



ACOUSTIC PROPERTIES OF ROAD SURFACES

An essential research topic of the AIT in the field of traffic acoustics is the generation of tyre/road noise and the related interaction between tyres and road surface. With this expertise, the AIT is a relevant partner for infrastructure operators and road surface manufacturers - in numerous national and international research projects.

A 3D surface texture scanner was developed especially for this application, which enables precise scanning of the road surface in flowing traffic. In combination with many years of experience in acoustic measurement technology and simulation, a unique coupled modelling of the tyre/road noise levels generated by the texture is thus made possible.

OUR SERVICES

- Accredited testing activities
- Tyre/road noise and pass-by measurements for acoustic characterization of road surfaces
- Simultaneous acquisition and coupled modelling of road surface, tyre/road noise and road texture
- Research and development of new road surface types
- Investigation of the acoustic ageing behaviour of low-noise and standard road surfaces

MEASURING EQUIPMENT AND ANALYSIS TOOLS

The AIT has a complete system of measuring equipment and software for acoustics. This includes special measuring vehicles or trailers, test benches, mobile measuring devices and simulation software. Thus, the entire chain from data



acquisition and evaluation through modelling and simulation to optimization is available.

The use of calibrated multi-channel measurement technology allows not only a high degree of accuracy but also a more detailed spatial view of the sound field. The perception of ambient noise is subject to the individual disturbance perception of residents and can best be described with psychoacoustic models. Due to its competence in the field of psychoacoustics, the AIT can carry out meaningful listening tests with the aid of binaural measurement or aurally correct reproduction technology.



ACCREDITED TESTS

As an accredited testing laboratory, the AIT is available for precise acoustic measurements in the areas of sound power, ambient noise and noise protection. The test procedures of the acoustics working group are based on measurements of sound pressure and further calculations (sound intensity, sound pressure level, impulse responses or transfer functions). The most common measurements in the field of acoustic properties of road surfaces include:

- Controlled and statistical pass-by measurements (SPB and CPB method) according to EN ISO 11819-1
- Tyre/road noise measurements using CPX trailers according to EN ISO 11819-2
- Tyre/road noise measurements using RVS trailers according to RVS 11.06.64



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