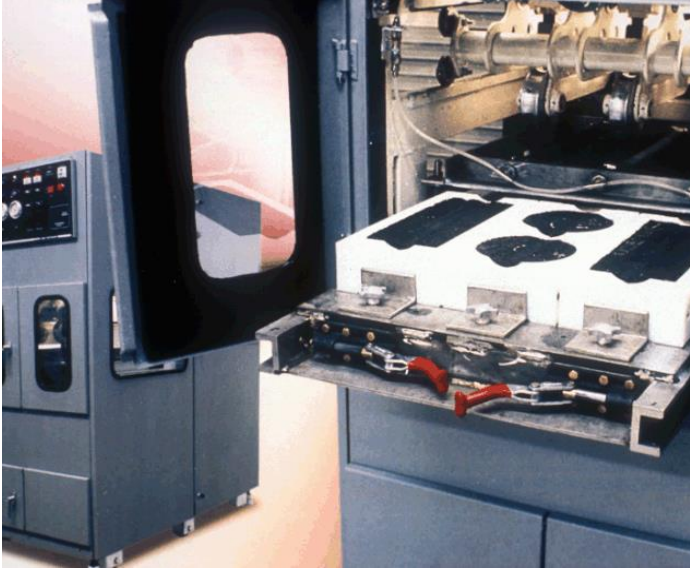


Pavement Technology, Inc.

7129 Wheat Street NE
Covington, GA 30014

New Generation Asphalt Pavement Analyzer (APA)



New Gen APA Rut Testing Utilizing Concave Wheels and Rubber Hoses (AASHTO T340-10)



Rutted Superpave Asphalt Samples Utilizing the Hamburg Test Method AASHTO T324-22)



Rutted Superpave Asphalt Samples Utilizing the APA Test Method (AASHTO T340-10)

General:

The New Generation APA is a multifunctional loaded wheel tester that is used to evaluate Cold Mix, Warm Mix, and Hot Mix asphalt in a dry or submerged in water condition. The New Generation APA automatically displays in a numeric and graphical format the real-time development of permanent deformation.

The New Generation APA can perform the AASHTO T324-22 Test Method (Hamburg Test Utilizing Solid Stainless Steel Wheels) and the AASHTO T 340-10 Test Method

(Rut Testing Utilizing Stainless Steel Concave Wheels and Hoses).The New Generation APA is CE approved and also meets all provisions of EN12697-22 and BS-598.

The New Generation APA has a frequency drive that allows a user to test mixes at multiple speeds and multiple rates of loading.

The New Generation APA can maintain temperatures -10C to 80C.

The New Generation APA has a "High Pressure Feature" that allows a user to perform High-Pressure testing at High Contact Pressures of 250+psi (Airport Runways, Taxiways, Intersections, Etc)

The New Generation APA incorporates electronic digital regulators that allow a user to set and maintain the load during a test. These regulators combined with the PLC PC based control system allow a user to change load during a test if desired.

The New Generation APA. charts depth versus stroke count and depth versus elapsed time. The New Generation APA control system is capable of determining the "Rate of Rutting".

Overall Dimensions:

Width: 88.90cm (35 inches)
Length: 177.80 cm (70 inches)
Height: 203.20 cm (80 inches)
Weight: 1357.47 Kg (3000 lbs.)

Electrical Requirement:

230 VAC, 60HZ, 50 Amp, Single Phase – 4 wire, NEMA#14-50P

Compressed Air Requirement:

8 SCFM @ 827 Kpa (120 PSI)

Water Tank Capacity:

4.68 CuFt, 35 Gallons full

APA Basic Components:

- A) Wheel tracking/loading system
- B) Sample holding assembly
- C) Temperature control system
- D) Water submersion system
- E) Rut depth measurement device
- F) Operating controls
- G) Sample temperature pre-conditioning shelves

A) Wheel Tracking / Loading System: The wheel tracking and loading system applies wheel loading on repetitive linear wheel tracking actions with controlled magnitude and contact pressure on beam or cylindrical samples for rutting, fatigue, and moisture damage testing. This system consists of the following components:

A1) Driving Assembly, consisting of a gear motor and cam connected to the loading assembly through a sliding frame and drives the loading assembly at 60rpm frequency and 12-inch stroke. Speed and stroke are adjustable for Hamburg Testing.

A2) Loading Assembly, consisting of a sliding frame, three independent pneumatic cylinders (250 lbs. Capacity), each attached with an aluminum wheel, and individual solenoids, able to develop an adjustable contact pressure up to 200+ PSI.

A3) Hose Rack Assembly (Stainless Steel), equipped with three (3) hoses, each having a quick release fitting.

a1) Rubber Hoses, special high-pressure GATES 77B $\frac{3}{4}$ inch 750 PSI.

B) Sample Holding Assembly: The assembly holds the samples directly underneath the concave wheels/rubber hoses or solid steel wheels to allow the samples to be subjected to the wheel tracking actions during testing. A sliding tray that allows the samples to be pulled out from inside the machine making it easy to install the samples and to perform test measurements. The assembly consists of the following components:

B1) Sample Tray, (Stainless Steel) which has two track rollers on each side bearing against rails. When the sample tray is in testing position it can be locked against the frame by two toggle clamps.

B2) Sample Molds, twelve (12) High Density Polyethylene (HDPE).

- Three (3) each for beam specimens,(rutting), 300 mm \pm 0.5 mm in length, 125mm \pm 0.5 mm in width, 75mm \pm 0.5 in height.
- Three (3) each for cylindrical specimens, (rutting and/or moisture damage), 150 mm \pm 0.5 in diameter, 75mm \pm 0.5 in height.
- Three (3) each for fatigue crack testing, 300 mm \pm 0.5 mm in length, 125mm \pm 0.5 mm in width, 75mm \pm 0.5 in height, with end restraining brackets.

- Three (3) each for Hamburg Type Testing, 300 mm \pm 0.5 mm in length, 152mm \pm 0.5 mm in width, 62mm \pm 0.5 in height.
- C) Temperature Control: heating and cooling of the main chamber is accomplished by a series of heating strips and a cooling unit, which are regulated by a microprocessor based temperature controller. The temperature can be controlled from -10° C to 80° C \pm 1.5° C (14° F to 176° F).
- D) Water Submerging System: A water submerging system allows water to cover the test samples during the submerged water test and readily drains when testing is completed and before the sample tray is disengaged from the testing position. The system consist of the following components:
- D1) Water Tank (Stainless Steel) with heating element and external pump for introduction of water into reservoir.
- D2) Water Reservoir -Capacity Approx. 30 gal. (Stainless Steel) which can be raised and flooded with water for submerged-in-water testing. The reservoir is equipped with a pneumatic cylinder, which allows it to be raised and lowered as needed. The reservoir is equipped with a weir valve on the back to allow draining back into the tank. When pumping, a constant water level of approximately ½ inch over the top of the test specimen is maintained during the submerged-in-water test.
- D3) Pneumatic Cylinder to raise and lower the water reservoir.
- E) Rut Depth Measurement Device: LVDT's are used to obtain measurements.
- E1) Calibration Device, for calibrating wheel load, with 0.001 inch precision.
- F) Operating Controls: The operating controls utilize a PLC PC Based Control System with New Gen 5 Software. All calibration and operation of the New Gen APA is performed utilizing a laptop.
- G) Sample Temperature Pre-Conditioning Shelves: These shelves are located at the base of the New Gen APA. These shelves are used to bring test specimens up to a desired temperature.
- G1) Enough space is provided for preconditioning of three (3) beam samples or six (6) cylindrical samples while testing is in progress.