



Tyre characterization with vehicle

Overall road vehicle performance is affected substantially by the performance of the tyres, which transmit all the tyre contact patch inputs to the rim and chassis. However, tyre behaviour is also affected by the wheel motion which is controlled by the vehicle chassis. Therefore, tyre integration on the vehicle chassis needs to be studied carefully using all the tyre characterization activities on the vehicle itself.



Applus IDIADA offers a wide range of characterization services that permit analysing subjectively and objectively the tyre's contribution to the overall vehicle performance.

TYRE SUBJECTIVE EVALUATIONS WITH VEHICLE PERFORMED BY APPLUS IDIADA

- Evaluation of the following vehicle performances influenced by the tyre: comfort, noise, steering, longitudinal behaviour and response
- Winter, wet and dry track condition testing
- Use of various types of roads such as IDIADA Proving Ground (Spain), winter test tracks, tyre makers' proving grounds, reference race circuits, and all kinds of public road (all over the world)
- Project management in the evaluation of sets of tyres
- Joint tests if required



TYRE OBJECTIVE EVALUATIONS WITH VEHICLE PERFORMED BY APPLUS IDIADA

- **Braking tests:** Stopping distance and deceleration measurements on different surfaces with different adherences such as aquaplaning, ceramic tiles, high-friction asphalt, basalt slabs, treated concrete and gravel safety area
- **Aquaplaning tests** while accelerating and in a curve



- **Dynamic tests** for the objective evaluation of:

Dry dynamics tyre efficiency:

- *Ride comfort in deterministic inputs or stochastic inputs*
- *Handling in straight driving, oscillatory input and step-steer*
- *Active safety in lane change and propensity to rollover*

Wet dynamics tyre efficiency:

- *Steady-state driving*
- *Transient driving*



- **NVH tests:** Interior tyre noise and vibration tests and exterior noise tests (coast-by)
- **Running resistance and emissions:** Analysis of tyre contribution to whole-vehicle running resistance and emissions

TYRE WEAR BY PERFORMING VEHICLE DURABILITY

- Tests on public roads in dry condition throughout the year
- Test driving programme can be generated considering client's reference circuit
- Tyre property measurements at different mileage intervals



CONTACT INFORMATION

Headquarters & Technical Centre • L'Albornar - PO Box 20 • E-43710 Santa Oliva (Tarragona) Spain

For further details, please contact:  tyrecharacterisation@idiada.com  +34 977 166 023



www.idiada.com