DYNAPLAQUE 2 : BEARING CAPACITY OF THE ROAD PLATFORM

Automated measurement of the dynamic modulus of soil

NF P94-117-2

Device qualified mlpc®

Description

The Dynaplaque 2 is the only reference equipment with the official qualification mlpc. It fulfills all the requirements of standard NF P94 117-2 and and is used for the following applications:

- measurement of the deformability of formation levels (top of subgrades)
- determination of their homogeneity during construction.
- assessment of the bearing capacity and fatigue behaviour of structures such as car parks, building site tracks, forestry or agricultural roads.

The dynamic stress applied to the platform to be tested is similar in intensity and frequency to that caused by the passage of an axle loaded to 13 tonnes and travelling at 60 km/h. It is generated by the fall of a mass on a damping spring placed on a load plate.

The complex analysis of the impact allows the dynamic deformation modulus of the structure at the test point to be calculated directly.

The system is mounted in a fixed position on the chassis of a light 4x4 or utility vehicle and allows measurement points per day to be effortlessly performed numerous compared to the traditional plate test.

Highlights

Efficiency / Security
→ High number of measurement points per day.
→ Setting up the measuring system without leaving the driver's seat.

Maintenance / Metrology
→ Annual metrology coupled with preventive maintenance.
→ ILAC metrology continuity

Easy to process
→ Direct reading of the result in relation to the expected threshold.
→ Quick provisional acceptance report in the field, which can be supplemented in the office with photos, plans and other elements in connection with the GTR (road subgrades working group).

Durability
→ Optimised transferability to new carriers
→ Units with service periods 20 years.

Features

DYNAPLAQUE 2 kit	
Weight of the package	650 kg
Weight of the falling mass	125 kg
Plate diameter	600 mm
Drop height	Adjustable from 45 to 55 cm
Force on impact	70 kN+/- 10kN+/- with 125 kN load cell (maximum range) Measuring chain uncertainty: <1% over the measuring range
Deflection	Bandwidth: > 1 kHz Measurement chain uncertainty: <0.025 mm + 1% measured value
Measuring range	from 20 Mpa to 250 Mpa
Power supply	12 V (vehicle power)
Data transfer	USB, Ethernet, Wifi, Bluetooth
GPS	AGPS, WAAS, EGNOS and MSAS Positioning accuracy: 2 m CEP with SBAS
Software	Measurement acquisition and processing (Windows, Android, iOS) - Image environment of the measurement - Cartographic 'background' map) - Test report with status (and in accordance with the Labroute standard)
Deployment	
Integration/Dimensioning	Compact mechanical assembly, articulated and integrated into the vehicle: robustness, precision of application, great stability, The operator does not need a specific permit for crane operation
Measuring altitude	from + 20 to - 80 cm
Power supply	Autonomous 12 V hydraulic power station (vehicle energy)
Control	Remote control with emergency stop
Vehicle	
Choice of vehicle	At the convenience of our customer, after technical validation (example of realization on: Ford Ranger, Toyota Hilux, Iveco Daily...)
Overall height	2.80 m

Standard equipment

The machine comprises :

- the shock generator consisting of the falling mass, the operating cylinder which also guides this mass, the damping spring block and the release hooks
- the sensors integrated in the load plate
- the manoeuvring frame with the fork, the tilting cylinder and the hydraulic unit
- the distance travelled encoder for marking in the longitudinal profile
- an auxiliary GPS integred into the data acquisition system.

Accessories and options

The system is equipped with an extension kit to go down to the bottom of the trenches (80 cm below the platform level).

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