



Tyre characterization

Applus IDIADA provides a full tyre characterization service covering the following tyre tests:

- Measurement of tyre contact patch
- Measurement of all wheel centre forces in various test conditions
- Tyre response while rolling over a cleat
- Measurement of static tyre stiffness
- Measurement of basic tyre properties
- Measurement of tyre handling response in proving ground conditions
- Measurements of tyre emissions

TYRE TESTING EQUIPMENT

The basic rigs used to characterize the tyres are:

IDIADA'S SKID TRAILER

The skid trailer permits tyre dynamics characterization by controlling tyre attitude over the ground. All the wheel motions and forces are registered when the tyre is free rolling or braking. Lateral slip, longitudinal slip and combined slip tests are performed on a real proving ground. Summer and winter test climates can be used to characterize tyres in any usage condition. Two reference testing centres are used:

- Dry and wet tests are performed on Applus IDIADA's state-of-the-art proving ground in Spain
- Snow and ice tests are performed on the proving ground with the most stable winter test conditions in Europe: Test World (Finland)



Apart from the characterization of tyre specific parameters, the skid trailer data can be used to measure proving ground adherence and to generate the tyre parametric models, such as FTire and MF-Tyre.

IDIADA'S KINEMATICS AND COMPLIANCE TEST RIG

The K&C test rig enables tyre static stiffness and footprint characterization. Tyre behaviour is controlled over the ground while all the motions and forces are being registered. The tyre contact patch is placed over a platform, which can be controlled over five degrees-of-freedom (vertical, longitudinal and lateral motions; steer and roll angular movement).

Stiffness and footprint measurements are basic parameters during the generation of FTire models.



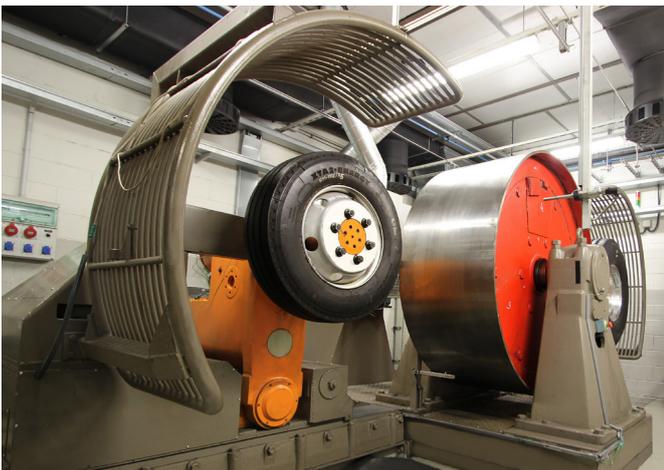
IDIADA'S DRUM FOR DYNAMIC CLEAT TESTING

Cleat testing is performed with the aim of exciting the tyre's natural frequency, according to SAE J2730 & J2731 standards. The output data is highly valuable for improving the quality of MF-Tyre 6.1 and FTire models.



IDIADA'S DRUM FOR ROLLING RESISTANCE TESTS

Tyre laboratory testing is conducted to obtain rolling resistance measurements under defined regulations.



IDIADA'S MINISHED FOR TYRE EMISSION TESTS

IDIADA MiniSHED and Passive SHED facilities permit the measurement of tyre out-gassing of volatile organic compounds.



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