CFADAGA2004/429
Track specification for noise type test - specification of components versus functional approach

M. Kalivoda[a], M. Bukovnik[b] and M. Jaksch[b]
[a]psiA-Consult GmbH, Lastenstraße 38/1, 1230 Wien, Austria
[b]psiA-Consult GmbH, Lastenstrasse 38/1, A-1230 Wien, Austria
kalivoda@psia.at

Pass-by noise type testing of rolling stock requires tight specifications for the test track. There are two main reasons for that. On one hand track noise generation has to be reasonably lower than vehicle emission. On the other hand track specifictions have to guarantee a high reproducability especially for type testes at different sites. Both, the prEN ISO 3095 and the Technical Specifications for Interoperability of High Speed Trains (HS-TSI) therefore include a number of requirements for the test track. They describe the components to be used such as mono-bloc concrete sleepers, stiff rail pads and UIC 60 rail profile. This sort of approach is questioned and an alternative approach (called ATSI) has been proposed in the final phase of the HS-TSI adoption. ATSI uses a functional track specification by limiting the spatial vibration decay of the track. The spatial decay rate is a criterion to describe the vibration damping of the track along its longitudinal direction expressed in decrease of rail vibration in dB by meter of track. There is a lot of concern that the ATSI approach cannot guarantee a low noise track. The compilation of a big number of pass-by noise, decay rate and track vibration measurements on different test tracks will be presented here. This data made us able to show that the TSI and the ATSI specifications are not equivalent. The decay rate limit as it is proposed at the moment is not able to preclude tracks with high noise radiation.

The complete document was not available at the publication time. It has been replaced by the submitted abstract.