



## NOISE EMISSIONS FROM EXPANSION JOINTS ON BRIDGES

**DESCRIPTION.** Expansion joints on bridges can induce impulsive rolling noise and high noise levels which are often perceived as annoying by local residents. Here, expansion joints radiate noise both upwards via the tyre-road contact and downwards via the abutment. Apart from the crossing vehicle's type and its velocity, the noise level significantly depends on the type of the expansion joint and on the installation quality.

**PURPOSE.** Determination of sound emitted from expansion joints when cars are crossing.

**APPLICATION.** Expansion joints of any dimension and type. Comparison between conventional and noise-reducing expansion joints.



**MEASUREMENT PROCEDURE.** Multi-channel measurement of the sound pressure levels produced by reference vehicles crossing at determined speeds. Measurements at a reference section without expansion joint, next to the expansion joint and underneath the bridge – optionally, if necessary, also directly in the abutment.

**MEASUREMENT RESULT.** A-weighted sound pressure level, spectral analysis.

**MEASUREMENT CONDITIONS.** Measurement along with ongoing traffic on dry road surfaces with air and surface temperatures above 5 °C.

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