

WHEEL TRACKER NEW GENERATION - Measure of rutting susceptibility -

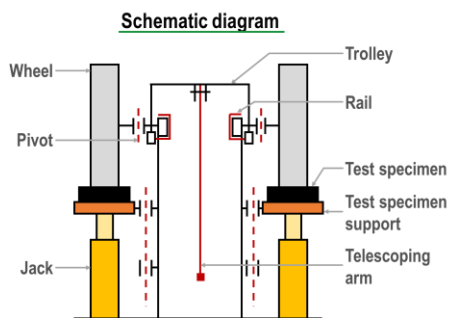


Lab equipment designed to assess the resistance to rutting of asphaltic materials under conditions which simulate the effect of traffic following NF EN 12697-22 Large device (sept. 2007).

Rectangular asphalt specimens are subjected to repeated passing of a wheel with pneumatic tires. This wheel is attached to a trolley, animated with a sinusoidal reciprocating motion, thus causing permanent deformations.

Measurement

Each of the two wheels moving with a reciprocating motion, with or without skidding effect, tracks on an asphalt specimen which the deteriorations are observed. Stresses induced in the material result from the load application on each specimen support. One of the available result is the average of the evolution of the rut found on at least two specimens. The final number of cycles depends on the materials, the temperature and the study purpose.



Overview

The continuous rotation of a gear-motor unit is converted into a continuous reciprocating motion thanks to bearing group supporting a telescoping arm. It transmits its movement to a trolley on two rails linked to the assembly. The trolley simulates the vehicle axle action. It has two steered wheels; each is mounted on a pivot. The middle plane of each wheel passes, for a zero orientation of its pivot, by the longitudinal axis of the test specimen. The pressure action of each tire on the material is obtained by charging a jack acting on the specimen holder guided on the frame. A heating system using air circulation and a regulator maintain the temperature constant during the test.



Improvements

- . « Research mode » for testing up to 80 °C.
- . Rising to the temperature of 60°C in only 4 hours.
- . Measuring time reduced: Easier rutting measurements thanks to test specimen transfer.
- . Easier maintenance thanks to disassembly and reassembly of the side panels in less than 2 minutes.
- . While testing, optimal visibility thanks to large windows and inside lighting.
- . Programmable heating (e.g. the day before testing).

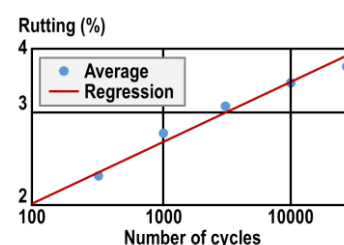
- . Improvement of the heating time, the stability and the temperature uniformity within the housing.
- . Noise reduction.
- . Indicator light to follow the test status (OK/Standby/Breakdown).
- . In 2019: Fully automated acquisition of measurement data → no waiting time.

Features

Adjustable wheel travel	360 – 410 (default) – 450 – 500 mm
Wheel frequency	1 +/- 0,1 Hz
Maximal wheel load	5,5 kN
Test specimen size (l x w)	500 x 180 mm ²
Specimen thickness	20 à 140 mm
Temperature range	de 35 à 80° C
Net dimensions (l x w x h)	173 x 155 x 200 cm ³
Overall dimensions (l x w x h)	209 x 235 x 246 cm ³
Net floor area	2,7 m ²
Overall floor area	4,9 m ²
Min. work area (+0,8 to +1,0m on 3 sides)	14,6 à 17,8 m ²
Weight approx.	1200 kg
Power	6 kW
Energy	Rating pressure 7 bars 8 NL/min for pressure control 300 NL/min peak
Power supply	400 V (three-phase power)
Maximum inflation pressure	700 kPa
Language	French and English



Typical result



Applications

- Study the ability of the rutting of the hydrocarbon materials intended for bearing or base layers, according to standard NF EN 12697-22, large device of September 2007.
- Also study normal or non-skid surface coatings. In this case, it is possible to make the wheel skid sideways to increase the stripping effects.
- Study the evolution of texture under traffic.



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