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Cetiev

Technical Centre for Vehicle Equipement Industries

OBJECT

In a bid to improve the competitiveness of automotive industry in Morocco, the Ministry of Industry, Trade and Upgrading of Economy, jointly with the Moroccan Association for Automotive Trade and Industry, set up the Technical Centre for Vehicle Equipement Industries in 2005, with a financial support from the European Commission, as part of the MEDA II Program.

GENERAL MISSION

- To support enterprises in the development and validation of their products;
- To ensure technological and regulatory monitoring;
- To conduct compliance tests on car components;
- To act as a neutral interlocutor able to issue opinions based on tests as part of standardization and/or regulation works;
- To organize specialized trainings.

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1. Manufacturers' tests :

1.1. testers Filter :

These testers can:
- evaluate the efficiency of a filter of fuel, gas or diesel, and oil filter through the measurement of particles and retention capacity,
- evaluate the efficiency of water separation from fuel filters,
- measure differential pressure at the level of the filter,
- check manufacturing compliance and determine the first bubble point

Reference norms :
ISO 4548-12, ISO 13353, ISO 19438, ISO 2942

1.2. Tester of remote control cables :

This tester can conduct tests of endurance, flexibility and drag on the clutch cable, throttle control cable and hand brake cable (also known as remote control cables), in compliance with the specifications of automotive manufacturers (particularly Renault and Peugeot).

1.3. Testers of engine radiators :

These equipments are used to measure the performances of heat exchange in water cooling radiators, and conduct tests on vibration endurance of radiators and their fixing components under the effect of vibrations emitted by the chassis.
These tests are conducted in compliance with the specifications of automotive manufacturers (particularly Renault and Peugeot).

1.4. Sensing devices for the evaluation of exhaust noise :

This set includes sound meters (type 2238, first class), which are accredited by all European countries, along with a portable kit for the analysis of exhaust noise (type 3638).
It has also some manometers which can measure back-pressure at the level of exhaust systems, in addition to some precision tachometers to measure the speed of gas or diesel engine.

1.5. Seat testers :

Test stands of the thrust of simple or double seats
- Two points of thrust for each seat
- Four points of thrust for double seats

Bench for energy dissipation in compliance with regulation 21 of the UNO Fatigue test stands
- Vibrating table with a frequency of 5 to 100 Hz, maximum displacement of 100 mm.
- Test stand allowing the realization of loading cycles/relief (jacks up to 5000 N)

Realizable tests :
R80, R21 manufacturer specifications.

1.6. Testers of batteries :

Tester of load/unload with :
- 1 load/unload circuit 50A
- 1 unload circuit of 1500 A
- A Bain Marie (water bath)

In compliance with the descriptions of the Moroccan norm NM 22.2.013 and the manufacturers' specifications.

2. Technical contrôl equipements :

Equipment for the verification of installations of the Center for Technical Control of in-service vehicles
List of equipment :
- 1 brake tester with rollers
  (With upstream and downstream clearing, flat zones of 7.50 meters long)
- 1 testing device of suspension symmetry
  (With electromechanical placement)
- 1 device for rotation control (side slip tester)
- 1 device for inspection of tyres
  (In conformity with the Directive CEE 86/217)
- 1 device for the control setting of light signals (a flat zone of 8.6 x 4 m)
- 1 device for the analysis of exhaust gases (4 gases)
  (In compliance with norm ISO 3930 and OIML R 99)
- 1 device for measuring the opacity of smoke
- In-ground piston lift (up to 4000 kg), with a sufficient release for vehicle movements
- Speed detection device up to 250 km/h minimum (speed control) and a taximeter
  for the calibration of taxi meter machines.
  Reference norms:
  EN 12645, EN 1494, ISO 3930, Directive CEE 86/217

3. Electromagnetic compatibility testing and electrical testing

Semi-anechoic chamber for radiofrequency tests and measurement of emissions generated by vehicle electronic and electrical sub-assemblies (useful dimensions 7.7m X 4.6 m X 5.4m)
- Measurement of conducted and radiated emissions 150 KHZ to 7GHZ (a conducted range of 150 MHZ)
- Radiofrequency measures (radiated, fundamental and harmonic power) up to 5 GHZ
- Electric testing on supply lines (50 V, 15 A)
- DES testing (25 KV in the air and when starting)

Realizable tests :
ISO 7637-1, ISO 7637-2, EN 6100 4-2, EN 55022, EN 55011, EN 300220, 2004/104/CE, 72/245/CEE.

4. Vehicle dynamic testing :

4.1. Load speed tester :
- Maximum tyre diameter : 1400 mm
- Maximum tyre width : 605 mm
- Maximum radial load : 8000 kg
- Maximum camber angle : ± 6°
- Maximum rolling speed : 300km/h
- Smooth motor bull wheel tester, diameter (1,707), width (about 0,60 m)
- Acquisition and handling devices (possibility of handling rolling cycles under differing loads, for differing speeds and differing durations)
* Balancing tools and accessories (utility vehicles and heavy vehicles)
* PC software and interface for data recoding and processing
* Hydraulic station from 0 to 200 bars

Realizable tests :
ONU regulations : R30, R54, R106, R108, R109
UE Directives : 92/23/CEE, 2001/43/CE

4.2. Brake dynamometer bench :
- Maximum inertia : 150 kg*m² approximately, adjustable at 5 to 150 kg*m²
- Maximum speed : 2500 revs/min approximately (250 km/h)
- Maximum braking torque : 5000 N.m
- Pressure regulation, in torque, in deceleration, torque provided for the engine of 1347 Nm from 0 to 1298 t/min
- Ventilation driven by air-speed, flow, bench speed (maximum capacity 3000 m³/h)
- Hydroelectric station of 0 to 200 bars approximately, integrated in the bench (for the feeding of brake callipers)
- PC software and interface for data recoding and processing
- Acquisition and handling devices (possibility of handling brake cycles of types 0, 1, or 2, for various speeds, in compliance with reference regulations)
- Installer tools and accessories
- Installer interfaces which allow adaptation of the different brake assemblies

Realizable tests :
Regulation ONU R 13, EU Directive : 71/320/CEE

4.3. Bicycle test stands :
- Stands to check bicycle's compliance to security requirements
- Cycle pedals endurance stands
- Cycle shock stands
- Tester stands of cyclist-deflector bars which, in compliance with the ONU R73 regulations

Realizable tests :
ISO 4210

5- Passive safety test :

5.1. Glazing test :

- Falling drop 12m, 6m (free/guided falling)
- Abrasion tester
- Light scatter measuring instrument
- Optical distortion testing device
- Image separation testing device

Realisable tests :

Regulations ONU R43, NM 22.4.003, manufactures specifications.

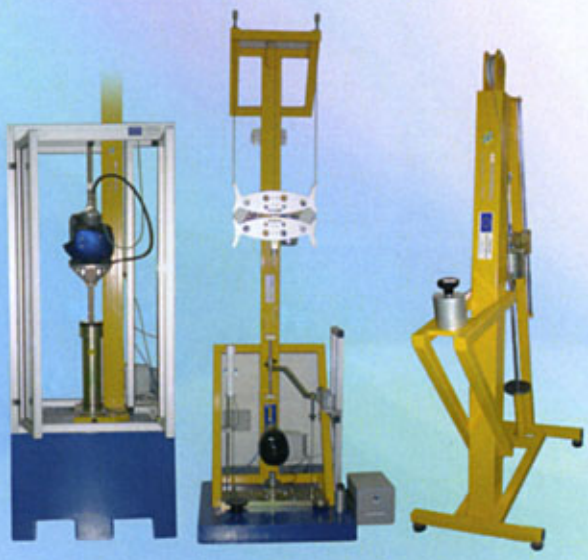
5.2. Helmet test :

Testers to make the following tests :

- Collision damping
- Mechanical resistance
- Puncture resistance
- Sand abrasion resistance

Realisable norms and regulations :

Regulations ONU R 22, NM 22.8.118, NM 22.8.119



6. Climatic condition and UV aging chamber

- Endurance chamber Heat/Cold from -70°C to +180 °C
- Endurance chamber Heat/Cold from -40 °C to +180 °C

Humidity from 10% to 98% with possibility of computer-based cycle programming and data acquisition

- Salt mist endurance chamber
- UV arc aging chamber on Mercury with irradiation source :

* Hanovia UVS 500 Arc
* Regulation precision : ± 0,05 w/m²
* Irradiation source rotation devices allowing for flat sample tests

- Xenon UV arc aging chamber :

* 2200W xenon lamp ;
* UV multi-sensing irradiation radiometer and black thermometer measurement ;
* Xenon arc filter ;
* Temperature and humidity control and maintenance ;
* Water spray control ;
* Turning table
* 10 sample supports for a maximum structure as per 135 x 45 mm samples ;

- Xenon arc UV aging chamber ;

* Adjustable power : from 125 W/m² to 450 w/m²
* Dimensions : 900 x 1000 x 1900
* Device for determining UV radiation exposure

- Flammability, toxicity and smoke testers.