Dynatest

8082 Heavy Weight Deflectometer (HWD)

The Dynatest 8081 Heavy Weight Deflectometer (HWD) is more than just a testing device—it's a solution built for airport and pavement agencies managing the toughest, high-capacity pavements.

Traditional testing methods can struggle to simulate the massive load demands of modern aircraft.

The HWD, however, effortlessly handles these requirements by accurately reproducing the load impact of aircraft like the Boeing 747/777 and Airbus A380, capturing critical data on pavement durability and performance.

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Dynatest®
Pavement Expertise in Action

Who We Are

Dynatest is a pioneer in non-destructive pavement testing solutions, delivering Danish-engineered, high-precision equipment designed to assess road quality and longevity with innovative accuracy.

Our commitment to innovation means that every piece of Dynatest equipment—from our Falling Weight Deflectometers to our specialized software—is crafted to provide reliable, actionable insights.

With over four decades of expertise, we help engineers, airports, and road agencies worldwide make data-driven decisions that improve pavement performance, optimize maintenance budgets, and extend infrastructure life.

Dynatest solutions empower clients to proactively manage their pavements, ensuring safer, longer-lasting roads and runways for the future.

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Heavy Weight Deflectometer (HWD)

Similar to the FWD, the HWD is designed to impart a load pulse to the pavement surface simulating the load produced by a rolling vehicle wheel. The load is produced by dropping a large weight on a set of rubber buffers on a bracket connected to a circular load plate.

A load cell mounted on top of the plate measures the imparted load. Deflection sensors (geophones) mounted radially in and from the center of the load plate measure the deformation of the pavement in response to the load.

The post processing software, Dynatest ELMOD (Evaluation of Layer Moduli and Overlay Design) can be used to backcalculate the pavement layer moduli based on the impact load and surface deflection basin.

The results can effectively be used for the evaluation of pavement structural condition and overlay design based on empirical or mechanistic- empirical pavement design guides.

The HWD data can also be used to calculate the degree of load transfer between adjacent concrete slabs, and to detect voids under slabs in rigid pavements.

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Standard Equipment

- 4 segmented loading plate with swivel commodates uneven or rutted pavement surfaces
- 7 or 9 deflection sensors (geophones)
- Air/Pavement Temperature Sensors
- Distance Measuring Instrument (DMI)

Available Options

- Global Positioning System (GPS)
- Camera system for plate location or Right of Way Imaging
- On board generator for standalone operation
- Trailer mounted light(s) or strobe(s)
- Rear or rear and transverse sensor extension bars
- Ground Penetrating Radar (GSSI or IDS)
- Spare parts kit
- Tool kit

Key Features

The Heavy Weight Deflectometer is a nondestructive device designed for structural pavement testing, offering comprehensive insights ideal for mechanistic-empirical analysis and design.

With an extensive loading range of 30 to 320 kN, it's versatile enough to test a wide array of surfaces, from paved and unpaved roadways to parking lots and airfield pavements.

- Allowing for simulation of new large aircraft such as A-380 and B-777
- Excellent repeatability
- Single person operation
- Quiet operation
- Accommodating up to 15 deflection sensors
- Up to 60 test points per hour
- AASHTO R32-11 calibration protocol compliant
- Passes TRL correlation trials

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Data Collection Software

- Intuitive and user-friendly software facilitates data collection in the field
- Supports multiple languages
- Stores the HWD data in Access (.mdb) databases for further process
- Generates the following legacy formats: .fwd, .f25, .PDDX
- Real-time plotting of the surface moduli along the test sections

ELMOD Software

Evaluation of Layer Moduli and Overlay Design

Dynatest's ELMOD software is used for the analysis and design of flexible, rigid, and composite pavements, enabling quick data reduction and analysis of HWD load and deflection measurements.

- Capable of backcalculation of the layer moduli, for a typical drop sequence in less than a second
- Fast calculation of the seasonally adjusted moduli, residual life of the pavement, and required overlay thickness for a given service life
- For maintenance and rehabilitation (M&R), the LCCA (Life Cycle Cost Analysis) module allows the user to select the optimum M&R solution for a pavement section according to cost/benefit ratios
- To analyze the bearing capacity of airfield pavements, the ELMOD software can calculate both the new ACR/PCR classification and the traditional ACN/PCN values. This dual calculation will be available until November 2024, when the new ACR/PCR system becomes fully applicable under FAA AC150/5335-5D guidelines.

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New bearing capacity classification ACR/PCR

The pavement bearing capacity is a key point when it comes to the safety of runways. The International Civil Aviation Organization (ICAO) has introduced a new classification ACR/PCR which will take effect in November 2024.ACR stands for – Aircraft Classification Rating and tells how different aircrafts affect pavements.

PCR stands for – Pavement Classification Rating and shows how much weight the pavement can carry. By using this new ACR/PCR classification, airports can improve their operations, enhance safety, and plan better pavement maintenance.

Our product doesn’t just perform – it proves itself.

Scan to see our product at work

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HWD Safety Features

Our equipment is equipped with safety features to ensure safe operation, including an automated load system that minimizes manual handling and an emergency stop function to halt operations if hazards are detected.

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Dynatest®

Maintenance, Service & Calibration

Our team of highly trained service technicians is always ready to assist you when it comes to planning your equipment service and maintenance needs.

Let us reduce your workload so you can focus on performing pavement measurements and collecting precise data.

Do you need assistance?

You are always welcome to contact us if you want to know more about how we can help your company.

If you want a non-committal talk or need more information about Dynatest, we are also happy to help.

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Your Dynatest equipment is a sophisticated piece of technology and a significant investment in your business.

Taking good care of your Dynatest equipment is essential to ensure both optimal performance and longevity of the equipment – all of which add to your return on investment.

Neglecting to service and maintain your equipment can lead to costly repairs and uncertain test data and down time.

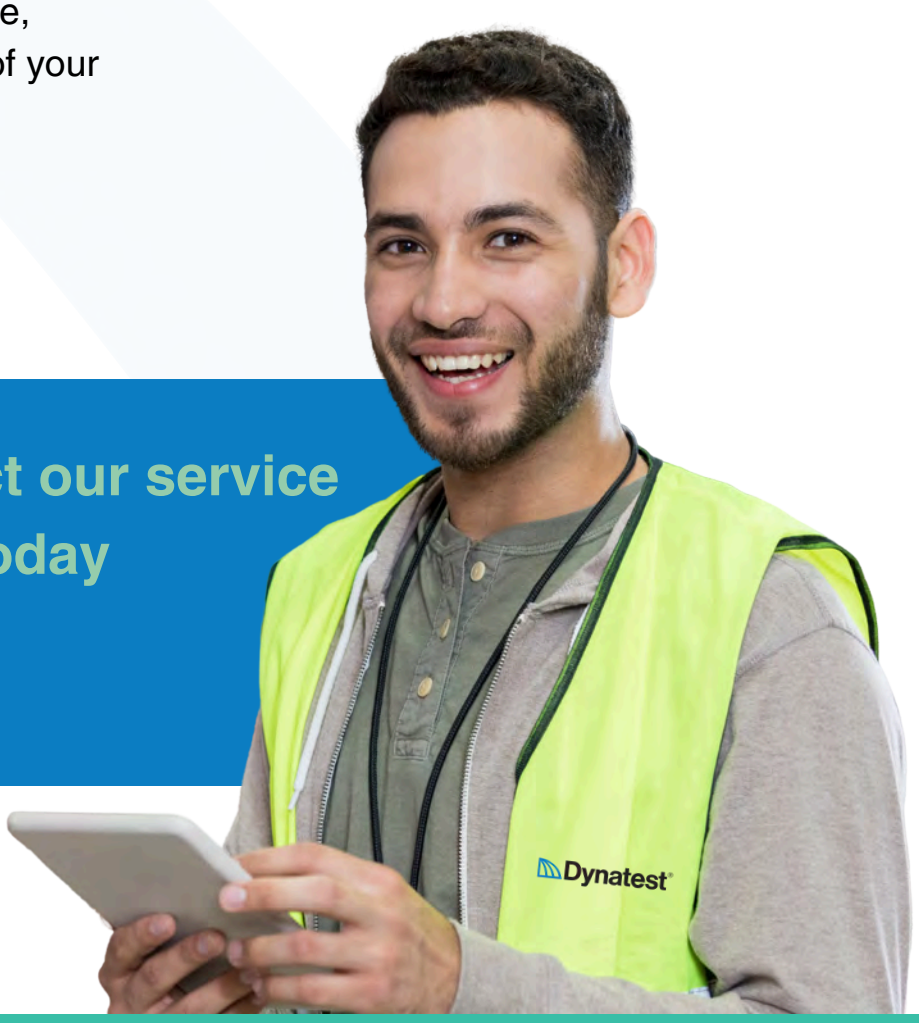
Eliminate the risks of downtime and defects through regular service, maintenance and calibration of your Dynatest pavement testing equipment.

Service and calibration can be carried out by our team of skilled technicians at our production facilities in Denmark (Ballerup) or Florida (Gainesville) or at your own location.

Our service team will work with you to plan the correct level of service and maintenance for your operational needs and the realities of your budgets and also for your operational timetable.

Regular maintenance, calibration, and service will also contribute to an increased overall lifespan of your equipment.

Contact our service team today



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Scan for more information about the HWD

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