

Rolling Resistance Measurement

FKFS developed a special measurement trailer, which enables rolling resistance measurement under realistic conditions on real road surfaces.

The suspension of the measurement wheels is designed to offer the possibility to vary wheel load, toe and camber angle in a wide range. Thereby it is possible to investigate a broad variety of tire set-ups under realistic conditions.

The influence of parameters such as inflation pressure, wheel load, wheel alignment and road surface on the rolling resistance force can be determined in road measurements.

Since rolling resistance is depending on the temperature, it is inevitable to record the temperature conditions during the measurement. For this purpose, the trailer is equipped with temperature sensors to measure road-, tire- and ambient temperature.



FKFS Rolling Resistance Trailer

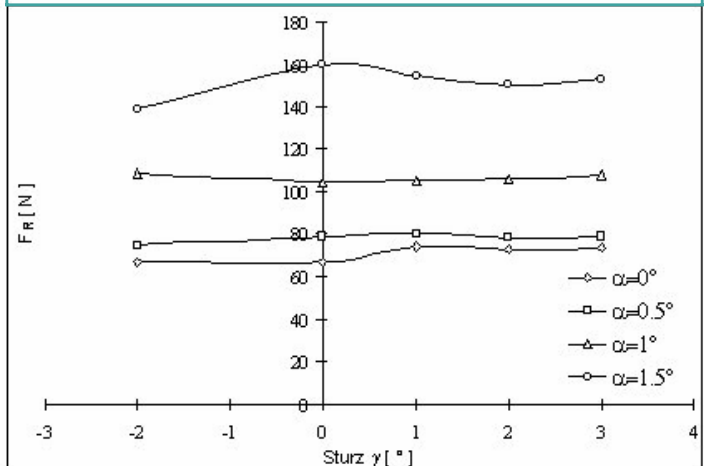
In addition to this, sensors to measure the internal tire temperature and a thermographic camera can be added. Within a current project, this temperature dependency is investigated closer, in order to enable reliable comparisons between road and test stand measurements.



Test tire and wheel suspension

Technical Data

Test tires	145/70 R13 ... 275/35 ZR20
Test rims	4 1/2 J 13 ... 9 1/2 J 20
Tire load	650 ... 5000 N (continuously adjustable)
Toe angle	-5 ... +5° (continuously adjustable)
Camber angle	-5 ... +5° (continuously adjustable)



Rolling resistance force, varying camber angle γ and toe angle α